

**Iowa Department of Natural Resources
Title V Operating Permit**

Name of Permitted Facility: POET Biorefining - Fairbank, LLC

Facility Location: 1277 102nd Street, Fairbank, Iowa 50629

Air Quality Operating Permit Number: 15-TV-010R1-M001

Expiration Date: March 8, 2025

Permit Renewal Application Deadline: September 8, 2024

EIQ Number: 92-6958

Facility File Number: 10-04-007

Responsible Official

Name: Bryon Wilson

Title: General Manager

**Mailing Address: 1277 102nd Street
Fairbank, Iowa 50629**

Phone #: 319-975-1870

Permit Contact Person for the Facility

Name: Mitch Willard

Title: EHS Specialist

**Mailing Address: 1277 102nd Street
Fairbank, Iowa 50629**

Phone #: 319-830-5812

This permit is issued in accordance with 567 Iowa Administrative Code Chapter 22, and is issued subject to the terms and conditions contained in this permit.

For the Director of the Department of Natural Resources



Marnie Stein, Supervisor of Air Operating Permits Section

9/13/2023

Date

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Abbreviations

acfm.....	actual cubic feet per minute
CFR.....	Code of Federal Regulation
CE	control equipment
CEM.....	continuous emission monitor
°F.....	degrees Fahrenheit
EIQ.....	emissions inventory questionnaire
EP	emission point
EU	emission unit
gr/dscf	grains per dry standard cubic foot
IAC.....	Iowa Administrative Code
DNR	Iowa Department of Natural Resources
MVAC.....	motor vehicle air conditioner
NAICS.....	North American Industry Classification system
NSPS	new source performance standard
ppmv	parts per million by volume
lb/hr	pounds per hour
lb/MMBtu	pounds per million British thermal units
SCC	Source Classification Codes
scfm.....	standard cubic feet per minute
SIC	Standard Industrial Classification
TPY	tons per year
USEPA.....	United States Environmental Protection Agency

Pollutants

PM.....	particulate matter
PM ₁₀	particulate matter ten microns or less in diameter
SO ₂	sulfur dioxide
NO _x	nitrogen oxides
VOC	volatile organic compound
CO	carbon monoxide
HAP.....	hazardous air pollutant

I. Facility Description and Equipment List

Facility Name: POET Biorefining - Fairbank, LLC

Permit Number: 15-TV-010R1-M001

Facility Description: Industrial Organic Chemicals (SIC 2869)

Equipment List

Emission Point Number	Emission Unit Number	Emission Unit Description	DNR Construction Permit Number
EP S20	EU P20	Grain Receiving/Handling System	05-A-007-S3
	EU P20a	Grain Bin	
	EU P20b	Grain Bin	
EP S25	EU P25a	Grain Storage Bin	07-A-271-S1
	EU P25b	Grain Storage Bin	
EP S30	EU P30	Four (4) Hammermills	05-A-008-S4
EP S10	EU 62	Dryer A	05-A-006-S9
	EU 63	Dryer B	
	EU 64	Dryer C	
	EU 65	Dryer D	
	EU B10a	Heat Recovery Boiler A	
	EU B10b	Heat Recovery Boiler B	
	EU 19	Slurry Tank #1	
	EU 20	Slurry Tank #2	
	EU 21	Cook Tubes #1	
	EU 22	Cook Tubes #2	
	EU 23	Cook Flash Vessel	
	EU 24	Liquefaction Tank #1	
	EU 25	Liquefaction Tank #2	
	EU 33	Molecular Sieve Vaporizer	
	EU 34 - EU 39	Molecular Sieve Bottles #1 - #6	
	EU 40	200 Proof Condenser	
	EU 41	200 Proof Flash Vessel	
	EU 42	200 Proof Flash Receiver	
	EU 43	CIP Screen Tank	
	EU 44	Yeast Tank #1	
	EU 45	Yeast Tank #2	
	EU 46	Beer Column	
	EU 48	Side Stripper	
	EU 49	Rectifier Column	
	EU 50	190 Proof Condenser	

Emission Point Number	Emission Unit Number	Emission Unit Description	DNR Construction Permit Number
	EU 51	Reflux Tank	
	EU 52	Regen Tank	
	EU 53	Acid Wash Tank	
	EU 54	Centrate Tank #1	
	EU 55	Centrate Tank #2	
	EU 56	Centrifuges	
	EU 57	Evaporators	
	EU 58	Methanator #1	
	EU 59	Methanator #2	
	EU 60	Methanator #3	
	EU 61	Methanator #4	
EP S40	EU 26	Fermenter #1	05-A-010-S10
	EU 27	Fermenter #2	
	EU 28	Fermenter #3	
	EU 29	Fermenter #4	
	EU 30	Fermenter #5	
	EU 31	Fermenter #6	
	EU 32	Fermenter #7	
	EU 47	Beer Well	
EP S70	EU P70	DDGS Cooler	05-A-011-S6
EP S90	EU P90	Rail and Truck DDGS Loadout	05-A-009-S3
EP SEP22	EU 74	Rail Product Loadout	05-A-013-S5
	EU 75	Truck Product Loadout	
EP 11	EU 58	Methanator #1	05-A-020-S4
	EU 59	Methanator #2	
	EU 60	Methanator #3	
	EU 61	Methanator #4	
EP S80	EU P80	Cooling Tower	05-A-012-S2
EP F61	EU T61	Denatured Ethanol Storage Tank	05-A-014
EP F62	EU T62	Denatured Ethanol Storage Tank	05-A-015
EP F63	EU T63	200 Proof Ethanol Storage Tank	05-A-016
EP F65	EU T65	190 Proof Ethanol Storage Tank	05-A-018
EP T64	EU T64	Denaturant Storage Tank	05-A-017-S1
EP FP	EU FP	Fire Water Pump	05-A-022-S3
EP F110	EU F110	VOC Emissions from Equipment Leaks	05-A-019-S1
EP F120	EU F120	Truck Traffic	05-A-021-S6
EP F130	EU F130	WDGS Storage & Loadout	07-A-272-S2
EP S150	EU S150	Whole Stillage Tank	13-A-557
EP F150	EU F150	Open Transportation Devices	14-A-460
EP S31	EU 81	Hammermill #5	17-A-523-S2
EP S32	EU 82	Hammermill #6	17-A-524-S2
EP S160	EU S160	Boiler #1	19-A-097

Insignificant Activities Equipment List

Insignificant Emission Unit Number	Insignificant Emission Unit Description
TS-8411	Corrosion Inhibitor Tank (2,300 gal)
TF-6801	Thin Stillage Tank (374,000 gal)
TF-6810	Syrup Tank (180,000 gal)
TF-2101	Cook Water Tank (374,000 gal)
TF-2112	Methanator Feed Tank (374,000 gal)
TP-12501	Sulfuric Acid Tank (8,000 gal)
S200	Diesel Tank (1,000 gal)
S201	Fire Pump Diesel Tank (360 gal)
S202	Portable Diesel Tank (500 gal)
S203	Gasoline Tank (500 gal)
S204	Corn Oil Loadout (0.16 psi)
S205	Parts Washers (30 gal each)
S206	Corn Oil Vent (0.16 psi)
S207	Corn Storage Pile (2.5 MMBu)
TK-13800	Corn Oil Tank #1 (20,000 gal)
TK-13801	Corn Oil Tank #2 (20,000 gal)
TK-13802	Corn Oil Tank #3 (20,000 gal)
TK-13803	Corn Oil Tank #4 (20,000 gal)
TF-13010	Mid Stillage Tank (101,150 gal)

II. Plant-Wide Conditions

Facility Name: POET Biorefining - Fairbank, LLC
Permit Number: 15-TV-010R1-M001

Permit conditions are established in accord with 567 Iowa Administrative Code Rule 22.108

Permit Duration

The term of this permit is: Five (5) years
Commencing on: March 9, 2020
Ending on: March 8, 2025

Amendments, modifications and reopenings of the permit shall be obtained in accordance with 567 Iowa Administrative Code rules 22.110 - 22.114. Permits may be suspended, terminated, or revoked as specified in 567 Iowa Administrative Code Rules 22.115.

Emission Limits

Unless specified otherwise in the Source Specific Conditions, the following limitations and supporting regulations apply to all emission points at this plant:

Opacity (visible emissions): 40% opacity
Authority for Requirement: 567 IAC 23.3(2)"d"

Sulfur Dioxide (SO₂): 500 parts per million by volume
Authority for Requirement: 567 IAC 23.3(3)"e"

Particulate Matter:

No person shall cause or allow the emission of particulate matter from any source in excess of the emission standards specified in this chapter, except as provided in 567 – Chapter 24. For sources constructed, modified or reconstructed on or after July 21, 1999, the emission of particulate matter from any process shall not exceed an emission standard of 0.1 grain per dry standard cubic foot of exhaust gas, except as provided in 567 – 21.2(455B), 23.1(455B), 23.4(455B) and 567 – Chapter 24.

For sources constructed, modified or reconstructed prior to July 21, 1999, the emission of particulate matter from any process shall not exceed the amount determined from Table I, or amount specified in a permit if based on an emission standard of 0.1 grain per standard cubic foot of exhaust gas or established from standards provided in 23.1(455B) and 23.4(455B).

Authority for Requirement: 567 IAC 23.3(2)"a"

Fugitive Dust: Attainment and Unclassified Areas - No person shall allow, cause or permit any materials to be handled, transported or stored; or a building, its appurtenances or a construction haul road to be used, constructed, altered repaired or demolished, with the exception of farming operations or dust generated by ordinary travel on unpaved public roads, without taking reasonable precautions to prevent particulate matter in quantities sufficient to create a nuisance, as defined in Iowa Code section 657.1, from becoming airborne. All persons, with the above exceptions, shall take reasonable precautions to prevent the discharge of visible emissions of fugitive dusts beyond the lot line of the property on which the emissions originate. The highway authority shall be responsible for taking corrective action in those cases where said authority has received complaints of or has actual knowledge of dust conditions which require abatement pursuant to this subrule. Reasonable precautions may include, but not limited to, the following procedures.

1. Use, where practical, of water or chemicals for control of dusts in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land.
2. Application of suitable materials, such as but not limited to asphalt, oil, water or chemicals on unpaved roads, material stockpiles, race tracks and other surfaces which can give rise to airborne dusts.
3. Installation and use of containment or control equipment, to enclose or otherwise limit the emissions resulting from the handling and transfer of dusty materials, such as but not limited to grain, fertilizers or limestone.
4. Covering at all times when in motion, open-bodied vehicles transporting materials likely to give rise to airborne dusts.
5. Prompt removal of earth or other material from paved streets or to which earth or other material has been transported by trucking or earth-moving equipment, erosion by water or other means.
6. Reducing the speed of vehicles traveling over on-property surfaces as necessary to minimize the generation of airborne dusts.

Authority for Requirement: 567 IAC 23.3(2)"c"

NESHAP and NSPS Applicability

40 CFR 60 Subpart A Requirements

This facility is an affected source and these *General Provisions* apply to the facility.

The affected units are EU B10a, B10b, EUs 26 through 42, EUs 48 through 52, F50, T61, T62, T63, T64, T65, F110 and S160. See Appendix A for a link to the Standard.

Authority for Requirements: 40 CFR 60 Subpart A
567 IAC 23.1(2)

40 CFR 60 Subpart Db Requirements

This facility is subject to Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units. The affected units are EU B10a and B10b. See Appendix A for a link to the Standard.

Authority for Requirements: 40 CFR 60 Subpart Db
567 IAC 23.1(2) "ccc"

40 CFR 60 Subpart Dc Requirements

This facility is subject to Standards of Performance for *Small Industrial Commercial Institutional Steam Generating Units*. The affected unit is EU S160. See Appendix for a link to the Standard.

Authority for Requirements: 40 CFR 60 Subpart Dc
567 IAC 23.1(2) "III"

40 CFR 60 Subpart Kb Requirements

This facility is subject to the Standards of Performance for Volatile Organic Liquid storage vessels (including petroleum liquids). This is applicable for storage tanks constructed after July 1984. The affected units are storage tanks T61, T62, T63, T64 and T65. See Appendix A for a link to the Standard.

Authority for Requirements: 40 CFR 60 Subpart Kb
567 IAC 23.1(2) "ddd"

40 CFR 60 Subpart VV Requirements

This facility is subject to the Standards of Performance for Equipment leaks of VOC in the Synthetic Organic Chemicals Manufacturing industry. The affected units are EUs 26 through 42, EUs 48 through 52, F50, T61 through T65 and F110. See Appendix A for a link to the Standard.

Authority for Requirements: 40 CFR 60 Subpart VV
567 IAC 23.1(2) "nn"

40 CFR 63 Subpart A Requirements

This facility is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) for General Provisions. The affected emission points are S10, S40, SEP22, FP, F110 and S160. See Appendix A for a link to the Standard.

Authority for Requirements: 40 CFR 63 Subpart A
567 IAC 23.1(4)"a"

40 CFR 63 Subpart FFFF Requirements

This facility is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) for *Miscellaneous Organic Chemical Manufacturing*. The affected EPs are S10, S40, SEP22, See Appendix A for a link to the Standard.

Authority for Requirements: 40 CFR 63 Subpart FFFF
567 IAC 23.1(4)"cf"

40 CFR 63 Subpart ZZZZ Requirements

This facility is subject to National Emission Standards for Hazardous Air Pollutants for *Stationary Reciprocating Internal Combustion Engines* (RICE NESHAP). The affected EP is FP. See Appendix A for a link to the Standard.

Authority for Requirements: 40 CFR 63 Subpart ZZZZ
567 IAC 23.1(4)"cz"

40 CFR 63 Subpart DDDDD Requirements

This facility is subject to National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. The affected EP is S160. See Appendix A for a link to the Standard.

Authority for Requirements: 40 CFR 63 Subpart DDDDD

III. Emission Point-Specific Conditions

Facility Name: POET Biorefining - Fairbank, LLC

Permit Number: 15-TV-010R1-M001

Emission Point ID Number: EP S20

Associated Equipment

Table: Grain Receiving and Storage

Emission Unit	Emissions Unit Description	Raw Material/Fuel	Rated Capacity	Control Equipment
EU P20	Grain Receiving/Handling System	Grain	40,000 bu/hr	Baghouse (C20)
EU P20a	Grain Bin	Grain	500,000 bu	
EU P20b	Grain Bin	Grain	500,000 bu	

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): 40%⁽¹⁾

Authority for Requirement: DNR Construction Permit 05-A-007-S3
567 IAC 23.3(2)"d"

⁽¹⁾ An exceedance of the indicator opacity of "no visible emissions" will require the owner/operator to promptly investigate the emission unit and make corrections to operations or equipment associated with the exceedance. If exceedances continue after the corrections, the DNR may require additional proof to demonstrate compliance (e.g., stack testing).

Pollutant: Particulate Matter (PM)

Emission Limit(s): 1.59 lb/hr, 0.1 gr/dscf

Authority for Requirement: DNR Construction Permit 05-A-007-S3
567 IAC 23.4(7)

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

- A. The owner or operator shall maintain the Baghouse (CE C20) according to the facility's (Facility ID: 10-04-007) operation and maintenance plan. The owner or operator shall maintain a log of all maintenance and inspection activities performed on the Baghouse (CE C20). This log shall include, but is not necessarily limited to:
 - i. The date any inspection and/or maintenance was performed on the Baghouse (CE C20);
 - ii. Any issues identified during the inspection and the date each issue was resolved;
 - iii. Any issues addressed during the maintenance activities and the date each issue was resolved; and
 - iv. Identification of the staff member performing the maintenance or inspection.
- B. The Baghouse (CE C20) shall be operated during any grain bin filling operation. All emissions shall be vented to the Baghouse (CE C20).

Authority for Requirement: DNR Construction Permit 05-A-007-S3

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

Stack Height, (ft, from the ground): 40

Stack Opening, (inches, dia.): 44.5

Exhaust Flow Rate (scfm): 26,350

Exhaust Temperature (°F): Ambient

Discharge Style: Vertical Unobstructed

Authority for Requirement: DNR Construction Permit 05-A-007-S3

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below:

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☒ No ☐

Authority for Requirement: 567 IAC 22.108(3)

**Compliance Assurance Monitoring Plan for POET Biorefining - Fairbank,
LLC
Facility located in Fairbank, Iowa**

EP S20 –Grain Receiving, Storage, and Handling System Baghouse

I. Background

A. Emissions Unit

Description: Grain Receiving, Storage, and Handling (EU P20, 20a, 20b)

Facility: POET Biorefining - Fairbank, LLC
Fairbank, Iowa

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Regulation No.: Construction Permit 05-A-007-S3

PM Emission Limit or Standard: 1.59 lb/hr; 0.1 gr/dscf

PM₁₀ Emission Limit or Standard: N/A

PM_{2.5} Emission Limit or Standard: N/A

C. Control Technology

Fabric Filter Baghouse (CE C20)

II. Grain Receiving, Storage, and Handling System Baghouse Monitoring Approach

A. Indicator

Pressure drop will be used as the performance indicator.

B. Measurement Approach

The key elements of the monitoring approach, including the indicators to be monitored, indicator ranges, and performance criteria are presented in Table 1.

Table 1: Monitoring Approach

I. Indicator	
Indicator	Differential pressure across the baghouse
Measurement / Approach	The pressure drop will be monitored and recorded at least once each day of operation.
II. Indicator Range	
Range	A pressure drop of 0 to 6 inches of water shall be maintained during operation.
Corrective Action	Procedures, system parameters, data trends will be reviewed and the functional operation of the equipment will be assessed to determine the cause of the excursion. Once the cause is identified, a repair or adjustment will be implemented to procedures to address the excursion.
QIP Threshold	An accumulation of excursions outside the indicator range of six or more for a reporting period excluding periods of startup, shutdown and malfunction.
III. Performance Criteria	
Data Representativeness	Pressure drop is measured across the system
Verification of Operational Status	Records of pressure drop readings will be maintained for five years.
QA/QC Practices and Criteria	Calibrate, maintain, and operate instrumentation in accordance with the Facility Operations and Maintenance Plan.
Monitoring Frequency	The pressure drop will be recorded a minimum of once per day during operations.
Data Collection Procedures	The pressure drop will be recorded electronically or manually.
Averaging period	Not applicable.
Record Keeping	Maintain for a period of five years records and corrective actions taken in response to excursions.
Reporting	Number, duration, and cause of any excursion and the corrective action taken.
Frequency	Semiannually.

III. Justification

A. Background

PM, PM₁₀, and PM_{2.5} emissions from the Grain Receiving, Storage, and Handling System (EU P20, 20a, 20b) are controlled by the Grain Receiving, Storage, and Handling Baghouse.

B. Rationale for Selection of Performance Indicator

Baghouses operate by collecting particulate on porous fabric bags, thus resulting in a pressure differential across the system. The gas stream is passed through the fabric which results in pressure; too much pressure indicates a possible plugging of the system and too little indicates possible

bag breakage. Therefore, pressure drop is the best indicator of baghouse performance.

C. Rationale for Selection of Indicator Level

Baghouses remove dust from a gas stream by passing the stream through a porous fabric. Particles form a porous cake on the fabric that acts as the filtration device. This porous cake is routinely removed and collected and returned to the process. Baghouses are highly efficient for controlling filterable PM, PM₁₀, and PM_{2.5}. Baghouses are subject to failure if they are not properly operated and maintained. An indicator pressure drop of 0 to 6 inches of water is recommended to achieve the required control efficiency.

The selected QIP threshold for the daily pressure drop is six excursions during a semi-annual reporting period. If the QIP threshold is exceeded during a semi-annual reporting period, a QIP will be developed and implemented.

Emission Point ID Number: EP S25

Associated Equipment

Table: Grain Storage Bins

Emission Unit	Emissions Unit Description	Raw Material/Fuel	Rated Capacity	Control Equipment
EU P25a	Grain Storage Bin	Grain	684,000 bu	Baghouse (C25)
EU P25b	Grain Storage Bin	Grain	684,000 bu	

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): 40%⁽¹⁾

Authority for Requirement: DNR Construction Permit 07-A-271-S1
567 IAC 23.3(2)"d"

⁽¹⁾An exceedance of the indicator opacity of 25% will require the owner/operator to promptly investigate the emission unit and make corrections to operations or equipment associated with the exceedance. If exceedances continue after the corrections, the DNR may require additional proof to demonstrate compliance (e.g., stack testing).

Pollutant: Particulate Matter (PM)

Emission Limit(s): 1.28 lb/hr; 0.1 gr/dscf

Authority for Requirement: DNR Construction Permit 07-A-271-S1
567 IAC 23.4(7)

Pollutant: Particulate Matter (PM₁₀)

Emission Limit(s): 1.28 lb/hr

Authority for Requirement: DNR Construction Permit 07-A-271-S1

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

- A. The owner or operator shall maintain the Baghouse (CE C25) according to the facility's (Facility ID: 10-04-007) operation and maintenance plan. The owner or operator shall maintain a log of all maintenance and inspection activities performed on the Baghouse (CE C25). This log shall include, but is not necessarily limited to:
 - i. The date any inspection and/or maintenance was performed on the Baghouse (CE

- C25);
 - ii. Any issues identified during the inspection and the date each issue was resolved;
 - iii. Any issues addressed during the maintenance activities and the date each issue was resolved; and
 - iv. Identification of the staff member performing the maintenance or inspection.
- B. The Baghouse (CE C25) shall be operated during any grain bin filling operation. All emissions shall be vented to the Baghouse (CE C25).

Authority for Requirement: DNR Construction Permit 07-A-271-S1

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

Stack Height, (ft, from the ground): 30

Stack Opening, (inches, dia.): 15

Exhaust Flow Rate (scfm): 1,500

Exhaust Temperature (°F): Ambient

Discharge Style: Vertical unobstructed

Authority for Requirement: DNR Construction Permit 07-A-271-S1

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below:

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☒ No ☐

Authority for Requirement: 567 IAC 22.108(3)

**Compliance Assurance Monitoring Plan for POET Biorefining - Fairbank,
LLC**

Facility located in Fairbank, Iowa

EP S25 – Grain Storage Bins Baghouse

I. Background

A. Emissions Unit

Description: Grain Storage Bins (EU P25A/B)

Facility: POET Biorefining - Fairbank, LLC
Fairbank, Iowa

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Regulation No.: Construction Permit 07-A-271-S1

PM Emission Limit or Standard: 1.28 lb/hr; 0.1 gr/dscf

PM₁₀ Emission Limit or Standard: 1.28 lb/hr

PM_{2.5} Emission Limit or Standard: N/A

C. Control Technology

Fabric Filter Baghouse (CE C25)

II. DDGS Cooler Baghouse Monitoring Approach

A. Indicator

Pressure drop will be used as the performance indicator.

B. Measurement Approach

The key elements of the monitoring approach, including the indicators to be monitored, indicator ranges, and performance criteria are presented in Table 1.

Table 2: Monitoring Approach

I. Indicator	
Indicator	Differential pressure across the baghouse
Measurement / Approach	The pressure drop will be monitored and recorded at least once each day of operation.
II. Indicator Range	
Range	A pressure drop of 0 to 6 inches of water shall be maintained during operation.

Corrective Action	Procedures, system parameters, data trends will be reviewed and the functional operation of the equipment will be assessed to determine the cause of the excursion. Once the cause is identified, a repair or adjustment will be implemented to procedures to address the excursion.
QIP Threshold	An accumulation of excursions outside the indicator range of six or more for a reporting period excluding periods of startup, shutdown and malfunction.
III. Performance Criteria	
Data Representativeness	Pressure drop is measured across the system
Verification of Operational Status	Records of pressure drop readings will be maintained for five years.
QA/QC Practices and Criteria	Calibrate, maintain, and operate instrumentation in accordance with the Facility Operations and Maintenance Plan.
Monitoring Frequency	The pressure drop will be recorded a minimum of once per day during operations.
Data Collection Procedures	The pressure drop will be recorded electronically or manually.
Averaging period	Not applicable.
Record Keeping	Maintain for a period of five years records and corrective actions taken in response to excursions.
Reporting	Number, duration, and cause of any excursion and the corrective action taken.
Frequency	Semiannually.

III. Justification

A. Background

PM, PM₁₀, and PM_{2.5} emissions from the Grain Bins (EU P25A/B) are controlled by the Grain Bin Baghouse.

B. Rationale for Selection of Performance Indicator

Baghouses operate by collecting particulate on porous fabric bags, thus resulting in a pressure differential across the system. The gas stream is passed through the fabric which results in pressure; too much pressure indicates a possible plugging of the system and too little indicates possible bag breakage. Therefore, pressure drop is the best indicator of baghouse performance.

C. Rationale for Selection of Indicator Level

Baghouses remove dust from a gas stream by passing the stream through a porous fabric. Particles form a porous cake on the fabric that acts as the filtration device. This porous cake is routinely removed and collected and returned to the process. Baghouses are highly efficient for controlling filterable PM. Baghouses are subject to failure if they are not properly

operated and maintained. An indicator pressure drop of 0 to 6 inches of water is recommended to achieve the required control efficiency.

The selected QIP threshold for the daily pressure drop is six excursions during a semi-annual reporting period. If the QIP threshold is exceeded during a semi-annual reporting period, a QIP will be developed and implemented.

Emission Point ID Number: EP S30

Associated Equipment

Table: Hammermills

Emission Unit	Emissions Unit Description	Raw Material/Fuel	Rated Capacity	Control Equipment
P30	Four (4) Hammermills	Grain	44 tons/hr each; 176 tons/hour total	Baghouse (C30)

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): 40%⁽¹⁾

Authority for Requirement: DNR Construction Permit 05-A-008-S4
567 IAC 23.3(2)"d"

⁽¹⁾ An exceedance of the indicator opacity of no visible emissions will require the owner/operator to promptly investigate the emission unit and make corrections to operations or equipment associated with the exceedance. If exceedances continue after the corrections, the DNR may require additional proof to demonstrate compliance (e.g., stack testing).

Pollutant: Particulate Matter (PM)

Emission Limit(s): 1.75 lb/hr; 0.1 gr/dscf

Authority for Requirement: DNR Construction Permit 05-A-008-S4
567 IAC 23.4(7)

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

- A. The owner or operator shall operate and maintain the Baghouse (CE C30) according to the facility's operation and maintenance plan. The owner or operator shall maintain a log of all maintenance and inspection activities performed on the Baghouse (CE C30). This log shall include, but is not necessarily limited to:
 - a. The date any inspection and/or maintenance was performed on the Baghouse (CE C30);
 - b. Any issues identified during the inspection;
 - c. Any issues addressed during the maintenance activities; and
 - d. Identification of the staff member performing the maintenance or inspection.

Authority for Requirement: DNR Construction Permit 05-A-008-S4

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

Stack Height, (ft, from the ground): 40

Stack Opening, (inches, dia.): 38

Exhaust Flow Rate (scfm): 22,100

Exhaust Temperature (°F): Ambient

Discharge Style: Vertical Unobstructed

Authority for Requirement: DNR Construction Permit 05-A-008-S4

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below:

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☒ No ☐

Authority for Requirement: 567 IAC 22.108(3)

**Compliance Assurance Monitoring Plan for POET Biorefining - Fairbank,
LLC**

Facility located in Fairbank, Iowa

EP S30 – Hammermill Baghouse

I. Background

A. Emissions Unit

Description: Hammermills (EU P30)

Facility: POET Biorefining - Fairbank, LLC
Fairbank, Iowa

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Regulation No.: Construction Permit 05-A-008-S4

PM Emission Limit or Standard: 1.75 lb/hr; 0.1 gr/dscf

PM₁₀ Emission Limit or Standard: N/A

PM_{2.5} Emission Limit or Standard: N/A

C. Control Technology

Baghouse (CE C30)

II. Hammermill Baghouse Monitoring Approach

A. Indicator

Pressure drop will be used as the performance indicator.

B. Measurement Approach

The key elements of the monitoring approach, including the indicators to be monitored, indicator ranges, and performance criteria are presented in Table 1.

Table 3: Monitoring Approach

I. Indicator	
Indicator	Differential pressure across the baghouse
Measurement / Approach	The pressure drop will be monitored and recorded at least once each day of operation.
II. Indicator Range	
Range	A pressure drop of 0 to 6 inches of water shall be maintained during operation.

Corrective Action	Procedures, system parameters, data trends will be reviewed and the functional operation of the equipment will be assessed to determine the cause of the excursion. Once the cause is identified, a repair or adjustment will be implemented to procedures to address the excursion.
QIP Threshold	An accumulation of excursions outside the indicator range of six or more for a reporting period excluding periods of startup, shutdown and malfunction.
III. Performance Criteria	
Data Representativeness	Pressure drop is measured across the system
Verification of Operational Status	Records of pressure drop readings will be maintained for five years.
QA/QC Practices and Criteria	Calibrate, maintain, and operate instrumentation in accordance with the Facility Operations and Maintenance Plan.
Monitoring Frequency	The pressure drop will be recorded a minimum of once per day during operations.
Data Collection Procedures	The pressure drop will be recorded electronically or manually.
Averaging period	Not applicable.
Record Keeping	Maintain for a period of five years records and corrective actions taken in response to excursions.
Reporting	Number, duration, and cause of any excursion and the corrective action taken.
Frequency	Semiannually.

III. Justification

A. Background

PM, PM₁₀, and PM_{2.5} emissions from the Hammermills (EU S30) are controlled by the Hammermill Baghouse.

B. Rationale for Selection of Performance Indicator

Baghouses operate by collecting particulate on porous fabric bags, thus resulting in a pressure differential across the system. The gas stream is passed through the fabric which results in pressure; too much pressure indicates a possible plugging of the system and too little indicates possible bag breakage. Therefore, pressure drop is the best indicator of baghouse performance.

C. Rationale for Selection of Indicator Level

Baghouses remove dust from a gas stream by passing the stream through a porous fabric. Particles form a porous cake on the fabric that acts as the filtration device. This porous cake is routinely removed and collected and returned to the process. Baghouses are highly efficient for controlling filterable PM, PM₁₀, and PM_{2.5}. Baghouses are subject to failure if they are

not properly operated and maintained. An indicator pressure drop of 0 to 6 inches of water is recommended to achieve the required control efficiency.

The selected QIP threshold for the daily pressure drop is six excursions during a semi-annual reporting period. If the QIP threshold is exceeded during a semi-annual reporting period, a QIP will be developed and implemented.

Emission Point ID Number: EP S10

Associated Equipment

Table: Dryers, Boilers, Distillation and Biomethanators

Emission Unit	Emissions Unit Description	Raw Material/Fuel	Rated Capacity	Control Equipment
EU 62	DDGS Dryer A	Natural Gas/Biogas	54.4 MMBtu/hr	Thermal Oxidizer (CE10a)
EU 63	DDGS Dryer B	Natural Gas/Process Gas	54.4 MMBtu/hr	
EU 64	DDGS Dryer C	Natural Gas/Process Gas	54.4 MMBtu/hr	Thermal Oxidizer (CE10b)
EU 65	DDGS Dryer D	Natural Gas/Process Gas	54.4 MMBtu/hr	
EU B10a	Heat Recovery Boiler A	Heat	147.4 MMBtu/hr	None, Units recover heat from the TOs, located post-control
EU B10b	Heat Recovery Boiler A	Heat	147.4 MMBtu/hr	

Distillation Process

Emission Unit	Emissions Unit Description	Raw Material/Fuel	Rated Capacity	Control Equipment
EU 19	Slurry Tank #1	Mash	25,000 gallons	Thermal Oxidizer (CE10a) or Thermal Oxidizer (CE10b)
EU 20	Slurry Tank #2		29,000 gallons	
EU 21	Cook Tube #1		3,500 gal/min	
EU 22	Cook Tube #2		3,500 gal/min	
EU 23	Cook Flash Vessel		2,385 gallons	
EU 24	Liquefaction Tank #1		128,400 gallons	
EU 25	Liquefaction Tank #2		128,400 gallons	
EU 33	Molecular Sieve Vaporizer	Ethanol	1,025 gal/min	
EU 34 – EU 39	Molecular Sieve Bottles #1-#6		1,025 gal/min	
EU 40	200 Proof Condenser		665 gal/min	
EU 41	200 Proof Flash Vessel		1,025 gal/min	
EU 42	200 Proof Flash Receiver		1,025 gal/min	
EU 43	CIP Screen/Tank	CIP	25,000 gallons	
EU 44	Yeast Tank #1	Yeast	20,000 gallons	
EU 45	Yeast Tank #2		20,000 gallons	
EU 46	Beer Column	Beer	2,350 gal/min	
EU 48	Side Stripper	Ethanol	1,650 gal/min	
EU 49	Rectifier Column		680 gal/min	
EU 50	190 Proof Condenser		1,967 gallons	
EU 51	Reflux Tank		1,240 gallons	
EU 52	Regen Tank		1,240 gallons	
EU 53	Acid Wash Tank	Acid Wash	14,200 gallons	
EU 54	Centrate Tank #1	Centrate	1,690 gallons	
EU 55	Centrate Tank #2		1,690 gallons	

EU 56	Centrifuges	Whole Stillage	3,100 gal/min	
EU 57	Evaporators	Thin Stillage	1,650 gal/min	

Biomethanators

Emission Unit	Emissions Unit Description	Raw Material/Fuel	Rated Capacity	Control Equipment
EU 58 – EU 61	Biomethanators #1 - #4	Process Water	30,000 gallons each	The biomethanator system sends the biogas produced either to Dryer A (EU 62) for combustion in its burner and to offset some natural gas use or else it is combusted in the Methanator Flare (CE 11) and exhausted through EP 11.

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): 40%⁽¹⁾

Authority for Requirement: 567 IAC 23.3(2)"d"

DNR Construction Permit 05-A-006-S9

⁽¹⁾An exceedance of the indicator opacity of "no visible emissions" will require the owner or operator to promptly investigate the emission unit and make corrections to operations or equipment associated with the exceedance. If exceedances continue after the corrections, the Department may require additional proof to demonstrate compliance (e.g., stack testing).

Pollutant: Particulate Matter (PM)

Emission Limit(s): 7.36 lb/hr; 0.1 gr/dscf

Authority for Requirement: DNR Construction Permit 05-A-006-S9

567 IAC 23.4(7)

Pollutant: Sulfur Dioxide (SO₂)

Emission Limits: 16.67 lb/hr; 500ppmv

Authority for Requirement: DNR Construction Permit 05-A-006-S9

567 IAC 23.3(3)"e"

Pollutant: Nitrogen Oxides (NO_x) – EP S10

Emission Limits: 27.5 lb/hr⁽²⁾

Authority for Requirement: DNR Construction Permit 05-A-006-S9

⁽²⁾ Based on a 30-day rolling average.

Pollutant: Nitrogen Oxides (NO_x) – (CE10a/EU B10a, CE10b/EU B10b; EU S160)
Emission Limits: 97.0 tons/year
Authority for Requirement: DNR Construction Permit 05-A-006-S9

Pollutant: Nitrogen Oxides (NO_x) – (CE10a/EU B10a, CE10b/EU B10b)
Emission Limits: 0.1 lb/MMBtu⁽³⁾
Authority for Requirement: DNR Construction Permit 05-A-006-S9
40 CFR §60.44b(a)
567 IAC 23.1(2)"ccc"⁽⁴⁾

⁽³⁾ As indicated in 40 CFR §60.44b(h), this limit applies at all times, including periods of startup, shutdown, and malfunctions. In addition, as indicated in 40 CFR §60.44b(i), compliance with this limit is determined on a 30-day rolling average basis.

⁽⁴⁾ Reference in the Iowa Administrative Code (IAC) for 40 CFR Part 60, Subpart Db – *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units* [40 CFR §60.40b – 40 CFR §60.49b].

Pollutant: Volatile Organic Compounds (VOC)
Emission Limit(s): 4.17 lb/hr
Authority for Requirement: DNR Construction Permit 05-A-006-S9

Pollutant: Carbon Monoxide (CO) – EP S10
Emission Limit(s): 21.40 lb/hr
Authority for Requirement: DNR Construction Permit 05-A-006-S9

Pollutant: Carbon Monoxide (CO) – (CE10a/EU B10a, CE10b/EU B10b; EU S160)
Emission Limits: 97.0 tons/year
Authority for Requirement: DNR Construction Permit 05-A-006-S9

Pollutant: Total HAP
Emission Limit(s): 98% reduction or 20 ppmv⁽⁵⁾
Authority for Requirement: DNR Construction Permit 05-A-006-S9
40 CFR 63 Subpart FFFF
567 IAC 23.1(4)"cf"

⁽⁵⁾ The emission limit is for Group 1 process vents as described in Table 1 to Subpart FFFF of Part 63 – *Emission Limits and Work Practice Standards for Continuous Process Vents*. As indicated in this table, the owner or operator shall reduce emissions of Total Organic HAP by ≥ 98 percent by weight or to an outlet process concentration ≤ 20 ppm_v as organic HAP by venting emissions through a closed-vent system to any combination of control devices (except a flare).

NSPS and NESHAP Applicability

EU ID	Subpart	Title	Type	State Reference (567 IAC)	Federal Reference (40 CFR)
CE 10A / EU B10a and CE 10B / EU B10b	A	General Provisions	NA	23.1(2)	§60.1 – §60.19
	Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units	low heat release rate	23.1(2)"ccc"	§60.40b - §60.49b

Affected Source	Subpart	Title	Type	State Reference (567 IAC)	Federal Reference (40 CFR)
Distillation Process	A	General Provisions	NA	23.1(4)"a"	§63.1 – §63.15
EP S10	FFFF	NESHAP: Miscellaneous Organic Chemical Manufacturing	Group 1 Process Vents	23.1(4)"cf"	§63.2430 – §63.2550

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

New Source Performance Standards Requirements

- A. The owner or operator shall comply with the applicable standards in 40 CFR Part 60, Subpart Db [§60.40b - §60.49b], including those not specifically mentioned in this permit.
 - a) The owner or operator shall maintain records of the following information for each steam generating unit operating day. This information shall be submitted in a report, as required in 40 CFR §60.49b(i).
 - i. Calendar date;
 - ii. The average hourly NO_x emission (as NO₂) rates measured;
 - iii. The 30-day average NO_x emission rates calculated at the end of each steam generating unit operating day from the measured hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days;
 - iv. Identification of the steam generating unit operating days when the calculated 30-day average NO_x emission rates are in excess of the NO_x emission standard in §60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken;
 - v. 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;
- vi. Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data;
 - vii. Identification of the "F" factor used for calculations, method of determination, and type of fuel combusted;
 - viii. Identification of the times when the pollutant concentration exceeds full span of the CEMS;
 - ix. Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3; and
 - x. Results of daily CEMS drift tests and quarterly accuracy assessments as required in 40 CFR Appendix F, Procedure 1.

National Emission Standards for Hazardous Air Pollutants Requirements

- B. The owner or operator shall comply with the applicable standards in 40 CFR Part 63, Subpart FFFF [§63.2430 - §63.32550], including those not specifically mentioned in this permit.
- a. As required by 40 CFR §63.2450(e)(1), the owner or operator of this equipment shall comply with the requirements of 40 CFR §63.982(c). This also requires the owner or operator to comply with the requirements of 40 CFR §63.988 and any other applicable referenced requirement.
 - b. In accordance with 40 CFR §63.2450(e) and as indicated in 40 CFR §63.982(c), the owner or operator shall comply with the applicable recordkeeping requirements in 40 CFR §63.998 and with the reporting requirements in 40 CFR §63.999 for control devices used in closed vent systems.
 - c. The owner or operator shall comply with the notification, reporting, and recordkeeping requirements as outlined in 40 CFR §63.2515, §63.2520, and §63.2525, respectively.
 - d. As required by 40 CFR §63.6(e), the facility shall develop and implement a written startup, shutdown and malfunction plan (SSMP) unless otherwise excluded within the applicable standards.

Emission Units and Control Equipment Operation Requirements

- C. The dryers and thermal oxidizers shall combust only natural gas and/or process off-gases.
- D. The thermal oxidizers shall be operated at all times the dryers or distillation equipment is operated and each shall be operated at a temperature (daily average) that is at or above the oxidizer average temperature recorded during the most recent performance test that demonstrated compliance with the emission limits.
- a. The owner or operator shall continuously collect and record the operating temperature, in degrees Fahrenheit, for each thermal oxidizer.
 - b. The owner or operator shall calculate and record the operating temperature daily averages, in degrees Fahrenheit, for each thermal oxidizer.
 - i. If any operating temperature daily average does not comply with the temperature requirements in Condition D, the owner or operator shall investigate and make the necessary corrections.

- c. The owner or operator shall maintain on-site a copy of the most recent stack test report detailing the operating temperature of each thermal oxidizer measured during the most recent stack test on Emission Point S10 that demonstrated compliance with the emission limits.
- E. The owner or operator shall inspect and maintain the thermal oxidizers according to the facility's (Plant No. 10-04-007) operation and maintenance plan.
 - a. The owner or operator shall keep a log of all maintenance and inspection activities performed on each thermal oxidizer. At a minimum, this log shall include:
 - i. The date that any inspection and/or maintenance was performed on each thermal oxidizer;
 - ii. Any issues identified during the inspection;
 - iii. Any issues addressed during the maintenance activities and the date each issue was resolved;
 - iv. Any actions taken to correct operating temperature malfunctions; and
 - v. Identification of the staff member performing the maintenance inspection.
 - b. The owner or operator shall keep records of the frequency and amount of time that each thermal oxidizer malfunctions.
 - i. The owner or operator shall estimate the amount of emissions that occurred during said malfunctions.

Nitrogen Oxides (NO_x) and Carbon Monoxide (CO) Emissions Calculations Requirements

- F. The owner or operator shall use the NO_x data collected from the continuous emission monitoring system (CEMS), the natural gas fuel usage records, and the equation below to calculate and record the monthly NO_x emissions from Fossil-Fuel Boilers CE10A / EU B10a and CE10B / EU B10b (also known as TO/HRSGs), and EU S160.

$$a) \text{NO}_x \left(\frac{\text{ton}}{\text{month}} \right) = [S10_{\text{NO}_x}] \times \left[\frac{1.2 \times \text{NG}_{\text{TO/HRSG}}}{(1.2 \times \text{NG}_{\text{TO/HRSG}}) + (\text{NG}_{\text{Dryers}})} \right] + [EF_{S160} \times \frac{[\text{NG}_{S160}]}{2000}]$$

Where: NO_x (ton/month) = NO_x from TO/HRSGs and S160

S10_{NO_x} = total NO_x emissions from stack S10 as measured by the CEM, in tons

NG_{TO/HRSG} = amount of natural gas combusted in the TO/HRSGs in MMBtu

NG_{Dryers} = amount of natural gas combusted in the Dryers in MMBtu

1.2 = compliance margin for TO/HRSGs

EF_{S160} = NO_x emission factor from the boiler in lb/MMBTU. This emission factor shall be determined as follows:

- 1) For the period between the start of operation of this unit and the acceptance of the initial stack test, the emission factor shall be 0.1 lb/MMBtu;
- 2) After the initial stack test, the emission factor shall be calculated as follows:

$$EF_{S160} = (\text{average of the three test runs}) + 1.7 \times (\text{standard deviation of the three test runs})$$

$$NG_{S160} = \text{amount of natural gas combusted in EU S160 in MMBtu}$$

- G. The owner or operator shall use the equation in Condition F to determine the 12-month rolling total emissions of NO_x from the TO/HRSGs and S160 for each calendar month. New 12-month totals shall be calculated at the end of each month for the previous month. As an alternative to using the equation in Condition F, the owner or operator may assume that all NO_x emissions from Emission Point S10 are from the TO/HRSGs.
- H. The emissions of carbon monoxide (CO) from EP S160 and EP S10 shall not exceed 97.0 tons per twelve (12) month total, rolled monthly.
- I. At the end of each month, record the amount of CO emitted from this emission point (EP S10) in tons during the previous month.
- J. At the end of each month, record the amount of CO emitted from this emission point (EP S160) and EP S10 over the previous twelve (12) months by summing the most recent combined twelve (12) values for EP S10 and EP S160.

Authority for Requirement: DNR Construction Permit 05-A-006-S9

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

Stack Height (ft, from the ground): 125

Stack Opening (inches, dia.): 120

Exhaust Flow Rate (scfm): 153,400

Exhaust Temperature (°F): 310

Discharge Style: Vertical Unobstructed

Authority for Requirement: DNR Construction Permit 05-A-006-S9

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below.

Continuous Emission Monitoring Systems (CEMS)

A. NSPS Monitoring Requirements for Nitrogen Oxides Emission Standards:

1. The owner or operator shall continuously monitor emissions of nitrogen oxides (NO_x) discharged to the atmosphere through EP-S10. Therefore, in accordance with 40 CFR §60.48b(b)(1), the owner or operator shall install, calibrate, maintain, and operate a CEMS for measuring NO_x concentrations and shall record the output of the CEMS.
2. Per 40 CFR 60.48b(f), when NO_x emissions are not obtained because of CEMS

breakdowns, repairs, calibration checks and zero and span adjustments, emission data shall be obtained by using standby monitoring systems, 40 CFR Part 60 Appendix A Method 7, 40 CFR Part 60 Appendix A Method 7A, 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.

B. Non-NSPS NO_x Emission Standards Monitoring Requirements:

1. The owner or operator shall demonstrate compliance with the non-NSPS NO_x emission standards in this permit through the use of CEMS as required by NSPS Subpart Db (see Condition A.1.).
2. The owner or operator shall demonstrate compliance with the NO_x pound per hour emission limits through the use of a continuous flow monitoring system (flowmeter). The owner or operator shall install, calibrate, maintain, and operate a flowmeter for calculating the lb/hr emission rates of NO_x discharged from the emission point to the atmosphere. The flowmeter shall be installed, evaluated, operated and data collected to meet the requirements of 40 CFR Part 60, Appendix B, Performance Specification 6 (PS6).

C. Requirements for the CEMS monitoring NSPS and Non-NSPS Emission Standards:

1. The CEMS required by this permit to monitor emissions of NO_x discharged to the atmosphere through EP-S10 shall be designed to meet the requirements in 40 CFR Part 60, Appendix B, Performance Specification 2 (PS2) – *Specifications and Test Procedures for SO₂ and NO_x Continuous Emission Monitoring Systems in Stationary Sources* and Performance Specification 6 (PS6) – *Specifications and Test Procedures for Continuous Emission Rate Monitoring Systems in Stationary Sources*.
2. All CEMS required by this permit shall comply with the applicable requirements in Appendix F to 40 CFR Part 60 – *Quality Assurance Procedures*, including, but not limited to the following requirements:
 - i. The owner or operator shall develop and implement a quality control (QC) program. As a minimum, each QC program shall include written procedures which should describe in detail, complete, step-by-step procedures and operations for each of the following activities:
 - a. Calibration of the CEMS;
 - b. Calibration drift determination and adjustment of the CEMS;
 - c. Preventive maintenance of the CEMS (including spare parts inventory);
 - d. Data recording, calculations, and reporting;
 - e. Accuracy audit procedures including sampling and analysis methods; and
 - f. Program of corrective action for malfunctioning CEMS.
 - ii. Whenever excessive inaccuracies occur for two consecutive quarters, the owner or operator shall revise the current written procedures or shall modify or replace the CEMS to correct the deficiency causing the excessive inaccuracies.
 - iii. The owner or operator shall keep on-site a copy of these written procedures and shall make them available for inspection by the

Department.

- iv. The owner or operator shall conduct a Relative Accuracy Test Audit (RATA) at least once every four calendar quarters and shall submit RATA reports to the Department as indicated in this permit (see Permit Condition 8 – *Notification, Reporting, and Recordkeeping*).

3. If requested by the Department, the owner or operator shall coordinate the quarterly cylinder gas audits with the Department to afford the Department the opportunity to observe these audits. The relative accuracy test audits shall be coordinated with the Department.

D. Operation and Data Handling Requirements for Continuous Emission Monitoring of Non-NSPS Emission Standards:

1. All CEMS required by this permit shall be operated and data recorded during all periods of operation of the emission unit associated with EP-S10, except for CEMS breakdowns and repairs. Data is recorded during calibration checks and zero span adjustments.
 - i. The 1-hour average NO_x emission rates measured by the CEMS required by this permit shall be used to demonstrate compliance with the emission standards in this permit. At least two data points must be used to calculate each 1-hour average.
 - ii. For each hour of missing emission data for NO_x, the owner or operator shall substitute data as follows:
 - a. If the monitor data availability is equal to or greater than 95.0%, the owner or operator shall substitute data by means of the automated data acquisition and handling system for each hour of missing data period according to the following procedures:
 1. For a missing data period less than or equal to 24 hours, substitute the average of the hourly concentrations recorded by the CEMS for the hour before and the hour after the missing data period.
 2. For a missing data period greater than 24 hours, substitute the greater of:
 - The 90th percentile hourly pollutant concentration recorded by the CEMS during the previous 720 quality-assured monitor operating hours; or
 - The average of the hourly pollutant concentrations recorded by the CEMS for the hour before and the hour after the missing data period.
 - b. If the monitor data availability is at least 90.0%, the owner or operator shall substitute data by means of the automated data acquisition and handling system for each hour of missing data period according to the following procedures:
 1. For a missing data period of less than or equal to 8 hours, substitute the average of the hourly concentrations recorded by the CEMS for the hour before and the hour after the missing data period.
 2. For a missing data period of more than 8 hours, substitute

the greater of:

- The 95th percentile hourly pollutant concentration recorded by the CEMS during the previous 720 quality-assured monitor operating hours; or
- The average of the hourly pollutant concentrations recorded by the CEMS for the hour before and the hour after the missing data period.

If the monitor data availability is less than 90.0%, the owner or operator shall obtain actual emission data by an alternate testing or monitoring method approved by the Department.

Authority for Requirement: DNR Construction Permit 05-A-006-S9

Stack Testing:

Compliance Demonstration Table

Pollutant	Compliance Methodology	Frequency	Test Run Time	Test Method
VOC	Stack Testing	See Footnote 1	1 hour	40 CFR 63, Appendix A, Method 320 or 40 CFR 60, Appendix A, Method 18
CO	Stack Testing	Annually ⁽²⁾	1 hour	40 CFR 60, Appendix A, Method 10
HAP	Stack Testing	See Footnote 3	1 hour	40 CFR 63, Appendix A, Method 320 or 40 CFR 60, Appendix A, Method 18

⁽¹⁾ VOC stack testing shall be conducted every time that Total Organic HAP Testing is required.

⁽²⁾ The owner or operator shall continue the pre-established annual CO periodic testing with at least 3 months between tests.

⁽³⁾ Total Organic HAP testing shall be completed on the schedule required by 40 CFR Part 63, Subpart FFFF (§63.2430 - §63.2550)

Authority for Requirement: DNR Construction Permit 05-A-006-S9

The owner of this equipment or the owner's authorized agent shall provide written notice to the Director, not less than 30 days before a required stack test or performance evaluation of a continuous emission monitor. Results of the test shall be submitted in writing to the Director in the form of a comprehensive report within 6 weeks of the completion of the testing. 567 IAC 25.1(7)

Agency Approved Operation & Maintenance Plan Required?

Yes ☒ No ☐

Required for multiclones following DDGS Dryers.

Facility Maintained Operation & Maintenance Plan Required?

Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required?

Yes ☒ No ☐

Operating Requirements and Associated Recordkeeping for this emission point fulfill the CAM Plan requirement.

Authority for Requirement: 567 IAC 22.108(3)

Multi Cyclone Agency Operation & Maintenance Plan

This Operations and Maintenance (O&M) Plan pertains to the multicyclones which are part of the process equipment and service Emission Point EP S10.

Monitoring Guidelines

POET Biorefining - Fairbank, LLC makes commitment to take corrective action during period of excursion where the indicators are out of range. A corrective action may include an investigation of the reason for the excursion, evaluation of the situation and necessary follow up action to return operation within the indicator range. An excursion is determined by the averaged discrete data point over a period of time, or the presence of a monitored abnormal condition. An excursion does not necessarily indicate a violation of an applicable requirement. If the corrective action measures fail to return the indicators to the appropriate range, the facility will report the excursion to the department and continue to eliminate the root cause.

Monitoring Methods & Corrective Actions

General

- Periodic Monitoring is not required during periods of time greater than one day in which the source does not operate.
- POET Biorefining - Fairbank, LLC will maintain a written record of the observation, deficiencies and any action resulting from the inspections.

Continuous

- Operational personnel will maintain dryer/cyclone systems at optimal operating pressures. Pressure indicators in the dryer drums will be maintained at negative pressure for optimal flow. Corrective action will be taken in the event of the system pressure swings positive (during start-up, shutdown and upset conditions) to return to negative pressures.
- Multiclones have high level switches present, monitored within the DCS to ensure appropriate operation. Operators will systematically shutdown the dryer feed and the dryers in a safe manner when system alarm is activated.
- POET Biorefining - Fairbank, LLC will maintain a written record of the observation, deficiencies and any action resulting from the inspections.
- If leaks or abnormal conditions are detected the appropriate measures for remediation will be implemented within eight (8) hours.

Daily

- Operations personnel will conduct visual inspections of sight glasses on the Thermal Oxidizers which can provide indications of unusual carry over of particulate from the multiclones. If unusual or excessive carry over particulate is observed action will be taken as soon as possible, but no later than 8 hour after the occurrence
- POET Biorefining - Fairbank, LLC will maintain a written record of the observations, deficiencies and any action resulting from the inspection.
- If leaks or abnormal conditions are detected the appropriate measures for remediation will be implemented within eight (8) hours.

Semi-Annual

- Inspect the structural components including the cyclone ductwork and hoods for leaks or component failure.
- POET Biorefining - Fairbank, LLC will maintain a written record of the observations, deficiencies and any action resulting from the inspection.
- If leaks or abnormal conditions are detected the appropriate measures for remediation will be implemented within eight (8) hours.

Annual

- Inspect the hopper unloading components.
- Check for leaks in the system to ensure the airflow from the dirty side doesn't infiltrate the clean side. Verify that the inlet and outlet ductwork is in good operating condition.
- Check the barrel and collecting tube for deposits and/or excess wear and clean/repair as needed. Dents in the barrel or collecting tube must be removed to ensure proper operation.
- Inspect the cyclone inlet vanes (ramps or spinners) and if necessary clean to ensure they operate according to manufacture specification.
- POET Biorefining - Fairbank, LLC will maintain a written record of the observations, deficiencies and any action resulting from the inspection.
- If leaks or abnormal conditions are detected the appropriate measures for remediation will be implemented before the system is returned to service.

Record Keeping and Reporting

- POET Biorefining - Fairbank, LLC will maintain a written or electronic record of all inspections and any action resulting from the inspections.
- POET Biorefining - Fairbank, LLC will keep maintenance and inspection records for five (5) years and will be available upon request.

Quality Control

- All instruments and control equipment will be calibrated, maintained, and operated according to the manufacture specifications.

Authority for Requirement: 567 IAC 22.108(3)

Emission Point ID Number: EP S40

Associated Equipment

Table: Fermentation Process

Emission Unit Number	Emission Unit Description	Raw Material/Fuel	Rated Capacity (gallons)	Control Equipment
EU 26	Fermenter #1	Mash	807,000	CO ₂ Scrubber (C40)
EU 27	Fermenter #2		807,000	
EU 28	Fermenter #3		807,000	
EU 29	Fermenter #4		807,000	
EU 30	Fermenter #5		807,000	
EU 31	Fermenter #6		807,000	
EU 32	Fermenter #7		807,000	
EU 47	Beer Well	Beer	1.08 million	

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): 40%⁽¹⁾

Authority for Requirement: DNR Construction Permit 05-A-010-S10
567 IAC 23.3(2)"d"

⁽¹⁾ An exceedance of the indicator opacity of "no visible emissions" will require the owner/operator to promptly investigate the emission unit and make corrections to operations or equipment associated with the exceedance. If exceedances continue after the corrections, the DNR may require additional proof to demonstrate compliance (e.g., stack testing).

Pollutant: Particulate Matter (PM)

Emission Limit(s): 0.20 lb/hr; 0.1 gr/dscf

Authority for Requirement: DNR Construction Permit 05-A-010-S10
567 IAC 23.4(7)

Pollutant: Particulate Matter (PM₁₀)

Emission Limit(s): 0.20 lb/hr

Authority for Requirement: DNR Construction Permit 05-A-010-S10

Pollutant: Volatile Organic Compounds (VOC)
Emission Limit(s): 20.00 lb/hr
Authority for Requirement: DNR Construction Permit 05-A-010-S10

Pollutant: Total HAP
Emission Limit(s): 20 ppmv⁽²⁾
Authority for Requirement: DNR Construction Permit 05-A-010-S10
40 CFR 63 Subpart FFFF
567 IAC 23.1(4)"cf"

⁽²⁾ The emission limit is for Group 1 process vents as described in Table 1 to Subpart FFFF of Part 63 – *Emission Limits and Work Practice Standards for Continuous Process Vents*. As indicated in this table, the owner or operator shall reduce emissions of Total Organic HAP by ≥ 98 percent by weight or to an outlet process concentration ≤ 20 ppm_v as organic HAP by venting emissions through a closed-vent system to any combination of control devices (except a flare).

NESHAP Applicability

EU ID	Subpart	Title	Type	State Reference (567 IAC)	Federal Reference (40 CFR)
EU 26 through EU 32, EU 66 & EU 67 EU 47	A	General Provisions	NA	23.1(4)	§63.1 – §63.15
	FFFF	Miscellaneous Organic Chemical Manufacturing	Group 1 Process Vents	23.1(4)"cf"	§63.2430 - §63.2550

Operating Requirements with Associated Monitoring and Recordkeeping

Unless specified by a federal regulation, all records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner.

The operating requirements and associated recordkeeping for this permit shall be:

- A. For each month of operation, the facility shall operate the scrubber according to the parameters (water feed rate, process (make-up) water feed rate, and additive feed rate) that it established during the seasonal performance testing required in the Monitoring Requirements with the permitted emission limits listed above.

Permitted Monthly Scrubber Operating Parameters as Allowed by Season Tested

Season Tested	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Summer (testing shall be conducted in June, July or August)	X	X	X	X	X	X	X	X	X	X	X	X
Winter (testing allowed in any month from October through April)	X	X	X	X						X	X	X

- B. For purposes of this permit, “*reduced rate scrubber operation*” is defined as the period during which the scrubber liquid flow rate and the additive feed rate are decreased as a result of the owner or operator performing maintenance activities or due to unusual market conditions. The scrubber liquid flow rate and the additive feed rate shall be maintained at or above the average rate observed during the most recent stack test that demonstrated compliance with the VOC and HAP limits in this permit, while the scrubber was operating at a reduced rate. The beer feed rates of the equipment in the fermentation process may not exceed the average beer feed rate observed during the most recent reduced rate scrubber operation stack test that demonstrated compliance with the VOC and HAP emission limits in this permit. The scrubber may be operated at a reduced rate a maximum of 90 days per calendar year. On a monthly basis, the owner or operator shall:
1. Record the number of days that the scrubber was operated at a reduced rate during the previous month; and
 2. Calculate and record the number of days that the scrubber was operated at a reduced rate during the applicable calendar year.
- C. The control device (CE-C40) associated with Emission Point S40 shall be operated at all times process equipment associated with this emission point is in operation.
- D. As required by 40 CFR §63.2450(e)(1), the owner or operator of this equipment shall comply with the requirements of 40 CFR §63.982(c). This also requires the owner or operator to comply with the requirements of 40 CFR §63.990(b) and 40 CFR §63.990(c) and any other applicable referenced requirement. The owner or operator shall maintain all records required by the NESHAP Subpart FFFF and all applicable referenced requirements.
- E. The owner or operator shall install, operate and maintain equipment necessary to continuously monitor the water feed rate (in gallons per minute) into the scrubber. This equipment shall be installed, operated, and maintained in accordance with the facility’s Operations & Maintenance (O&M) Plan.
1. The daily (calendar day) average water feed rate (in gallons per minute) into the scrubber shall be maintained at or above the average value observed during the most recent applicable seasonal operating or reduced operating rate compliance test which demonstrated compliance with all applicable emission limits.
 2. If the rate deviates below the minimum flow rate from the most recent applicable seasonal operating or reduced operating rate compliance test which demonstrated compliance with all applicable emission limits, then the owner or operator shall record the time, date and all corrective actions taken. This requirement shall not apply on the days that the scrubber is not in operation.
 3. The facility shall record the permitted scrubber water feed rate it is utilizing for each month as determined during the most recent seasonal performance test that is being used to demonstrate compliance.
- F. The owner or operator shall install, operate and maintain equipment necessary to continuously monitor the process (make-up) water feed rate (in gallons per minute) into the scrubber. This equipment shall be installed, operated, and maintained in accordance with the facility’s Operations & Maintenance (O&M) Plan.
1. The daily (calendar day) average process (make-up) water feed rate (in gallons per minute) into the scrubber shall be maintained at or below the average value

- observed during the most recent applicable seasonal operating or reduced operating rate compliance test which demonstrated compliance with all applicable emission limits.
2. If the rate deviates above the average process (make-up) water feed rate from the most recent applicable seasonal operating or reduced operating rate compliance test which demonstrated compliance with all applicable emission limits, then the owner or operator shall record the time, date and all corrective actions taken. This requirement shall not apply on the days that the scrubber is not in operation.
 3. The facility shall record the permitted process (make-up) water feed rate it is utilizing for each month as determined during the most recent seasonal performance test that is being used to demonstrate compliance.
- G. The owner or operator shall install, operate and maintain equipment necessary to continuously monitor the additive feed rate into the scrubber. This equipment shall be installed, operated, and maintained in accordance with the facility's Operations & Maintenance (O&M) Plan.
1. The daily (calendar day) average additive feed rate (in milliliters per minute) into the scrubber shall be maintained at or above the average value observed during the most recent applicable seasonal operating or reduced operating rate compliance test which demonstrated compliance with all applicable emission limits.
 2. If the rate deviates below the average additive feed rate from the most recent applicable seasonal operating or reduced operating rate compliance test which demonstrated compliance with all applicable emission limits, then the owner or operator shall record the time, date and all corrective actions taken. This requirement shall not apply on the days that the scrubber is not in operation.
 3. The facility shall record the permitted additive feed rate it is utilizing for each month as determined during the most recent seasonal performance test that is being used to demonstrate compliance.
- H. The owner or operator shall install, operate and maintain equipment necessary to continuously monitor the pressure drop across the scrubber. This equipment shall be installed, operated, and maintained in accordance with the facility's Operations & Maintenance (O&M) Plan.
1. The facility shall maintain a daily (calendar day) average differential pressure drop across the wet scrubber that is less than 15 inches water column based on a daily averaging period. The facility shall establish an alarm setting for the purpose of initiating corrective action based on a pressure drop across the wet scrubber greater than 15 inches water column.
 2. The owner or operator shall collect and record differential pressure drop at minimum of once every 15 minutes and calculate and record the average pressure drop across the scrubber based on a daily (calendar day) average.
 3. If the daily (calendar day) average pressure drop is greater than 15 inches of water column, the facility shall record the time, date and actions taken to correct the situation and also when the parameter is back in the acceptable average pressure drop range.
 4. These requirements shall not apply on days that the scrubber or the equipment the scrubber controls is not in operation.

- I. The owner or operator shall install, operate and maintain equipment necessary to continuously monitor the scrubbing process (make-up) water outlet temperature from the heat exchanger (i.e., prior to mixing with well water). This equipment shall be installed, operated, and maintained in accordance with the facility's Operations & Maintenance (O&M) Plan.
 1. The facility shall maintain a daily (calendar day) average temperature of the scrubbing process water (measured at the outlet of the heat exchanger) that is no greater than 5°F above the average scrubbing process water temperature recorded during a previous seasonal operating or reduced operating rate performance test that demonstrated compliance with all applicable emission limits.
 2. The owner or operator shall collect and record scrubbing process water temperature at a minimum of once every 15 minutes and calculate and record the daily average scrubbing process water temperature.
 3. If the daily (calendar day) average scrubbing process water temperature exceeds the average scrubbing process water temperature recorded during a previous seasonal operating or reduced operating rate performance test that demonstrated compliance with all applicable emission limitations by more than 5°F, the facility shall record the time, date and actions taken to correct the situation, and the time and date that parameter was returned below the acceptable maximum scrubbing process water temperature.
 4. The facility shall establish an alarm setting for the purpose of initiating corrective action based on a scrubbing process water temperature greater than 5°F above the average scrubbing process water temperature recorded during a previous seasonal operating or reduced operating rate performance test that demonstrated compliance.
 5. These requirements shall not apply on days that the scrubber or the equipment the scrubber controls is not in operation.
- J. The owner or operator shall maintain a copy of the previous performance tests for each scrubber seasonal operating scenario and reduced rate operating scenario detailing the scrubber pressure drop, water feed rate, process (make-up) water feed rate, and additive feed rate measured during each performance test which demonstrated compliance with the Emission Limits section above.
- K. The facility shall keep daily records of the plant's operating scenario (normal rate or reduced rate).
- L. The owner or operator shall inspect and maintain the scrubber (CE-C40) according to the facility's (Plant No. 10-04-007) operation and maintenance plan or manufacturer's specifications.
 1. The owner or operator shall keep a log of all maintenance and inspection activities performed on the control equipment. At a minimum, this log shall include:
 - a) The date any inspection and/or maintenance was performed on the control equipment;
 - b) Any issues identified during the inspection;
 - c) Any issues addressed during the maintenance activities; and,
 - d) Identification of the staff member performing the maintenance or inspection.

Note: Continuous monitoring of any parameter shall be consistent with requirements of 40 CFR §63.998(b).

Authority for Requirement: DNR Construction Permit 05-A-010-S10

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

Stack Height, (ft, from the ground): 75

Stack Opening, (inches, dia.): 24

Exhaust Flow Rate (scfm): 12,375-20,625

Exhaust Temperature (°F): Ambient

Discharge Style: Vertical Unobstructed

Authority for Requirement: DNR Construction Permit 05-A-010-S10

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below:

Compliance Demonstration Table

Pollutant	Compliance Methodology	Frequency	Test Run Time	Test Method
VOC	Stack Testing	Footnotes (1)(2)(3)(4)	1 hour	40 CFR 63, Appendix A, Method 320 or 40 CFR 60, Appendix A, Method 18
HAP	Stack Testing	Footnotes (1)(2)(3)(4)(5)	1 hour	40 CFR 63, Appendix A, Method 320 or 40 CFR 60, Appendix A, Method 18

(1) Performance testing shall be conducted in June, July, or August to demonstrate compliance with the emission limits in Construction Permit 05-A-010-S10 and to establish summer operating parameters. The next stack test for summer (defined as May through September for the purposes of this permit) shall be conducted in June, July, or August 2021. Performance testing shall be conducted within October through April to demonstrate compliance with the emission limits in Construction Permit 05-A-010-S10 and to establish winter operating parameters. The next stack test for winter (for purposes of this permit, defined as October through April) shall be completed before the use of winter operating parameters.

(2) After the performance test establishing summer operating parameters, the facility shall conduct annual stack testing for the qualifying seasonal period cover the months of May through September (summer) as described in Operating Requirements with Associated Monitoring and Recordkeeping condition A listed above. Stack testing shall be conducted during the months of June, July, or August for this period. The facility shall use those tests that demonstrate compliance with the permitted emission limits in Construction Permit 05-A-010-S10 to establish the scrubber water flow rate, process water flow rate, the additive feed rate, and chiller water temperature, if a chiller is used to control scrubbing water temperature, for each month of operation, as detailed in the Operating Requirements with Associated Monitoring and Recordkeeping.

(3) After the performance test establishing the winter operating parameters, the facility shall conduct stack testing for the qualifying seasonal period covering the months of October through April (winter) once every 36 months, as described in Operating Requirements with Associated Monitoring and Recordkeeping condition A.

(4) Testing shall be conducted while the scrubber is operating at a reduced rate to establish reduced rate scrubber operation parameters (see Construction Permit 05-A-010-S10 Condition 5.B. for the definition of “reduced rate

scrubber operation”). Performance testing shall be conducted with production at a reduced rate below at least 90% of the maximum (normal) operating rate to establish the “reduced-rate” operating parameters for the scrubber. Performance testing shall be conducted in any calendar month to demonstrate compliance with the emission limits of Construction Permit 05-A-010-S10 and to establish “reduced-rate” scrubber operating parameters. If the reduced rate testing is not completed during the months of June, July, or August, the scrubber may not be operated at the reduced rate operating parameters during the months of June, July, and August. If the reduced rate testing is completed during the months of June, July, or August, the scrubber may be operated at the reduced rate operating parameters during the months of June, July, and August. Initial reduced rate testing shall be completed prior to starting reduced rate scrubber operation. After the first reduced rate scrubber operation testing, the owner or operator shall conduct reduced rate scrubber operation testing once every 60 months.

- ⁽⁵⁾ Total Organic HAP initial testing shall be completed on the schedule required by 40 CFR Part 63, Subpart FFFF (§63.2430 - §63.2550).

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☒ No ☐

Authority for Requirement: 567 IAC 22.108(3)

**Compliance Assurance Monitoring Plan for POET Biorefining - Fairbank, LLC
Facility located in Fairbank, Iowa**

EP S40 – CO₂ Scrubber

I. Background

A. Emissions Unit

Description: Fermentation Process
Fermenters (EU 26-32)
Beerwell (EU47)

Facility: POET Biorefining - Fairbank, LLC
Fairbank, Iowa

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Regulation No.: Construction Permit 05-A-010-S10

VOC Emission Limit or Standard: 20.0 lb/hr

SHAP Emission Limit or Standard: N/A

THAP Emission Limit or Standard: N/A

Monitoring Requirements:

- Record the amount of additive(s) used on a continuous basis,
- Record the scrubber liquid (water) flow rate on a continuous basis,
- Record the scrubber pressure drop on a continuous basis.

C. Control Technology

Packed Bed Scrubber (CE C40)

II. CO₂ Scrubber (CE C40) Monitoring Approach

A. Indicator

Water flow rate, additive flow rate, and pressure drop of the scrubber will be used as indicators.

B. Measurement Approach

The key elements of the monitoring approach, including the indicators to be monitored, indicator ranges, and performance criteria are presented in Table 1.

Table 4: Monitoring Approach

	Indicator No. 1	Indicator No. 2
I. Indicator		
Indicator	Water Flow Rate.	Additive Flow Rate.
Measurement / Approach	The water flow rate will be measured using a flow meter.	The additive flow rate will be measured using a flow meter.
II. Indicator Range		
Range	An excursion is defined as a daily (calendar day) average scrubber water flow rate recording of less than 90% of the average amount recorded during the most recent stack test.	An excursion is defined as a daily (calendar day) average scrubber additive flow rate recording of less than the amount recorded during the most recent stack test.
Corrective Action	Procedures, system parameters, data trends will be reviewed and the functional operation of the equipment will be assessed to determine the cause of the excursion. Once the cause is identified, a repair or adjustment will be implemented to procedures to address the excursion.	Procedures, system parameters, data trends will be reviewed and the functional operation of the equipment will be assessed to determine the cause of the excursion. Once the cause is identified, a repair or adjustment will be implemented to procedures to address the excursion.
QIP Threshold	An accumulation of excursions below the indicator range exceeding 5 percent of operating time for a reporting period excluding periods of startup, shutdown and malfunction.	An accumulation of excursions below the indicator range exceeding 5 percent of operating time for a reporting period excluding periods of startup, shutdown and malfunction.
III. Performance Criteria		
Data Representativeness	The water flow rate meter measures the inlet water flow rate to the scrubber. Water flow rates less than that recorded during the most recent stack test indicate a potential decrease in VOC removal efficiency of the scrubber.	The additive flow rate meter measures the inlet water flow rate to the scrubber. Additive flow rates less than that recorded during the most recent stack test indicate a potential decrease in VOC removal efficiency of the scrubber.
Verification of Operational Status	The water flow rate meter was installed, calibrated, and is operated in accordance with the Facility Operations and Maintenance Plan.	The additive flow rate meter was installed, calibrated, and is operated in accordance with the Facility Operations and Maintenance Plan.
QA/QC Practices and Criteria	Calibrate, maintain, and operate instrumentation in accordance with the Facility Operations and Maintenance Plan.	Calibrate, maintain, and operate instrumentation in accordance with the Facility Operations and Maintenance Plan.
Monitoring Frequency	The scrubber water flow rate will be measured continuously using a data acquisition system.	The scrubber additive flow rate will be measured continuously using a data acquisition system.
Data Collection Procedures	The scrubber water flow rate will be recorded on a continuous basis	The scrubber additive flow rate will be recorded on a continuous basis

Averaging period	A daily (calendar day) average will be calculated and recorded during process operation.	A daily (calendar day) average will be calculated and recorded during process operation.
Record Keeping	Maintain for a period of five years records of electronic media and corrective actions taken in response to excursions.	Maintain for a period of five years records of electronic media and corrective actions taken in response to excursions.
Reporting	Number, duration, and cause of any excursion and the corrective action taken.	Number, duration, and cause of any excursion and the corrective action taken.
Frequency	Semiannually.	Semiannually.

III. Justification

A. Background

VOC, Single HAP, and Total HAP emissions from the Fermenters (EU 26-32) and Beer Well (EU 47) are controlled using a CO₂ wet scrubber with single pass water flow. The exhaust from the scrubber is routed to the atmosphere.

B. Rationale for Selection of Performance Indicator

To comply with the applicable emission limits, a minimum water and additive flow rate must be supplied to the scrubber to absorb a given amount of VOC in the gas stream. The liquid circulation rate is a key operating parameter of the scrubber. If the liquid circulation rate decreases below the minimum, sufficient mass transfer of the pollutant from the gas phase to the liquid phase may not occur. Results from stack testing are used as a minimum liquid flow required to maintain the proper liquid circulation rate. Maintaining this minimum liquid flow, even during periods of reduced air flow, will help ensure that the ideal liquid circulation rate is achieved at all times.

C. Rationale for Selection of Indicator Level

The minimum water and additive flow rates levels were determined based on stack test results that showed compliance with the current emission limits. The water flow rates to the scrubber must be maintained at 90 percent of this level or higher to meet permitted emission limits. The additive flow rates to the scrubber must be maintained at this level or higher to meet permitted emission limits.

Emission Point ID Number: EP S70

Associated Equipment

Associated Emissions Unit ID Number: EU P70
Emissions Control Equipment ID Number: C70
Emissions Control Equipment Description: Baghouse

Emission Unit vented through this Emission Point: EU P70
Emission Unit Description: DDGS Cooler
Raw Material/Fuel: DDGS
Maximum Process Design Capacity: 43 tons/hour
Maximum Nameplate Capacity: 45 tons/hour

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): 40%⁽¹⁾

Authority for Requirement: DNR Construction Permit 05-A-011-S6
567 IAC 23.3(2)"d"

⁽¹⁾ An exceedance of the indicator opacity of "no visible emissions" will require the owner/operator to promptly investigate the emission unit and make corrections to operations or equipment associated with the exceedance. If exceedances continue after the corrections, the DNR may require additional proof to demonstrate compliance (e.g., stack testing).

Pollutant: Particulate Matter (PM)

Emission Limit(s): 0.67 lb/hr; 0.1 gr/dscf

Authority for Requirement: DNR Construction Permit 05-A-011-S6
567 IAC 23.4(7)

Pollutant: Particulate Matter (PM₁₀)

Emission Limit(s): 0.67 lb/hr

Authority for Requirement: DNR Construction Permit 05-A-011-S6

Pollutant: Volatile Organic Compounds (VOC)

Emission Limit(s): 6.17 lb/hr

Authority for Requirement: DNR Construction Permit 05-A-011-S6

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

- A. The owner or operator shall inspect, maintain, and repair the Baghouse (CE-C70) according to the facility's (Plant No. 10-04-007) operation and maintenance plan.
 - a. The owner or operator shall keep a log of all maintenance, inspection, and repair activities performed on the control equipment. At a minimum, this log shall include:
 - i. The date that any inspection and/or maintenance was performed on the control equipment;
 - ii. Any issues identified during the inspection;
 - iii. Any issues addressed during the maintenance activities; and
 - iv. Identification of the staff member performing the maintenance inspection.

Authority for Requirement: DNR Construction Permit 05-A-011-S6

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

Stack Height, (ft, from the ground): 40

Stack Opening, (inches, dia.): 48

Exhaust Flow Rate (scfm): 11,000-35,000

Exhaust Temperature (°F): Ambient

Discharge Style: Vertical Unobstructed

Authority for Requirement: DNR Construction Permit 05-A-011-S6

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below:

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☒ No ☐

Authority for Requirement: 567 IAC 22.108(3)

**Compliance Assurance Monitoring Plan for POET Biorefining - Fairbank,
LLC
Facility located in Fairbank, Iowa
EP S70 – DDGS Cooler Baghouse**

I. Background

A. Emissions Unit

Description: DDGS Cooler (EU P70)

Facility: POET Biorefining - Fairbank, LLC
Fairbank, Iowa

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Regulation No.: Construction Permit 05-A-011-S6

PM Emission Limit or Standard: 0.67 lb/hr; 0.1 gr/dscf

C. Control Technology

Fabric Filter Baghouse (CE C70)

II. DDGS Cooler Baghouse Monitoring Approach

A. Indicator

Pressure drop will be used as the performance indicator.

B. Measurement Approach

The key elements of the monitoring approach, including the indicators to be monitored, indicator ranges, and performance criteria are presented in Table 1.

Table 5: Monitoring Approach

I. Indicator	
Indicator	Differential pressure across the baghouse
Measurement / Approach	The pressure drop will be monitored and recorded at least once each day of operation.
II. Indicator Range	
Range	A pressure drop of 0 to 4 inches of water shall be maintained during operation.

Corrective Action	Procedures, system parameters, data trends will be reviewed and the functional operation of the equipment will be assessed to determine the cause of the excursion. Once the cause is identified, a repair or adjustment will be implemented to procedures to address the excursion.
QIP Threshold	An accumulation of excursions outside the indicator range of six or more for a reporting period excluding periods of startup, shutdown and malfunction.
III. Performance Criteria	
Data Representativeness	Pressure drop is measured across the system
Verification of Operational Status	Records of pressure drop readings will be maintained for five years.
QA/QC Practices and Criteria	Calibrate, maintain, and operate instrumentation in accordance with the Facility Operations and Maintenance Plan.
Monitoring Frequency	The pressure drop will be recorded a minimum of once per day during operations.
Data Collection Procedures	The pressure drop will be recorded electronically or manually.
Averaging period	Not applicable.
Record Keeping	Maintain for a period of five years records and corrective actions taken in response to excursions.
Reporting	Number, duration, and cause of any excursion and the corrective action taken.
Frequency	Semiannually.

III. Justification

A. Background

PM emissions from the DDGS Cooler (EU S70) are controlled by the DDGS Cooler Baghouse.

B. Rationale for Selection of Performance Indicator

Baghouses operate by collecting particulate on porous fabric bags, thus resulting in a pressure differential across the system. The gas stream is passed through the fabric which results in pressure; too much pressure indicates a possible plugging of the system and too little indicates possible bag breakage. Therefore, pressure drop is the best indicator of baghouse performance.

C. Rationale for Selection of Indicator Level

Baghouses remove dust from a gas stream by passing the stream through a porous fabric. Particles form a porous cake on the fabric that acts as the filtration device. This porous cake is routinely removed and collected and returned to the process. Baghouses are highly efficient for controlling filterable PM. Baghouses are subject to failure if they are not properly

operated and maintained. An indicator pressure drop of 0 to 4 inches of water is recommended to achieve the required control efficiency.

The selected QIP threshold for the daily pressure drop is six excursions during a semi-annual reporting period. If the QIP threshold is exceeded during a semi-annual reporting period, a QIP will be developed and implemented.

Emission Point ID Number: EP S90

Associated Equipment

Associated Emissions Unit ID Number: EU P90
Emissions Control Equipment ID Number: C90
Emissions Control Equipment Description: Baghouse

Emission Unit vented through this Emission Point: EU P90
Emission Unit Description: Rail and Truck DDGS Loadout
Raw Material/Fuel: DDGS
Rated Capacity: 9,100 bushels/hr

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): 40%⁽¹⁾

Authority for Requirement: DNR Construction Permit 05-A-009-S3
567 IAC 23.3(2)"d"

⁽¹⁾ An exceedance of the indicator opacity of 10% will require the owner or operator to promptly investigate the emission unit and make corrections to operations or equipment associated with the exceedance. If exceedances continue after the corrections, the Department may require additional proof to demonstrate compliance (e.g., stack testing).

Pollutant: Particulate Matter (PM)

Emission Limit(s): 0.89 lb/hr; 0.1 gr/dscf

Authority for Requirement: DNR Construction Permit 05-A-009-S3
567 IAC 23.4(7)

Pollutant: Particulate Matter (PM₁₀)

Emission Limit(s): 0.89 lb/hr

Authority for Requirement: DNR Construction Permit 05-A-009-S3

Pollutant: Volatile Organic Compounds (VOC)

Emission Limit(s): 1.0 lb/hr

Authority for Requirement: DNR Construction Permit 05-A-009-S3

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

- A. The owner or operator shall inspect and maintain the baghouse (CE-C90) according to the facility's (Plant No. 10-04-007) operation and maintenance plan.
- B. The owner or operator shall keep a log of all maintenance and inspection activities performed on the control equipment. This log shall include, but is not limited to:
 - a. The date any inspection and/or maintenance was performed on the control equipment;
 - b. Any issues identified during the inspection;
 - c. Any issues addressed during the maintenance activities; and
 - d. Identification of the staff member performing the maintenance or inspection.

Authority for Requirement: DNR Construction Permit 05-A-009-S3

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

Stack Height, (ft, from the ground): 40

Stack Opening, (inches, dia.): 26.1

Exhaust Flow Rate (scfm): 9,100

Exhaust Temperature (°F): Ambient

Discharge Style: Vertical Unobstructed

Authority for Requirement: DNR Construction Permit 05-A-009-S3

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below:

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☒ No ☐

Authority for Requirement: 567 IAC 22.108(3)

**Compliance Assurance Monitoring Plan for POET Biorefining - Fairbank,
LLC
Facility located in Fairbank, Iowa
EP S90 – DDGS Loadout Baghouse**

I. Background

A. Emissions Unit

Description: DDGS Storage and Loadout (EU P90)

Facility: POET Biorefining - Fairbank, LLC
Fairbank, Iowa

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Regulation No.: Construction Permit 05-A-009-S3

PM Emission Limit or Standard: 0.89 lb/hr; 0.1 gr/dscf

C. Control Technology

Fabric Filter Baghouse (CE C90)

II. DDGS Storage and Loadout Baghouse Monitoring Approach

A. Indicator

Pressure drop will be used as the performance indicator.

B. Measurement Approach

The key elements of the monitoring approach, including the indicators to be monitored, indicator ranges, and performance criteria are presented in Table 1.

Table 6: Monitoring Approach

I. Indicator	
Indicator	Differential pressure across the baghouse
Measurement / Approach	The pressure drop will be monitored and recorded at least once each day of operation.
II. Indicator Range	
Range	A pressure drop of 0 to 6 inches of water shall be maintained during operation.
Corrective Action	Procedures, system parameters, data trends will be reviewed and the functional operation of the equipment will be assessed to determine the cause of the excursion. Once the cause is identified, a repair or adjustment will be implemented to procedures to address the excursion.
QIP Threshold	An accumulation of excursions outside the indicator range of six or more for a reporting period excluding periods of startup, shutdown and malfunction.
III. Performance Criteria	
Data Representativeness	Pressure drop is measured across the system
Verification of Operational Status	Records of pressure drop readings will be maintained for five years.
QA/QC Practices and Criteria	Calibrate, maintain, and operate instrumentation in accordance with the Facility Operations and Maintenance Plan.
Monitoring Frequency	The pressure drop will be recorded a minimum of once per day during operations.
Data Collection Procedures	The pressure drop will be recorded electronically or manually.
Averaging period	Not applicable.
Record Keeping	Maintain for a period of five years records and corrective actions taken in response to excursions.
Reporting	Number, duration, and cause of any excursion and the corrective action taken.
Frequency	Semiannually.

III. Justification

A. Background

PM emissions from the DDGS Loadout (EU P90) are controlled by the DDGS Storage and Loadout Baghouse.

Rationale for Selection of Performance Indicator

Baghouses operate by collecting particulate on porous fabric bags, thus resulting in a pressure differential across the system. The gas stream is passed through the fabric which results in pressure; too much pressure indicates a possible plugging of the system and too little indicates possible bag breakage. Therefore, pressure drop is the best indicator of baghouse performance.

B. Rationale for Selection of Indicator Level

Baghouses remove dust from a gas stream by passing the stream through a porous fabric. Particles form a porous cake on the fabric that acts as the filtration device. This porous cake is routinely removed and collected and returned to the process. Baghouses are highly efficient for controlling filterable PM. Baghouses are subject to failure if they are not properly operated and maintained. An indicator pressure drop of 0 to 6 inches of water is recommended to achieve the required control efficiency.

The selected QIP threshold for the daily pressure drop is six excursions during a semi-annual reporting period. If the QIP threshold is exceeded during a semi-annual reporting period, a QIP will be developed and implemented.

Emission Point ID Number: EP SEP22

Associated Equipment

Table: Rail and Truck Product Loadout

Emission Unit	Emissions Unit Description	Raw Material/Fuel	Rated Capacity	Control Equipment
EU 74	Rail Product Loadout	Ethanol Vapor	3,850 gallons/minute	CE F50 (Loadout Flare)
EU 75	Truck Product Loadout			

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): 40%⁽¹⁾

Authority for Requirement: DNR Construction Permit 05-A-013-S5
567 IAC 23.3(2)"d"

⁽¹⁾ Except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours, Flare CE F50 shall operate with no visible emissions. Therefore, outside of these periods, an exceedance of the indicator opacity of "no visible emissions" will require the owner or operator to promptly investigate the emission unit and make corrections to operations or equipment associated with the exceedance. If exceedances continue after the corrections, the Department may require additional proof to demonstrate compliance (e.g., stack testing).

Pollutant: Particulate Matter (PM)

Emission Limit(s): 0.44 tons/year⁽²⁾; 0.1 gr/dscf

Authority for Requirement: DNR Construction Permit 05-A-013-S5
567 IAC 23.3(2)"a"

⁽²⁾ Based on a maximum flare (CE F50) and pilot operation of 8,760 hours per year.

Pollutant: Sulfur Dioxide (SO₂)

Emission Limits: 500 ppmv

Authority for Requirement: DNR Construction Permit 05-A-013-S5
567 IAC 23.3(3)"e"

Pollutant: Nitrogen Oxides (NO_x)

Emission Limits: 3.07 tons/yr⁽³⁾

Authority for Requirement: DNR Construction Permit 05-A-013-S5

⁽³⁾ Based on a maximum flare (CE F50) and pilot operation of 8,760 hours per year.

Pollutant: Volatile Organic Compounds (VOC)

Emission Limit(s): 15.82 tons/yr⁽⁴⁾

Authority for Requirement: DNR Construction Permit 05-A-013-S5

⁽⁴⁾ VOC emissions are the sum of: (1) Losses from switch-loading a maximum of 35 million gallons of product per year at the truck loadout; (2) Losses from loading a maximum of 105 million gallons of product per year at the truck and rail loadout, combined; and (3) Combustion emissions from a maximum flare and pilot operation of 8,760 hours per year. Product at Plant No. 10-04-007 includes varying blends of ethanol and natural gasoline.

Pollutant: Carbon Monoxide (CO)

Emission Limit(s): 13.75 tons/yr⁽⁵⁾

Authority for Requirement: DNR Construction Permit 05-A-013-S5

⁽⁵⁾ Based on a maximum flare (CE-F50) and pilot operation of 8,760 hours per year.

NESHAP Applicability

EU ID	Subpart	Title	Type	State Reference (567 IAC)	Federal Reference (40 CFR)
EU 74 and EU 75	A	General Provisions	NA	23.1(4)	§63.1 – §63.15
	FFFF	NESHAP for Miscellaneous Organic Chemical Manufacturing	Group 2 Transfer Racks	23.1(4)"cf"	§63.2430 - §63.2550

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

Equipment Operation and Throughput Limits Requirements

- A. The total amount of fuel ethanol product loaded out at Plant Number 10-04-007 by truck and rail combined shall not exceed 140 million gallons per rolling twelve-month period.
 - a. The owner or operator shall record the total amount of fuel ethanol product, in gallons, loaded out at this facility on a monthly basis.
 - b. The owner or operator shall calculate and record the total amount of fuel ethanol product, in gallons, loaded out at this facility on a rolling 12-month basis.
- B. The total amount of fuel ethanol product switch-loaded at the truck loadout shall not exceed 35 million gallons per rolling twelve-month period. Switch-loading is not allowed at the rail loadout.
 - a. The owner or operator shall record the total amount, in gallons, of fuel ethanol product switch-loaded at the truck loadout on a monthly basis.
 - b. The owner or operator shall calculate and record the total amount, in gallons, of fuel ethanol product switch-loaded at the truck loadout on a rolling 12-month basis.

National Emissions Standards for Hazardous Air Pollutants Requirements

- C. The owner or operator shall comply with the applicable standards in 40 CFR Part 63, Subparts A and FFFF including those not specifically mentioned in this permit.
 - a. The owner or operator of a Group 2 transfer rack shall load liquid products that

contain organic hazardous air pollutants with a rack weighted average vapor pressure of less than 1.5 pound per square inch absolute.

- i. The owner or operator shall maintain on-site records demonstrating that the rack weighted average vapor pressure meets the requirements of a Group 2 transfer rack.

Control Equipment Requirements

- D. Flare CE F50 shall meet the following requirements:
 - a. Flare CE F50 shall be operated at all times when emissions may be vented to it.
 - b. Flare CE F50 shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
 - c. Flare CE F50 shall be operated with a flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.
- E. The owner or operator shall continuously verify the output of the flame detection system indicating the presence of a flame while loading.
- F. The owner or operator shall inspect and maintain Flare CE F50 according to the facility's (Plant No. 10-04-004) operation and maintenance plan.
 - a. The owner or operator shall keep a log of all maintenance and inspection activities performed on Flare CE F50. At a minimum, this log shall include:
 - i. The date that any inspection and/or maintenance was performed on Flare CE F50;
 - ii. Any issues identified during the inspection;
 - iii. Any issues addressed during the maintenance activities and the date each issue was resolved; and
 - iv. Identification of the staff member performing the maintenance or inspection.

Authority for Requirement: DNR Construction Permit 05-A-013-S5

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

Stack Height, (ft, from the ground): 30

Stack Opening, (inches, dia.): 60

Exhaust Flow Rate (scfm): 34,000

Exhaust Temperature (°F): 1,600

Discharge Style: Vertical Unobstructed

Authority for Requirement: DNR Construction Permit 05-A-013-S5

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below:

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☒ No ☐

Operating Requirements and Associated Recordkeeping for this emission point fulfill the CAM Plan requirement.

Authority for Requirement: 567 IAC 22.108(3)

Emission Point ID Number: EP 11

Associated Equipment

Table: Methanators

Emission Unit	Emissions Unit Description	Raw Material/Fuel	Rated Capacity	Control Equipment
EU 58	Methanator #1	Natural Gas/Biogas	250 gallons/minute (Total System Capacity)	Biomethanator Flare (CE 11) or Thermal Oxidizer 1 (CE C10a)
EU 59	Methanator #2			
EU 60	Methanator #3			
EU 61	Methanator #4			

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): ⁽¹⁾

Authority for Requirement: DNR Construction Permit 05-A-020-S4
567 IAC 23.3(2)"d"

⁽¹⁾ The flare (CE-F50) shall operate with no visible emissions, except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours.

Pollutant: Particulate Matter (PM)

Emission Limit(s): 0.1 gr/dscf

Authority for Requirement: DNR Construction Permit 05-A-020-S4
567 IAC 23.3(2)"a"

Pollutant: Sulfur Dioxide (SO₂)

Emission Limits: 500 ppmv

Authority for Requirement: 567 IAC 23.3(3)"e"

Pollutant: Nitrogen Oxides (NO_x)

Emission Limits: 0.42 tons/yr⁽²⁾

Authority for Requirement: DNR Construction Permit 05-A-020-S4

⁽²⁾ Based on the sum of flare combustion emissions and pilot combustion emissions.

Pollutant: Volatile Organic Compounds (VOC)

Emission Limit(s): 3.20 tons/yr⁽²⁾

Authority for Requirement: DNR Construction Permit 05-A-020-S4

⁽²⁾ Based on the sum of flare combustion emissions and pilot combustion emissions.

Pollutant: Carbon Monoxide (CO)

Emission Limit(s): 1.77 tons/yr⁽²⁾

Authority for Requirement: DNR Construction Permit 05-A-020-S4

⁽²⁾ Based on the sum of flare combustion emissions and pilot combustion emissions.

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

- A. The flare (CE 11) shall be limited to operating 1,752 hours per twelve-month rolling period. (NOTE: The pilot light is allowed to operate 8,760 hours per year).
- B. The methanators (EU 58, EU 59, EU 60, and EU 61) shall be controlled by either the biomethanator flare (CE 11) or Thermal Oxidizer 1 (CE C10a) via Dryer A (EU 62).
- C. The flare (CE 11) shall:
 - a. Be designed for and operated with no visible emissions, except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours;
 - b. Be operated with a flame present at all times biogas is being sent to the flare; and
 - c. Be designed to ensure smokeless operation.
- D. The owner or operator shall inspect and maintain the flare (CE 11) according to the facility's (Plant No. 10-04-007) operation and maintenance plan.
- E. By the end of the following month, the owner or operator shall record the number of hours that the flare (CE 11) operated over the previous month.
- F. By the end of the following month, the owner or operator shall record the number of hours that the flare (CE 11) operated over the previous twelve (12) months.
- G. The owner or operator shall monitor the presence of a flare pilot flame using a thermocouple or any other equivalent device to detect the presence of a flame.
- H. The owner or operator shall keep a log of all maintenance and inspection activities performed on the control equipment. This log shall include, but is not limited to:
 - a. The date any inspection and/or maintenance was performed on the control equipment;
 - b. Any issues identified during the inspection;
 - c. Any issues addressed during the maintenance activities; and
 - d. Identification of the staff member performing the maintenance or inspection.

Authority for Requirement: DNR Construction Permit 05-A-020-S4

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

Stack Height, (ft, from the ground): 22.4

Stack Opening, (inches, dia.): 22

Exhaust Flow Rate (scfm): 230

Exhaust Temperature (°F): 1,500

Discharge Style: Vertical Unobstructed

Authority for Requirement: DNR Construction Permit 05-A-020-S4

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below:

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☒ No ☐

Operating Requirements with Associated Monitoring and Recordkeeping requirements are CAM equivalent.

Authority for Requirement: 567 IAC 22.108(3)

Emission Point ID Number: EP S80

Associated Equipment

Associated Emissions Unit ID Number: EU P80
Emissions Control Equipment ID Number: C 80
Emissions Control Equipment Description: Mist Eliminator

Emission Unit vented through this Emission Point: EU P80
Emission Unit Description: Cooling Tower
Raw Material/Fuel: Cooling Water
Rated Capacity: 3,480,000 gal/hr

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Opacity
Emission Limit(s): 40 %
Authority for Requirement: 567 IAC 23.3(2)"d"

Pollutant: Particulate Matter (PM)
Emission Limit(s): 3.63 lb/hr⁽¹⁾; 0.1 gr/dscf
Authority for Requirement: DNR Construction Permit 05-A-012-S2
567 IAC 23.3(2)"a"(1)

⁽¹⁾ Based on a drift loss of 0.005% and a total dissolved solids (TDS) limit of 2,500 parts per million.

Pollutant: Particulate Matter (PM₁₀)
Emission Limit(s): 3.63 lb/hr⁽¹⁾
Authority for Requirement: DNR Construction Permit 05-A-012-S2
⁽¹⁾ Based on a drift loss of 0.005% and a total dissolved solids (TDS) limit of 2,500 parts per million.

Pollutant: Particulate Matter (PM_{2.5})
Emission Limit(s): 2.00 lb/hr
Authority for Requirement: DNR Construction Permit 05-A-012-S2

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

Operating Limits:

- A. The total dissolved solids (TDS) in the circulating water for the Cooling Tower (EU P80) shall not exceed 2,500 parts per million (ppm).
- B. The Cooling Tower (EU P80) shall be inspected and maintained according to the facility's (Plant No. 10-04-007) operation and maintenance plan.
- C. The owner or operator shall not use any additives containing hazardous air pollutants, volatile organic compounds, or chromium in the circulating water for the Cooling Tower (EU P80).

Monitoring and Recordkeeping:

- A. The owner or operator shall sample the TDS concentration in the circulating water once per calendar month using an industry standard sampling method or procedure.
- B. The owner or operator shall maintain monthly records of the TDS concentration in the circulating water for the Cooling Tower (EU P80). In addition to the TDS concentration, these records shall include the dates of each measurement and the method used to obtain each measurement.
- C. The owner or operator shall keep records of all maintenance and repairs to the Cooling Tower (EU P80).
- D. The owner or operator shall maintain onsite a copy of the Safety Data Sheet (SDS) for each additive used in the circulating water for the Cooling Tower (EU P80).

Authority for Requirement: DNR Construction Permit 05-A-012-S2

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

Stack Height, (ft, from the ground): 39.8

Stack Opening, (inches, dia.): 360

Exhaust Flow Rate (scfm): 4,079,000 (total flow for all four cells)

Exhaust Temperature (⁰F): 84

Discharge Style: Vertical Unobstructed

Authority for Requirement: DNR Construction Permit 05-A-012-S2

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below.

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☐ No ☒

Authority for Requirement: 567 IAC 22.108(3)

Emission Point ID Numbers: See Table: Storage Tanks

Associated Equipment

Table: Storage Tanks

Emission Point Number	Emission Unit Number	Emission Unit Description	Raw Material & Size (gal)	Control Equipment	DNR Construction Permits
EP F61	EU T61	Denatured Ethanol Storage Tank	Denatured Ethanol 1,500,000	Internal Floating Roof (T61)	05-A-014
EP F62	EU T62	Denatured Ethanol Storage Tank	Denatured Ethanol 1,500,000	Internal Floating Roof (T62)	05-A-015
EP F63	EU T63	200 Proof Ethanol Storage Tank	200 Proof Ethanol 200,000	Internal Floating Roof (T63)	05-A-016
EP F65	EU T65	190 Proof Ethanol Storage Tank	190 Proof Ethanol 200,000	Internal Floating Roof (T65)	05-A-018

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

There are no emission limits at this time.

NSPS Applicability

EU ID	Subpart	Title	Type	State Reference (567 IAC)	Federal Reference (40 CFR)
EU T61, T62, T63, T65	A	General Provisions	NA	23.1(2)	§60.1 – §60.19
	Kb	NSPS for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification commenced after July 23, 1984	Capacity > 19,800 gallons	23.1(d)"ddd"	§60.110b - §60.117b

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below.

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☐ No ☒

Authority for Requirement: 567 IAC 22.108(3)

Emission Point ID Number: EP T64

Associated Equipment

Associated Emissions Unit ID Number: EU T64
Emissions Control Equipment ID Number: CE T64
Emissions Control Equipment Description: Internal Floating Roof

Emission Unit vented through this Emission Point: EU T64
Emission Unit Description: Denaturant Storage Tank
Raw Material/Fuel: Denaturant
Rated Capacity: 200,000 gallons

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

There are no emission limits at this time.

NSPS and NESHAP Applicability

EU ID	Subpart	Title	Type	State Reference (567 IAC)	Federal Reference (40 CFR)
EU T64	A	General Provisions	NA	23.1(2)	§60.1 – §60.19
	Kb	NSPS for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification commenced after July 23, 1984	Capacity > 19,800 gallons	23.1(d)"ddd"	§60.110b - §60.117b

EU ID	Subpart	Title	Type	State Reference (567 IAC)	Federal Reference (40 CFR)
EU T64	A	General Provisions	NA	23.1(4)	§63.1 – §63.15
	FFFF	NESHAP for Miscellaneous Organic Chemical Manufacturing	Group 1 Storage Tank	23.1(4)"cf"	§63.2430 - §63.2550

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

New Source Performance Standards Requirements

- A. The owner or operator shall comply with the applicable requirements in 40 CFR Part 60, Subpart Kb [§60.110b – §60.117b], including those not specifically mentioned in this permit.
 - a. The owner or operator shall inspect the Internal Floating Roof CE T64 per the requirements of 40 CFR §60.113b(a).
 - b. The owner or operator shall comply with the applicable monitoring requirements in 40 CFR §60.116b.
 - c. Per 40 CFR §60.116b(b), the owner or operator shall keep readily accessible records showing the dimension of Denaturant Storage Tank (EU T64) and an analysis showing the capacity of this vessel. These records shall be kept on-site for the life of the unit.

National Emissions Standards for Hazardous Air Pollutants Requirements

- B. The owner or operator shall comply with the applicable standards in 40 CFR Part 63, Subparts A and FFFF including those not specifically mentioned in this permit.
 - a. Per 40 CFR 63.6(e)(iii)(3), the owner or operator shall develop a written start-up, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the equipment during periods of start-up shutdown, and malfunction; and a program of corrective action for malfunctioning process, air pollution control, and monitoring equipment used to comply with the applicable requirements.
 - b. The owner or operator shall comply with the notification, reporting, and recordkeeping requirements as outlined in 40 CFR §63.2515, §63.2520, and §63.2525, respectively.

Authority for Requirement: DNR Construction Permit 05-A-017-S1

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

Stack Height, (ft, from the ground): 36

Stack Opening, (inches): 4 squared vents: 8 X 36 in each; 1 top round vent: 10 in

Exhaust Flow Rate (scfm): Displacement

Exhaust Temperature (°F): ambient

Discharge Style: Downward

Authority for Requirement: DNR Construction Permit 05-A-017-S1

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below.

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☐ No ☒

Authority for Requirement: 567 IAC 22.108(3)

Emission Point ID Number: EP FP

Associated Equipment

Associated Emissions Unit ID Numbers: EU FP

Emission Unit vented through this Emission Point: EU FP

Emission Unit Description: Fire Water Pump

Raw Material/Fuel: Diesel Fuel

Rated Capacity: 300 Bhp

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): 40%⁽¹⁾

Authority for Requirement: DNR Construction Permit 05-A-022-S3
567 IAC 23.3(2)"d"

⁽¹⁾ An exceedance of the indicator opacity of "No Visible Emissions" will require the owner or operator to promptly investigate the emission unit and make corrections to operations or equipment associated with the exceedance. If exceedances continue after the corrections, the Department may require additional proof to demonstrate compliance (e.g., stack testing).

Pollutant: Particulate Matter (PM)

Emission Limit(s): 0.75 lb/hr, 0.1 gr/dscf

Authority for Requirement: DNR Construction Permit 05-A-022-S3
567 IAC 23.3(2)"a"

Pollutant: Pollutant: Particulate Matter (PM₁₀)

Emission Limit(s): 0.75 lb/hr

Authority for Requirement: DNR Construction Permit 05-A-022-S3

Pollutant: Sulfur Dioxide (SO₂)

Emission Limits: 2.5 lb/MMBtu

Authority for Requirement: DNR Construction Permit 05-A-022-S3
567 IAC 23.3(3)"b"(2)

Pollutant: Nitrogen Oxides (NO_x)

Emission Limits: 10.65 lb/hr

Authority for Requirement: DNR Construction Permit 05-A-022-S3

NESHAP Applicability

The emergency engine is subject to 40 CFR 63 Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE). According to 40 CFR 63.6590(a)(1)(ii) this compression ignition emergency engine, located at a major source, is an existing stationary RICE as it was constructed prior to June 12, 2006.

Authority for Requirements: 40 CFR 63 Subpart ZZZZ
567 IAC 23.1(4)"cz"

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

1. This emission unit shall operate on diesel fuel only.
 - i. The sulfur content of the fuel used shall not exceed 0.5% (by wt).
 - ii. The facility shall keep records of the fuel used and its sulfur content.
2. The owner/operator shall install a non-resettable hour meter.
3. The owner/operator shall change oil and filter on this unit every 500 hours of operation or annually, whichever comes first.
4. The owner/operator shall inspect air cleaner every 1000 hours of operation or annually, whichever comes first, and replace as necessary.
5. The owner/operator shall inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
6. This emission unit shall not operate more than 100 hours per rolling twelve (12) month period.
7. This engine is limited to operate as an emergency stationary RICE as defined in §63.6675 and in accordance with §63.6640(f). There is no time limit on the use of the engine in emergency situations provided that the annual hourly limit established in Condition 5 is not exceeded. In accordance with §63.6640(f), the engine is limited to operate a maximum of 100 hours per year for maintenance checks and readiness testing.
8. The engine is also allowed to operate up to 50 hours per year in non-emergency situations, but the 50 hours are counted toward the 100 hours provided for maintenance and testing. The 50 hours per year for non-emergency operation cannot be used to generate income for the facility to supply power to the electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. This engine is not allowed to operate as a peak shaving unit.
9. The owner/operator shall minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.
10. The owner or operator shall maintain the following monthly records:
 - i. the number of hours that the engine operated for maintenance checks and readiness testing;
 - ii. the number of hours that the engine operated for allowed non-emergency

- operations;
 - iii. the total number of hours that the engine operated; and,
 - iv. the rolling 12-month total amount of the number of hours that the engine operated.
11. The owner or operator shall maintain the following annual records:
- i. the number of hours that the engine operated for maintenance checks and readiness testing; and,
 - ii. the number of hours that the engine operated for allowed non-emergency operations.

Authority for Requirement: DNR Construction Permit 05-A-022-S3

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

Stack Height, (ft, from the ground): 10

Stack Opening, (inches, dia.): 5

Exhaust Flow Rate (scfm): 600

Exhaust Temperature (⁰F): 855

Discharge Style: Horizontal

Authority for Requirement: DNR Construction Permit 05-A-022-S3

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below.

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☐ No ☒

Authority for Requirement: 567 IAC 22.108(3)

Emission Point ID Number: EP F110

Associated Equipment

Associated Emissions Unit ID Numbers: EU F110

Emission Unit vented through this Emission Point: EU F110
Emission Unit Description: VOC Emissions from Equipment Leaks
Raw Material/Fuel: Ethanol
Rated Capacity: N/A

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Volatile Organic Compounds (VOC)
Emission Limit(s): 11.43 tons/yr
Authority for Requirement: DNR Construction Permit 05-A-019-S1

NSPS and NESHAP Applicability

The equipment leaks at this facility are subject to the requirements of the New Source Performance Standard (NSPS) for Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006 (40 CFR 60 Subpart VV, 567 IAC 23.1(2)"nn").

Authority for Requirement: DNR Construction Permit 05-A-019-S1
40 CFR 60 Subpart VV
567 IAC 23.1(2)"nn"

This facility is subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Miscellaneous Organic Chemical Manufacturing (40 CFR 63 Subpart FFFF; 567 IAC 23.1(4)"cf". The requirements that specifically apply to the equipment leaks are found in 40 CFR 63.2480.

Authority for Requirement: DNR Construction Permit 05-A-019-S1
40 CFR 63 Subpart FFFF
567 IAC 23.1(4)"cf"

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

Operating Limits

- A. The owner/operator shall comply with all requirements of the New Source Performance Standard (NSPS) 40 CFR 63 Subpart VV.
- B. The owner/operator shall comply with all requirements of the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Miscellaneous Organic Chemical Manufacturing 40 CFR 63 Subpart FFFF and all referenced subparts as applicable.

Reporting & Recordkeeping

- A. From each months leak detection tracking information determine the following for each component type;
 - a) The fraction of sources that were repaired the previous month that were found to be leaking this month.
 - b) The fraction of sources that were successfully repaired after being found to be leaking in the previous months monitoring.
 - c) The fraction of sources that were found to not be leaking during the previous months monitoring that were found to be leaking during this month's monitoring.
- B. Using the information collected in A, above, determine the control efficiency of the leak detection and repair program as outlined in EPA's document 453/R-95-017 titled Protocol for Equipment Leak Emission Estimates (page 5-54 through 5-57). Control efficiencies listed in table 5-2 (pages 5-9) may be assumed for those components listed. If these control efficiencies are assumed, the information required by A. above need not be recorded for that component type.
- C. Using the information collected above, determine the VOC emissions over the previous month from the facility using the calculation methods outlined in EPA's document 453/R-95-017 titled Protocol for Equipment Leak Emission Estimates (page 2-11).
- D. At the end of each month, record the total VOC emissions over the previous month from the facility by adding the emissions totals for each section as determined in C, above.
- E. At the end of each month, record the total VOC emissions over the previous 12 (twelve) months as determined in D, above.
- F. The owner/operator shall maintain all records required by the New Source Performance Standard and outlined in 40 CFR 60 Subpart VV.
- G. The owner/operator shall maintain all records required by the National Emission Standard for Hazardous Air Pollutants (NESHAP) 40 CFR 63 Subpart FFFF and all applicable referenced subparts.

Authority for Requirement: DNR Construction Permit 05-A-019-S1

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below.

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☐ No ☒

Authority for Requirement: 567 IAC 22.108(3)

Emission Point ID Number: EP F120

Associated Equipment

Associated Emissions Unit ID Number: EU F120
Emissions Control Measure Description: Truck Traffic

Emission Unit vented through this Emission Point: EU F120
Emission Unit Description: Truck Traffic
Raw Material/Fuel: Truck Traffic
Rated Capacity: 132,491 vehicle miles traveled per year

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): No Visible Emissions⁽¹⁾

Authority for Requirement: DNR Construction Permit 05-A-021-S6
567 IAC 23.3(2)"c"

⁽¹⁾ The owner or operator shall take reasonable precautions to prevent the discharge of visible emissions of fugitive dust beyond the lot line of the property.

Pollutant: Particulate Matter (PM_{2.5})

Emission Limit(s): 0.96 tons/yr⁽²⁾

Authority for Requirement: DNR Construction Permit 05-A-021-S6

⁽²⁾ Based on 27.5 tons average vehicle weight; 132,491 vehicle miles traveled per year; and 0.90 g/m² maximum surface silt loading.

Pollutant: Particulate Matter (PM₁₀)

Emission Limit(s): 3.97 tons/yr⁽²⁾

Authority for Requirement: DNR Construction Permit 05-A-021-S6

⁽²⁾ Based on 27.5 tons average vehicle weight; 132,491 vehicle miles traveled per year; and 0.90 g/m² maximum surface silt loading.

Pollutant: Particulate Matter (PM)

Emission Limit(s): 19.87 tons/yr⁽²⁾

Authority for Requirement: DNR Construction Permit 05-A-021-S6

⁽²⁾ Based on 27.5 tons average vehicle weight; 132,491 vehicle miles traveled per year; and 0.90 g/m² maximum surface silt loading.

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

- A. The owner or operator shall pave all haul roads prior to the receipt of any grain.
- B. Truck traffic on haul roads shall not exceed 10 miles per hour. The owner or operator shall post the speed limit on all haul roads.
- C. The owner or operator shall clean haul roads by sweeping to control fugitive emissions.
 - a. Sweeping of the haul roads shall be done Monday, Wednesday, and Friday each week, weather permitting.
 - b. Any spills on the haul roads shall be cleaned immediately.
 - c. Haul roads sweeping need not occur under the following conditions:
 - i. Weather.
 - 1. If sweeping cannot be accomplished because the ambient air temperature (as measured at the facility during daylight operating hours) will be less than 35°F or road conditions due to weather could create hazardous driving conditions (i.e., completely covered with snow and/or ice), then the haul roads cleaning shall be postponed and accomplished the next scheduled sweeping day after the conditions preventing the cleaning have abated.
 - 2. Whenever a rain gauge located at the site indicates that *at least* 0.2 inch of precipitation (water equivalent) has occurred within the preceding 24-hour time period. It may be assumed that the surfaces have been sufficiently cleaned and that day shall be counted as a cleaning day.
 - 3. If the haul roads are not cleaned due to weather, a written record must be kept on-site outlining the conditions that impeded haul roads cleaning.
 - ii. Whenever the haul roads will not be used or if the plant will not receive any truck traffic that day.
- D. Haul road surface silt loading testing shall be completed on a quarterly basis using an industry standard sampling method or procedure.
 - a. Quarterly silt loading testing shall be completed prior to haul road sweeping for that day.
 - b. Should the quarterly test exceed 0.81 g/m², the owner or operator shall complete silt loading testing on a monthly basis beginning the next month after the test exceeded 0.81 g/m². Monthly testing shall continue until 3 consecutive tests are less than 0.81 g/m², after which quarterly testing shall resume.
 - c. Provided 8 consecutive silt loading testing results demonstrate compliance with the PM, PM₁₀ and PM_{2.5} emission limits, the owner or operator may discontinue silt sampling and may utilize an average silt loading factor. The average silt loading factor is to be calculated by averaging all silt loading sample results collected over the previous 8 quarters.
 - d. The owner or operator shall maintain records including:

- i. The date when silt loading testing occurs;
 - ii. The results of the testing; and
 - iii. The method used to perform the testing.
- E. The owner or operator shall comply with the PM, PM₁₀ and PM_{2.5} emission limits.
 - a. The owner or operator shall record the PM, PM₁₀ and PM_{2.5} emissions from truck traffic on a monthly basis.
 - b. The owner or operator shall calculate and record PM, PM₁₀ and PM_{2.5} emissions from truck traffic on a rolling 12-month basis.
- F. On a monthly basis, the owner or operator shall:
 - a. Record the number of trucks that loaded/unloaded material;
 - b. Record the vehicle miles traveled during the month; and
 - c. Calculate and record PM, PM₁₀ and PM_{2.5} emissions using the following formulas, which are based on:
 - i. Equation 1 and Table 13.2.1-1 from AP-42, Section 13.2.1 – *Paved Roads* and
 - ii. An average vehicle weight of 27.5 tons.

$$E_{PM} = \frac{[0.323 * VMT * (sL)^{0.91}]}{2000}$$

Where E_{PM} = tons PM emitted during the month
 VMT = Vehicle miles traveled during the month
 sL = road surface silt loading (g/m²) from the month test

$$E_{PM10} = \frac{[0.065 * VMT * (sL)^{0.91}]}{2000}$$

Where E_{PM10} = tons PM₁₀ emitted during the month
 VMT = Vehicle miles traveled during the month
 sL = road surface silt loading (g/m²) from the month test

$$E_{PM2.5} = \frac{[0.016 * VMT * (sL)^{0.91}]}{2000}$$

Where $E_{PM2.5}$ = tons PM_{2.5} emitted during the month
 VMT = Vehicle miles traveled during the month
 sL = road surface silt loading (g/m²) from the month test

- G. The owner or operator shall maintain a log for the haul roads that show the following:
 - a. Daily records of whether sweeping on the haul roads was performed or not;
 - b. Weekly records on the number of days that cleaning on the haul roads was performed;
 - c. Weekly records on the type of haul road cleaning, e.g., sweeping, water flushing, a rainfall event, etc. performed; and
 - d. The operator's initials.

Authority for Requirement: DNR Construction Permit 05-A-021-S6

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

There is no physical stack associated with Truck Traffic (EU-F120). Emissions from EU-F120 are fugitive emissions generated by vehicle traffic on roadways inside the facility.

Authority for Requirement: DNR Construction Permit 05-A-021-S6

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below.

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☐ No ☒

Authority for Requirement: 567 IAC 22.108(3)

Emission Point ID Number: EP F130

Associated Equipment

Associated Emissions Unit ID Number: EU F130

Emission Unit vented through this Emission Point: EU F130

Emission Unit Description: WDGS Storage & Loadout

Raw Material/Fuel: WDGS

Rated Capacity: 75 tons/hour

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): 40%

Authority for Requirement: 567 IAC 23.3(2)"d"

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

Operating Limits

- A. Total wet distillers grains with solubles (WDGS) production at this facility (Plant No. 10-04-007) shall not exceed 258,720 tons per twelve-month rolling period.

Reporting & Recordkeeping

- A. By the end of the following month, the owner or operator shall record the amount of WDGS produced over the previous month.
- B. By the end of the following month, the owner or operator shall record the amount of WDGS produced over the previous twelve (12) months.

Authority for Requirement: DNR Construction Permit 07-A-272-S2

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below.

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☐ No ☒

Authority for Requirement: 567 IAC 22.108(3)

Emission Point ID Number: EP S150

Associated Equipment

Associated Emission Unit ID Numbers: EU S150

Emission Unit vented through this Emission Point: EU S150

Emission Unit Description: Whole Stillage Tank

Raw Material/Fuel: Whole Stillage

Rated Capacity: 180,000 gallons

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): 40%⁽¹⁾

Authority for Requirement: DNR Construction Permit 13-A-557
567 IAC 23.3(2)"d"

⁽¹⁾ An exceedance of the indicator opacity of "no visible emissions" will require the owner or operator to promptly investigate the emission unit and make corrections to operations or equipment associated with the exceedance. If exceedances continue after the corrections, the Department may require additional proof to demonstrate compliance (e.g., stack testing).

Pollutant: Volatile Organic Compounds (VOC)

Emission Limit(s): 3.23 lb/hr

Authority for Requirement: DNR Construction Permit 13-A-557

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

Stack Height, (ft, from the ground): 57.7

Stack Opening, (inches, dia.): 12

Exhaust Flow Rate (scfm): 167

Exhaust Temperature (°F): 167

Discharge Style: Downward

Authority for Requirement: DNR Construction Permit 13-A-557

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below:

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☐ No ☒

Authority for Requirement: 567 IAC 22.108(3)

Emission Point ID Number: EP F150

Associated Equipment

Associated Emission Unit ID Numbers: EU F150

Emission Unit vented through this Emission Point: EU F150

Emission Unit Description: Open Transportation Devices

Raw Material/Fuel: Ethanol Unloading Fugitives

Rated Capacity: N/A

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from this emission point shall not exceed the levels specified below.

Pollutant: Volatile Organic Compounds (VOC)

Emission Limit(s): 3.74 tons/yr

Authority for Requirement: DNR Construction Permit 14-A-460

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

- A. The permittee shall develop and follow a Best Management Practices (BMP) guidance document to minimize emission from the Open Transportation Devices (EU F150) at the facility. This BMP guidance document shall, at a minimum, outline the action steps necessary to minimize the amount of time that the railcar or truck is left opened for loading or unloading of product or material to or from the tank.

Reporting & Recordkeeping

- A. The permittee shall maintain and make available a copy of the BMP guidance document.

Authority for Requirement: DNR Construction Permit 14-A-460

Emission Point Characteristics

The emission point shall conform to the specifications listed below.

Emissions from this unit are fugitive emissions from open transportation devices, i.e. railcars or tanker trucks. These emissions occur when the railcar or truck tank is opened for unloading of product or material to or from the tank. This permit only accounts for the time between opening the tank and connection of vapor collection system to the tank for loading purposes.

Authority for Requirement: DNR Construction Permit 14-A-460

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below:

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☐ No ☒

Authority for Requirement: 567 IAC 22.108(3)

Emission Point ID Number: EPs S31 and S32

Associated Equipment

Table: Grind Systems

Emission Point Number	Emission Unit Number	Emission Unit Description	Raw Material	Rate Capacity	Control Equipment	DNR Construction Permits
EP S31	EU 81	Hammermill #5	Grain	40 ton/hr	Baghouse (CE C31)	17-A-523-S2
EP S32	EU 82	Hammermill #6	Grain	40 ton/hr	Baghouse (CE C32)	17-A-524-S2

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from these emission points shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): 40% ⁽¹⁾

Authority for Requirement: See Table: Grind Systems
567 IAC 23.3(2)"d"

⁽¹⁾ An exceedance of the indicator opacity of "No Visible Emissions" will require the owner or operator to promptly investigate the emission unit and make corrections to operations or equipment associated with the exceedance. If exceedances continue after the corrections, the Department may require additional proof to demonstrate compliance (e.g., stack testing).

Pollutant: Particulate Matter (PM)

Emission Limit(s): 0.91 lb/hr; 0.1 gr/dscf

Authority for Requirement: See Table: Grind Systems
567 IAC 23.4(7)

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

- A. The owner or operator shall operate and maintain the Baghouses (CE C31 and CE C32) according to the facility's operation and maintenance plan. The owner or operator shall maintain a log of all maintenance and inspection activities performed on the Baghouses (CE C31 and CE C32). This log shall include, but is not necessarily limited to:
 - a. The date any inspection and/or maintenance was performed on the Baghouse (CE C31 and CE C32);
 - b. Any issues identified during the inspection;
 - c. Any issues addressed during the maintenance activities; and

- d. Identification of the staff member performing the maintenance or inspection.

Authority for Requirement: See Table: Grind Systems

Emission Point Characteristics

The emission points shall conform to the specifications listed below.

Stack Height, (ft, from the ground): 40.6

Stack Opening, (inches, dia.): 22

Exhaust Flow Rate (scfm): 12,000

Exhaust Temperature (°F): 68

Discharge Style: Vertical Unobstructed

Authority for Requirement: See Table: Grind Systems

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below:

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☒ No ☐

Authority for Requirement: 567 IAC 22.108(3)

**Compliance Assurance Monitoring Plan for POET Biorefining - Fairbank,
LLC**

Facility located in Fairbank, Iowa

EP S31 and S32 – Hammermill #5 and #6 Baghouse

I. Background

A. Emissions Unit

Description: Hammermill #5 (EU 81) and Hammermill #6 (EU 82)

Facility: POET Biorefining - Fairbank, LLC
Fairbank, Iowa

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Regulation No.: Construction Permit 17-A-523-S2

Construction Permit 17-A-524-S2

PM Emission Limit or Standard: 0.91 lb/hr; 0.1 gr/dscf

C. Control Technology

Fabric Filter Baghouses (CE C31) and (CE C32)

II. DDGS Cooler Baghouse Monitoring Approach

A. Indicator

Pressure drop will be used as the performance indicator.

B. Measurement Approach

The key elements of the monitoring approach, including the indicators to be monitored, indicator ranges, and performance criteria are presented in Table 1.

Table 7: Monitoring Approach

I. Indicator	
Indicator	Differential pressure across the baghouse
Measurement / Approach	The pressure drop will be monitored and recorded at least once each day of operation.
II. Indicator Range	
Range	A pressure drop of 0 to 6 inches of water shall be maintained during operation.

Corrective Action	Procedures, system parameters, data trends will be reviewed and the functional operation of the equipment will be assessed to determine the cause of the excursion. Once the cause is identified, a repair or adjustment will be implemented to procedures to address the excursion.
QIP Threshold	An accumulation of excursions outside the indicator range of six or more for a reporting period excluding periods of startup, shutdown and malfunction.
III. Performance Criteria	
Data Representativeness	Pressure drop is measured across the system
Verification of Operational Status	Records of pressure drop readings will be maintained for five years.
QA/QC Practices and Criteria	Calibrate, maintain, and operate instrumentation in accordance with the Facility Operations and Maintenance Plan.
Monitoring Frequency	The pressure drop will be recorded a minimum of once per day during operations.
Data Collection Procedures	The pressure drop will be recorded electronically or manually.
Averaging period	Not applicable.
Record Keeping	Maintain for a period of five years records and corrective actions taken in response to excursions.
Reporting	Number, duration, and cause of any excursion and the corrective action taken.
Frequency	Semiannually.

III. Justification

A. Background

PM emissions from the Hammermill #5 (EU 81) and Hammermill #6 (EU 82) are controlled by the Hammermill #5 Baghouse and Hammermill #6 Baghouse.

B. Rationale for Selection of Performance Indicator

Baghouses operate by collecting particulate on porous fabric bags, thus resulting in a pressure differential across the system. The gas stream is passed through the fabric which results in pressure; too much pressure indicates a possible plugging of the system and too little indicates possible bag breakage. Therefore, pressure drop is the best indicator of baghouse performance.

C. Rationale for Selection of Indicator Level

Baghouses remove dust from a gas stream by passing the stream through a porous fabric. Particles form a porous cake on the fabric that acts as the filtration device. This porous cake is routinely removed and collected and returned to the process. Baghouses are highly efficient for controlling filterable PM. Baghouses are subject to failure if they are not properly

operated and maintained. An indicator pressure drop of 0 to 6 inches of water is recommended to achieve the required control efficiency.

The selected QIP threshold for the daily pressure drop is six excursions during a semi-annual reporting period. If the QIP threshold is exceeded during a semi-annual reporting period, a QIP will be developed and implemented.

Emission Point ID Number: EP S160

Associated Equipment

Associated Emission Unit ID Numbers: EU S160

Emission Unit vented through this Emission Point: EU S160

Emission Unit Description: Boiler #1

Raw Material/Fuel: Natural Gas

Rated Capacity: 49 MMBtu/hr

Applicable Requirements

Emission Limits (lb./hr, gr./dscf, lb./MMBtu, % opacity, etc.)

The emissions from these emission points shall not exceed the levels specified below.

Pollutant: Opacity

Emission Limit(s): 40% ⁽¹⁾

Authority for Requirement: DNR Construction Permit 19-A-097
567 IAC 23.3(2)"d"

⁽¹⁾ An exceedance of the indicator opacity of "No Visible Emissions" will require the owner or operator to promptly investigate the emission unit and make corrections to operations or equipment associated with the exceedance. If exceedances continue after the corrections, the Department may require additional proof to demonstrate compliance (e.g., stack testing).

Pollutant: Particulate Matter (PM₁₀)

Emission Limit(s): 0.5 lb/hr

Authority for Requirement: DNR Construction Permit 19-A-097

Pollutant: Particulate Matter (PM)

Emission Limit(s): 0.6 lb/MMBtu

Authority for Requirement: DNR Construction Permit 19-A-097
567 IAC 23.3(2)"b"

Pollutant: Sulfur Dioxide (SO₂)

Emission Limit(s): 500 ppmv

Authority for Requirement: DNR Construction Permit 19-A-097
567 IAC 23.3(3)"e"

Pollutant: Nitrogen Oxides (NO_x)

Emission Limit(s): 4.9 lb/hr; 97.0 tons/year⁽²⁾

Authority for Requirement: DNR Construction Permit 19-A-097

⁽²⁾ Combined emission limits for CE 10A/EU B10a, CE 10B/EU B10b and EU S160.

Pollutant: Carbon Monoxide (CO)

Emission Limit(s): 97.0 tons/year⁽²⁾

Authority for Requirement: DNR Construction Permit 19-A-097

⁽²⁾ Combined emission limits for CE 10A/EU B10a, CE 10B/EU B10b and EU S160.

NSPS and NESHAP Applicability

EU ID	Subpart	Title	Type	State Reference (567 IAC)	Federal Reference (40 CFR)
EU S160	A	General Provisions	NA	23.1(2)	§60.1 – §60.19
	Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	NA	23.1(2)"III"	§60.40c - §60.48c

This unit is of the source category affected by the following federal regulation: National Emission Standard for Hazardous Air Pollutants for Industrial, Commercial, Institutional Boilers and Process Heaters [40 CFR Part 63, Subpart DDDDD]. At the time of the issuance of this permit, the Department has not adopted this standard. As such, the USEPA shall be considered the administrator of this standard until the Department adopts this standard.

Operating Requirements with Associated Monitoring and Recordkeeping

All records as required by this permit shall be kept on-site for a minimum of five (5) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

- A. The boiler (EU S160) shall combust only natural gas.
- B. (1) Except as provided under paragraphs B(2) and B(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.

(2) As an alternative to meeting the requirements of paragraph B(1) of this section, the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in 40 CFR 60.48c(f) to demonstrate compliance with the SO₂ standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

(3) As an alternative to meeting the requirements of paragraph B(1) of this section, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in 40 CFR 60.42c to use fuel certification to demonstrate compliance with the SO₂ standard, and/or fuels,

excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.

- C. The emissions of carbon monoxide (CO) from EP S160 and EP S10 shall not exceed 97.0 tons per twelve (12) month total, rolled monthly.
- D. At the end of each month, record the amount of CO emitted from this emission point (EP S160) in tons during the previous month. The emissions for EP S160 shall be determined based on the MMBtu combusted per month and using an emission factor as follows:
 - 1) For the period between the start of operation of this unit and the acceptance of the initial stack test, the emission factor shall be 0.084 lb/MMBTU;
 - 2) After the initial stack test, the emission factor shall be calculated as follows:

$$EF_{S160} = (\text{average of the three test runs}) + 1.7 \times (\text{standard deviation of the three test runs})$$
- E. At the end of each month, record the amount of CO emitted from this emission point (EP S160) and EP S10 over the previous twelve (12) months by summing the most recent combined twelve (12) values for EP S10 and EP S160.
- F. The emissions of oxides of nitrogen (NOx) from EP S160 and EP S10 shall not exceed 97.0 tons per twelve (12) month total, rolled monthly.
- G. The permittee shall use the NOx CEM data from EP S10, the natural gas fuel usage records, and the equation below to calculate and record the monthly NOx emissions from the TO/HRSGs and boiler EU S160. The permittee shall maintain records of all data used to perform the calculations:

$$NO_x \left(\frac{\text{ton}}{\text{month}} \right) = [S10_{NO_x}] \times \left[\frac{1.2 \times NG_{TO/HRSG}}{(1.2 \times NG_{TO/HRSG}) + (NG_{Dryers})} \right] + [EF_{S160} \times NG_{S160}] / 2000$$

a)

Where: NOx (ton/month) = NOx from TO/HRSGs and S160

S10_{NOx} = total NOx emissions from stack S10 as measured by the CEM, in tons

NG_{TO/HRSG} = amount of natural gas combusted in the TO/HRSGs in MMBtu

NG_{Dryers} = amount of natural gas combusted in the Dryers in MMBtu

1.2 = compliance margin for TO/HRSGs

EF_{S160} = NOx emission factor from the boiler in lb/MMBTU. This emission factor shall be determined as follows:

- 1) For the period between the start of operation of this unit and

the acceptance of the initial stack test, the emission factor shall be 0.1 lb/mmBTU;

- 2) After the initial stack test, the emission factor shall be calculated as follows:

$$EF_{S160} = (\text{average of the three test runs}) + 1.7 \times (\text{standard deviation of the three test runs})$$

$$NG_{S160} = \text{amount of natural gas combusted in EU S160 in MMBtu}$$

- H. The permittee shall use the equation in condition G to determine the 12-month rolling total emissions of NO_x from the TO/HRSGs and boiler EU S160 for each calendar month. New 12-month totals shall be calculated at the end of each month, for the previous month. The permittee may also assume that all NO_x emissions from stack S10 are from the TO/HRSGs.
- I. The owner/operator shall inspect the burner during each boiler tune-up. The burner shall be cleaned and any components shall be replaced as necessary.
- J. The owner/operator shall inspect the flame pattern in the boiler during each boiler tune-up. The burner shall be adjusted consistent with the manufacturer's specifications to optimize the flame pattern as necessary.
- K. The owner/operator shall inspect the system controlling air-to-fuel ratio in the boiler during each boiler tune-up.
- L. The owner/operator shall optimize the CO and NO_x emissions from the boiler during each boiler tune-up.
- M. The owner/operator shall measure the concentration of CO in the effluent stream in parts per million, by volume, concentration of NO_x in the effluent stream in parts per million, by volume, and the oxygen in volume percent both before and after adjustments are made. Measurements may be made on either a wet or a dry basis as long as the same basis is used before and after adjustments. Measurements may be made using the appropriate portable gas analyzers.
- N. The following records shall be kept for each boiler tune-up performed.
1. The date the boiler tune-up was performed;
 2. A description of any corrective acts taken as part of the tune-up;
 3. The concentration of CO in the effluent stream in parts per million, by volume, concentration of NO_x in the effluent stream in parts per million, by volume, and the oxygen in volume percent measured at high fire or typical operating load before and after the tune-up of the boiler.

Authority for Requirement: DNR Construction Permit 19-A-097

Emission Point Characteristics

The emission points shall conform to the specifications listed below.

Stack Height, (ft, from the ground): 33

Stack Opening, (inches, dia.): 32

Exhaust Flow Rate (scfm): 9,330

Exhaust Temperature (°F): 250

Discharge Style: Vertical Unobstructed

Authority for Requirement: DNR Construction Permit 19-A-097

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

Monitoring Requirements

The owner/operator of this equipment shall comply with the monitoring requirements listed below:

Agency Approved Operation & Maintenance Plan Required? Yes ☐ No ☒

Facility Maintained Operation & Maintenance Plan Required? Yes ☐ No ☒

Compliance Assurance Monitoring (CAM) Plan Required? Yes ☐ No ☒

Authority for Requirement: 567 IAC 22.108(3)

IV. General Conditions

This permit is issued under the authority of the Iowa Code subsection 455B.133(8) and in accordance with 567 Iowa Administrative Code chapter 22.

G1. Duty to Comply

1. The permittee must comply with all conditions of the Title V permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for a permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. *567 IAC 22.108(9)"a"*
2. Any compliance schedule shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based. *567 IAC 22.105 (2)"h"(3)*
3. Where an applicable requirement of the Act is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act, both provisions shall be enforceable by the administrator and are incorporated into this permit. *567 IAC 22.108 (1)"b"*
4. Unless specified as either "state enforceable only" or "local program enforceable only", all terms and conditions in the permit, including provisions to limit a source's potential to emit, are enforceable by the administrator and citizens under the Act. *567 IAC 22.108 (14)*
5. It shall not be a defense for a permittee, in an enforcement action, that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. *567 IAC 22.108 (9)"b"*
6. For applicable requirements with which the permittee is in compliance, the permittee shall continue to comply with such requirements. For applicable requirements that will become effective during the permit term, the permittee shall meet such requirements on a timely basis. *567 IAC 22.108(15)"c"*

G2. Permit Expiration

1. Except as provided in rule 567—22.104(455B), permit expiration terminates a source's right to operate unless a timely and complete application for renewal has been submitted in accordance with rule 567—22.105(455B). *567 IAC 22.116(2)*
2. To be considered timely, the owner, operator, or designated representative (where applicable) of each source required to obtain a Title V permit shall submit on forms or electronic format specified by the Department to the Air Quality Bureau, Iowa Department of Natural Resources, Air Quality Bureau, Wallace State Office Building, 502 E 9th St., Des Moines, IA 50319-0034, two copies (three if your facility is located in Linn or Polk county) of a complete permit application, at least 6 months but not more than 18 months prior to the date of permit expiration. An additional copy must also be sent to U.S. EPA Region VII, Attention: Chief of Air Permitting & Standards Branch, 11201 Renner Blvd., Lenexa, KS 66219. Additional copies to local programs or EPA are not required for application materials submitted through the electronic format specified by the Department. The application must include all emission points, emission units, air pollution control equipment, and monitoring devices at the facility. All emissions generating activities, including fugitive emissions, must be included. The definition of a complete application is as indicated in 567 IAC 22.105(2). *567 IAC 22.105*

G3. Certification Requirement for Title V Related Documents

Any application, report, compliance certification or other document submitted pursuant to this permit shall contain certification by a responsible official of truth, accuracy, and completeness. All certifications shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. *567 IAC 22.107 (4)*

G4. Annual Compliance Certification

By March 31 of each year, the permittee shall submit compliance certifications for the previous calendar year. The certifications shall include descriptions of means to monitor the compliance status of all emissions sources including emissions limitations, standards, and work practices in accordance with applicable requirements. The certification for a source shall include the identification of each term or condition of the permit that is the basis of the certification; the compliance status; whether compliance was continuous or intermittent; the method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with all applicable department rules. For sources determined not to be in compliance at the time of compliance certification, a compliance schedule shall be submitted which provides for periodic progress reports, dates for achieving activities, milestones, and an explanation of why any dates were missed and preventive or corrective measures. The compliance certification shall be submitted to the administrator, director, and the appropriate DNR Field office. *567 IAC 22.108 (15)"e"*

G5. Semi-Annual Monitoring Report

By March 31 and September 30 of each year, the permittee shall submit a report of any monitoring required under this permit for the 6 month periods of July 1 to December 31 and January 1 to June 30, respectively. All instances of deviations from permit requirements must be clearly identified in these reports, and the report must be signed by a responsible official, consistent with 567 IAC 22.107(4). The semi-annual monitoring report shall be submitted to the director and the appropriate DNR Field office. *567 IAC 22.108 (5)*

G6. Annual Fee

1. The permittee is required under subrule 567 IAC 22.106 to pay an annual fee based on the total tons of actual emissions of each regulated air pollutant. Beginning July 1, 1996, Title V operating permit fees will be paid on July 1 of each year. The fee shall be based on emissions for the previous calendar year.
2. The fee amount shall be calculated based on the first 4,000 tons of each regulated air pollutant emitted each year. The fee to be charged per ton of pollutant will be available from the department by June 1 of each year. The Responsible Official will be advised of any change in the annual fee per ton of pollutant.
3. The emissions inventory shall be submitted annually by March 31 with forms specified by the department documenting actual emissions for the previous calendar year.
4. The fee shall be submitted annually by July 1 with forms specified by the department.
5. If there are any changes to the emission calculation form, the department shall make revised forms available to the public by January 1. If revised forms are not available by January 1, forms from the previous year may be used and the year of emissions documented changed. The department shall calculate the total statewide Title V emissions for the prior calendar year and make this information available to the public no later than April 30 of each year.
6. Phase I acid rain affected units under section 404 of the Act shall not be required to pay a fee for emissions which occur during the years 1993 through 1999 inclusive.
7. The fee for a portable emissions unit or stationary source which operates both in Iowa and out of state shall be calculated only for emissions from the source while operating in Iowa.
8. Failure to pay the appropriate Title V fee represents cause for revocation of the Title V permit as indicated in 567 IAC 22.115(1)"d".

G7. Inspection of Premises, Records, Equipment, Methods and Discharges

Upon presentation of proper credentials and any other documents as may be required by law, the permittee shall allow the director or the director's authorized representative to:

1. Enter upon the permittee's premises where a Title V source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
3. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
4. Sample or monitor, at reasonable times, substances or parameters for the purpose of ensuring compliance with the permit or other applicable requirements. *567 IAC 22.108 (15)"b"*

G8. Duty to Provide Information

The permittee shall furnish to the director, within a reasonable time, any information that the director may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee also shall furnish to the director copies of records required to be kept by the permit, or for information claimed to be confidential, the permittee shall furnish such records directly to the administrator of EPA along with a claim of confidentiality. *567 IAC 22.108 (9)"e"*

G9. General Maintenance and Repair Duties

The owner or operator of any air emission source or control equipment shall:

1. Maintain and operate the equipment or control equipment at all times in a manner consistent with good practice for minimizing emissions.
2. Remedy any cause of excess emissions in an expeditious manner.
3. Minimize the amount and duration of any excess emission to the maximum extent possible during periods of such emissions. These measures may include but not be limited to the use of clean fuels, production cutbacks, or the use of alternate process units or, in the case of utilities, purchase of electrical power until repairs are completed.
4. Schedule, at a minimum, routine maintenance of equipment or control equipment during periods of process shutdowns to the maximum extent possible. *567 IAC 24.2(1)*

G10. Recordkeeping Requirements for Compliance Monitoring

1. In addition to any source specific recordkeeping requirements contained in this permit, the permittee shall maintain the following compliance monitoring records, where applicable:

- a. The date, place and time of sampling or measurements
- b. The date the analyses were performed.
- c. The company or entity that performed the analyses.
- d. The analytical techniques or methods used.
- e. The results of such analyses; and
- f. The operating conditions as existing at the time of sampling or measurement.
- g. The records of quality assurance for continuous compliance monitoring systems (including but not limited to quality control activities, audits and calibration drifts.)

2. The permittee shall retain records of all required compliance monitoring data and support information for a period of at least 5 years from the date of compliance monitoring sample, measurement report or application. Support information includes all calibration and maintenance records and all original strip chart recordings for continuous compliance monitoring, and copies of all reports required by the permit.

3. For any source which in its application identified reasonably anticipated alternative operating scenarios, the permittee shall:
 - a. Comply with all terms and conditions of this permit specific to each alternative scenario.
 - b. Maintain a log at the permitted facility of the scenario under which it is operating.
 - c. Consider the permit shield, if provided in this permit, to extend to all terms and conditions under each operating scenario. *567 IAC 22.108(4), 567 IAC 22.108(12)*

G11. Evidence used in establishing that a violation has or is occurring.

Notwithstanding any other provisions of these rules, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any provisions herein.

1. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred at a source:
 - a. A monitoring method approved for the source and incorporated in an operating permit pursuant to 567 Chapter 22;
 - b. Compliance test methods specified in 567 Chapter 25; or
 - c. Testing or monitoring methods approved for the source in a construction permit issued pursuant to 567 Chapter 22.
2. The following testing, monitoring or information gathering methods are presumptively credible testing, monitoring, or information gathering methods:
 - a. Any monitoring or testing methods provided in these rules; or
 - b. Other testing, monitoring, or information gathering methods that produce information comparable to that produced by any method in subrule 21.5(1) or this subrule. *567 IAC 21.5(1)-567 IAC 21.5(2)*

G12. Prevention of Accidental Release: Risk Management Plan Notification and Compliance Certification

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Act, the permittee shall notify the department of this requirement. The plan shall be filed with all appropriate authorities by the deadline specified by EPA. A certification that this risk management plan is being properly implemented shall be included in the annual compliance certification of this permit. *567 IAC 22.108(6)*

G13. Hazardous Release

The permittee must report any situation involving the actual, imminent, or probable release of a hazardous substance into the atmosphere which, because of the quantity, strength and toxicity of the substance, creates an immediate or potential danger to the public health, safety or to the environment. A verbal report shall be made to the department at (515) 725-8694 and to the local police department or the office of the sheriff of the affected county as soon as possible but not later than six hours after the discovery or onset of the condition. This verbal report must be followed up with a written report as indicated in 567 IAC 131.2(2). *567 IAC Chapter 131-State Only*

G14. Excess Emissions and Excess Emissions Reporting Requirements

1. Excess Emissions. Excess emission during a period of startup, shutdown, or cleaning of control equipment is not a violation of the emission standard if the startup, shutdown or cleaning is accomplished expeditiously and in a manner consistent with good practice for minimizing emissions. Cleaning of control equipment which does not require the shutdown of the process equipment shall be limited to one six-minute period per one-hour period. An incident of excess emission (other than an incident during startup, shutdown or cleaning of control equipment) is a

violation. If the owner or operator of a source maintains that the incident of excess emission was due to a malfunction, the owner or operator must show that the conditions which caused the incident of excess emission were not preventable by reasonable maintenance and control measures. Determination of any subsequent enforcement action will be made following review of this report. If excess emissions are occurring, either the control equipment causing the excess emission shall be repaired in an expeditious manner or the process generating the emissions shall be shutdown within a reasonable period of time. An expeditious manner is the time necessary to determine the cause of the excess emissions and to correct it within a reasonable period of time. A reasonable period of time is eight hours plus the period of time required to shut down the process without damaging the process equipment or control equipment. A variance from this subrule may be available as provided for in Iowa Code section 455B.143. In the case of an electric utility, a reasonable period of time is eight hours plus the period of time until comparable generating capacity is available to meet consumer demand with the affected unit out of service, unless, the director shall, upon investigation, reasonably determine that continued operation constitutes an unjustifiable environmental hazard and issue an order that such operation is not in the public interest and require a process shutdown to commence immediately.

2. Excess Emissions Reporting

a. Initial Reporting of Excess Emissions. An incident of excess emission (other than an incident of excess emission during a period of startup, shutdown, or cleaning) shall be reported to the appropriate field office of the department within eight hours of, or at the start of the first working day following the onset of the incident. The reporting exemption for an incident of excess emission during startup, shutdown or cleaning does not relieve the owner or operator of a source with continuous monitoring equipment of the obligation of submitting reports required in 567-subrule 25.1(6). An initial report of excess emission is not required for a source with operational continuous monitoring equipment (as specified in 567-subrule 25.1(1)) if the incident of excess emission continues for less than 30 minutes and does not exceed the applicable emission standard by more than 10 percent or the applicable visible emission standard by more than 10 percent opacity. The initial report may be made by electronic mail (E-mail), in person, or by telephone and shall include as a minimum the following:

- i. The identity of the equipment or source operation from which the excess emission originated and the associated stack or emission point.
- ii. The estimated quantity of the excess emission.
- iii. The time and expected duration of the excess emission.
- iv. The cause of the excess emission.
- v. The steps being taken to remedy the excess emission.
- vi. The steps being taken to limit the excess emission in the interim period.

b. Written Reporting of Excess Emissions. A written report of an incident of excess emission shall be submitted as a follow-up to all required initial reports to the department within seven days of the onset of the upset condition, and shall include as a minimum the following:

- i. The identity of the equipment or source operation point from which the excess emission originated and the associated stack or emission point.
- ii. The estimated quantity of the excess emission.
- iii. The time and duration of the excess emission.
- iv. The cause of the excess emission.

v. The steps that were taken to remedy and to prevent the recurrence of the incident of excess emission.

vi. The steps that were taken to limit the excess emission.

vii. If the owner claims that the excess emission was due to malfunction, documentation to support this claim. *567 IAC 24.1(1)-567 IAC 24.1(4)*

3. Emergency Defense for Excess Emissions. For the purposes of this permit, an “emergency” means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include non-compliance, to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation or operator error. An emergency constitutes an affirmative defense to an action brought for non-compliance with technology based limitations if it can be demonstrated through properly signed contemporaneous operating logs or other relevant evidence that:

- a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;
- b. The facility at the time was being properly operated;
- c. During the period of the emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements of the permit; and
- d. The permittee submitted notice of the emergency to the director by certified mail within two working days of the time when the emissions limitations were exceeded due to the emergency. This notice fulfills the requirement of paragraph 22.108(5)"b." – See G15. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof. This provision is in addition to any emergency or upset provision contained in any applicable requirement. *567 IAC 22.108(16)*

G15. Permit Deviation Reporting Requirements

A deviation is any failure to meet a term, condition or applicable requirement in the permit. Reporting requirements for deviations that result in a hazardous release or excess emissions have been indicated above (see G13 and G14). Unless more frequent deviation reporting is specified in the permit, any other deviation shall be documented in the semi-annual monitoring report and the annual compliance certification (see G4 and G5). *567 IAC 22.108(5)"b"*

G16. Notification Requirements for Sources That Become Subject to NSPS and NESHAP Regulations

During the term of this permit, the permittee must notify the department of any source that becomes subject to a standard or other requirement under 567-subrule 23.1(2) (standards of performance of new stationary sources) or section 111 of the Act; or 567-subrule 23.1(3) (emissions standards for hazardous air pollutants), 567-subrule 23.1(4) (emission standards for hazardous air pollutants for source categories) or section 112 of the Act. This notification shall be submitted in writing to the department pursuant to the notification requirements in 40 CFR Section 60.7, 40 CFR Section 61.07, and/or 40 CFR Section 63.9. *567 IAC 23.1(2), 567 IAC 23.1(3), 567 IAC 23.1(4)*

G17. Requirements for Making Changes to Emission Sources That Do Not Require Title V Permit Modification

1. Off Permit Changes to a Source. Pursuant to section 502(b)(10) of the CAAA, the permittee may make changes to this installation/facility without revising this permit if:
 - a. The changes are not major modifications under any provision of any program required by section 110 of the Act, modifications under section 111 of the act, modifications under section 112 of the act, or major modifications as defined in 567 IAC Chapter 22.
 - b. The changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or in terms of total emissions);
 - c. The changes are not modifications under any provisions of Title I of the Act and the changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or as total emissions);
 - d. The changes are not subject to any requirement under Title IV of the Act (revisions affecting Title IV permitting are addressed in rules 567—22.140(455B) through 567 - 22.144(455B));.
 - e. The changes comply with all applicable requirements.
 - f. For each such change, the permitted source provides to the department and the administrator by certified mail, at least 30 days in advance of the proposed change, a written notification, including the following, which must be attached to the permit by the source, the department and the administrator:
 - i. A brief description of the change within the permitted facility,
 - ii. The date on which the change will occur,
 - iii. Any change in emission as a result of that change,
 - iv. The pollutants emitted subject to the emissions trade
 - v. If the emissions trading provisions of the state implementation plan are invoked, then Title V permit requirements with which the source shall comply; a description of how the emissions increases and decreases will comply with the terms and conditions of the Title V permit.
 - vi. A description of the trading of emissions increases and decreases for the purpose of complying with a federally enforceable emissions cap as specified in and in compliance with the Title V permit; and
 - vii. Any permit term or condition no longer applicable as a result of the change.
2. Such changes do not include changes that would violate applicable requirements or contravene federally enforceable permit terms and conditions that are monitoring (including test methods), record keeping, reporting, or compliance certification requirements. *567 IAC 22.110(2)*
3. Notwithstanding any other part of this rule, the director may, upon review of a notice, require a stationary source to apply for a Title V permit if the change does not meet the requirements of subrule 22.110(1). *567 IAC 22.110(3)*
4. The permit shield provided in subrule 22.108(18) shall not apply to any change made pursuant to this rule. Compliance with the permit requirements that the source will meet using the emissions trade shall be determined according to requirements of the state implementation plan authorizing the emissions trade. *567 IAC 22.110(4)*

5. No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes, for changes that are provided for in this permit. *567 IAC 22.108(11)*

G18. Duty to Modify a Title V Permit

1. Administrative Amendment.

- a. An administrative permit amendment is a permit revision that does any of the following:
 - i. Correct typographical errors
 - ii. Identify a change in the name, address, or telephone number of any person identified in the permit, or provides a similar minor administrative change at the source;
 - iii. Require more frequent monitoring or reporting by the permittee; or
 - iv. Allow for a change in ownership or operational control of a source where the director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittee has been submitted to the director.
- b. The permittee may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request. The request shall be submitted to the director.
- c. Administrative amendments to portions of permits containing provisions pursuant to Title IV of the Act shall be governed by regulations promulgated by the administrator under Title IV of the Act.

2. Minor Title V Permit Modification.

- a. Minor Title V permit modification procedures may be used only for those permit modifications that satisfy all of the following:
 - i. Do not violate any applicable requirement;
 - ii. Do not involve significant changes to existing monitoring, reporting or recordkeeping requirements in the Title V permit;
 - iii. Do not require or change a case by case determination of an emission limitation or other standard, or an increment analysis;
 - iv. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed in order to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include any federally enforceable emissions caps which the source would assume to avoid classification as a modification under any provision under Title I of the Act; and an alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Act;
 - v. Are not modifications under any provision of Title I of the Act; and
 - vi. Are not required to be processed as significant modification under rule 567 - 22.113(455B).
- b. An application for minor permit revision shall be on the minor Title V modification application form and shall include at least the following:
 - i. A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;

- ii. The permittee's suggested draft permit;
- iii. Certification by a responsible official, pursuant to 567 IAC 22.107(4), that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used; and
- iv. Completed forms to enable the department to notify the administrator and the affected states as required by 567 IAC 22.107(7).

c. The permittee may make the change proposed in its minor permit modification application immediately after it files the application. After the permittee makes this change and until the director takes any of the actions specified in 567 IAC 22.112(4) "a" to "c", the permittee must comply with both the applicable requirements governing the change and the proposed permit terms and conditions. During this time, the permittee need not comply with the existing permit terms and conditions it seeks to modify. However, if the permittee fails to comply with its proposed permit terms and conditions during this time period, the existing permit terms and conditions it seeks to modify may be enforced against the facility.

3. Significant Title V Permit Modification.

Significant Title V modification procedures shall be used for applications requesting Title V permit modifications that do not qualify as minor Title V modifications or as administrative amendments. These include but are not limited to all significant changes in monitoring permit terms, every relaxation of reporting or recordkeeping permit terms, and any change in the method of measuring compliance with existing requirements. Significant Title V modifications shall meet all requirements of 567 IAC Chapter 22, including those for applications, public participation, review by affected states, and review by the administrator, as those requirements that apply to Title V issuance and renewal.

The permittee shall submit an application for a significant permit modification not later than three months after commencing operation of the changed source unless the existing Title V permit would prohibit such construction or change in operation, in which event the operation of the changed source may not commence until the department revises the permit. *567 IAC 22.111-567 IAC 22.113*

G19. Duty to Obtain Construction Permits

Unless exempted in 567 IAC 22.1(2) or to meet the parameters established in 567 IAC 22.1(1)"c", the permittee shall not construct, install, reconstruct or alter any equipment, control equipment or anaerobic lagoon without first obtaining a construction permit, or conditional permit, or permit pursuant to rule 567 IAC 22.8, or permits required pursuant to rules 567 IAC 22.4, 567 IAC 22.5, 567 IAC 31.3, and 567 IAC 33.3 as required in 567 IAC 22.1(1). A permit shall be obtained prior to the initiation of construction, installation or alteration of any portion of the stationary source or anaerobic lagoon. *567 IAC 22.1(1)*

G20. Asbestos

The permittee shall comply with 567 IAC 23.1(3)"a", and 567 IAC 23.2(3)"g" when activities involve asbestos mills, surfacing of roadways, manufacturing operations, fabricating, insulating, waste disposal, spraying applications, demolition and renovation operations (*567 IAC 23.1(3)"a"*); training fires and controlled burning of a demolished building (*567 IAC 23.2*).

G21. Open Burning

The permittee is prohibited from conducting open burning, except as provided in 567 IAC 23.2. *567 IAC 23.2 except 23.2(3)"j"; 567 IAC 23.2(3)"j" - State Only*

G22. Acid Rain (Title IV) Emissions Allowances

The permittee shall not exceed any allowances that it holds under Title IV of the Act or the regulations promulgated there under. Annual emissions of sulfur dioxide in excess of the number of allowances to emit sulfur dioxide held by the owners and operators of the unit or the designated representative of the owners and operators is prohibited. Exceedences of applicable emission rates are prohibited. "Held" in this context refers to both those allowances assigned to the owners and operators by USEPA, and those allowances supplementally acquired by the owners and operators. The use of any allowance prior to the year for which it was allocated is prohibited. Contravention of any other provision of the permit is prohibited. 567 IAC 22.108(7)

G23. Stratospheric Ozone and Climate Protection (Title VI) Requirements

1. The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:

- a. All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to § 82.106.
- b. The placement of the required warning statement must comply with the requirements pursuant to § 82.108.
- c. The form of the label bearing the required warning statement must comply with the requirements pursuant to § 82.110.
- d. No person may modify, remove, or interfere with the required warning statement except as described in § 82.112.

2. The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for MVACs in Subpart B:

- a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to § 82.156.
- b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to § 82.158.
- c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to § 82.161.
- d. Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with reporting and recordkeeping requirements pursuant to § 82.166. ("MVAC-like appliance" as defined at § 82.152)
- e. Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to § 82.156.
- f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to § 82.166.

3. If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR part 82, Subpart A, Production and Consumption Controls.

4. If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle

has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant,

5. The permittee shall be allowed to switch from any ozone-depleting or greenhouse gas generating substances to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR part 82, Subpart G, Significant New Alternatives Policy Program. *40 CFR part 82*

G24. Permit Reopenings

1. This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. *567 IAC 22.108(9)"c"*

2. Additional applicable requirements under the Act become applicable to a major part 70 source with a remaining permit term of 3 or more years. Revisions shall be made as expeditiously as practicable, but not later than 18 months after the promulgation of such standards and regulations.

a. Reopening and revision on this ground is not required if the permit has a remaining term of less than three years;

b. Reopening and revision on this ground is not required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions have been extended pursuant to 40 CFR 70.4(b)(10)(i) or (ii) as amended to May 15, 2001.

c. Reopening and revision on this ground is not required if the additional applicable requirements are implemented in a general permit that is applicable to the source and the source receives approval for coverage under that general permit. *567 IAC 22.108(17)"a"*, *567 IAC 22.108(17)"b"*

3. A permit shall be reopened and revised under any of the following circumstances:

a. The department receives notice that the administrator has granted a petition for disapproval of a permit pursuant to 40 CFR 70.8(d) as amended to July 21, 1992, provided that the reopening may be stayed pending judicial review of that determination;

b. The department or the administrator determines that the Title V permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the Title V permit;

c. Additional applicable requirements under the Act become applicable to a Title V source, provided that the reopening on this ground is not required if the permit has a remaining term of less than three years, the effective date of the requirement is later than the date on which the permit is due to expire, or the additional applicable requirements are implemented in a general permit that is applicable to the source and the source receives approval for coverage under that general permit. Such a reopening shall be complete not later than 18 months after promulgation of the applicable requirement.

d. Additional requirements, including excess emissions requirements, become applicable to a Title IV affected source under the acid rain program. Upon approval by the administrator, excess emissions offset plans shall be deemed to be incorporated into the permit.

e. The department or the administrator determines that the permit must be revised or

revoked to ensure compliance by the source with the applicable requirements. *567 IAC 22.114(1)*

4. Proceedings to reopen and reissue a Title V permit shall follow the procedures applicable to initial permit issuance and shall effect only those parts of the permit for which cause to reopen exists. *567 IAC 22.114(2)*

5. A notice of intent shall be provided to the Title V source at least 30 days in advance of the date the permit is to be reopened, except that the director may provide a shorter time period in the case of an emergency. *567 IAC 22.114(3)*

G25. Permit Shield

1. The director may expressly include in a Title V permit a provision stating that compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that:

a. Such applicable requirements are included and are specifically identified in the permit; or

b. The director, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.

2. A Title V permit that does not expressly state that a permit shield exists shall be presumed not to provide such a shield.

3. A permit shield shall not alter or affect the following:

a. The provisions of Section 303 of the Act (emergency orders), including the authority of the administrator under that section;

b. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;

c. The applicable requirements of the acid rain program, consistent with Section 408(a) of the Act;

d. The ability of the department or the administrator to obtain information from the facility pursuant to Section 114 of the Act. *567 IAC 22.108 (18)*

G26. Severability

The provisions of this permit are severable and if any provision or application of any provision is found to be invalid by this department or a court of law, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected by such finding. *567 IAC 22.108 (8)*

G27. Property Rights

The permit does not convey any property rights of any sort, or any exclusive privilege. *567 IAC 22.108 (9)"d"*

G28. Transferability

This permit is not transferable from one source to another. If title to the facility or any part of it is transferred, an administrative amendment to the permit must be sought consistent with the requirements of *567 IAC 22.111(1)*. *567 IAC 22.111 (1)"d"*.

G29. Disclaimer

No review has been undertaken on the engineering aspects of the equipment or control equipment other than the potential of that equipment for reducing air contaminant emissions. *567 IAC 22.3(3)"c"*

G30. Notification and Reporting Requirements for Stack Tests or Monitor Certification

The permittee shall notify the department's stack test contact in writing not less than 30 days before a required test or performance evaluation of a continuous emission monitor is performed to determine compliance with applicable requirements of 567 – Chapter 23 or a permit condition. Such notice shall include the time, the place, the name of the person who will conduct the test and other information as required by the department. If the owner or operator does not provide timely notice to the department, the department shall not consider the test results or performance evaluation results to be a valid demonstration of compliance with applicable rules or permit conditions. Upon written request, the department may allow a notification period of less than 30 days. At the department's request, a pretest meeting shall be held not later than 15 days prior to conducting the compliance demonstration. A testing protocol shall be submitted to the department no later than 15 days before the owner or operator conducts the compliance demonstration. A representative of the department shall be permitted to witness the tests. Results of the tests shall be submitted in writing to the department's stack test contact in the form of a comprehensive report within six weeks of the completion of the testing. Compliance tests conducted pursuant to this permit shall be conducted with the source operating in a normal manner at its maximum continuous output as rated by the equipment manufacturer, or the rate specified by the owner as the maximum production rate at which the source shall be operated. In cases where compliance is to be demonstrated at less than the maximum continuous output as rated by the equipment manufacturer, and it is the owner's intent to limit the capacity to that rating, the owner may submit evidence to the department that the source has been physically altered so that capacity cannot be exceeded, or the department may require additional testing, continuous monitoring, reports of operating levels, or any other information deemed necessary by the department to determine whether such source is in compliance.

Stack test notifications, reports and correspondence shall be sent to:

Stack Test Review Coordinator
Iowa DNR, Air Quality Bureau
Wallace State Office Building
502 E 9th St.
Des Moines, IA 50319-0034
(515) 725-9545

Within Polk and Linn Counties, stack test notifications, reports and correspondence shall also be directed to the supervisor of the respective county air pollution program.

567 IAC 25.1(7)"a", 567 IAC 25.1(9)

G31. Prevention of Air Pollution Emergency Episodes

The permittee shall comply with the provisions of 567 IAC Chapter 26 in the prevention of excessive build-up of air contaminants during air pollution episodes, thereby preventing the occurrence of an emergency due to the effects of these contaminants on the health of persons.

567 IAC 26.1(1)

G32. Contacts List

The current address and phone number for reports and notifications to the EPA administrator is:

Iowa Compliance Officer
Air Branch
Enforcement and Compliance Assurance Division
U.S. EPA Region 7
11201 Renner Blvd.
Lenexa, KS 66219
(913) 551-7020

The current address and phone number for reports and notifications to the department or the Director is:

Chief, Air Quality Bureau
Iowa Department of Natural Resources
Wallace State Office Building
502 E 9th St.
Des Moines, IA 50319-0034
(515) 725-8200

Reports or notifications to the DNR Field Offices or local programs shall be directed to the supervisor at the appropriate field office or local program. Current addresses and phone numbers are:

Field Office 1

1101 Commercial Court, Suite 10
Manchester, IA 52057
(563) 927-2640

Field Office 2

2300-15th St., SW
Mason City, IA 50401
(641) 424-4073

Field Office 3

1900 N. Grand Ave.
Spencer, IA 51301
(712) 262-4177

Field Office 4

1401 Sunnyside Lane
Atlantic, IA 50022
(712) 243-1934

Field Office 5

Wallace State Office Building
502 E 9th St.
Des Moines, IA 50319-0034
(515) 725-0268

Field Office 6

1023 West Madison Street
Washington, IA 52353-1623
(319) 653-2135

Polk County Public Works Dept.

Air Quality Division
5885 NE 14th St.
Des Moines, IA 50313
(515) 286-3351

Linn County Public Health

Air Quality Branch
1020 6th Street SE
Cedar Rapids, IA 52401
(319) 892-6000

Appendix A: Links to Standards

40 CFR 60 Subpart A – General Provisions

<https://www.ecfr.gov/cgi-bin/text-idx?SID=026831e0c108c2b6642ba783dccab36f&mc=true&node=sp40.7.60.a&rgn=div6>

40 CFR 60 Subpart Db – Standards of Performance for Industrial Commercial Institutional Steam Generating Units.

https://www.ecfr.gov/cgi-bin/text-idx?SID=026831e0c108c2b6642ba783dccab36f&mc=true&node=sp40.7.60.d_0b&rgn=div6

40 CFR 60 Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

https://www.ecfr.gov/cgi-bin/text-idx?SID=026831e0c108c2b6642ba783dccab36f&mc=true&node=sp40.7.60.d_0c&rgn=div6

40 CFR 60 Subpart Kb – Standards of Performance for *Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels)* for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984.

https://www.ecfr.gov/cgi-bin/text-idx?SID=026831e0c108c2b6642ba783dccab36f&mc=true&node=sp40.7.60.k_0b&rgn=div6

40 CFR 60 Subpart VV – Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006

<https://www.ecfr.gov/cgi-bin/text-idx?SID=026831e0c108c2b6642ba783dccab36f&mc=true&node=sp40.7.60.vv&rgn=div6>

40 CFR 63 Subpart A - National Emission Standards for Hazardous Air Pollutants for Source Category: General Provisions

<https://www.ecfr.gov/cgi-bin/text-idx?SID=026831e0c108c2b6642ba783dccab36f&mc=true&node=sp40.11.63.a&rgn=div6>

40 CFR 63 Subpart FFFF – National Emission Standard for Hazardous Air Pollutants for *Miscellaneous Organic Chemical Manufacturing*.

<https://www.ecfr.gov/cgi-bin/text-idx?SID=026831e0c108c2b6642ba783dccab36f&mc=true&node=sp40.14.63.ffff&rgn=div6>

40 CFR 63 Subpart ZZZZ – National Emission Standard for Hazardous Air Pollutants for *Stationary Reciprocating Internal Combustion Engines*.

<https://www.ecfr.gov/cgi-bin/text-idx?SID=026831e0c108c2b6642ba783dccab36f&mc=true&node=sp40.15.63.zzzz&rgn=div6>

40 CFR 63 Subpart DDDDD - National Emission Standards For Hazardous Air Pollutants For *Industrial, Commercial, And Institutional Boilers And Process Heaters*

<https://www.ecfr.gov/cgi-bin/text-idx?SID=026831e0c108c2b6642ba783dccab36f&mc=true&node=sp40.15.63.ddddd&rgn=div6>