

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection**

M420473520

FACILITY: Zeeland Farm Services, Inc.		SRN / ID: M4204
LOCATION: 2468 84th Ave, ZEELAND		DISTRICT: Grand Rapids
CITY: ZEELAND		COUNTY: OTTAWA
CONTACT: Bridgette Rillema , Environmental Manager		ACTIVITY DATE: 08/28/2024
STAFF: Chris Robinson	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY '24 inspection to determine this facility's compliance status with respect to MI-ROP-M4204-2018b and any other applicable air quality rules and regulations.		
RESOLVED COMPLAINTS:		

I. Introduction

Staff Chris Robinson (CR) and Heidi Hollenbach (HH) from Michigan's Department of Environment, Great Lakes, and Energy (EGLE) Air Quality Division (AQD) conducted an unannounced onsite inspection of Zeeland Farm Services, Inc. (SRN M4204) located at 2468 84th Street, Zeeland, Michigan on August 28, 2024. Prior to entry CR surveyed the perimeter of the facility for odors and visible emissions, none were observed. Weather conditions were approximately 80°F, mostly cloudy with northwest winds at approximately 12 mph (www.weatherunderground.com).

AQD staff met with Hannah O'Toole, EHS Manager, and Bridgette Rillema, Environmental Manager. The purpose of the inspection was relayed, which was to determine this facility's compliance status with respect to applicable state and federal air quality rules and regulations including Renewable Operating Permit (ROP) No. MI-ROP-M4204-2018b. Identification was also provided.

II. Facility Description

Zeeland Farm Services, Inc. (ZFS) is a grain distribution and soybean processing facility. The facility receives in raw soybeans, and other grains, which are either stored for future sale or sent on for further processing. Soybeans are the only grain that is further processed. When further processed, the soybeans start by undergoing extraction. The first steps include drying, cracking, and flaking. Not all of the soybeans have to be dried, using the drying process, before they are processed. All "waste" from this process is captured and sold for other animal feed uses. Hexane is used in the extraction process, of which most is recovered during the extraction process. After extraction, the soybean oil can be sold as is, or is further refined. The grain elevator portion of ZFS has a capacity of 707,000 bushels.

The site where ZFS is located contains several other buildings. In addition to the Zeeland Farm Services buildings, there is a trucking building, owned by Zeeland Freight Services, and a general office building, owned by ZFS Solutions. It has been previously determined that the generator located at the ZFS Solutions office building is part of ZFS, but Zeeland Freight Solutions has been determined to be a separate entity.

III. Regulatory Analysis

ZFS is a Major source for Volatile Organic Compounds (VOC's), Particulate Matter (PM), Carbon Monoxide (CO), Nitrogen Oxides (NOx), Hazardous Air Pollutants (HAP's) and therefore subject to the Title V program (40 CFR Part 70). ZFS is also subject to several Federal Regulations, of which many of the requirements are written into the ROP:

- New Source Performance Standards (NSPS) 40 CFR Part 60 subpart Dc for small industrial-commercial-institutional steam generating units; Subpart DD for grain elevators, and JJJJ for stationary spark ignition combustion engines.
- National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63 Subparts GGGG for solvent extraction for vegetable oil production; subpart DDDDD for industrial, commercial, and institutional boilers and process heaters; and ZZZZ for stationary reciprocating internal combustion engines (RICE).
- Compliance Assurance Monitoring (CAM) requirements promulgated under 40 CFR Part 64.

IV. Compliance Evaluation**1) MI-ROP-M4204-2018b**

Stack dimensions were not explicitly measured during this inspection. However, ZFS informed the AQD on July 21, 2023, that the stacks for EUBOILER, EULF/NGBLR5, and REFBOILER did not meet the permitted requirements. A Violation Notice was issued on January 30, 2024, and the facility is working to resolve these issues. In addition, at AQD's request, on February 15, 2024, ZFS verified the heights of the five (5) horizontal stacks for EUDRYING. CR was onsite to observe, and they all met the permitted requirements.

All semiannual and annual reports required by the ROP have been received. The facility initially did not report the stack dimension violations as deviations. Revised reports were requested and received. However, the facility was under the impression that only monitoring and recordkeeping deviations were required to be reported in the semiannual. CR informed them that all deviations must be reported, and he provided supporting documentation.

Source Wide Conditions

Opacity from all onsite vehicle traffic is limited to 5%, none was observed during the inspection. ZFS has submitted a fugitive dust plan, preventative maintenance plan (PMP), and a malfunction abatement plan (MAP). The facility is required to conduct and record daily non-certified visible emissions observations of on-site vehicle traffic when traffic is present. These records, which were reviewed onsite, indicate that ZFS is taking visible emission observations daily and is noting when visible emissions are present. ZFS is following the outlined requirements of the fugitive dust plan.

No soybeans or soybean meal is stored outside, it is all kept in silos.

EUBOILER

EUBOILER is located in the boiler building next to the prep building. It is an existing Johnston 35 MMBTU/Hr. firetube boiler that is capable of burning natural gas, distillate oil, landfill gas, and soy oil.

This unit is subject to the NSPS for Industrial-Commercial-Institutional Steam Generating Units (40 CFR Part 60 Subpart Dc) and the NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63 Subpart DDDDD). The requirements of Subpart DDDDD will be evaluated in FGBOILERS, below.

ZFS primarily burns landfill gas and natural gas in this boiler, and it was using landfill gas at the time of the inspection. Distillate and Soybean oil has not been used in some time. If the boiler were to burn distillate oil, the sulfur content of the distillate oil is limited to a maximum of 0.5% by weight. However, since no distillate oil has been used, there is no sulfur content data available.

ZFS is tracking the natural gas and landfill usage for this boiler. As of August 2024, the month with the highest natural gas usage was March 2024 at 2,568,091scf and the month with the highest landfill gas usage was also in March 2024 at 37,687,792 scf. Fuel usage is being tracked daily and monthly.

EUDRYING

This emission unit is the Cimbria Super Cyclofan grain dryer that consists of five (5) associated horizontal exhaust stacks. Not all of the soybeans are dried, but rather only those that are not at the proper moisture level to undergo the further processing.

Particulate matter (PM) emissions from each stack in EUDRYING is limited to 0.03 lbs./1,000 lbs. of exhaust gases on a dry gas basis. PM₁₀ and PM_{2.5} are limited to 12.65 pounds per hour (pph) and 10.12 pph, respectively, for the total of the five (5) exhaust stacks combined. Stack testing is required to be conducted within 5 years of the date of the previous testing. The previous two tests were conducted in October 2018 and on October 17, 2023. The emissions results from the October 2023 test showed PM emissions from stack SVCIMBRIA3 (middle stack) of 0.004 pounds/1000 pounds of exhaust gas. PM₁₀ and PM_{2.5} emissions determined from SVCIMBRIA3 were multiplied by Five (5) to determine lb/hr emissions for all stacks combined, which were, 0.95 pph, for PM₁₀, and 0.80 pph for PM_{2.5}. Additionally, each stack has an opacity limit of 10% with daily non-certified visual emissions (VE) readings required. ZFS is conducting the daily readings, and records reviewed onsite indicate no excess opacity.

Soybean throughput is limited to 225,000 tpy, based on a 12-month rolling time period and 2,520 tons per day. Based on the attached records, as of August 2024, the 12-month rolling throughput for soybeans was 73,844.46 tons and the highest daily throughput was on February 21, 2024, at 1107.99 tons.

EUPREPEQUIPMENT

This emission unit covers all of the equipment used to prepare the soybean for oil extraction. The various pieces of equipment include a scale, jet dryer, vertical seed conditioner (VSC), CCC aspirator, CCC cyclone, cracker, hull separator, jet dryer cyclone, split soy aspirator, secondary aspirator, four (4) flakers, hull screener, hull grinder, two (2) screeners, two (2) meal grinders, ball crusher, mixing screw conveyor, meal leg, four (4) loadout bins, two (2) loadout spouts, and a baghouse. The emission unit with a baghouse, which controls the PM emissions from all the equipment except for the VSC, is subject to 40 CFR Part 64 Compliance Assurance Monitoring (CAM). ZFS also has a Malfunction Abatement Plan (MAP) for both the baghouse and the VSC cyclone. The specifications of the MAP have been implemented and per the records, no malfunctions have occurred.

The VSC Cyclone is subject to several PM emission limits. PM is limited to 0.05 lbs./1000 lbs. of exhaust gas on a dry gas basis, PM₁₀ to 2.0 pph, and PM_{2.5} to 1.4 pph. Testing was last conducted in October 2020 resulting in emissions of 0.02 lb./1000 lb. exhaust gas for PM, and 0.54 pph for both PM₁₀ and PM_{2.5}. The next test is due in 2025. No opacity was observed from the VSC during the inspection, and non-certified VE records indicate compliance.

Testing of the baghouse was conducted to ensure compliance with its particulate limits of 0.044 lbs. PM/1000 lbs. exhaust gas on a dry gas basis, 5.36 pph for PM₁₀, and 4.25 pph for PM_{2.5}. The previous two tests were completed on October 18, 2018 & June 27, 2023. The June 2023 test resulted in emissions of 0.001 lb./1000 lb. exhaust gas for PM, and 0.18 pph for both PM₁₀ and PM_{2.5}. The baghouse is equipped with a magnehelic gauge and had a pressure drop of approximately 4" WC at the time of the inspection. The attached records indicate the baghouse typically operates at approximately 4" WC and readings are recorded at least twice daily. The magnehelic gauge is calibrated quarterly and the records also indicate no opacity from the baghouse.

This emission unit is subject to the compliance assurance monitoring (CAM) requirements of 40 CFR Part 64. ZFS has properly reported pursuant to the CAM requirements and appears to be following their CAM plan.

VOC emission testing for EUPREPREQUIPMENT and EUMEALLOADOUT was requested by region 5 US EPA under a Section 114 request. ZFS conducted this testing on March 12, 2024, and the results indicated that VOCs were emitted from EUPREPEQUIPMENT with an average concentration of 23.6 ppmv. Based on the amount of beans processed, during testing, for EUPREPEQUIPMENT, the VOC emission factor and lb/hr emission rate was calculated to be 0.069 lbs./tons processed or 3.03 lbs/hour. EUMEALLOADOUT is discussed below.

Since the requirements for EUPREPEQUIPMENT were established pursuant to Rule 201(1)(a) through PTI Nos. 62-15 and 4-19, changes to this emission unit must be covered under a Rule 285 meaningful change demonstration or a PTI modification. Since VOCs were not evaluated during permitting for this emission unit and ZFS has not prepared a meaningful change demonstration, operating EUPREPEQUIPMENT with VOC emissions is considered a Rule 201 violation.

EULF/NGBLR5

This is a 6.27 MMBTU/hr. boiler that can burn either natural gas or landfill gas. This boiler is subject to emission limits of 0.13 lb./MMBtu and 0.82 pph for NO_x and 0.53 pph for CO. All of these limits apply when burning both landfill gas and natural gas. Testing was required to be conducted prior to December 31, 2020, and was conducted in October 2020. Testing indicated emissions of 0.01 pph for CO, and 0.03 lb./MMBTU and 0.19 pph for NO_x. The next test is due in 2025. ZFS is tracking the natural gas and landfill usage for this boiler. As of August 2024, the month with the highest natural gas usage was December 2023 at 3,270,080 scf and the month with the highest landfill gas usage was August 2024 at 3,971,517 scf. Fuel usage is being tracked daily and monthly.

This boiler is also subject to 40 CFR Part 63 Subpart DDDDD (Boiler MACT) which is discussed in FGBOILERS below.

EUNUKBOILER

The EUNUKBOILER is a 4.00 MMBTU/hr. firetube natural gas boiler located in the refinery. This boiler is used to provide high pressure steam for the plant's deodorizing system. This boiler is subject to emission limits of 0.13 lb./MMBTU and 0.52 lb./hr. for NO_x, and 0.336 lb./hr. for CO. ZFS is tracking the natural gas usage for this boiler monthly. As of August 2024, the month with the highest natural gas usage was December 2023 at 1,223,756 scf.

This boiler is also subject to 40 CFR Part 63 Subpart DDDDD (Boiler MACT) which is discussed in FGBOILERS below.

EUREFBOILER

The refinery boiler is a 16.8 MMBTU/hr. firetube boiler that can either burn natural gas or landfill gas. This boiler can provide steam to the refinery plant or send it to the extraction plant. It is subject to the provisions of NSPS 40 CFR Part 60 Subpart Dc and is subject to emission limits of 0.13 lb./ MMBTU and 2.18 pph, both for NO_x, and 1.42 pph for CO. All limits apply when burning natural gas and landfill gas, or a combination of both. Testing for this boiler was required by December 31, 2020, and was conducted in October 2020. Testing was conducted using landfill gas, as a worst-case scenario, and indicated emissions of 0.21 pph for CO, and 0.28 pph and 0.02 lb./MMBTU for NO_x. The next test is due in 2025.

ZFS is tracking the natural gas and landfill gas usage for this boiler monthly. No natural gas was used in 2024, thus far, and as of August 2024, the month with the highest landfill gas usage was July 2024 at 13,570,261 scf.

This boiler is also subject to the boiler MACT, 40 CFR Part 63 Subpart DDDDD, and has completed the required one-time energy assessment and the required tune-ups.

EUAMMONIA

This emission unit is no longer onsite and ZFS requested to have this table removed from the ROP renewal.

EUGENERATOR

This emission unit is for a 70-kW natural gas fired emergency engine installed in April 2016. This engine is subject to the provisions of 40 CFR Part 60 Subpart JJJJ and 40 CFR Part 63 Subpart ZZZZ. Compliance with 40 CFR Part 63 Subpart ZZZZ is demonstrated via compliance with 40 CFR Part 60 Subpart JJJJ. This is an EPA Certified engine, thus meeting the emission limits of 387 g/hp-hr. for CO and 10 g/kW-hr for NOx +HC.

The unit is equipped with an hour meter and operating hours are being tracked. The unit is typically run weekly for testing and maintenance for approximately 45 minutes. As of August 30, 2024, the total operating hours were 351.8.

FGHANDLING

FGHANDLING includes all equipment used for the off-loading of the soybeans such as: receiving pits, storage bins, bean cleaners, the south receiving leg, the north reclaim leg, the wet let, the pit leg, the cleaner leg, the receiving belts, bin fill conveyors, and bin reclaim conveyors. Emissions from this flexible group are controlled by cyclones, baghouses, and oil spray applicators. This equipment is subject to the provisions of 40 CFR Part 60 Subpart DD for grain elevators. ZFS was receiving soybeans in pit 2 at the time of the inspection. The south door of the truck dumber enclosure was closed and the oil spray and baghouse were operating.

The grain handling operations, including loading, and unloading have opacity limits of 0%, 10%, and 5%. Grain was being received (unloaded) at the time of the inspection and for a brief moment some opacity was observed exiting the north end of the enclosure. Although a formal evaluation was not conducted it was most likely over the 5% limit. This was discussed with the facility, and they will look into it. ZFS is required to conduct daily non-certified visual emissions observations, and per the attached records, they are properly doing so, and are demonstrating compliance with the opacity limits. The pit 2 loading area where the trucks dump the soybeans has an enclosure in place.

FGEXTRACTION is subject to the emission limits in the table below that are demonstrated through testing and proper operation and maintenance. Testing results are included in the table.

Pollutant	Limit	Equipment	Previous Two (2) Test Dates	Most Recent Test Result
PM	0.023 grams per dscm	Each stack in FGHANDLING	Oct 2018 & Oct 17-18, 2023	EUHANDLING1 = 0.0016 g/dscm EUHANDLING2 = 0.0011 g/dscm
PM	0.019 pound per 1,000 pounds of exhaust gases, calculated on a dry gas basis	Each stack in FGHANDLING		EUHANDLING1= 0.0014 lbs/1000 lbs exhaust gas EUHANDLING2 = 0.0009 lbs/1000 lbs exhaust gas
PM10	0.86 pounds per hour	FGHANDLING EUHANDLING (SVRECSTACK)		0.08
PM2.5	0.69 pounds per hour	FGHANDLING EUHANDLING (SVRECSTACK)		0.08
PM10	0.51 pounds per hour	FGHANDLING EUHANDLING2 (SVRECSTACK2)		0.03
PM2.5	0.41 pounds per hour	FGHANDLING EUHANDLING2 (SVRECSTACK2)		0.03

ZFS is allowed to receive a maximum of 10,500 tons of soybeans per day, and 450,000 tons of soybeans per year, based on a 12-month rolling time period. ZFS is tracking the daily monthly, and 12-month rolling totals of soybeans received. Per the attached records, the highest daily load of soybeans received thus far in 2024 was on January 3, 2024, at 3,198.36 tons. As of August 2024, the month with the highest 12-month rolling total received was August at 311,064 tons of soybeans received.

FGEXTRACTION

This includes all equipment used to remove oil from the soybeans which includes: the extractor, DTDC, spent flake conveyor, evaporators, oil stripper solvent system, plug screw aspiration, solvent dump tank, solvent storage tanks, MO stripper, MO Absorber, MO heater, MO cooler, MO heat exchanger, MO storage tanks, main gas vent, vacuum gauge,

and fan motion alarm, and DTDC cyclones. All of the equipment and processes included in this flexible group are subject to 40 CFR Part 63 Subpart GGGG, the solvent extraction for vegetable oil production NESHAP.

FGEXTRACTION is subject to the emission limits in the table below that are demonstrated through testing and proper operation and maintenance. Most recent results are included in the table. The next test is due in 2025.

Pollutant	Limit	Equipment	Previous Two (2) Test Dates	Most Recent Test Result
VOC	7.12 lb/hr	FGEXTRACTION/ EUEXTRACTION (SVMMAINVENT)	Aug 2018 & June 2023	0.09 lb/hr
VOC	14.6 lb/hr	FGEXTRACTION/ EUDTDC (SVDTDC)	Oct 2020	6.0 pph
PM	0.034 lbs per 1,000 lbs of exhaust gases, calculated on a dry gas basis		Oct 2020	0.009
PM10	3.03 pph			0.59 pph
PM2.5	2.42 pph			0.59 pph

The main vent and DTDC are also subject to annual VOC emission limits, based on a 12-month rolling time period, of 30.3 tpy and 62.2 tpy, respectively. Based on attached records the months with the highest rolling totals were September 2023 for the main vent at 0.73 tons and February 2024 for DTDC at 25.80 tons.

There is also an opacity limit of 10% from the DTDC vent. No opacity was noted during the inspection, and the attached records of daily non-certified visual emissions observations corroborate this. The extraction plant has a throughput limit of 1,050 tons of soybeans per day, and 383,250 tons per year. Based on the attached records, the highest daily throughput of soybeans was 1,043.20 tons on 6/27/24, which is close to the permit limit. As of August 2024, the month with the highest 12-month rolling total throughput was February 2024 at 348,657 tons.

Solvent extraction is limited to 0.150 gallons per ton of soybeans processed, based on a 12-month time period and to 0.250 gallons per ton of soybeans processed based on a three-month rolling time period. Per the attached records, the month with the highest three-month and the highest 12-month rolling total gallons was in May 2024 at 0.095 gal/ton and 0.10 gal/ton, respectively.

ZFS has implemented and maintains a MAP and PMP and is operating in accordance with those plans. The four (4) cyclones and the absorber system appeared to be properly operating, and all of the storage tanks associated with the extraction process are tied into the system. The desolventizer toast sparge deck temperature was operating at a temperature of 226°F, which is compliant with the minimum temperature requirement of 195°F. Records also indicate compliance with the minimum required temperature.

The main gas vent of the mineral oil system is required to have an LEL reading of 0-50%, with readings taking at least four (4) times per day. Records indicate the LEL has been reading between 5% and 36%.

As previously mentioned, this flexible group is subject to the provisions of 40 CFR Part 63 Subpart GGGG The National Emission Standard for Hazardous Air Pollutants (NESHAP) for Solvent Extraction for Vegetable Oil Production. The facility has processed, as of August 2024, a 12-month rolling total of 338,174 tons of oilseed and is calculating the compliance ratio in accordance with the NESHAP. ZFS is tracking the weighted average volume fraction of HAPs, as required, indicating the 12-month rolling average as 0.65 as of August 2024. ZFS is also recording the solvent loss on a monthly and 12-month rolling basis. As of August 2024, the 12-month rolling solvent loss was 31,279 gallons. The weighted average volume fraction equates to a total HAP percentage at approximately 49.62%, which is being recorded, as required for HAP fractions greater than the 1% as per 40 CFR 63.2850 for existing sources and had varied throughout the year from as high as 49.62 to as low as 48.37%.

FGLF/NGENGINES

This flexible group covers two (2) 2,300 BHP Caterpillar reciprocating internal combustion engines, that can burn either landfill or natural gas. Both engines were in operation at the time of the inspection, and they were running on landfill gas. The energy from these engines is either used for running ZFS’s operations or are sold to a utility company. These engines are subject to the provisions of 40 CFR Part 63 Subpart ZZZZ for Reciprocating Internal Combustion Engines (RICE) and to the New Source Performance Standard (NSPS) 40 CFR Part 60 Subpart JJJJ for Stationary Spark Ignition Internal Combustion Engines. An initial notification was received for these units.

Emissions from these engines are limited to 4.56 pph for NO_x, 22.44 pph for CO, 4.02 pph for VOC, 2.8 pph for Formaldehyde, and 2.77 pph for SO₂. All limits are applied to the engines individually. Testing was most recently done in June 2023 for both engines and indicated the following emission rates: Engine1: 2.79 pph for NO_x, 13.14 pph, for CO, 2.12 pph for VOC, 1.2 pph for formaldehyde, and 1.69 pph for SO₂. Engine 2 had the following emissions: 2.71 pph for NO_x, 12.55 pph, for CO, 0.96 pph for VOC, 1.1 pph for formaldehyde, and 1.69 pph for SO₂. The facility has developed and implemented a malfunction abatement plan (MAP) for these engines.

ZFS is tracking the quantity of natural gas and landfill gas combusted in each engine on a monthly basis. Since January 2024 engine 1 has combusted 2,016,024 scf of natural gas and 115,270,401 scf of landfill gas. Engine 2 has combusted 3,119,146 scf of natural gas and 65,435,341 scf of landfill gas. The maximum heat content for the natural gas is 1,000 BTU/SCF and 523.3 BTU/SCF for Landfill gas. The Landfill gas BTU content is derived from information from the landfill gas supplier, and averages around 500 BTU/SCF. ZFS is also tracking the hours per day that each engine operated.

FGBOILERS

This flexible group covers all of the boilers that are subject to the provisions of 40 CFR Part 63 Subpart DDDDD. The emission units covered include: EUBOILER, EULF/NGBLR5, EUNUKBOILER, and EUREFBOILER. All of these boilers either burn landfill gas, natural gas, or a combination of both. Each of the boilers have had their required tune-ups based upon the required tune-up schedule as required for each specific boiler, see table below. Most recent inspections are attached. Additionally, each of the boilers have been following the required work practice standards. ZFS has elected to meet the requirements for the mercury specification via testing. Testing was conducted in 2016, and the results indicated a mercury content in the landfill gas of 0.22 µg/dscm, additional testing is not required at this time.

Boiler	Rating	Tune-up Frequency	Most Recent Tune up
EUBOILER	35	5	9/16/2020
EULF/NGBLR5	6.27	2	9/13/2022
EUNUKBOILER	4	5	9/17/2020
EUREFBOILER	16.8	5	9/17/2020

ZFS has also been properly submitting all required reporting, in accordance with 40 CFR part 63 Subpart DDDDD, including meeting the other fuel requirements.

FGRULE290

The refinery plant relies on Rule 290 as an exemption from Rule 201 permitting. The only pollutant that is reported as emissions from the refinery process is hexane. Per the attached records, the highest monthly emissions from the refinery were in August 2024 at 0.10 tons (200 lbs.)

ZFS also has a 157 HP Clarke Diesel Fire Pump that was installed in April 2019. This engine is Exempt from Rule 201 permitting under Rule 285(2)(g). This engine is subject to the provisions of 40 CFR Part 60 Subpart IIII for the "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines" and 40 CFR Part 63 Subpart ZZZZ the NESHAP for "Stationary Reciprocating Internal Combustion Engines". Compliance with 40 CFR Part 63 Subpart ZZZZ is demonstrated via compliance with 40 CFR Part 60 Subpart IIII. This is an EPA certified engine, thus meeting the requirements of Subpart IIII. This engine should be added to the ROP during the next renewal.

2) Rule 201 Exempt Emission Units Not in the ROP

Cold Cleaners:

ZFS has two (2) cold cleaners that appear exempt per Rule 281(2)(h) for cold cleaners with an air/vapor interface of not more than 10 square feet. Lids were closed and instructions posted. Based on the Safety Data sheet, the cleaning solvent used is 100% VOCs by weight. The cold cleaner requirements should be added to the ROP during the next renewal.

Engines:

ZFS has a 157 HP Clarke Diesel Fire Pump that was installed in April 2019. This engine is Exempt from Rule 201 permitting under Rule 285(2)(g) but subject to the provisions of 40 CFR Part 60 Subpart IIII the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. This engine is also subject to the provisions of 40 CFR Part 63 Subpart ZZZZ the NESHAP for Stationary Reciprocating Internal Combustion Engines. Compliance with 40 CFR Part 63 Subpart ZZZZ is demonstrated via compliance with 40 CFR Part 60 Subpart IIII. This is an EPA certified engine, thus meeting the requirements of Subpart IIII. This generator will be added to facility's ROP during the next renewal.

Other:

Emission unit EUMEALLOADOUT includes a building and equipment for storage, transfer, and loading meal into trucks and containers. Meal is loaded into trucks through overhead spouts and a vacuum system collects dust from inside the

building which is routed to a baghouse for control. This emission unit had been part of EUPREPEQUIPMENT but in 2018 ZFS requested to separate it out since it was no longer associated with the baghouse for EUPREPEQUIPMENT. ZFS provided a Rule 291 demonstration for EUMEALLOADED which did not include potential emissions for VOCs.

As mentioned above, VOC emission testing for EUMEALLOADOUT was requested by region 5 US EPA under a Section 114 request. ZFS conducted this testing on March 12, 2024. The results indicate that VOCs were present with an average concentration of 22.5 ppmv. Based on the amount of beans processed, during testing, the VOC emission factor and lb/hr emission rate was calculated to be 0.0084 lbs/tons processed or 1.55 lbs/hour.

Given this information potential emissions of VOCs would be approximately 7 tpy ($1.55 * 8760 / 2,000 = 6.79$ tons), which exceeds the potential emissions allowed by Rule 291 for VOCs of 5 tpy. This is considered a Rule 201 permitting violation. In agreement with the USEPA, this emission unit needs to be properly permitted.

Part "D" of ZFS's ROP renewal forms state that EUMEALLOADOUT is Rule 201 exempt per Rules 291, 284(2)(k), and 285 (2)(dd). Only one exemption can be used per emission unit and permitted emission units cannot be exempt. The ROP renewal forms must be updated accordingly.

3) 2023 Annual Emissions Reporting

A summary of the facility's 2023 emissions is provided in the table below. No issues were identified during the review. However, on March 12, 2024, in response to an EPA request, ZFS conducted testing on EUMEALLOADOUT and EUPREPEQUIPMENT to determine if residual hexane was making it through the process from EUEXTRACTION. The results indicated that it was. Past emissions reported by ZFS do not take this into account. EPA has requested that ZFS update their reported emissions for 2022 and 2023.

Pollutant	Reported Amount (Tons)
CO	55.92
Lead	0.00002
NOX	43.84
PM10-PRI	12.16
PM10-FIL	0.0002
PM25-PRI	11.23
PM25-FIL	0.0002
PM-CON	0.0002
SO2	17.61
VOC	32.71
NH3	0.08

V. Compliance Determination

Based on observations, discussions, and a records review Zeeland Farm Services, Inc. is not operating in compliance with all applicable air quality Rules and Regulations. Specifically, the stack dimensions for EUBOILER, EULF/NGBLR5, and REFBOILER do not meet the permitted requirements; VOC emissions were not evaluated during the permitting of EUPREPEQUIPMENT, which would most likely represent a meaningful change; and the Rule 291 demonstration for EUMEALLOADOUT did not include VOC emissions and based on the VOC emission rate calculated by the facility from testing results potential emissions would exceed what is allowed by Rule 291.

Compliance issues noted for EUPREPEQUIPMENT and EUMEALLOADOUT are considered Rule 201 violations. However, a violation notice is not being issued at this time as the emissions of VOCs from these processes were previously unknown. Per discussions with the USEPA these emission units need to be properly permitted.

A violation notice has already been issued for the stacks and the facility is working to resolve the issues, a 2nd violation notice will not be issued at this time. However, the facility must continue to provide biweekly updates until the issues are resolved.

NAME 

DATE 9/30/2024

SUPERVISOR 