

AIR EMISSION PERMIT NO. 06300025- 003

IS ISSUED TO

Heron Lake BioEnergy LLC

HERON LAKE BIOENERGY LLC

91246 390th Avenue

Heron Lake, Jackson County, Minnesota 56137

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

Permit Type	Permit Action	Application Date	Issuance Date
Total Facility Operating Permit	001	07/20/2004	05/24/2005
Minor Amendment	002	09/21/2005	11/10/2005
Major Amendment	003	05/29/2007 07/18/2007	See Below

This permit authorizes the Permittee to operate and modify the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: State; Limits to Avoid Pt 70 and NSR

Major Amendment

Issue Date: May 24, 2005

Issue Date: September 5, 2007

Expiration: Nonexpiring

All Title I Conditions do not expire.

Richard J. Sandberg, Manager
Air Quality Permits Section
Industrial Division

for Brad Moore
Commissioner
Minnesota Pollution Control Agency

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NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	651-296-6300
Outside Metro Area	1-800-657-3864
TTY	651-282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

Heron Lake Bio-Energy facility will have the capacity to produce 55 million gallons of fuel-grade ethanol and 193,306 tons of Distillers Dried Grains and Solubles (DDGS) annually. The pollutants emitted in the greatest quantities are: Volatile Organic Compounds (VOC), Particulate Matter (PM), Particulate Matter smaller than 10 microns (PM₁₀), Nitrogen Oxides (NO_x), Sulfur Dioxide (SO₂), and Carbon Monoxide (CO). The emissions of each of these pollutants are limited to less than the applicable major source thresholds. Source of emissions from the facility will be: fermentation; distillation; DDGS production, storage and handling; coal, natural gas, and propane combustion; product and gasoline storage and loadout; and equipment leaks (valves, flanges, etc.).

The facility will employ a thermal oxidizer to control VOC emissions from DDGS drying and distillation processes. A wet scrubber will control VOC emissions from the fermentation. The facility will employ several baghouses to control PM and PM₁₀ emissions. The coal burning boiler will be a bubbling fluidized bed combustor. The fluidized bed boiler includes lime/limestone injection to control acid gases, ammonia injection for controlling NO_x, and a baghouse to control PM/PM₁₀. The large product storage tanks will be equipped with internal floating roofs to control VOCs. The ethanol loadout rack for trucks will be equipped with a flare to control VOCs. Emissions from equipment leaks will be controlled through an inspection and maintenance program.

Description of the Activities Allowed by Permit Action 003

This is a major amendment to authorize the following changes:

Changes requested by the Permittee which require a major amendment:

- Both DDGS dryers are now steam heated and vent to the Regenerative Thermal Oxidizer (RTO) for destruction of VOC/HAP instead of one dryer being vented to the Fluid Bed Boiler (FBB);
- Distillation and process vents gases are directed to the RTO instead of the FBB for destruction of VOC/HAP.

Other changes requested by the Permittee:

- Baghouse fabric filters to be installed for control of coal dust and flyash are clarified as follows:

Application	MPCA ID (HLBE ID)	MPCA STACK ID (HLBE ID)
Coal handling	CE014 (CE100)	SV013 (SV90)
Flyash filter receiver	CE015 (CE104)	SV014 (SV100)
Flyash storage	CE016 (CE105)	SV015 (SV101)
Coal bins	CE017	SV016 (SV150)
Limestone	CE024	SV019 (SV110)

- Two (2) additional PM sources are added (sand storage vessel and temporary grain storage);
- Cooling tower water circulation rate is increased from 1,200,000 gallons per hour to 1,500,000 gallons per hour (the original permit and public notice was based on 1,700,000 gallons per hour);
- Denatured ethanol loading rate is increased from 1,800 gallons per minute to 5,600 gallons per minute (truck and railcar loading combined);
- DDGS loadout rate is increased from 15,000 bushels per hour to 20,000 bushels per hour for each of two (2) loadout stations;
- Stack parameters have been updated;
- The requirements of 40 CFR pt. 60, Subpart IIII for compression ignition engines have been added to the permit;
- The SO₂ limit for the fluid bed boiler has been updated in accord with the change made by U.S. Environmental Protection Agency (EPA) to 40 CFR pt. 60, Subpart Db in February 2006;
- Fuel for the thermal oxidizer and for the pilot flames for the ethanol loadout flare and methanator flare will use liquid propane (natural gas may also be used if it becomes available);
- Two (2) emergency generators are added (administration building and boiler feedwater pump; a generator is also added to the City's water treatment plant0;
- Cooling tower drift loss is recalculated based on the manufacturer's guarantee of drift loss;
- Estimated limestone throughput rate for boiler SO₂ control is reduced from 6570 tons per year to 2190 tons per year;
- Building dimensions have been updated.

Other changes made to the permit:

- stockpiling of wetcake for shipment offsite is allowed (lower emissions result from simply stockpiling the wetcake as opposed to drying it);
- baghouse pressure drop range is changed to a range of 0.25 to 8.0 inches water column;
- size of three liquid storage tanks is corrected;
- clarified fuel recordkeeping requirement for GP010 so that records match the limit (30-day rolling average);
- emission limits have been changed to match the revised emission calculations;
- limits (except for a 5 percent opacity limit) now have at least two significant digits (e.g., 0.3 is now 0.30);
- performance tests have been entered individually for each pollutant to be tested;
- citations for flare requirements have been corrected (flare is not subject to NSPS);
- feed of wetcake to the dryers must now stop if the RTO breaks down;
- temperature and syrup feedrate limits on the dryers are replaced with a more general condition that allows limits to be set based on performance tests;
- a redundant monthly fuel recordkeeping requirement for the fluid bed boiler has been deleted (the permit also contains a daily records requirement);
- Continuous Emission Monitor (CEM) requirements now appear on separate pages at the end of Table A (moved from EU035);
- CE004 is deleted from the permit since it contained requirements that applied to the fluid bed boiler when it was intended to also operate as a thermal oxidizer;
- The PM limit for the fluid bed boiler has been updated in accord with the change made by EPA to 40 CFR pt. 60, Subpart Db in February 2006.

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-1

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item: Total Facility

What to do	Why to do it
OPERATIONAL LIMITS	hdr
Production: less than or equal to 55.0 million gallons/year using 12-month Rolling Sum of ethanol (200 proof prior to addition of denaturant).	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Process Throughput: less than or equal to 593,600 tons/year using 12-month Rolling Sum of corn, based on 56 pounds per bushel.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Process Throughput: less than or equal to 193,306 tons/year using 12-month Rolling Sum of distillers dry grains and solubles (DDGS) as measured on a dry mass basis.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Process Throughput: less than or equal to 1050 gallons/minute using 3-hour Rolling Average of beer, or the average measured during the most recent performance test demonstrating compliance.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
PARAMETERS USED IN MODELING	hdr
Parameters Used in Modeling: The parameters used in the modeling performed for an Environmental Assessment Worksheet under Minn. R. ch. 4410 and for determining emission and/or operational limits for this facility are listed in Appendix I of this permit. If the Permittee intends to change any of these parameters, the Permittee must submit the revised parameters to the Commissioner and receive written approval before making any changes. The revised parameter information submittal must include, but is not limited to: the locations, heights and diameters of the stacks; locations and dimensions of nearby buildings; velocity and temperatures of the gases emitted; and the emission rates. The plume dispersion characteristics due to the parameter revisions must equal or exceed the dispersion characteristics modeled for this permit, and the Permittee shall demonstrate this in the proposal.	Minn. R. 7009.0020; Minn. R. 7007.0800, subp. 2
Parameters Used in Modeling (continued): If the information does not demonstrate equivalent or better dispersion characteristics, or if a conclusion cannot readily be made about the dispersion, the Permittee must remodel.	Minn. R. 7009.0020; Minn. R. 7007.0800, subp. 2
Parameters Used in Modeling (continued): Pollutant Emission Rates: If the Permittee proposes to emit any pollutant in addition to those listed in Appendix I of this permit, or proposes to increase the emission rate of any pollutant listed in Appendix I, the Permittee shall first use the Heron Lake BioEnergy Air Emissions Risk Analysis (AERA) report as a template for recalculating the risk due to the change in emissions. The Permittee shall submit a report to the MPCA of the proposed change and demonstrate that the recalculated risk for all pollutants emitted from the facility does not exceed the acceptable risk criteria used in the Heron Lake BioEnergy AERA report. The Permittee must receive written approval from the MPCA before making any changes.	Minn. R. 7009.0020; Minn. R. 7007.0800, subp. 2
Parameters Used in Modeling (continued): For changes that do not involve an increase in an emission rate and that do not require a permit amendment, the proposal must be submitted as soon as practicable, but no less than 60 days before making the change to any parameter. For changes involving increases in emission rates and that require a minor permit amendment, the proposal must be submitted as soon as practicable, but no less than 60 days before making the change to any parameter. For changes involving increases in emission rates and that require a permit amendment other than a minor amendment, the proposal must be submitted prior to or with the permit amendment application. This is a state only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act.	Minn. R. 7009.0020; Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-2**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

OPERATIONAL REQUIREMENTS	hdr
Follow the Odor Action Plan which is attached to this permit as Appendix IV.	Minn. R. 7007.0800, subp. 2
Clean up commodities spilled on the driveway and other facility property as required to minimize fugitive emissions; maintain air pollution control equipment in proper operating condition and utilize the air pollution control system as designed.	Minn. R. 7011.1005, subp. 1
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A or B.	Minn. R. ch. 7017
Performance Test Notifications and Submittals: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change. Limits set following a performance test may include production limits, limits on material feedrate to individual units, and operating parameters for emission units or air pollution control equipment.	Minn. R. 7017.2025, subp. 3
MONITORING REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-3**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
The Permittee shall install, calibrate, maintain and operate a monitor that continuously reads and records the beer production. The average beer production rate shall be calculated in a 3-hour rolling average basis.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Operation of Monitoring Equipment: Unless otherwise noted in Tables A or B, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
RECORDKEEPING	hdr
Recordkeeping: The Permittee shall keep daily records of: - the quantity of ethanol produced, - the quantity of DDGS produced, - the quantity of wetcake produced, - the quantity of corn received, and - the quantity of coal, natural gas and propane purchased.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
The Permittee shall produce and maintain a hourly record of the 3-hour rolling average beer production rate.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
By the 15th of each month calculate and record: - ethanol, DDGS, and wetcake production, - corn receipts, for the previous month and the previous 12-month period.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
REPORTING/SUBMITTALS	hdr
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-4**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Fugitive Emissions Control Plan: The Permittee shall submit a fugitive emissions control plan within 60 days of the date of permit issuance for review and approval by the Commissioner. The plan shall identify all fugitive emission sources, primary and contingent control measures, and record keeping. The Permittee shall follow the actions and record keeping specified in the control plan. The plan may be amended by the Permittee with the Commissioner's approval. If the Commissioner determines the permittee is out of compliance with Minn. R. 7011.0150 or the fugitive emission control plan, then the permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Any requirements set due to 40 CFR Part 60 (Federal New Source Performance Standards), 40 CFR Part 70 (Operating Permits) or that are set as Title I Conditions do not meet the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. The Permittee shall submit this on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3100
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095
Best Management Practices Odor Plan: The Permittee shall prepare and maintain a plan based on Best Management Practices for minimizing odorous emissions from the facility. The Plan shall address minimization of odors from: - emissions units and control equipment; - fugitive emissions from process piping , valves, flanges, etc.; and - emissions from the production of wetcake. The permittee shall submit the plan to the Commissioner for approval prior to commencement of operation of the facility. The Permittee shall update the plan as necessary and submit the updated plan to the Commissioner for approval.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-5**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: GP 001 Dry Bulk Commodity Facility**Associated Items:** CE 001 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 002 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 009 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

EU 001 Truck Receiving 1

EU 002 Truck Receiving 2

EU 003 Grain Elevator 1

EU 004 Conveyor

EU 005 Grain Bin 1

EU 006 Grain Bin 2

EU 007 Grain Day Bin (scalping bin)

EU 008 Grain Elevator 2

EU 009 Grain Day Bin (grinding bin)

EU 010 Hammermill Feed Conveyor

EU 011 Hammermill 1

EU 012 Hammermill 2

EU 038 Truck Load Spout (DDGS)

EU 039 DDGS Dump Pit/Auger

EU 052 DDGS storage silo

EU 055 DDGS storage silo

What to do	Why to do it
EMISSION LIMITS	hdr
Opacity: less than or equal to 5 percent opacity	Minn. R. 7011.1005, Subp. 3(A)
POLLUTION CONTROL REQUIREMENTS	hdr
Vent all captured emissions through a baghouse. See GP003 for baghouse operation and maintenance requirements.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Keep all doors and windows closed when receiving, handling and/or processing material.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-6**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: GP 002 Coal / Ash / Lime Handling and Storage**Associated Items:** EU 044 Coal Handling

EU 045 Flyash Filter Receiver

EU 046 Flyash Storage

EU 047 Coal Storage Bin Vent

EU 050 Lime Storage Silo

EU 051 Lime Storage & Handling

What to do	Why to do it
Vent all captured emissions to baghouse. See GP 003 for baghouse operation and maintenance requirements.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
The Permittee shall keep all doors and windows in the closed when receiving, handling or loading materials.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-7**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: GP 003 Low-Temperature Baghouses**Associated Items:** CE 001 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 002 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 009 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 014 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 015 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 017 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 024 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

What to do	Why to do it
CE001 - grain receiving (SV001) CE002 - hammermilling (SV002) CE009 - DDGS loadout (SV008) CE014 - coal handling (SV013) CE015 - flyash filter receiver (SV014) CE016 - flyash storage (SV015) CE017 - coal bin vent (SV016) CE024 - limestone (SV019)	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall capture efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent capture efficiency	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
The Permittee shall operate and maintain the control equipment such that it achieves an overall capture efficiency for Total Particulate Matter: greater than or equal to 99 percent capture efficiency	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Pressure Drop: greater than or equal to 0.25 inches of water column and less than or equal to 8.0 inches of water column unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours when in operation.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Visible Emissions: The Permittee shall check the fabric filter stack (SV 001, 002, 008, 013, 014, 015, and 016) for any visible emissions once each day of operation during daylight hours. During inclement weather, the Permittee shall read and record the pressure drop across the fabric filter, once each day of operation.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Recordkeeping of Visible Emissions and Pressure Drop. The Permittee shall record the time and date of each visible emission inspection and pressure drop reading, and whether or not any visible emissions were observed, and whether or not the observed pressure drop was within the range specified in this permit	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 4, 5, and 14
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Heron Lake BioEnergy LLC
Permit Number: 06300025 - 003

Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.	Minn. R. 7007.0800, subp. 4
Calibrate the gauges annually, or as often as required by the manufacturer's specifications. Maintain a written record of the calibration and any action resulting from calibration.	Minn. R. 7007.0800, subp. 2 and subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Heron Lake BioEnergy LLC
Permit Number: 06300025 - 003

Subject Item: GP 004 Fermentation Units Vented to Scrubber

Associated Items: CE 003 Packed-Gas Adsorption Column
EU 013 Fermenter 1
EU 014 Fermenter 2
EU 015 Fermenter 3
EU 016 Fermenter 4
EU 017 Beerwell

What to do	Why to do it
POLLUTION CONTROL REQUIREMENTS	hdr
Vent all emissions to fermentation scrubber (CE 003). See Fermentation Scrubber (CE 003) for operation and maintenance requirements for scrubber.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
OPERATIONAL LIMITS	hdr
Total Fermentation Tank Volume: 3,905,000 gallons	Minn. R. Ch 4410

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-10**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: GP 005 Distillation and Units Vented to Thermal Oxidizer**Associated Items:** CE 005 Direct Flame Afterburner

EU 018 DDGS Dryer A

EU 019 Mixer

EU 020 Slurry Tank

EU 021 Cook Tube

EU 022 Flash Vessel

EU 023 Liquefaction Tank 1

EU 024 Liquefaction Tank 2

EU 025 Yeast Tank

EU 026 Beer Column

EU 027 Side Stripper

EU 028 Rectifier Column

EU 029 190 Proof Condenser

EU 030 Molecular Sieve

EU 031 200 Proof Condenser

EU 032 Centrifuges

EU 033 Evaporators

EU 034 DDGS Dryer B

What to do	Why to do it
POLLUTION CONTROL REQUIREMENTS	hdr
Vent all emissions to the thermal oxidizer (CE 005). See CE 005 for operation and maintenance requirements.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-11**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: GP 006 Tanks**Associated Items:** TK 001 190 Proof Ethanol, 165,000 gallons

TK 002 200 Proof Ethanol, 165,000 gallons

TK 003 Denaturant, 165,000 gallons

TK 004 Denatured Ethanol, 1,200,000 gallons

TK 005 Denatured Ethanol, 1,200,000 gallons

What to do	Why to do it
POLLUTION CONTROL REQUIREMENTS	hdr
The storage vessels shall be equipped with a fixed roof in combination with an internal floating roof meeting the requirements of 40 CFR Section 60.112b(a)(1).	40 CFR Section 60.112b(a); Minn. R. 7011.1520(C)
Internal Floating Roof Seal Requirement: Each internal roof shall be equipped with one of the closure devices between the all of the storage vessel and the edge of the internal floating roof as described in 40 CFR Section 60.112b(a)(1)(ii).	40 CFR Section 60.112b(a)(1)(ii); Minn. R. 7011.1520(C)
MONITORING REQUIREMENTS	hdr
Inspection - Prior to initial fill of tanks: Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with Volatile Organic Liquid (VOL). If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric; or defects in the internal floating roof, or both, the Permittee shall repair the items before filling the storage vessel.	40 CFR Section 60.113b(a)(1); Minn. R. 7011.1520(C)
Inspection - Annual: Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every twelve (12) months after initial fill as required by 40 CFR Section 60.113b(a)(2).	40 CFR Section 60.113b(a)(2) & (4); Minn. R. 7011.1520(C)
Inspection - Tank Empty and Degassed: Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the tank is emptied and degassed as required by 40 CFR Section 60.113b(a)(4). In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years.	40 CFR Section 60.113b(a)(4); Minn. R. 7011.1520(C)
RECORDKEEPING REQUIREMENTS	hdr
Keep a record of each inspection performed as required by 40 CFR Section 60.113b(a). 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 Section 60.115b(a)(2); Minn. R. 7011.1520(C)
Recordkeeping: Maintain records showing the dimensions of each tank and an analysis showing tank capacity.	40 CFR Section 60.116b(c); Minn. R. 7011.1520(C)
Recordkeeping: Maintain records of the volatile organic liquid (VOL) stored, the period of storage, and the maximum true vapor pressure of the VOL during the respective storage period, calculated as described in 40 CFR Section 60.116b(e).	40 CFR Section 60.116b(c); Minn. R. 7011.1520(C)
REPORTING REQUIREMENTS:	hdr
Notification: Notify the Commissioner in writing at least 30 days prior to the filling or refilling of each tank for which an inspection is required by 40 CFR Section 60.113b(a)(1) and (a)(4) to afford the Commissioner the opportunity to have an observer present. If the inspection required by 40 CFR Section 60.113b(a)(4) is not planned and the Permittee could not have known about the inspection 30 days in advance of refilling the tank, the Permittee shall notify the Administrator at least 7 days prior to the refilling of the tank. Notification shall be made by telephone followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Commissioner at least 7 days prior to the refilling.	40 CFR Section 60.113b(a)(5); Minn. R. 7011.1520(C)
After each inspection required by 40 CFR Section 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in 40 CFR Section 60.113b(a)(3)(ii), a report shall be furnished to the Administrator within thirty (30) days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of 40 CFR Section 60.112b(a)(1) or 40 CFR Section 60.113b(a)(3)(ii) and list each repair made.	40 CFR Section 60.115b(a)(4); Minn. R. 7011.1520(C)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-12**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Notification - Control Equipment Installation and Certification: After installing the internal floating roofs, furnish the Administrator with a report describing the control equipment (fixed roof/internal floating roof combination) and certifying that the control equipment meets the specifications of 40 CFR Section 60.112b(a)(1) and 40 CFR Section 60.113b(a)(1). This report shall be attached to the initial startup notification required by 40 CFR Section 60.7(a)(3) and located in Table B of this permit.	40 CFR Section 60.115b(a)(1); Minn. R. 7011.1520(C)
Reporting - Annual Inspection Results: If any of the conditions described in 40 CFR Section 60.113b(a)(2) are detected during the annual visual inspection required by 40 CFR Section 60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the tank, the nature of the defects, and the date the tank was emptied or the nature of and date the repair was made.	40 CFR Section 60.113b(a)(3); Minn. R. 7011.1520(C)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-13**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: GP 007 Flares**Associated Items:** CE 008 Flaring (Methanator)

CE 010 Flaring (Loadout)

What to do	Why to do it
EMISSION LIMITS	hdr
Flares must be designed for and operated with no visible emissions except for a period not to exceed a total of 5 minutes during any 2 consecutive hours.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 4, 5 and 14
OPERATING REQUIREMENTS	hdr
Fuel: Liquid propane or natural gas	Minn. R. 7007.0800, subp. 2
Operation Requirement: At all times, including periods of startup, shutdown, and malfunction, owners shall maintain and operate any affected facility in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on available information which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.	Minn. R. 7007.0800, subp. 2 and 14
Operation Requirement: Flares shall be operated at all times when emissions may be vented to them.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 14
Operating Requirement: Flares shall be operated with a flame present at all times.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 14
Operation Requirement: Flame presence shall be monitored using a thermocouple or any other equivalent device.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 4 and 5
Construction and Operation Requirement: Steam assisted flares shall be designed and operated with an exit velocity of less than 60 ft/sec.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 14
Construction and Operation Requirement: Steam assisted flares designed and operated with an exit velocity equal to or greater than 60 ft/sec but less than 200 ft/sec are allowed if the heating value of the combustion gas is greater than 1,000 Btu/scf.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 14
Construction and Operation Requirement: Steam assisted flares designed and operated with an exit velocity less than Vmax (as determined by the method specified in 40 CFR Section 60.18(f)(5)) and less than 400 ft/sec are allowed.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 14
Construction Requirement: Flares used to comply with this section shall be steam assisted, air assisted, or nonassisted.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 14
Operation Requirement: Flares shall be monitored to ensure that they are operated and maintained in conformance with their design.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 4,5 and 14
Records Requirement: Keep a record of any startup, shutdown, or malfunction in the affected facility or malfunction of the air pollution control equipment.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-14**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Recordkeeping: Maintain a file of all measurements, CMS performance evaluations, calibration checks, adjustments and maintenance, and all other information required by this part in permanent form, suitable for inspection for at least two years following the date of such measurements, maintenance, and records.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 4 and 5
Compliance Requirement: For opacity standards, use Reference Method 9 to determine initial compliance, the minimum total time of observations shall be 3 hours (30-6 minute averages) for the performance test or other set of observations (meaning those fugitive type emission sources subject only to an opacity standard).	Minn. R. 7007.0800, subp. 2 and 14
Compliance Requirement: Reference Method 22 shall be used to determine the compliance of flares with the visible emissions provisions of this subpart.	Minn. R. 7007.0800, subp. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-15**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: GP 009 Sulfur Dioxide Group**Associated Items:** SV 004 Regenerative Thermal Oxidizer (CE005)

SV 005 Bubbling Fluidized Bed Boiler w/ Baghouse

SV 006 Methanater Flare Stack

What to do	Why to do it
<p>Sulfur Dioxide: less than or equal to 98.7 tons/year using 12-month Rolling Sum . During the first 12 months of operation, the cumulative sulfur dioxide shall be (in tons):</p> <p>Month 1 - 28 Month 2 - 34.1 Month 3 - 40.2 Month 4 - 46.3 Month 5 - 52.4 Month 6 - 58.5 Month 7 - 64.6 Month 8 - 70.7 Month 9 - 76.8 Month 10 - 82.9 Month 11 - 90.0</p> <p>The sum shall be based on the most resent monthly CEM total from SV 005 and most resent performance test for SV 004.</p>	<p>Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2</p>
<p>Recordkeeping: The Permittee shall produce and maintain a record by the 15th of each month of the sulfur dioxide emissions from SV 004 and SV 005.</p>	<p>Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-16**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: GP 010 Fuel-Limited Group**Associated Items:** EU 035 Coal Fired Boiler Bubbling Fluidized Bed Combustor

What to do	Why to do it
Fuel Usage: less than or equal to 220 million Btu/hour using 30-day Rolling Average for the bubbling fluidized bed combustor (EU 035).	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Monitoring: The Permittee shall produce and maintain daily records of the purchases of propane, natural gas, and coal burned in the bubbling fluidized bed combustor (EU 035).	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Recordkeeping: The Permittee shall produce and maintain each day records of the quantity of fuels burned and the average hourly heat input for the bubbling fluidized bed combustor (EU 035), and the 30-day rolling average of the average hourly heat input. The Permittee shall determine, and maintain records of, the hourly average heat input rate based on quantity of fuel burned multiplied by the average heat content of the fuel. Hourly Average Heat Input Rate = [(Total number of pounds of coal purchased in the period) x (heat input per pound of coal) + (Total number of cubic feet of natural gas purchased in the period) x (heat input per cubic foot of natural gas) + (total number of pounds of propane purchased in the period) x (heat input per pound of propane)]/number of hours in the period.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-17**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: GP 011 Coal group**Associated Items:** EU 035 Coal Fired Boiler Bubbling Fluidized Bed Combustor

EU 041 Coal Receiving

EU 042 Coal Storage Silos

EU 044 Coal Handling

EU 045 Flyash Filter Receiver

EU 046 Flyash Storage

EU 047 Coal Storage Bin Vent

EU 050 Lime Storage Silo

EU 051 Lime Storage & Handling

What to do	Why to do it
Process Throughput: less than or equal to 12.5 tons/hour using 24-hour Block Average of coal.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Recordkeeping: The Permittee maintain a daily record of the quantity of coal burned as required by 40 CFR Section 60.49b(d).	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; 40 CFR Section 60.49b(d)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-18**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: SV 001 Grain Baghouse Stack (CE001)**Associated Items:** EU 001 Truck Receiving 1

EU 002 Truck Receiving 2

EU 003 Grain Elevator 1

EU 004 Conveyor

EU 005 Grain Bin 1

EU 006 Grain Bin 2

EU 007 Grain Day Bin (scalping bin)

EU 008 Grain Elevator 2

EU 009 Grain Day Bin (grinding bin)

EU 010 Hammermill Feed Conveyor

What to do	Why to do it
LIMITS	hdr
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)
Total Particulate Matter: less than or equal to 1.34 lbs/hour using 3-hour Average	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 1.34 lbs/hour using 3-hour Average	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
PERFORMANCE TESTING	hdr
Performance Test: due 180 days after Initial Startup to measure total particulate matter emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure particulate matter less than 10 micron emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-19**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: SV 002 Hammermilling Stack (CE002)**Associated Items:** EU 011 Hammermill 1

EU 012 Hammermill 2

What to do	Why to do it
LIMITS	hdr
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)
Particulate Matter < 10 micron: less than or equal to 0.94 lbs/hour using 3-hour Average	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Total Particulate Matter: less than or equal to 0.94 lbs/hour using 3-hour Average	Title I Condition: To limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21
PERFORMANCE TESTING	hdr
Performance Test: due 180 days after Initial Startup to measure total particulate matter emissions.	Title I Condition: To limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure particulate matter less than 10 micron emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-20**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: SV 003 Fermentation (CO2) Scrubber Stack (CE003)**Associated Items:** EU 013 Fermenter 1

EU 014 Fermenter 2

EU 015 Fermenter 3

EU 016 Fermenter 4

EU 017 Beerwell

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Volatile Organic Compounds: less than or equal to 7.83 lbs/hour using 3-hour Average as measured on a total mass VOC basis.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
PERFORMANCE TESTING	hdr
Performance Test: due 180 days after Initial Startup to measure volatile organic compounds.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-21

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: **SV 004 Regenerative Thermal Oxidizer (CE005)**

Associated Items: EU 018 DDGS Dryer A

EU 019 Mixer

EU 020 Slurry Tank

EU 021 Cook Tube

EU 022 Flash Vessel

EU 023 Liquefaction Tank 1

EU 024 Liquefaction Tank 2

EU 025 Yeast Tank

EU 026 Beer Column

EU 027 Side Stripper

EU 028 Rectifier Column

EU 029 190 Proof Condenser

EU 030 Molecular Sieve

EU 031 200 Proof Condenser

EU 032 Centrifuges

EU 033 Evaporators

EU 034 DDGS Dryer B

EU 049 Regenerative Thermal Oxidizer (RTO)

GP 009 Sulfur Dioxide Group

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Total Particulate Matter: less than or equal to 2.65 lbs/hour	Title I Condition: To limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21
Particulate Matter < 10 micron: less than or equal to 2.65 lbs/hour	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Nitrogen Oxides: less than or equal to 0.90 lbs/hour	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Volatile Organic Compounds: less than or equal to 4.41 lbs/hour as measured on a total mass VOC basis.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Carbon Monoxide: less than or equal to 9.42 lbs/hour	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Sulfur Dioxide: See GP 009 (Sulfur Dioxide Group) for SO ₂ emissions limit.	hdr
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
PERFORMANCE TESTING	hdr
Performance Test: due 180 days after Initial Startup to measure total particulate matter emissions.	Title I Condition: To limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-22**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Performance Test: due 180 days after Initial Startup to measure particulate matter less than 10 micron emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup for sulfur dioxide emissions. The CE 005 shall be operated at the maximum bio-gas flow rate achievable during performance test for SO ₂ .	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup for nitrogen oxides emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup for volatile organic compound emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup for carbon monoxide emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-23**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: SV 005 Bubbling Fluidized Bed Boiler w/ Baghouse**Associated Items:** EU 035 Coal Fired Boiler Bubbling Fluidized Bed Combustor

GP 009 Sulfur Dioxide Group

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 10.6 lbs/hour and the limit required by 40 CFR Part 60, Subp. Db	Title I Condition: To limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21. Minn. R. 7011.0610, subp. 1(A)(1)
Particulate Matter < 10 micron: less than or equal to 7.8 lbs/hour	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Nitrogen Oxides: less than or equal to 20.9 lbs/hour using 30-day Rolling Average and the limit required by 40 CFR Part 60, Subp. Db	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Volatile Organic Compounds: less than or equal to 0.63 lbs/hour as measured on a total mass VOC basis.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Carbon Monoxide: less than or equal to 11.3 lbs/hour	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Opacity: less than or equal to 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. The limit applies at all times, except during periods of startup, shutdown or malfunction. This is more stringent than Minn. R. 7011.0610, subp. 1(A)(2).	40 CFR Section 60.43b(f) 40 CFR Section 60.43b(g) Minn. R. 7011.0610, subp. 1(A)(2)
Sulfur Dioxide: See GP 009 (Sulfur Dioxide Group) for SO ₂ emissions limit, and the limit required by 40 CFR Part 60, Subp. Db.	hdr
PERFORMANCE TESTS	hdr
Performance Test: due 180 days after Initial Startup to measure total particulate matter emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure particulate matter less than 10 micron emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup for volatile organic compound emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup for carbon monoxide emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup for Total PCDD/PCDF emissions.	Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup for mercury emissions.	Minn. R. 7017.2020, subp. 1
Upon completion of these performance tests, the Permittee shall notify the Supervisor of the Risk Evaluation and Air Modeling unit of the Environmental Analysis and Outcomes Division of the MPCA of the results.	Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-24**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: SV 007 DDGS Cooler w/ Baghouse**Associated Items:** EU 037 Cooling Cyclone

What to do	Why to do it
LIMITS	hdr
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)
Total Particulate Matter: less than or equal to 0.96 lbs/hour using 3-hour Average	Title I Condition: To limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21
Particulate Matter < 10 micron: less than or equal to 0.96 lbs/hour using 3-hour Average	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Volatile Organic Compounds: less than or equal to 3.0 lbs/hour using 3-hour Average as measured on a total mass VOC basis.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
PERFORMANCE TESTING	hdr
Performance Test: due 180 days after Initial Startup to measure total particulate matter emissions.	Title I Condition: To limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure particulate matter less than 10 micron emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure volatile organic compounds emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-25**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: SV 008 DDGS Baghouse (CE009)**Associated Items:** EU 038 Truck Load Spout (DDGS)

EU 039 DDGS Dump Pit/Auger

What to do	Why to do it
LIMITS	hdr
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)
Total Particulate Matter: less than 0.36 lbs/hour using 3-hour Average	Title I Condition: To limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21
Particulate Matter < 10 micron: less than 0.36 lbs/hour using 3-hour Average	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
PERFORMANCE TESTING	hdr
Performance Test: due 180 days after Initial Startup to measure total particulate matter emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure particulate matter less than 10 micron emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-26**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: SV 013 Coal Handling Baghouse (CE014)**Associated Items:** EU 042 Coal Storage Silos

EU 044 Coal Handling

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.035 lbs/hour using 3-hour Average	Title I Condition: To limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21
Particulate Matter < 10 micron: less than or equal to 0.035 lbs/hour using 3-hour Average	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
PERFORMANCE TESTING	hdr
Performance Test: due 180 days after Initial Startup to measure total particulate matter emissions.	Title I Condition: To limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure particulate matter less than 10 micron emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-27**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: SV 014 Flyash Filter Receiver (CE015)**Associated Items:** EU 045 Flyash Filter Receiver

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.046 lbs/hour	Title I Condition: To limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21
Particulate Matter < 10 micron: less than or equal to 0.046 lbs/hour	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
PERFORMANCE TESTING	hdr
Performance Test: due 180 days after Initial Startup to measure total particulate matter emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure particulate matter less than 10 micron emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-28**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: SV 015 Flyash Storage Baghouse (CE016)**Associated Items:** EU 046 Flyash Storage

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.055 lbs/hour	Title I Condition: To limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21
Particulate Matter < 10 micron: less than or equal to 0.055 lbs/hour	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
PERFORMANCE TESTING	hdr
Performance Test: due 180 days after Initial Startup to measure total particulate matter emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure particulate matter less than 10 micron emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-29**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: SV 016 Coal Storage Bin Vent (CE017)**Associated Items:** EU 047 Coal Storage Bin Vent

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.051 lbs/hour	Title I Condition: To limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21
Particulate Matter < 10 micron: less than or equal to 0.051 lbs/hour	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
PERFORMANCE TESTING	hdr
Performance Test: due 180 days after Initial Startup to measure total particulate matter emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure particulate matter less than 10 micron emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-30**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: SV 019 Limestone Baghouse (CE024)**Associated Items:** EU 050 Lime Storage Silo

EU 051 Lime Storage & Handling

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.025 lbs/hour	Title I Condition: To limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21
Particulate Matter < 10 micron: less than or equal to 0.025 lbs/hour	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
PERFORMANCE TESTING	hdr
Performance Test: due 180 days after Initial Startup to measure total particulate matter emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure particulate matter less than 10 micron emissions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-31**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: EU 018 DDGS Dryer A**Associated Items:** CE 005 Direct Flame Afterburner

CE 006 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones

GP 005 Distillation and Units Vented to Thermal Oxidizer

SV 004 Regenerative Thermal Oxidizer (CE005)

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
OPERATIONAL REQUIREMENTS	hdr
Wetcake: When wetcake is stockpiled for offsite shipment and not dried, the wet cake shall be stored onsite for no more than 72 hours. Time stored onsite is determined for each 72 hour period (3 consecutive calendar days) by dividing the total amount of wetcake put into storage during the 72 hours by the average daily amount shipped offsite during the same 72 hours. The Permittee shall keep a record of the amount of wetcake sent to storage each day and the amount shipped offsite each day.	Minn. R. 7007.0800, subp. 4 and 5
When a shutdown or breakdown of CE005 occurs, the Permittee shall stop feed of wetcake to the dryers. The Permittee may continue operation of the dryers only as long as necessary to empty material already in the dryers. For each breakdown event leading to the production of wet cake, the Permittee shall conduct a root cause failure analysis of the event and submit a report of the analysis to the commissioner within 15 days.	Minn. R. 7019.1000, subp. 4 Minn. R. 7007.0800, subp. 2
Limits set as a result of a performance test apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change. Limits set following a performance test for dryers include production limits (wet cake feedrate or beer production rate as a surrogate), syrup feedrate and dryer operating temperature. Other operating parameters for emission units or air pollution control equipment may be set based upon the test results.	Minn. R. 7017.2025, subp. 3
POLLUTION CONTROL REQUIREMENTS	hdr
Vent all emissions to the regenerative thermal oxidizer (CE 005). See CE 005 for operation and maintenance requirements for the regenerative thermal oxidizer.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
PROCESS MONITORING	hdr
The Permittee shall operate and maintain dryer A in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available on-site for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-32**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: EU 034 DDGS Dryer B**Associated Items:** CE 005 Direct Flame Afterburner

CE 007 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones

GP 005 Distillation and Units Vented to Thermal Oxidizer

SV 004 Regenerative Thermal Oxidizer (CE005)

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0610, subp. 1(A)(2)
OPERATIONAL REQUIREMENTS	hdr
Wetcake: When wetcake is stockpiled for offsite shipment and not dried, the wet cake shall be stored onsite for no more than 72 hours. Time stored onsite is determined for each 72 hour period (3 consecutive calendar days) by dividing the total amount of wetcake put into storage during the 72 hours by the average daily amount shipped offsite during the same 72 hours. The Permittee shall keep a record of the amount of wetcake sent to storage each day and the amount shipped offsite each day.	Minn. R. 7007.0800, subp. 4 and 5
When a shutdown or breakdown of CE005 occurs, the Permittee shall stop feed of wetcake to the dryers. The Permittee may continue operation of the dryers only as long as necessary to empty material already in the dryers. For each breakdown event leading to the production of wet cake, the Permittee shall conduct a root cause failure analysis of the event and submit a report of the analysis to the commissioner within 15 days.	Minn. R. 7019.1000, subp. 4 Minn. R. 7007.0800, subp. 2
Limits set as a result of a performance test apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change. Limits set following a performance test for dryers include production limits (wet cake feedrate or beer production rate as a surrogate), syrup feedrate and dryer operating temperature. Other operating parameters for emission units or air pollution control equipment may be set based upon the test results.	Minn. R. 7017.2025, subp. 3
POLLUTION CONTROL REQUIREMENTS	hdr
Vent all emissions to the regenerative thermal oxidizer (CE 005). See CE 005 for operation and maintenance requirements for the regenerative thermal oxidizer.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
PROCESS MONITORING	hdr
The Permittee shall operate and maintain Dryer B in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of th O & M Plan available on-site for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-33**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: EU 035 Coal Fired Boiler Bubbling Fluidized Bed Combustor**Associated Items:** CE 018 Dry Limestone Injection

CE 019 Selective Noncatalytic Reduction for NOX

CE 020 Fabric Filter - High Temperature, i.e., T>250 Degrees F

GP 010 Fuel-Limited Group

GP 011 Coal group

SV 005 Bubbling Fluidized Bed Boiler w/ Baghouse

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.030 lbs/million Btu heat input . The limit applies at all times, except during periods of startup, shutdown or malfunction.	40 CFR Section 60.43b(h)(1) 40 CFR Section 60.43b(g) Minn. R. 7011.0565
Sulfur Dioxide: less than or equal to 0.20 lbs/million Btu heat input using 30-day Rolling Average . The sulfur dioxide emission limit applies at all times, including periods of startup, shutdown, and malfunction.	40 CFR Section 60.42b(k) Minn. R. 7011.0565
Nitrogen Oxides: less than or equal to 0.20 lbs/million Btu heat input using 30-day Rolling Average . The nitrogen oxide limit applies at all times including periods of startup, shutdown, or malfunction.	40 CFR Section 60.44b(l)(1) 40 CFR Section 60.44b(h) Minn. R. 7011.0565
Mercury: less than or equal to 0.000003 lbs/million Btu heat input . This is a state-only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act.	Minn. R. 7007.0800, subp. 2
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due 60 days after achieving maximum capacity for particulate matter emissions but no later than 180 days after initial startup.	40 CFR Section 60.8 40 CFR Part 60, Subpart Db
Performance Test: due 60 days after achieving maximum capacity but no later than 180 days after startup for sulfur dioxide	40 CFR Section 60.8 40 CFR Part 60, Subpart Db
RECORDKEEPING AND REPORTING	hdr
The Permittee shall report the following information to the Administrator: (1) Calendar dates covered in the reporting period. (2) Each 30-day average sulfur dioxide emission rate (ng/J or lb/million Btu heat input) measured during the reporting period, ending with the last 30-day period; reasons for noncompliance with the emission standards; and a description of corrective actions taken. (3) Each 30-day average percent reduction in sulfur dioxide emissions calculated during the reporting period, ending with the last 30-day period; reasons for noncompliance with the emission standards; and a description of corrective actions taken.	40 CFR Section 60.49b(j) and (k) Minn. R. 7011.0565
(4) Identification of the steam generating unit operating days that coal was combusted and for which sulfur dioxide or diluent (oxygen or carbon dioxide) data have not been obtained by an approved method for at least 75 percent of the operating hours in the steam generating unit operating day; justification for not obtaining sufficient data; and description of corrective action taken. (5) Identification of the times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and description of corrective action taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit. (6) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted. (7) Identification of times when hourly averages have been obtained based on manual sampling methods.	40 CFR Section 60.49b(k) continued Minn. R. 7011.0565
(8) Identification of the times when the pollutant concentration exceeded full span of the CEMS. (9) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3. (10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1. (11) The annual capacity factor of each fired as provided under paragraph (d) of this section.	40 CFR Section 60.49b(k) continued Minn. R. 7011.0565

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-34**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

The Permittee shall submit to the Administrator the performance test data from the initial performance test and the performance evaluation of the CEMS. The Permittee shall submit to the Administrator the maximum heat input capacity data from the demonstration of the maximum heat input capacity of the affected facility.	40 CFR Section 60.49b(b) Minn. R. 7011.0565
The Permittee shall maintain records of the following information for each steam generating unit operating day: (1) Calendar date. (2) The average hourly nitrogen oxides emission rates (expressed as NO ₂) (ng/J or lb/million Btu heat input) measured or predicted. (3) The 30-day average nitrogen oxides emission rates (ng/J or lb/million Btu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days. (4) Identification of the steam generating unit operating days when the calculated 30-day average nitrogen oxides emission rates are in excess of the nitrogen oxides emissions limit, with the reasons for such excess emissions as well as a description of corrective actions taken.	40 CFR Section 60.49b(g) Minn. R. 7011.0565
(5) Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken. (6) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data. (7) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted. (8) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system. (9) Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3. (10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.	40 CFR Section 60.49b(g) continued Minn. R. 7011.0565
The Permittee shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for each fuel for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.	40 CFR Section 60.49b(d) Minn. R. 7011.0565
The Permittee shall maintain records of opacity.	40 CFR Section 60.49b(f) Minn. R. 7011.0565
The Permittee shall report to the Administrator for each period for which the minimum amount of data were not obtained during the reporting period, the following additional information: (1) The number of hourly averages available for outlet sulfur dioxide emission rates. (2) The standard deviation of hourly averages for outlet sulfur dioxide emission rates. (3) The lower confidence limit for the mean outlet sulfur dioxide emission rate. (4) The ratio of the lower confidence limit for the mean outlet sulfur dioxide emission rate and the allowable.	40 CFR Section 60.49b(m) Minn. R. 7011.0565
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130; 40 CFR Section 60.7(f)

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Heron Lake BioEnergy LLC
Permit Number: 06300025 - 003

Subject Item: EU 036 Methanator

Associated Items: CE 008 Flaring (Methanator)
SV 006 Methanater Flare Stack

What to do	Why to do it
Vent all emissions to the bubbling fluidized bed combustor (EU035) or to the methanator flare (CE008) at all times.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-36**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: EU 037 Cooling Cyclone**Associated Items:** SV 007 DDGS Cooler w/ Baghouse

What to do	Why to do it
OPERATING REQUIREMENTS	hdr
Pressure Drop: greater than or equal to 0.25 inches of water column and less than or equal to 8.0 inches of water column for CE009, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours when in operation.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Recordkeeping of Pressure Drop. The Permittee shall record daily the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 4 and 5
Corrective Actions: The Permittee shall take corrective action as soon as possible if visible emissions are observed. Corrective actions shall return the pressure drop to within the permitted range. Corrective actions include, but are not limited to, those outlined in the O & M Plan. The Permittee shall keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subp. 4, 5, and 14
Inspect Quarterly, or more frequently as required by manufacturing specifications, all components that are not subject to wear or plugging, including structural components, housings, ducts, and hoods. Maintain a record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
Inspect monthly, or more frequently as required by manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
Calibrate the gauge annually or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-37**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: EU 040 Ethanol Loading Rack**Associated Items:** CE 010 Flaring (Loadout)

SV 009 Ethanol Loading Rack Flare (CE010)

What to do	Why to do it
The Permittee shall vent all emissions when loading ethanol to trucks to the flare. See GP 007 for requirements for the flare	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Recordkeeping: The Permittee shall maintain a daily record of the number of gallons of denatured ethanol loaded into non-dedicated, uncontrolled trucks.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-38**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: EU 042 Coal Storage Silos**Associated Items:** CE 017 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

GP 011 Coal group

SV 013 Coal Handling Baghouse (CE014)

What to do	Why to do it
Vent all captured emissions to baghouse. See CE 020 for baghouse operation and maintenance requirements.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
The Permittee shall keep all doors and windows closed when receiving, handling or loading materials.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-39**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: EU 048 Fire Pump**Associated Items:** SV 017 Fire Pump (less than 500 hrs)

What to do	Why to do it
NSPS SUBPART IIII REQUIREMENTS	hdr
Owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to subpart IIII for all pollutants.	40 CFR Section 60.4205(c)
Effective 10-1-2007, diesel fuel must meet 40 CFR Section 80.510(a); effective 10-1-2010, diesel fuel must meet 40 CFR Section 80.510(b) for nonroad diesel fuel.	40 CFR Section 60.4207(a) 40 CFR Section 60.4207(b) Most stringent, meets limit required by Minn. R. 7011.2300
The engine must be equipped with a nonresettable hours-of-operation meter.	40 CFR Section 60.4209(a)
The Permittee shall keep the records or perform the tests specified in one of the methods specified in 40 CFR Section 60.4211.	40 CFR Section 60.4211(b)
Annual operation for maintenance checks and readiness testing is limited to 100 hrs /yr.	40 CFR Section 60.4211(e)
OPERATING REQUIREMENTS	hdr
Fuel type: Distillate fuel oil only by design.	Minn. R. 7005.0100, subp. 35a
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
RECORDKEEPING	hdr
Hours of Operation: The Permittee shall record each day of operation, the number of hours of operation and a monthly record of the 12-month rolling sum of the hour of operation.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Heron Lake BioEnergy LLC
Permit Number: 06300025 - 003

Subject Item: EU 049 Regenerative Thermal Oxidizer (RTO)

Associated Items: SV 004 Regenerative Thermal Oxidizer (CE005)

What to do	Why to do it
Fuel Usage: Bio-gas, natural gas and propane only.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-41**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: EU 053 Admin. Bldg. Emergency Generator**Associated Items:** SV 020 Admin. Bldg. Emergency Generator

What to do	Why to do it
NSPS SUBPART IIII REQUIREMENTS	hdr
The Permittee shall comply with the emission standards in table 1 to subpart IIII for all pollutants.	40 CFR Section 60.4205(a)
Effective 10-1-2007, diesel fuel must meet 40 CFR Section 80.510(a); effective 10-1-2010, diesel fuel must meet 40 CFR Section 80.510(b) for nonroad diesel fuel.	40 CFR Section 60.4207(a) 40 CFR Section 60.4207(b) Most stringent, meets limit required by Minn. R. 7011.2300
The engine must be equipped with a nonresettable hours-of-operation meter.	40 CFR Section 60.4209(a)
The Permittee shall keep the records or perform the tests specified in one of the methods specified in 40 CFR Section 60.4211.	40 CFR Section 60.4211(b)
Annual operation for maintenance checks and readiness testing is limited to 100 hrs /yr.	40 CFR Section 60.4211(e)
OPERATING REQUIREMENTS	hdr
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Fuel type: Distillate fuel oil only by design.	Minn. R. 7005.0100, subp. 35a
RECORDKEEPING	hdr
Hours of Operation: The Permittee shall record each day of operation, the number of hours of operation and a monthly record of the 12-month rolling sum of the hour of operation.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-42**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: EU 054 Boiler Feedwater Emergency Generator

What to do	Why to do it
OPERATING REQUIREMENTS	hdr
Fuel type: Propane	Minn. R. 7005.0100, subp. 35a
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Annual operation for maintenance checks and readiness testing is limited to 100 hrs /yr.	Minn. R. 7007.0800, subp. 2
RECORDKEEPING	hdr
Hours of Operation: The Permittee shall record each day of operation, the number of hours of operation and a monthly record of the 12-month rolling sum of the hour of operation.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-43**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: CE 003 Packed-Gas Adsorption Column**Associated Items:** EU 013 Fermenter 1

EU 014 Fermenter 2

EU 015 Fermenter 3

EU 016 Fermenter 4

EU 017 Beerwell

GP 004 Fermentation Units Vented to Scrubber

What to do	Why to do it
OPERATIONAL REQUIREMENTS	hdr
Pressure Drop: greater than or equal to 2.0 inches of water column and less than or equal to 10.0 inches of water column unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours when in operation.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Water flow rate: greater than or equal to 40 gallons/minute unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new minimum shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The new minimum is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the flowrate at least once every 24 hours when in operation.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Recordkeeping of Pressure Drop and Water Flow Rate. The Permittee shall daily record the time and date of each pressure drop and water flow rate reading and whether or not the each reading was within the range specified in this permit.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 4 and 5
Calibrate the gauges annually, or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and 14
Inspect Monthly, or more frequently as required by the manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the scrubber in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored equipment is in operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded water flow rate is below the required minimum; - the recorded pressure drop is outside the required operating range; - any components are found during the inspections to need repair. Corrective actions shall return the pressure drop and/or water flow rate to within the permitted range, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan. The Permittee shall keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subp. 4, 5, and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-44**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: CE 005 Direct Flame Afterburner**Associated Items:** EU 018 DDGS Dryer A

EU 019 Mixer

EU 020 Slurry Tank

EU 021 Cook Tube

EU 022 Flash Vessel

EU 023 Liquefaction Tank 1

EU 024 Liquefaction Tank 2

EU 025 Yeast Tank

EU 026 Beer Column

EU 027 Side Stripper

EU 028 Rectifier Column

EU 029 190 Proof Condenser

EU 030 Molecular Sieve

EU 031 200 Proof Condenser

EU 032 Centrifuges

EU 033 Evaporators

EU 034 DDGS Dryer B

GP 005 Distillation and Units Vented to Thermal Oxidizer

What to do	Why to do it
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Volatile Organic Compounds: greater than or equal to 95 percent control efficiency	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
The Permittee shall maintain a continuous hard copy readout or computer disk file of the temperature readings and calculated three hour rolling average temperatures for the thermal oxidizer.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
MONITORING REQUIREMENTS	hdr
Monitoring Equipment: The Permittee shall install and maintain thermocouples to conduct temperature monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored equipment if required.	Minn. R. 7007.0800, subp. 4
Daily Monitoring: The Permittee shall physically check the temperature recording device at least once each operating day to verify that it is working and recording properly.	Minn. R. 7007.0800, subp. 4 & 5
Annual Calibration: The Permittee shall calibrate the temperature monitor at least annually and shall maintain a written record of the calibration and any action taken from the calibration.	Minn. R. 7007.0800, subp. 4, 5 & 14
The Permittee shall maintain and operate a thermocouple monitoring device that continuously indicates and records the combustion chamber temperature of the thermal oxidizer. The monitoring device shall have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 2.5 degrees Celsius. The recording device shall also calculate the three-hour rolling average combustion chamber temperature.	Minn. R. 7007.0800, subp. 4 & 5
OPERATING REQUIREMENTS	hdr
When a shutdown or breakdown of CE005 occurs, the Permittee shall stop feed of wetcake to the dryers. The Permittee may continue operation of the dryers only as long as necessary to empty material already in the dryers.	Minn. R. 7019.1000, subp. 4 Minn. R. 7007.0800, subp. 2
For each breakdown event leading to the stockpiling of wet cake, the Permittee shall conduct a root cause failure analysis of the event and submit a report of the analysis to the commissioner within 15 days.	

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-45**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

The Permittee shall operate and maintain the thermal oxidizer any time that any process equipment controlled by the thermal oxidizer is in operation. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Temperature: greater than or equal to 1400 degrees F using 3-hour Average at the combustion chamber outlet, unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new minimum shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. If the 3-hour rolling average temperature is below the minimum temperature limit, the VOC used during that time shall be considered uncontrolled until the average temperature is above the minimum temperature limit. This shall be reported as a deviation.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Quarterly Inspections: At least once per calendar quarter, or more frequently as required by manufacturer's specifications, the Permittee shall inspect the control equipment external system components, including but not limited to the heat exchanger, and electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. The Permittee shall inspect the control equipment internal components during all planned shutdowns and not less than annually, including, but not limited to, the refractory.	Minn. R. 7007.0800, subp. 4, 5 & 14
Corrective Actions: If the temperature is below the minimum specified by this permit or if the thermal oxidizer or any of its components are found during the inspections to need repair, the Permittee shall take corrective actions as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the thermal oxidizer. The Permittee shall keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subp. 4, 5 & 14
The Permittee shall operate and maintain the thermal oxidizer in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-46**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: CE 020 Fabric Filter - High Temperature, i.e., T>250 Degrees F**Associated Items:** EU 035 Coal Fired Boiler Bubbling Fluidized Bed Combustor

What to do	Why to do it
POLLUTION CONTROL REQUIREMENTS	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall capture efficiency for Particulate Matter < 10 micron: greater than or equal to 95.5 percent capture efficiency	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
The Permittee shall operate and maintain the control equipment such that it achieves an overall capture efficiency for Total Particulate Matter: greater than or equal to 95.5 percent capture efficiency	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Pressure Drop: greater than or equal to 0.25 inches of water column and less than or equal to 8.0 inches of water column unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours when in operation.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Recordkeeping of Pressure Drop. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 4 and 5
The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 2 and 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 4, 5, and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.	Minn. R. 7007.0800, subp. 4
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5 and 14
The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Calibrate the gauges annually, or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 707.0800, subp. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-47**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: CE 021 Gas Scrubber (General, Not Classified)

What to do	Why to do it
LIMITS	hdr
Hydrogen Sulfide: less than or equal to 10 ppm as measured at the outlet of the scrubber (CE021).	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
MONITORING AND RECORDKEEPING	hdr
Bio-gas Monitoring: Measure and record the hydrogen sulfide concentration in the biomethanator gas at the outlet of the scrubber (CE021) by the 15th of each month.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2
Recordkeeping of hydrogen sulfide concentration. The Permittee shall record the time and date of each hydrogen sulfide concentration reading and whether or not the recorded hydrogen sulfide concentration was within the range specified in this permit.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-48**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: CE 022 Atomized Water Spray**Associated Items:** EU 041 Coal Receiving

What to do	Why to do it
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall operate and maintain the air pollution controls in accordance with the manufacturer's Operation and Maintenance Manual (to be maintained onsite with the facility O & M Plan for all air pollution control equipment). The Permittee shall keep copies of the O & M Plan available onsite for use by facility staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Inspect Monthly, or more frequently as required by the manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored equipment is in operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: The Permittee shall take corrective action as soon as possible if the fogging equipment is not operating properly as described in the manufacturer's Operation and Maintenance Manual.	Minn. R. 7007.0800, subp. 4, 5, and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Heron Lake BioEnergy LLC
Permit Number: 06300025 - 003

Subject Item: FS 001 Truck Traffic

What to do	Why to do it
Road Maintenance: The Permittee shall clean all roads at least weekly, conduct inspections between cleanings and other activities as set forth in the Dust Control Plan which is attached to this permit (Appendix III). Sweeping is not required when the roadway is wet, snow or ice covered, or during times of adverse weather conditions.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-50**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: FS 004 Equipment Leaks

What to do	Why to do it
STANDARDS: PUMPS	hdr
<p>Pumps in light liquid service:</p> <p>Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in 40 CFR Section 60.485(b), except as provided in 40 CFR Section 60.482-1(c) and paragraphs (d), (e), and (f).</p> <p>Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquid s dripping from the seal.</p>	<p>40 CFR Section 60.482-2 Minn. R. 7011.2900(A)</p>
<p>(b)(1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.</p> <p>(2) If there are indications of liquids dripping from the pump seal, a leak is detected.</p> <p>(c)(1) 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 in 40 CFR Section 60.4829 (Delay of Repair).</p> <p>(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.</p>	<p>40 CFR Section 60.482-2(b) & (c) Minn. R. 7011.2900(A)</p>
STANDARDS: COMPRESSORS	hdr
(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system that prevents leakage of VOC to the atmosphere, except as provided in 40 CFR Section 60.482-1(c) and 40 CFR Section 60.482-3(h) and (i).	40 CFR Section 60.482-3(a) Minn. R. 7011.2900(A)
<p>(b) Each compressor seal system shall be:</p> <p>(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or</p> <p>(2) Equipped with a barrier fluid system that is connected by a closed vent system to a control device that complies with the requirements of 40 CFR Section 60.482-10; or</p> <p>(3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.</p>	<p>40 CFR Section 60.482-3(b) Minn. R. 7011.2900(A)</p>
<p>(c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.</p> <p>(d) Each barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.</p>	<p>40 CFR Section 60.482-3(c) & (d) Minn. R. 7011.2900(A)</p>
<p>(e)(1) Each sensor shall be checked daily or shall be equipped with an audible alarm.</p> <p>(2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.</p>	<p>40 CFR Section 60.482-3(e) Minn. R. 7011.2900(A)</p>
<p>(f) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph 40 CFR Section 60.482-3(e)(2), a leak is detected.</p>	<p>40 CFR Section 60.482-3(f) Minn. R. 7011.2900(A)</p>
<p>(g)(1) 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 in 40 CFR Section 60.482-9 (Delay of Repair).</p> <p>(2) A first attempt at repair shall be made no later than 15 calendar days after it is detected, except as provided in 40 CFR Section 60.482-9.</p>	<p>40 CFR Section 60.482-3(g) Minn. R. 7011.2900(A)</p>
STANDARDS: PRESSURE RELIEF DEVICES IN GAS/VAPOR SERVICE	hdr
(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background as determined by the methods specified in 40 CFR Section 60.485(c).	40 CFR Section 60.482-4(a) Minn. R. 7011.2900(A)
(b)(1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in 40 CFR Section 60.482-9 (Delay of Repair).	40 CFR Section 60.482-4(b) Minn. R. 7011.2900(A)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-51**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

STANDARDS: SAMPLING CONNECTION SYSTEMS	hdr
(a) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system, except as provided in 40 CFR Section 60.482-1(c).	40 CFR Section 60.482-5(a) Minn. R. 7011.2900(A)
(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.	40 CFR Section 60.482-5(b) and (c) Minn. R. 7011.2900(A)
(c)(1) 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.	
(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.	
STANDARDS: OPEN ENDED VALVES OR LINES	hdr
(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in 40 CFR Section 60.482-1(c).	40 CFR Section 60.482-6(a) Minn. R. 7011.2900(A)
(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.	40 CFR Section 60.482-6(b) and (c) Minn. R. 7011.2900(A)
(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.	
(c) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) at all other times.	
STANDARDS: VALVES	hdr
(a) Each valve shall be monitored monthly to detect leaks by the methods specified in 40 CFR Section 60.485(b).	40 CFR Section 60.482-7(a) Minn. R. 7011.2900(A)
(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.	40 CFR Section 60.482-7(b) & (c) Minn. R. 7011.2900(A)
(c)(1) 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.	
(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.	
(d)(1) 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 in 40 CFR Section 60.482-9.	40 CFR Section 60.482-7(d) Minn. R. 7011.2900(A)
(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.	40 CFR Section 60.482-7(e) Minn. R. 7011.2900(A)
(e) 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.	
STANDARDS: PUMPS AND VALVES IN HEAVY LIQUID SERVICE, PRESSURE RELIEF DEVICES IN LIGHT LIQUID OR HEAVY LIQUID SERVICE, AND FLANGES AND OTHER CONNECTORS	hdr
(a) Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service and flanges and other connectors shall be monitored within 5 days by the method specified in 40 CFR Section 60.485(b) if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method.	40 CFR Section 60.482-8(a) Minn. R. 7011.2900(A)
(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.	40 CFR Section 60.482-8(b) and (c) Minn. R. 7011.2900(A)
(c)(1) 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 in 40 CFR Section 60.4829 (Delay of Repair).	
(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.	
(d) First attempts at repair include, but are not limited to, the best practices described under 40 CFR Section 60.482-7(e).	40 CFR Section 60.482-8(d) Minn. R. 7011.2900(A)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-52**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

DELAY OF REPAIR	hdr
(a) Delay of repair of equipment for which leaks have been detected will be allowed if the repair is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown.	40 CFR Section 60.482-9(a) and (b) Minn. R. 7011.2900(A)
(b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.	
(c) Delay of repair for valves will be allowed if: (1) The owner or operator demonstrates that emissions of purged material resulting from the immediate repair are greater than the fugitive emissions likely to result from delay of repair, and (2) When repair procedures are affected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR Section 60.482-10.	40 CFR Section 60.482-9(c) Minn. R. 7011.2900(A)
(d) Delay of repair for pumps will be allowed if: (1) Repair required the use of a dual mechanical seal system that includes a barrier fluid system, and (2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.	40 CFR Section 60.482-9(d) Minn. R. 7011.2900(A)
(e) Delay of repair beyond a process shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.	40 CFR Section 60.482-9(e) Minn. R. 7011.2900(A)
TESTING PROCEDURES	hdr
Compliance shall be determined by the methods specified in 40 CFR Section 60.485.	40 CFR Section 60.486(b) Minn. R. 7011.2900(A)
RECORDKEEPING	hdr
(b) When each leak is detected, the following requirements apply: (1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment. (2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in 40 CFR Section 60.482-7(c) and no leak has been detected during those 2 months. (3) The identification on equipment except on a valve may be removed after it has been repaired.	40 CFR Section 60.496(b) Minn. R. 7011.2900(A)
(c) When each leak is detected the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location: (1) The instrument and operator identification numbers and the equipment identification number. (2) The date the leak was detected and the dates of each attempt to repair the leak. (3) Repair methods applied in each attempt to repair the leak. (4) Above 10,000 is the maximum instrument reading measured by the methods specified in 40 CFR Section 60.485(a) after each repair attempt is equal to or greater than 10,000 ppm.	40 CFR Section 60.486(c)(1)-(4) Minn. R. 7011.2900(A)
(5) Repair delayed and the reason for the delay if a leak is not repaired within 15 calendar days after discover of the leak. (6) The signature of the owner or operator whose decision it was that the repair could not be affected without a process shutdown. (7) The expected date of successful repair of the leak if a leak is not repaired within 15 days. (8) Dates of process unit shutdown that occurs while the equipment is unrepaired. (9) The date of successful repair of the leak.	40 CFR Section 60.486(c)(5)-(9) Minn. R. 7011.2900(A)
REPORTING REQUIREMENTS	hdr
(a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning six months after the initial startup date.	40 CFR Section 60.487(a) Minn. R. 7011.2900(A)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-53**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

<p>(b) The initial semiannual report to the Administrator shall include the following information:</p> <p>(1) Process unit identification, (2) Number of valves subject to the requirements of 40 CFR Section 60.482-7, (3) Number of pumps subject to the requirements of 40 CFR Section 60.482-2, (4) Number of compressors subject to the requirements of 40 CFR Section 60.482-3.</p>	<p>40 CFR Section 60.487(b) Minn. R. 7011.2900(A)</p>
<p>(c) All semiannual reports to the Administrator shall include the following information, summarized from the information in 40 CFR Section 60.486:</p> <p>(1) Process unit identification, (2) For each month during the semiannual reporting period, (i) Number of valves for which leaks were detected as described in 40 CFR Section 60.482(7)(b) or 40 CFR Section 60.483-2. (ii) Number of valves for which leaks were not repaired as required in 40 CFR Section 60.482-7(d)(1), (iii) Number of pumps for which leaks were detected as described in 40 CFR Section 60.482-2(b) and (d)(6)(i), (iv) Number of pumps for which leaks were not repaired as required in 40 CFR Section 60.482-2(c)(1) and (d)(6)(ii),</p>	<p>40 CFR Section 60.487(c)(1) and (2)(i)-(2)(iv) Minn. R. 7011.2900(A)</p>
<p>(v) Number of compressors for which leaks were detected as described in 40 CFR Section 60.482-3(f), (vi) Number of compressors for which leaks were not repaired as required in 40 CFR Section 60.482-3(g)(1), (vii) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.</p>	<p>40 CFR Section 60.487(c)(2)(v)-(vii) Minn. R. 7011.2900(A)</p>
<p>(3) Dates of process unit shutdowns which occurred within the semiannual reporting period. (4) Revisions to items reported according to paragraph (b) if changes have occurred since the initial report or subsequent revisions to the initial report.</p>	<p>40 CFR Section 60.487(c)(3) and (4) Minn. R. 7011.2900(A)</p>
<p>(e) Report the results of all performance tests in accordance with 40 CFR Section 60.8. The provisions of 40 CFR Section 60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.</p>	<p>40 CFR Section 60.487(e) Minn. R. 7011.2900(A)</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Heron Lake BioEnergy LLC
Permit Number: 06300025 - 003

Subject Item: FS 007 Ethanol Loadout (Rail)

What to do	Why to do it
<p>All rail cars must be dedicated fleet (carry only ethanol). No loadout controls are required for dedicated fleet rail cars.</p> <p>To be considered dedicated, the rail cars must be placarded as ethanol transportation cars.</p> <p>Emissions from loadout to rail cars may be vented to CE010. See GP007 for requirements applicable to CE010.</p>	<p>Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Heron Lake BioEnergy LLC
Permit Number: 06300025 - 003

Subject Item: FS 008 Coal/Limestone Receiving

What to do	Why to do it
OPERATIONAL REQUIREMENTS	hdr
Operate dust suppression system (CE 022) when receiving coal or limestone. See CE 022 for dust suppression system operating requirements.	Title I Condition: to limit potential to emit to less than major source levels as defined by 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid major source threshold under 40 CFR Section 70.2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Heron Lake BioEnergy LLC
Permit Number: 06300025 - 003

Subject Item: FS 012 Temporary Grain Storage

What to do	Why to do it
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
The Permittee shall clean up commodities spilled on the driveway and other facility property as required to minimize fugitive emissions to a level consistent with RACT (reasonably available control technology).	Minn. R. 7011.1005, subp. 1(A)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-57**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: MR 001 NOx

What to do	Why to do it
The Permittee shall install, calibrate, maintain, and operate a continuous monitoring system for measuring nitrogen oxides emissions and the opacity of emissions discharged to the atmosphere and record the output of the system.	40 CFR Section 60.48b(a) and (b) Minn. R. 7017.1010, subp. 1
CEMS Monitor Design: Each CEMS shall be designed to complete a minimum of one cycle of sampling, analyzing, and data recording in each 15-minute period.	40 CFR Section 60.13(e)(2)
Installation Notification: due 60 days before installing the continuous emissions monitoring system. The notification shall include plans and drawings of the system.	Minn. R. 7017.1040, subp. 1
CEM Certification Test: due 60 days after Permit Issuance of permit action 003	40 CFR Section 60.8(a); 40 CFR Section 60.13(b); Minn. R. 7017.1050, subp. 1
CEMS Certification Test Plan: due 30 days before CEMS Certification Test.	40 CFR Section 60.7(a)(5); Minn. R. 7017.1060, subp. 1 & 2
CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test.	Minn. R. 7017.1060, subp. 3
CEMS Certification Test Report: due 45 days after CEMS Certification Test	Minn. R. 7017.1080, subp. 1, 2, & 4; 40 CFR Section 60.13(c)(2)
CEMS Certification Test Report - Microfiche or CD Copy: due 105 days after CEMS Certification Test.	Minn. R. 7017.1080, subp. 3
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	40 CFR Section 60.13(e), Minn. R. 7017.1090, subp. 1
QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR pt. 60, Appendix F, Section 3.	Minn. R. 7017.1170, subp. 2; 40 CFR pt. 60, App. F; section 3
CEMS QA/QC: The Permittee shall operate, calibrate, and maintain each CEMS according to the QA/QC procedures in 40 CFR pt. 60, Appendix F as amended and maintain a written QA/QC program available in a form suitable for inspection.	40 CFR pt. 60, Appendix F; 40 CFR Section 60.13(a)
CEMS Daily Calibration Drift Check: Permittees must automatically check the zero (low level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once daily. The zero and span must, at a minimum, be adjusted whenever the drift exceeds two times the limit specified in 40 CFR pt. 60, Appendix B. 40 CFR pt. 60, Appendix F shall be used to determine out-of-control periods for CEMS.	40 CFR pt. 60, Appendix F, section 4.1; 40 CFR Section 60.13(d)(1) regarding CEMS; Minn. R. 7017.1170, subp. 3
Cylinder Gas Audit: due before end of each calendar quarter following CEM certification test. A CGA is not required during any calendar quarter in which a RATA was performed.	40 CFR pt. 60, Appendix F, section 5.1.2; Minn. R. 7017.1170, subp. 4
CEMS Relative Accuracy Test Audit (RATA): due before end of each year following CEM certification test. Follow the procedures in 40 CFR pt. 60, Appendix F.	40 CFR pt. 60, Appendix F, section 5.1.1; Minn. R. 7017.1170, subp. 5
Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMs Relative Accuracy Test Audit (RATA)	Minn. R. 7017.1180, subp. 2
Monitoring Data: Reduce all NOx continuous monitoring systems data to 1-hour averages, in accordance with 40 CFR Section 60.13(h). 1-hour averages shall be computed from four or more data points equally spaced over each 1-hour period.	40 CFR Section 60.13(h) regarding continuous monitoring systems other than COMS.
The procedures under 40 CFR Section 60.13 shall be followed for installation, evaluation, and operation of the CEMS. (1) All CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 (appendix B). (2) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 (appendix F). (3) The span value of the sulfur dioxide CEMS shall be 50 percent of the maximum estimated hourly potential sulfur dioxide emissions.	40 CFR Section 60.47b(e)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-58**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

<p>The continuous monitoring systems for nitrogen oxides shall be operated and data recorded during all periods of operation except for continuous monitoring system breakdowns and repairs. Data shall be recorded during calibration checks, and zero and span adjustments.</p> <p>The 1-hour average nitrogen oxides emission rates measured by the continuous nitrogen oxides monitor shall be expressed as lb/million Btu heat input and shall be used to calculate the average emission rates. The 1-hour averages shall be calculated using at least 2 data points for each 1-hour average.</p> <p>The procedures under 40 CFR Section 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems.</p> <p>The span value for measuring nitrogen oxides shall be 1,000 ppm and the span value for measuring opacity shall be between 60 and 80 percent. .</p>	40 CFR Section 60.48b(c), (d) and (e)
<p>When nitrogen oxides emission data are not obtained because of continuous monitoring system breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.</p>	40 CFR Section 60.48b(f)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-59**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: MR 002 SO2

What to do	Why to do it
The Permittee shall install, calibrate, maintain, and operate continuous emission monitoring systems (CEMS) for measuring sulfur dioxide concentrations and either oxygen (O ₂) or carbon dioxide (CO ₂) concentrations and shall record the output of the systems. The Permittee shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive boiler operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator.	40 CFR Section 60.47b(a) 40 CFR Section 60.47b(c) Minn. R. 7017.1010, subp. 1
CEMS Monitor Design: Each CEMS shall be designed to complete a minimum of one cycle of sampling, analyzing, and data recording in each 15-minute period.	40 CFR Section 60.13(e)(2)
Installation Notification: due 60 days before installing the continuous emissions monitoring system. The notification shall include plans and drawings of the system.	Minn. R. 7017.1040, subp. 1
CEM Certification Test: due 60 days after achieving maximum capacity rate but not later than 180 days after initial startup or within 90 days after the due date of the first excess emissions report, whichever is more stringent.	40 CFR Section 60.8(a); 40 CFR Section 60.13(b); Minn. R. 7017.1050, subp. 1
CEMS Certification Test Plan: due 30 days before CEMS Certification Test.	40 CFR Section 60.7(a)(5); Minn. R. 7017.1060, subp. 1 & 2
CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test.	Minn. R. 7017.1060, subp. 3
CEMS Certification Test Report: due 45 days after CEMS Certification Test	Minn. R. 7017.1080, subp. 1, 2, & 4; 40 CFR Section 60.13(c)(2)
CEMS Certification Test Report - Microfiche or CD Copy: due 105 days after CEMS Certification Test.	Minn. R. 7017.1080, subp. 3
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	40 CFR Section 60.13(e), Minn. R. 7017.1090, subp. 1
QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR pt. 60, Appendix F, Section 3.	Minn. R. 7017.1170, subp. 2; 40 CFR pt. 60, App. F; section 3
CEMS QA/QC: The Permittee shall operate, calibrate, and maintain each CEMS according to the QA/QC procedures in 40 CFR pt. 60, Appendix F as amended and maintain a written QA/QC program available in a form suitable for inspection.	40 CFR pt. 60, Appendix F; 40 CFR Section 60.13(a)
CEMS Daily Calibration Drift Check: Permittees must automatically check the zero (low level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once daily. The zero and span must, at a minimum, be adjusted whenever the drift exceeds two times the limit specified in 40 CFR pt. 60, Appendix B. 40 CFR pt. 60, Appendix F shall be used to determine out-of-control periods for CEMS.	40 CFR pt. 60, Appendix F, section 4.1; 40 CFR Section 60.13(d)(1) regarding CEMS; Minn. R. 7017.1170, subp. 3
Cylinder Gas Audit: due before end of each calendar quarter following CEM certification test. A CGA is not required during any calendar quarter in which a RATA was performed.	40 CFR pt. 60, Appendix F, section 5.1.2; Minn. R. 7017.1170, subp. 4
CEMS Relative Accuracy Test Audit (RATA): due before end of each year following CEM certification test. Follow the procedures in 40 CFR pt. 60, Appendix F.	40 CFR pt. 60, Appendix F, section 5.1.1; Minn. R. 7017.1170, subp. 5
Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS Relative Accuracy Test Audit (RATA)	Minn. R. 7017.1180, subp. 2
Monitoring Data: Reduce all SO ₂ continuous monitoring systems data to 1-hour averages, in accordance with 40 CFR Section 60.13(h). 1-hour averages shall be computed from four or more data points equally spaced over each 1-hour period.	40 CFR Section 60.13(h) regarding continuous monitoring systems other than COMS.
The 1-hour average sulfur dioxide emission rates measured by the CEMS shall be expressed in lb/million Btu heat input and is used to calculate the average emission rates. Each 1-hour average sulfur dioxide emission rate must be based on more than 30 minutes of steam generating unit operation and include at least 2 data points with each representing a 15-minute period. Hourly sulfur dioxide emission rates are not calculated if the affected facility is operated less than 30 minutes in a 1-hour period and are not counted toward determination of a steam generating unit operating day.	40 CFR Section 60.47b(d)

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Heron Lake BioEnergy LLC
Permit Number: 06300025 - 003

The procedures under 40 CFR Section 60.13 shall be followed for installation, evaluation, and operation of the CEMS. (1) All CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 (appendix B). (2) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 (appendix F). (3) The span value of the sulfur dioxide CEMS shall be 50 percent of the maximum estimated hourly potential sulfur dioxide emissions.	40 CFR Section 60.47b(e)
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TABLE A: LIMITS AND OTHER REQUIREMENTS**A-61**

09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Subject Item: MR 003 Opacity

What to do	Why to do it
Opacity CEMS: The Permittee shall install, calibrate, maintain, and operate a continuous opacity monitoring systems (COMS).	40 CFR Section 60.48b(a)
All COMS shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data for each successive 6-minute period.	Minn. R. 7017.1200, subp. 1, 2 & 3; 40 CFR Section 60.13(e)(1); 40 CFR Section 60.13(h)
Installation Notification: due 60 days before installing the continuous opacity monitoring system. The notification shall include plans and drawings of the system.	Minn. R. 7017.1040, subp. 1
COMS Certification Test: due 60 days after achieving maximum capacity or within 90 days of the due date of the first excess emissions report, whichever occurs first	Minn. R. 7017.1050, subp. 1; 40 CFR Section 60.8(a)
COMS Certification Test Plan: due 30 days before CEMS Certification Test COMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test COMS Certification Test Report: due 45 days after CEMS Certification Test COMS Certification Test Report - Microfiche Copy: due 105 days after CEMS Certification Test The Notification, Test Plan, and Test Report may be submitted in alternate format as allowed by Minn. R. 7017.1120, subp. 2	Minn. R. 7017.1060, subp. 3
Continuous Operation: COMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A COMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2.	Minn. R. 7017.1090, subp. 1; 40 CFR Section 60.13(e)
QA Plan Required: Develop and implement a written quality assurance plan which covers each COMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain the written procedures listed in Minn. R. 7017.1210, subp. 1.	Minn. R. 7017.1210, subp. 1
COMS QA/QC: The owner or operator of an affected facility is subject to the performance specifications listed in 40 CFR pt. 60, Appendix B and shall operate, calibrate, and maintain each COMS according to the QA/QC procedures in Minn. R. 7017.1210.	40 CFR Section 60.13(a); Minn. R. 7017.1210
COMS Daily Calibration Drift Check: The Permittee must automatically, intrinsic to the opacity monitor, check the zero and upscale (span) calibration drifts at least once daily. The acceptable range is as defined in 40 CFR pt. 60, Appendix B, PS-1. The span value shall be between 60% and 80%. For COMS without automatic zero adjustments, the optical surfaces exposed to the effluent gases shall be cleaned prior to performing the zero and span drift adjustments. For COMS with automatic zero adjustments, the optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity. Minimum procedures must include an automated method for producing a simulated zero opacity condition and an upscale opacity condition as specified in 40 CFR 60.13(d)(2).	Minn. R. 7017.1210, subp. 2; 40 CFR Section 60.13(d)(l) regarding COMS and 60.13(d)(2)
COMS Calibration Error Audit: due before end of each calendar half-year following COMS Certification Test or Permit Issuance. Conduct three point calibration error audits at least 3 months apart but no greater than 8 months apart. Conduct audits in accordance with Minn. R. 7017.1210, subp. 3.	Minn. R. 7017.1210, subp. 3
Attenuator Calibration: The Permittee shall have an independent testing company conduct calibrations of each of the neutral density filters used in the calibration error audit according to the procedure in Code of Federal Regulations, Title 40, Part 60, Appendix B, Section 7.1.3.1 within the time frame of opacity stability guaranteed by the attenuator manufacturer. The manufacturer's guarantee of stability shall be on site available for inspection.	Minn. R. 7017.1210, subp. 4
Recordkeeping: The owner or operator must retain records of all COMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130

TABLE B: SUBMITTALS

B-1 09/05/07

Facility Name: Heron Lake BioEnergy LLC
Permit Number: 06300025 - 003

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

Send any application for a permit or permit amendment to:

AQ Permit Technical Advisor
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**B-2** 09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

What to send	When to send	Portion of Facility Affected
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup	EU048, EU053, GP006, Total Facility
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup the Permittee shall submit notification of the date of initial startup, as provided by 40 CFR Section 60.7. This notification shall include: (1) The design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility, (2) The annual capacity factor at which the owner or operator anticipates operating the facility based on all fuels fired and based on each individual fuel fired.	EU035
Notification of the Date Construction Began	due 30 days after Start Of Construction. Submit the name and number of each unit and the date construction of each unit began.	EU048, EU053
Testing Frequency Plan	due 60 days after Initial Performance Test for PM, PM10, VOC and CO emissions. The plan shall specify a testing frequency based on one year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA. A new testing frequency plan shall be submitted if any subsequent or future testing would change the testing frequency requirements under MPCA guidance.	EU035
Testing Frequency Plan	due 60 days after Initial Performance Test for total particulate matter and particulate matter less than 10 micron emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	SV008, SV013, SV014, SV015, SV016, SV019
Testing Frequency Plan	due 60 days after Initial Performance Test for total particulate matter, particulate matter less than 10 micron and opacity emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	SV002
Testing Frequency Plan	due 60 days after Initial Performance Test for total particulate matter, particulate matter less than 10 micron and volatile organic compounds emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	SV007
Testing Frequency Plan	due 60 days after Initial Performance Test for total particulate matter, particulate matter less than 10 micron emissions and opacity. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	SV001

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**B-3** 09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

Testing Frequency Plan	due 60 days after Initial Performance Test for total particulate matter, particulate matter less than 10 micron emissions, nitrogen oxides, VOCs, CO and sulfur dioxide emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	SV004
Testing Frequency Plan	due 60 days after Initial Performance Test for total particulate matter, particulate matter less than 10 micron emissions, volatile organic compounds, carbon monoxide and opacity emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	SV005
Testing Frequency Plan	due 60 days after Initial Performance Test for volatile organic compounds emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	SV003

TABLE B: RECURRENT SUBMITTALS**B-4** 09/05/07

Facility Name: Heron Lake BioEnergy LLC

Permit Number: 06300025 - 003

What to send	When to send	Portion of Facility Affected
COMS Calibration Error Audit Results Summary	due 30 days after end of each calendar quarter following COMS Certification Test	MR003
Cylinder Gas Audit (CGA) Results Summary	due 30 days after end of each calendar quarter following Permit Issuance	MR001, MR002
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Initial Startup of the Monitor. Submit Deviations Reporting Form DRF-1 as amended. The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions. The EER must be submitted even if there were no excess emissions, downtime or bypasses during the quarter.	EU035
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar quarter following Permit Issuance	MR001, MR002
Report	due 31 days after end of each calendar half-year following Initial Startup that includes the information specified in 40 CFR Section 60.487. The required information is summarized on pages A-27 and A-28 of this permit.	FS004
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 11/10/2005 . The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 31 days after end of each calendar year starting 11/10/2005 (for the previous calendar year). To be submitted to the Commissioner on a form approved by the Commissioner. This report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX MATERIAL

Facility Name:Heron Lake BioEnergy LLC

Permit Number: 06300025-003

APPENDIX I
Stack Parameters

3a) SV ID No.	3b) Operator's Description	3c) Height of Opening From Ground (ft.)	3d) Inside Diameter in ft. (left column only) or Length x Width in ft. (both columns)		3e) Design Flow Rate at Exit (acfm)	3f) Exit Gas Temperature (° F)	3g) Rate/Temp Information Source	3h) Discharge Direction
SV003	CO2 Scrubber Stack	104	2.0		6,000	Ambient	E	U
SV004	RTO Stack	125	2.67		16,200	425	E	U
SV005	Boiler Stack	150	6		165,000	425	E	U
SV006	Methanator Flare Stack	30	2.0		6,440	1832	E	U
SV007	Cooling Cyclone Stack	135	3.0		24,000	81	E	U

AERA Pollutant List

Acetaldehyde
Acrolein
Ammonia
Antimony
Arsenic
Benz[a]anthracene
Benzene
Benzo[a]pyrene
Benzo[b]fluoranthene
Benzyl chloride
Beryllium
Bis(2-ethylhexyl)phthalate (DEHP)
Bromoform
Cadmium
Carbon disulfide
Chloroacetophenone, 2-
Chlorobenzene
Chloroform
Chromium (Hexavalent) (particulate)
Chromium Compounds
Chrysene (Benzo(a)phenanthrene)
Cumene
Cyanide (Cyanide ion, Inorganic cyanides, Isocyanide)
Dinitrotoluene, 2,4-
Ethyl benzene
Ethyl chloride (Chloroethane)
Ethylene dibromide (Dibromoethane)
Ethylene dichloride (1,2-Dichloroethane)
Formaldehyde
Furancarboxaldehyde, 2-
Heptachlorodibenzodioxin, All Isomers
Heptachlorodibenzofuran, All Isomers
Hexachlorodibenzodioxins, All Isomers
Hexachlorodibenzofurans, All Isomers
Hexane
Hydrochloric acid

Hydrogen fluoride (Hydrofluoric acid)
Indeno(1,2,3-cd)pyrene
Isophorone
Lead
Manganese
Mercury
Methanol
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl chloroform (1,1,1-Trichloroethane)
Methyl ethyl ketone (2-Butanone)
Methyl methacrylate
Methyl tert butyl ether
Methylchrysene, 5-
Methylene chloride (Dichloromethane)
Naphthalene
Nickel
Nitrogen oxide (NO₂)-input NO_x emissions with criteria pollutants
Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-
Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-
Pentachlorodibenzodioxins, All Isomers
Pentachlorodibenzofurans, All Isomers
Phenol
Polycyclic Aromatic Hydrocarbons (PAH)
Selenium
Styrene
Sulfates
Sulfuric Acid mixture w. sulfur trioxide (oleum)
TCDD Equivalents, 2,3,7,8-
Tetrachlorodibenzodioxins, Other (Excluding 2,3,7,8)
Tetrachlorodibenzofuran, 2,3,7,8-
Tetrachlorodibenzofurans, Other (Excluding 2,3,7,8)
Tetrachloroethylene (Perchloroethylene)
Toluene
Vinyl acetate
Xylenes

APPENDIX II

Insignificant Activities

Insignificant Activities Without Applicable Requirements

The following activities/emission units are insignificant activities for which there are no applicable requirements:

- Space heaters.
- Welding equipment.
- Analysis laboratory
- Office photocopying equipment
- Infrequent use of spray paint equipment for routine housekeeping or plant upkeep

Other Insignificant Activities

- DDGS storage silos (2)
- Sand storage for fluid bed boiler

APPENDIX III

Heron Lake BioEnergy, LLC DUST CONTROL PLAN

Heron Lake BioEnergy (HLBE) has paved all facility roads as a dust control measure. Maintenance of the facility roads to ensure that silt buildup on the paved roads does not generate unnecessary fugitive dust emissions is part of the HLBE fugitive dust control plan. HLBE will comply with the monitoring and recordkeeping provisions set forth below.

Maintenance

Parameter	Set Point/Range	Frequency
Silt/Dust/Debris buildup on facility roadways	Sweeping of facility roadways with municipal street-sweeper or equivalent	Weekly, except as allowed below

Exceptions to Road Sweeping Schedule

Scheduled sweeping is not required when the facility roadway is predominantly snow covered, or wet due to precipitation. Sweeping is not required when severe weather of any description makes the task infeasible, such as lightning, severe high winds, tornado warning, etc. Water application will not be used as part of the sweeping process when the temperature is below 33°F.

Action

HLBE has determined that sweeping equipment operated by the municipality of Heron Lake, Minnesota can be obtained for sweeping HLBE facility roads. HLBE will obtain use of such equipment or equivalent to maintain facility roads.

In addition, the requirements to clean up grain fines or dust spilled outdoors anywhere it may accumulate found in the SWP3 storm water plan will be followed to avoid potential for tracking this material onto the roadway.

If silt, debris, or loose material is observed being deposited onto the roadway from an identifiable source, action will be taken to prevent the phenomena from occurring.

Recordkeeping

Personnel will record roadway sweeping data including but not limited to:

Date and time of sweeping, name of responsible party, and description of areas that were swept.

Documentation of corrective actions taken to prevent deposition of silt/dust/debris onto the roadways will be generated and kept for record.

Any deviation of sweeping frequency and range shall be recorded.

APPENDIX IV

**Best Management Practices Plan
Odor Prevention**

**Heron Lake BioEnergy, LLC
Heron Lake, MN**

Prepared for:

Heron Lake BioEnergy, LLC
P.O. Box 198
Heron Lake, MN 56137

Prepared by:

Natural Resource Group, LLC
1000 IDS Center
80 South Eighth Street
Minneapolis, MN 55402

JULY 2004
Revised September 2004
Revised December 2004

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Enclosures

Table 1. Ethanol Plant Emission Units

This best management practices (BMP) plan is intended to meet the requirements of Minnesota Pollution Control Agency (MPCA) Air Emission Permit Program (permit applied for) regarding any potential odors from the Heron Lake BioEnergy, LLC (facility), to be located near Heron Lake, Minnesota. This BMP plan is contingent on the construction and subsequent operation of the proposed facility. The facility is intended to operate continuously (24 hours per day). Any possible exposure to malodorous emissions beyond the property boundaries, considering the intensity, frequency, and duration, will be a function of the prevailing weather conditions such as temperature, wind direction, wind speed, and humidity. These odor characteristics may also be affected by unpredicted and undesirable process upsets. In the event that odors from the facility are realized during normal operations, the response portion of this plan will be implemented once the odor complaint is validated by the local governing unit (LGU) or MPCA. This plan describes the response the facility will take if odor complaints, validated by the LGU or MPCA, occur. The plan also describes the potential odor sources and the odor abatement best management practices and controls in place to minimize or negate the possibility of odors.

I. Possible Sources of Odorous Emissions

The various emission units at the plant and their emission characteristics are described below and are also listed in Table 1 as they appear in the draft air permit.

Fermentation Process and Vessels (EU13-17) – The fermentation process uses a mixture of corn, yeast, and water to ferment grain alcohol (ethanol). The yeast in the mixture aids in converting corn sugars to ethanol and carbon dioxide. The fermentation process is performed in large batch process vessels, called fermenters. Emissions from fermentation, that could possibly cause odors, are ethanol and a variety of trace volatile organic compounds (VOC), produced as part of the grain fermentation process. The evolved carbon dioxide (CO₂) can serve as a carrier to the organic compounds. Fermentation equipment vents to a water scrubber where residual VOC (including ethanol) are removed from the exhaust CO₂ for emission and odor control.

Distillation (EU19-33) – The distillation process follows fermentation. The purpose of distillation is to remove the ethanol from the fermented beer. Distillation is performed with a series of distillation columns. Further ethanol dewatering occurs with molecular sieves to separate the ethanol from the remaining water. The distillation equipment vents to the Regenerative Thermal Oxidizer (RTO) where residual VOC (including ethanol) are destroyed. Emissions that could possibly cause odors are ethanol and a variety of trace VOC, inherent with the grain fermentation process, vacuum distillation, and molecular sieve dehydration.

Dried Distiller Grains and Solubles (DDGS) Dryers (EU18&34) – The DDGS dryer system is used in series with a centrifuge and process evaporator to dry the spent grains (also known as DDGS) from the distillation process. The DDGS dryers are natural gas fired or steam heated rotary drum dryers that use hot air to evaporate the water from the DDGS. Emissions that may cause odors are a variety of VOC and particulate matter inherent with the grain drying process. The emissions that come from the dryer stack (with an odor of cooking bread or corn); are the major odor source at the facility. Emissions from the DDGS dryer system are routed to either the RTO for control.

Wet Cake (Distillers Grains) –Wet cake is the insoluble biomass remaining after extraction of starch from the corn at the centrifuge. Centrifuging is an enclosed process with any vents being routed to the boiler. The wet cake or spent grain is high moisture DDGS. This wet cake contains associated liquid water, proteins, yeast, oils and other fibrous carbohydrates. The facility will directly loadout the wet cake from the centrifuge to a concrete storage pad for truck loading. The wet cake is not significantly odorous, but it is a fertile medium for bacterial growth if exposed to warm ambient temperatures for an extended period of time. If it is not cleaned up during daily plant clean-up, it has the potential to generate odors. Good housekeeping will prevent any possible generation of odors.

Storage Tanks (TK001-TK006) and Ethanol loading facilities– Onsite storage tanks are used to store fuel-grade ethanol, 200 proof ethanol, denaturant (gasoline), and 190 proof ethanol. Emissions from these tanks that could possibly cause odors are various VOC and ethanol. The total emissions from these tanks are estimated to be less than three tons per year. Thus, these emissions are not expected to have odor impacts outside of the facility's property boundaries.

Anhydrous Ammonia – Anhydrous ammonia is used to control the process fluid pH in various portions of the ethanol production process. While ammonia is known to have an offensive odor, this process is actually a closed system. There should be no release of this material to the atmosphere. The anhydrous ammonia is readily consumed in the process stream.

Other emission sources – All other emission sources identified at the facility were evaluated as having insignificant odor potential. These include: corn unloading (EU01-10) and DDGS loading (EU38-39), corn milling (EU11-12), DDGS cooling cyclone (EU037), maintenance activities, warehousing and transport engines, fire control equipment, office and janitorial activities, heating, small fuel storage, water for boilers, and sewer plumbing.

II. Odor Abatement Practices and Controls

Potential odor from sources from the facility will be controlled by abatement equipment (e.g., pressurized vessel for anhydrous ammonia, floating roof tanks for ethanol storage, etc.) and control equipment (e.g., wet scrubber, thermal oxidizer or boiler). The source-specific odor controls planned for the facility are listed below.

Fermentation equipment (EU13-17) – The fermentation equipment will be controlled with a high efficiency wet scrubber. The scrubber capture efficiency will negate potential offsite odor impacts. The ethanol in equilibrium with the carbon dioxide leaving the fermentation tanks and beer well will be absorbed in the water. A computerized control and data recording instrumentation system will provide the following scrubber parameters: fluid level, the pressure differential, the water pump on – off status, and the make-up water flow rate, with operator alarms and logical shut downs when abnormal conditions exist. The scrubber will operate as a single-pass system without water recycles.

DDGS dryer system and distillation equipment (EU18-35) – The odors associated with the dryer system and the distillation equipment will be controlled by the regenerative thermal oxidizer. The thermal oxidizer capture efficiency will negate potential offsite odor impacts. The thermal oxidizer will reduce any odorous emissions to negligible levels. Therefore, no further steps should be necessary to reduce the odor.

Storage Tanks TK001-TK006 – Any potentially odorous VOC emissions from the storage tanks will be minimized by internal floating roofs according to Federal New Source Performance Standards (NSPS).

Anhydrous Ammonia – Anhydrous ammonia is stored in a pressurized tank and operates in a closed system. The anhydrous ammonia is fed directly to the process for pH control and is consumed by the process liquid.

Wet Cake (Distillers Grains) – Wet cake will be sold and shipped as quickly as possible to avoid the potential for odor impacts near the facility. Wet cake will not be stored for more than 72 hours unless the outside temperature is less than 55 °F. Wet cake is a fast-turnaround product that is not typically produced unless there is an immediate plan to ship it out to a customer.

Other emissions sources – All other emission sources planned for the facility were evaluated as having insignificant odor potential. These include: corn unloading and DDGS loading (EU038-039), corn milling (EU011-EU012), DDGS cooling cyclone (EU037), maintenance activities, warehousing and transport engines, fire control equipment, office and janitorial activities, heating, small engine fuel storage, water for boilers, and sewer plumbing.

III. Maintenance Schedules for Maintaining Control Equipment Efficiency.

Daily operational checks as well as monthly and quarterly maintenance schedules will be performed and recorded based on the air operating permit requirements and manufacturer specifications. These schedules will occur according to operation and maintenance plans and Best Management Practices as summarized below. The following items must be maintained for each unit:

DDGS Dryer System, EU018&034 -

- Complete inventory of replacement parts on site
- Review burner control system and the mechanical components of the conveyors monthly.
- Check of fans, conveyors, drive motors, and centrifuges daily.
- Record status of drive motors, conveyors, and fans daily.

Wet Scrubber, CE030 -

- Complete inventory of replacement parts on site
- Check the circulation pump operation and packing monthly.
- Check scrubber level, differential pressure, and water flow rate daily.
- Record water pump status, liquid levels, differential pressure, and water flow rate daily.

Wet Cake (Distillers Grains)

- Record wet cake production daily.

IV. Equipment Failure and Response Analysis

In the event of a process or odor control equipment breakdown, the facility will comply with MN Rules 7019.1000 and will use this document as the “compliance document”. The following steps will be taken in the event of process or odor control equipment failure:

DDGS Dryer System (EU018&034)

If the dryer system is not operating, the minimum operating conditions for this process will be production of wet cake limited by livestock feed markets.

Wet cake (stillage)

The facility will have the capacity to store 3 days of wet cake production. The minimum operating conditions for storage of this wet cake include:

- Wet cake would not be stored for longer than 3 days on site, or
- The facility will sell the wet cake as soon as possible or transport the wet cake offsite for land application or agricultural bagging
- Distillers wet or a dry grain is a valuable co-product. It would not be economical to produce Distillers grains without a market or sale of the product. Spoiled product is not suitable for sale to DDGS customers, so it must be avoided.

Fermentation Vessels, EU013-017

Failure or malfunction of the CO₂ scrubber – If the scrubber is to fail, fermentation continues for up to 48 hours for batch completion. However, fermentation would be suspended thereafter; until the scrubber is operable.

IV. Notification

If the facility does not follow the aforementioned response steps, the commissioner must be notified within 24 hours of the breakdown of more than one hour as specified in MN Rules 7019.1000. The plant electronic or written logs will serve as the record of compliance. Such records may include work orders or revised procedures for maintenance of odor abatement operations.

Signed,

Heron Lake BioEnergy, LLC

Robert Ferguson
President
(507) 793-2480

Unit ID	Emission Sources Associated with Ethanol Operations
EU001	Truck Receiving #1
EU002	Truck Receiving #2
EU003	Grain Elevator #1
EU004	Conveyor
EU005	Grain Bin #1
EU006	Grain Bin #2
EU007	Grain Bin #3
EU008	Grain Elevator #2
EU009	Grain Day Bin
EU010	Hammermill Feed Conveyor
EU011	Hammermill #1
EU012	Hammermill #2
EU013	Fermenter #1
EU014	Fermenter #2
EU015	Fermenter #3
EU016	Fermenter #4
EU017	Beerwell
EU018	DDGS Dryer A (steam heated)
EU019	Mixer
EU020	Slurry Tank
EU021	Cook Tube
EU022	Flash Vessel
EU023	Liquifaction Tank #1
EU024	Liquifaction Tank #2
EU025	Yeast Tank
EU026	Beer Column
EU027	Side Stripper
EU028	Rectifier Column
EU029	190 Proof Condenser
EU030	Molecular Sieve
EU031	200 Proof Condenser
EU032	Centrifuges
EU033	Evaporators
EU034	DDGS Dryer B (steam heated)

Unit ID	Emission Sources Associated with Ethanol Operations
EU035	Coal Fired Boiler (Boiling Fluid Bed)
EU036	Methanator / Flare
EU037	Cooling Cyclone
EU038	Truck Load Spout
EU039	DDGS Dump Pit / Auger
EU040	Ethanol Loading Rack Flare (Truck)
EU041	Coal/Limestone Receiving Fugitives
EU044	Coal Conditioning Baghouse
EU045	Flyash Pneumatic conveying Baghouse
EU046	Flyash Storage Baghouse
EU047	Flyash Loadout Baghouse
EU048	Fire Pump

Unit ID	Fugitive Emission Sources Associated with Ethanol Production
FS010	Truck Traffic
FS020	Fugitive Emissions From Grain Handling
FS030	Fugitive Emissions From DDGS Handling
FS040	Equipment Leaks
FS050	Cooling Towers
FS060	DDGS Storage Pile
FS070	Ethanol Loading Rack (Rail)
FS080	Coal Handling Fugitives
FS090	Flyash Handling Fugitives
TK001	190 Proof Tank
TK002	200 Proof Tank
TK003	Denaturant Tank
TK004	Denatured Ethanol Tank
TK005	Denatured Ethanol Tank
TK006	Corrosion Inhibitor Tank

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 06300025-003
(Major Amendment)

This Technical Support Document (TSD) is intended for all parties interested in the permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the permit.

1. General Information

1.1. Applicant and Stationary Source Location:

Applicant/Address	Stationary Source/Address (SIC Code: 2869)
Heron Lake BioEnergy, LLC 91246 390 th Avenue Heron Lake, MN 56137	91246 390 th Avenue Heron Lake Jackson County
Contact: Robert Ferguson Phone: 507-793-0077	

1.2. Description of the Permit Action:

The Minnesota Pollution Control Agency (MPCA) issued a permit to construct the Heron Lake BioEnergy facility on May 10, 2005. Construction on the facility is nearing completion. This amendment modifies some of the processing equipment and systems at the facility. It will not change the production capacity. As originally permitted, the Heron Lake BioEnergy facility will have the capacity to produce 55 million gallons of fuel-grade ethanol and 193,306 tons of Distillers Dried Grains and Solubles (DDGS) annually. The pollutants emitted in the greatest quantities are: Volatile Organic Compounds (VOC), Particulate Matter (PM), particulate matter smaller than 10 microns (PM₁₀), Nitrogen Oxides (NO_x), Sulfur Dioxide (SO₂), and Carbon Monoxide (CO). The emissions of each of these pollutants are limited to less than the applicable major source thresholds. Sources of emissions from the facility include: fermentation; distillation; DDGS production, storage and handling; coal, natural gas and propane combustion; product and gasoline storage and loadout; and equipment leaks (valves, flanges, etc.).

The facility will employ a Regenerative Thermal Oxidizer (RTO) to control VOC emissions from DDGS drying and other processes. A wet scrubber will control VOC emissions from the fermentation. The facility will employ several baghouses to control PM and PM₁₀ emissions. The coal burning boiler will be a bubbling fluidized bed combustor. The fluidized bed boiler includes lime injection to control acid gases, ammonia injection for controlling NO_x and a baghouse to control PM/PM₁₀. The large product storage tanks will be equipped with internal

floating roofs to control VOCs. The ethanol loadout rack for trucks will be equipped with a flare to control VOCs. Emissions from equipment leaks will be controlled through an inspection and maintenance program.

1.3. Description of the Activities Allowed by this Permit Action:

This is a major amendment to authorize the following changes:

Changes requested by the Permittee which require a major amendment:

- Both DDGS dryers are now steam heated and vent to the RTO for destruction of VOC/HAP instead of one dryer being vented to the Fluid Bed Boiler (FBB);
- Distillation and process vents gases are directed to the RTO instead of the FBB for destruction of VOC/HAP.

Other changes requested by the Permittee:

- Baghouse fabric filters to be installed for control of coal dust, flyash, and limestone are clarified as follows:

Application	MPCA ID (HLBE ID)	MPCA STACK ID (HLBE ID)
Coal handling	CE014 (CE100)	SV013 (SV90)
Flyash filter receiver	CE015 (CE104)	SV014 (SV100)
Flyash storage	CE016 (CE105)	SV015 (SV101)
Coal bins	CE017	SV016 (SV150)
Limestone	CE024	SV019 (SV110)

- Two (2) additional PM sources are added (sand storage vessel and temporary grain storage);
- Cooling tower water circulation rate is increased from 1,200,000 gallons per hour to 1,500,000 gallons per hour (the original permit and public notice was based on 1,700,000 gallons per hour);
- Denatured ethanol loading rate is increased from 1,800 gallons per minute to 5,600 gallons per minute (truck and railcar loading combined);
- DDGS loadout rate is increased from 15,000 bushels per hour to 20,000 bushels per hour for each of two (2) loadout stations;
- Stack parameters have been updated;
- The requirements of 40 CFR 60, Subpart IIII for compression-ignition internal combustion engines (fire pump engine) have been added (this NSPS was promulgated in 2006 after the first Heron Lake permit was issued);
- The SO₂ limit for the fluid bed boiler has been updated in accord with the change made by U.S. Environmental (EPA) to 40 CFR pt. 60, Subpart Db in February 2006;
- Fuel for the thermal oxidizer and for the pilot flames for the ethanol loadout flare and methanator flare will be liquid propane (natural gas may be used if it becomes available);
- Two (2) emergency generators are added (administration building and boiler feedwater pump; a generator is also added to the City's water treatment plant);

- Cooling tower drift loss is recalculated based on the manufacturer's guarantee of drift loss;
- Estimated limestone throughput rate for boiler SO₂ control is reduced from 6570 tons per year to 2190 tons per year;
- Building dimensions have been updated.

Other changes made to the permit:

- stockpiling of wetcake for shipment offsite is allowed (lower emissions result from simply stockpiling the wetcake as opposed to drying it);
- baghouse pressure drop range is changed to a range of 0.25 to 8.0 inches water column;
- size of three liquid storage tanks is corrected;
- clarified fuel recordkeeping requirement for GP010 so that records match the limit (30-day rolling average);
- emission limits have been changed to match the revised emission calculations;
- limits (except for a 5 percent opacity limit) now have at least two significant digits (e.g., 0.3 is now 0.30);
- performance tests have been entered individually for each pollutant to be tested;
- citations for flare requirements have been corrected (flare is not subject to NSPS);
- feed of wetcake to the dryers must now stop if the RTO breaks down;
- temperature and syrup feedrate limits on the dryers are replaced with a more general condition that allows limits to be set based on performance tests;
- a redundant monthly fuel recordkeeping requirement for the fluid bed boiler has been deleted (the permit also contains a daily records requirement);
- Continuous Emission Monitor (CEM) requirements now appear on separate pages at the end of Table A (moved from EU035);
- CE004 is deleted from the permit since it contained requirements that applied to the fluid bed boiler when it was intended to also operate as a thermal oxidizer;
- The PM limit for the fluid bed boiler has been updated in accord with the change made by EPA to 40 CFR pt. 60, Subpart Db in February 2006.

1.4. Facility Emissions:

Table 1. Total Facility Potential to Emit Summary

	PM tpy	PM ₁₀ tpy	SO ₂ tpy	NO _x tpy	CO tpy	VOC tpy	Single HAP tpy	All HAPs tpy
Total Facility Limited Potential Emissions*	95.4	69.3	98.7	98.2	97.5	82.7	8.8	15.1

*Since the total facility PTE remains below the major source threshold of 100 tpy, the changes do not constitute a major source by themselves and are not subject to PSD. Normally, PTE would be limited to 95 tpy or less. By the time this permit is issued, the major threshold for ethanol plants will have changed to 250 tpy. Thus, the limits above are more than sufficient to limit the source to below the PSD major source threshold.

Table 2. Facility Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD		X	
Part 70 Permit Program		X	
Part 63 NESHAP		X	

2. Regulatory and/or Statutory Basis

2.1. Federal New Source Review:

The proposed changes do not constitute a major modification for Federal New Source Review.

2.2. Part 70 Permit Program:

The source-wide potential-to-emit remains below Part 70 thresholds.

2.3. Federal New Source Performance Standards:

The requirements of 40 CFR 60 Subpart IIII for compression-ignition internal combustion engines (fire pump engine) have been added. This NSPS was promulgated in 2006 after the first Heron Lake permit was issued.

Also, revisions to 40 CFR 60 Subpart Db, promulgated in 2006, apply to boilers on which construction commenced after February 28, 2005, and thus apply to the fluid bed boiler. The revisions affect the limits for sulfur dioxide and particulate matter.

2.4. Minnesota Performance Standards:

The proposed changes do not subject the Heron Lake Bio-Energy facility to any additional Minnesota Performance Standards.

2.5. Environmental Review:

The proposed changes do not require preparation of another EAW.

2.6. National Emissions Standards for Hazardous Air Pollutants:

The proposed changes do not constitute construction of a new major source of HAP in and of themselves and thus are not subject to any requirements under 40 CFR pt. 63.

Table 3. Regulatory Overview of Units Affected by the Modification/Permit Amendment

EU, GP, or SV	Applicable Regulations	Comments:
FC	Minn. R. ch. 7019 and 7007	The condition prohibiting wet cake stockpiling is removed from this part of the permit. New conditions for wet cake stockpiling and for breakdown of the RTO have been added to EU 018 and EU 034 (dryers).
GP 005	Title I Condition to avoid major source status	The EUs previously described as vented to are now vented to an RTO

GP 007	Title I Conditions to avoid major source status; Minn. R. 7007.0800, subp. 2, 4, 5, and 14	Citations corrected (NSPS reference removed); the flare is not subject to NSPS requirements
SV 001	Title I Conditions to avoid major source status	PM and PM10 limits adjusted per calculations in application
SV 003	Title I Conditions to avoid major source status	VOC limit adjusted per calculations in application
SV 004	Title I Conditions to avoid major source status	Limits adjusted per calculations in application
SV 005	Title I Conditions to avoid major source status	Limits adjusted per calculations in application
SV 017	40 CFR 60, Subp. I I I I Minn. R. 7011.2300	NSPS Subpart I I I I requirements added
EU 018 EU 034	Minn. R. 7007.0800, subp. 4 Minn. R. 7019.1000, subp. 4 and 7007.0800, subp. 2 Minn. R. 7017.2025, subp. 3	Wet cake may be stockpiled for shipment offsite, but must not be stored onsite for more than 72 hour Breakdown of the RTO requires shutdown of the dryers Syrup and temperature limits are removed and replaced with a notice that such limits will be established following the initial performance test
EU 035	40 CFR 60, Subp. Db	Subpart Db was revised Feb. 27, 2006; the revisions apply to boilers on which construction commenced after February 28, 2005; the SO2 limit has been updated accordingly to 0.2 lb/million Btu and no percent reduction requirement, and the PM limit has been reduced from 0.051 to 0.030 lb/MMBtu
CE 004	NA	Deleted; this previously contained the requirements that applied to the fluid bed boiler when it was to be used as a thermal oxidizer
MR 001	40 CFR pt. 60 Minn. R. ch. 7017	Added separate page for NOx CEM requirements
MR 002	40 CFR pt. 60 Minn. R. ch. 7017	Added separate page for SO2 CEM requirements
MR 003	40 CFR pt. 60 Minn. R. ch. 7017	Added separate page for opacity COM requirements

3. Technical Information

The following additional information should be attached to or included as additional sections to the TSD:

- As required by a permit condition when modeled parameters are changed, HLBE has submitted a demonstration that dispersion is equal or better compared to the original parameters used in modeling.

3.1. Calculations of Potential to Emit:

- a) *DDGS dryer A, changed from natural gas fired to steam tube and both DDGS dryers vent to the RTO instead of one dryer being vented to the FBB;*

Emission calculations are combined with item b) below since all VOC-containing gases are vented to one thermal oxidizer.

- b) *Distillation and process vents gases are directed to the RTO instead of the FBB for destruction of VOC/HAP;*

For PM₁₀, SO₂, CO, and VOC, uncontrolled emission factors (expressed as lb/ton of DDGS) are developed from tests at another ethanol plant. For PM₁₀, CO, and VOC, the RTO is estimated to have a destruction efficiency respectively of 95, 96, and 98 percent. No destruction efficiency is assumed for SO₂. NO_x is calculated from the rated heat input of the RTO and use of propane as fuel.

- c) *Two (2) additional fugitive PM sources are added (sand storage vessel and temporary grain storage);*

- d) *Cooling tower water circulation rate is increased from 1,200,000 gallons per hour to 1,500,000 gallons per hour;*

PM and PM₁₀ emissions due to drift loss are assumed to be proportional to cooling water circulating flowrate.

- e) *Denatured ethanol loading rate is increased from 1,800 gallons per minute to 5,600 gallons per minute (truck and railcar loading combined);*

Emissions are controlled by a flare and the pilot flame is assumed to be operating 8760 hrs/yr. For gases vented from loading trucks and rail cars, emission factors for flaring waste gas are used with operation assumed to be 2000 hrs/yr (at 2000, more ethanol could be loaded than is allowed to be produced).

- f) *DDGS loadout rate is increased from 15,000 bushels per hour to 20,000 bushels per hour (10,000 bu/hr each for two (2) loadout stations);*

- g) *The requirements of 40 CFR 60 Subpart IIII for compression-ignition engines (the fire pump engine and administration building) have been added.*

- h) *Flare pilots are fueled by propane*

3.2. Periodic Monitoring:

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considers the following:

- The likelihood of violating the applicable requirements;
- Whether add-on controls are necessary to meet the emission limits;
- The variability of emissions over time;
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- The technical and economic feasibility of possible periodic monitoring methods; and
- The kind of monitoring found on similar units elsewhere.

Table 4 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Table 4. Periodic Monitoring

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
GP 005	All associated items in this Group must be vented to the RTO	None	This is a design requirement to be verified during inspections, not an emission limit; thus no periodic monitoring is needed.
GP 007	No visible emissions	Periodic monitoring remains the same as the previous permit	O and M requirements similar to NSPS for flares. This is adequate periodic monitoring because flame presence is monitored continuously with a thermocouple or the equivalent.
SV 001	PM, PM ₁₀ ≤ 1.34 lb/hr	Periodic monitoring remains the same as the previous permit	Periodic monitoring consists of baghouse requirements in GP 003. This is adequate periodic monitoring because the monitoring is done and recorded daily.
SV 003	VOC ≤ 7.83 lb/hr	Periodic monitoring remains the same as the previous permit	Periodic monitoring consists of scrubber requirements in CE 003. This is adequate periodic monitoring because the monitoring is done and recorded daily.

SV 004	PM, PM ₁₀ ≤ 2.65 lb/hr NO _x ≤ 0.90 lb/hr VOC ≤ 4.41	Periodic monitoring remains the same as the previous permit	For VOC, a minimum T is specified with continuous readout and recording of T required and O and M requirements. An adequate T is also expected to assure destruction of CO, PM and PM ₁₀ . NO _x is uncontrolled.
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	lb/hr $\text{CO} \leq 9.42$ lb/hr		
SV 005	$\text{PM} \leq 9.7$ lb/hr $\text{PM}_{10} \leq 7.8$ lb/hr $\text{NO}_x \leq 20.9$ lb/hr $\text{VOC} \leq 0.60$ lb/hr $\text{CO} \leq 11.3$ lb/hr	Periodic monitoring remains the same as the previous permit	PM, PM ₁₀ are controlled by a baghouse. Periodic Monitoring requirements are at CE 020. NO _x is monitored by a CEM. Requirements are at MR 001. VOC and CO are uncontrolled.
SV 017	CI engine subject to NSPS Subpart III	Periodic monitoring remains the same as the previous permit	Subpart III requirements are added including emission limits, fuel specifications, nonresettable hours-of-operation meter, and compliance requirements.
EU 035	$\text{SO}_2 \leq 0.2$ lb/MMBtu	SO ₂ CEM	CEM requirements are at MR 002

3.3. Insignificant Activities:

Heron Lake BioEnergy has several operations which are classified as insignificant activities. These are listed in an Appendix to the permit.

The permit is required to include periodic monitoring for all emissions units, including insignificant activities, per EPA guidance. The insignificant activities at this Facility are only subject to general applicable requirements. Using the criteria outlined earlier in this TSD, the following table documents the justification why no additional periodic monitoring is necessary for the current insignificant activities.

Table 5. Insignificant Activities

Insignificant Activity	General Applicable Emission limit	Discussion
Individual units with actual emissions less than 2000 lb/year of certain pollutants	PM, variable depending on airflow Opacity \leq 20% (with exceptions) (Minn. R. 7011.0715 and Minn. R. 7011.610)	Sand storage for the fluid bed boiler

3.4. Comments Received:

Public Notice Period: August 2, 2007 – August 31, 2007

Comments were received from the public during the public notice period. The comments received did not include adverse comments on any applicable requirements of the permit. Changes to the permit were not made as a result of the comments.

4. Conclusion

Based on the information provided by Heron Lake BioEnergy, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 06300025-003, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: David Beil (permit writer/engineer)
 Sarah Kilgriff (enforcement)
 Curt Stock (stack testing)
 Marshall Cole (peer review)

Attachment: Comment received during public notice

AQ File No. 4212; DQ 1544

Comment received during public notice:

From: Chuck Wolff [hlwra@frontiernet.net]

Sent: Thursday, August 30, 2007 9:56 PM

To: Beil, David

Subject: Heron Lake BioEnergy 30 day comment period ending August 31, 2007

Mr. Beil,

I have three questions concerning Heron Lake BioEnergy's amendment to their air emission facility permit.

1) After HLBE conceded to the Minnesota State Supreme Court to emissions that were over three times higher than the emissions summarized in this permit, how can HLBE now meet these emission limitations, especially the PM number of 95.4 with a request to now store corn outdoors?

2) If HLBE can meet these minor source emission limitations, than why is the MPCA requiring HLBE to submit an permit application by August 31, 2007 for a major source polluter?

3) I did not receive an adequate answer to this next question during the last thirty day comment period. With over two-thirds of Minnesota's impaired waters impaired for mercury and with testing only done on fish, which build up mercury within their tissues from the environment, how do we physically remove mercury from our environment (lakes and rivers)?

Thank you for the opportunity to comment on this permit.

Sincerely,

Charles Wolff
1216 Circle High Drive
Burnsville, MN 55306