N1162
manila
Ingham

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

N116249823

FACILITY: MSU SRN K3249 formerly MBI		**SRN / ID:** N1162
LOCATION: 3900 COLLINS RD, LANSING		**DISTRICT:** Lansing
CITY: LANSING		**COUNTY:** INGHAM
CONTACT: Thomas Grover , Environmental Compliance Officer		**ACTIVITY DATE:** 07/24/2019
STAFF: Daniel McGeen	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Inspection of anhydrous ammonia tank, emergency generators, and boilers, as part of overall inspection of MSU (K3249).		
RESOLVED COMPLAINTS:		

On 7/24/2019, EGLE, AQD conducted a scheduled inspection of the Michigan State University (MSU) lab facility formerly operated by MBI. Since 4/1/2016, the facility has been owned by MSU, State Registration Number (SRN) K3249. The text of this report is also entered into the inspection report for MSU. In the future, the permits for SRN N1162 will be rolled into the ROP for MSU, when it is next renewed.

Environmental contacts:

- Tom Grover, CHMM, Environmental Compliance Officer; 517-355-6651, grovert@ehs.msu.edu
- Mary Lindsey, Senior Environmental Coordinator; 517-432-5542, lindseym@ehs.msu.edu

Facility description:

This facility is utilized for biotechnology development.

Emission units:

Emission unit	Emission unit description	PTI No., or exemption rule	Federal regulations	Compliance status
EU-AMMONIA; anhydrous ammonia Supply System	Leased 1,000 gallon storage tank, with bypass to the Ammonia Capture System	127-07	NA	Compliance
Ammonia Capture System (scrubber)	Countercurrent packed column ammonia absorber for liquid and/or gaseous ammonia	Rule 283(1)(a)(viii)	NA	Did not observe
Boilers	Two 400 horsepower (hp) and one 250 hp natural gas and no. 2 fuel oil-fired boilers	575-85	40 CFR Part 63, Subpart DDDDD	Compliance
EU-EMERGENG1	Cummins Model DFEK-7511871, Compression Ignition (diesel fuel-fired), 507 kW, 680 hp, SN: H110237490; build date 8/8/2011	Rule 285(g) rather than 285(2)(g), because of installation pre-12/20/2016	40 CFR Part 63, Subpart ZZZZ	Compliance
EU-EMERGENG2	Cummins Model DFEK-7511871, Compression Ignition (diesel fuel-fired), 507 kW, 680 hp, SN: H110237489; build date 8/8/2011	Rule 285(g) rather than 285(2)(g), because of installation pre-12/20/2016	40 CFR Part 63, Subpart ZZZZ	Compliance

***An *emission unit* is any part of a stationary source that emits or has the potential to emit an air contaminant.**

Regulatory overview:

This facility, by itself, is considered to be a true *minor source,* rather than a *major source*. A major source has the potential to emit (PTE) of 100 tons per year (TPY) or more, of one of the criteria pollutants. *Criteria pollutants* are those for which a National Ambient Air Quality Standard exists, and include carbon monoxide, nitrogen oxides, sulfur dioxide, volatile organic compounds (VOCs), lead, particulate matter smaller than 10 microns, and particulate matter smaller than 2.5 microns. However, subsequent acquisition of this facility by MSU, itself a major HAPs source, makes this facility a major source.

As of the 3/9/2016 date of this inspection, MBI was considered a minor or *area source* for Hazardous Air

Pollutants (HAPs), because it was not considered to have a PTE of 10 TPY or more for a single HAP, nor to have a PTE of 25 TPY or more for combined HAPs.

MBI received general Permit to Install (PTI) No. 127-07 on 4/5/2007, for an anhydrous ammonia storage and handling process. A scrubber, the Ammonia Capture System, was identified in the PTI application. The permit does not appear to cover a scrubber, but the scrubber may be considered exempt under the Rule 283(1)(a)(viii) exemption, as discussed in the 11/13/2008 inspection activity report. This exemption covers pilot processes or process equipment using best available control technology for toxics (T-BACT).

In 1985, Michigan Biotechnology Institute, as MBI was known at that time, received Permit to Install No. 575-85, for oil and natural gas-fired boilers. This PTI was not located in the Lansing District Office files, and I was therefore unaware of it, until some time after the inspection. A copy was found in the AQD Central Office permit files. The boilers are not subject to 40 CFR Part 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, unless they were reconstructed or modified after 6/9/1989. To the best of my knowledge, they have not been reconstructed or modified.

MBI used to own the MBI building, but subsequently leased it from the MSU Trust. However, as of 4/1/2016, MSU became the owner of the building. The PTI for the ammonia tank, No. 127-07, and the PTI for the boilers, No. 575-85, will therefore be rolled into the next renewal cycle for MSU's ROP, five years from now. As MSU is a major source, the boilers are therefore subject to the major source boiler National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 63, Subpart DDDDD.

Note: MBI has had its own State registration Number (SRN), N1162, at least since the boiler PTI was issued in 1985. MSU, who has acquired this facility as of 4/1/2016, has its own SRN, K3249.

Fee status:

As of 3/9/2016, this facility was not considered fee-subject, because it was not a major source for criteria pollutants, nor a major source for Hazardous Air Pollutants (HAPs). Additionally, it was not a fee source because it was not subject to federal New Source Performance Standards nor federal Maximum Achievable Control Technology standards. The facility was not required to submit an annual air emissions report via the Michigan Air Emissions Reporting System (MAERS). However, it is now owned by MSU, which is classified as Category I-fee subject, for being a major source.

Location:

The former MBI facility is located just west of farm fields belonging to MSU. Based on satellite images, there is a MSU horse teaching facility about 600 feet to the northeast of the anhydrous ammonia tank's location, and a Spring Arbor University building about 400 feet to the south. There is a hotel about 600 feet to the south of the tank, and US-127 is about 300 feet to the west of the tank.

Recent history:

The facility was most recently inspected by AQD on the following dates:

- 4/18/2017, as part of an overall MSU inspection by AQD's Nathan Hude. See activity report under MSU's SRN, K3249. The former MBI facility was found to be in compliance with air requirements at this time.
- 3/9/2016, by myself. A Violation Notice was subsequently sent by AQD, as emergency signage, while at the site, was not conspicuously placed, and there were no records available to document annual review of emergency plan with fire department or emergency response agency.

Safety apparel required:

My understanding is that the safety apparel required would be safety glasses.

Arrival:

This was not an unannounced inspection. Because of the large amount of time needed for the overall inspection of MSU (SRN K3249) and this facility (parts of 3 days this year), and the need to have MSU environmental staff available at those times, this inspection was arranged in advance.

I arrived at the MSU environmental offices at 8:30 AM. I met with Mr Tom Grover, CHMM, Environmental Compliance Officer, and Ms. Mary Lindsey, Senior Environmental Coordinator. We drove to the former MBI Building, and arrived at 8:56 AM. We were met there by Mr. Phil Hegge, who for many years was the Facilities Manager of MSU's former MBI Building. He explained that he is now a part-time employee, working on call for MSU.

Note: The two boilers at the former MBI site permitted under PTI No. 575-85, and 2 emergency generators, were inspected earlier this year, on 3/22/2019, Day 1 of the 3 day MSU inspection this year. This field activity is summarized later in this inspection activity report, although it actually took place prior to today's date.

Inspection:

Anhydrous ammonia tank, general PTI No. 127-07:

As we examined the anhydrous ammonia tank, I could not detect any odors, nor could I see any visible emissions. Weather conditions were 68 degrees F, sunny, and clear, with winds 0-5 miles per hour, out of the north.

The permit application indicates that the capacity is 1,000 gallons. It is my understanding that the ammonia tank is seldom used, and that it has been roughly 1 and 1/2 years since anhydrous ammonia was delivered to the tank. It is also my understanding that MSU is considering whether to remove this tank or to let it stay.

The overall physical condition of the tank and equipment appeared to be very good. The tank is protected by metal poles or "truck guards," to prevent damage. It is located close to an exterior wall of the building. It is my understanding, from my 3/9/2016 inspection here, that the stainless steel lines coming from the tank have air actuated valves, and that the valves would automatically be "fail closed," if anything happened to the air supply.

Compliance with the updated anhydrous ammonia Tank General PTI's special conditions is described below. The general permit conditions are updated as needed on the AQD general permits webpage. The updated conditions apply to all previously issued general permits.

NOTE: The numbering and formatting of the special conditions in the updated general permit are different than in the original General PTI No. 127-07, as it was issued on 4/5/2007.

Gen. PTI 127-07 I. EMISSION LIMITS:

Not Applicable (NA.)

Gen. PTI 127-07 II. MATERIAL LIMITS:

NA

Gen. PTI 127-07 III. PROCESS/OPERATIONAL RESTRICTIONS:

Gen. PTI 127-07 Special Condition (SC) No. III. 1 requires the permittee to maintain onsite a copy of *Part 78, Storage and Handling of Anhydrous Ammonia* (MIOSHA 1910.111).

INSPECTION RESULT FROM 7/24/2019: COMPLIANCE. I was informed that they have a copy of this document. I provided a copy to MBI [previously, during the 3/9/2016 inspection, as they had a copy but it was not immediately available.

Gen. PTI 127-07 SC No. III. 2 states: The permittee shall not operate EU-AMMONIA unless the inspection and maintenance program specified in Appendix A of the general PTI is implemented and maintained.

INSPECTION RESULT FROM 7/24/2019: COMPLIANCE. I was informed that MSU does a periodic physical examination of the tank, although they do not use the exact inspection form in Appendix A of the General PTI No. 127-07 to do so.
Note: From the 3/9/2016 inspection, it is my understanding that Tanner, the company who owns the ammonia tank, and makes deliveries of anhydrous ammonia, handles the inspection and maintenance/upkeep of the tank, and all attached valves. Please refer to Appendix A, later in this report, for my check of all the items in the inspection and maintenance program.

Gen. PTI 127-07 SC No. III. 3 states: The permittee shall not operate EU-AMMONIA unless an emergency response plan, to be followed in the event of an emergency, has been approved by the local fire department or county emergency response agency, and is implemented and maintained. Prior to each spring season, the permittee shall review this plan with the local fire department or emergency response agency and make any necessary updates.

INSPECTION RESULT FROM 7/24/2019: COMPLIANCE. I was informed that they have a Pollution Incident Prevention (PIP) plan, and that they have their fire department come out annually to review. In addition, I was informed that they have Ingham County's Emergency Coordinator, Mr. Herb Corey, come out annually. I was advised that they develop emergency response plans for each building at MSU which is subject to Tittle III SARA regulations. I was advised that records are kept. As described, this complies with the permit requirement.

Gen. PTI No. 127-07 SC No. III. 4 states: EU-AMMONIA shall be located a minimum of 50 feet from the property line, 300 feet from any existing places of residence or private or public assembly, 500 feet from a school, apartment building, or institutional occupancy, and not less than 1,000 feet from a hospital or nursing home.

INSPECTION RESULT FROM 7/24/2019: COMPLIANCE. Based on satellite images, the tank appears to be about 600 feet from a university horse teaching facility, which is located northeast of MBI. This complies with the 500 foot setback requirement for schools. There is a hotel, about 600 feet south of the anhydrous ammonia tank. This complies with the 300 foot setback requirement. If the hotel is considered equivalent to an apartment building or place of institutional occupancy, the tank complies with the 500 foot setback requirement., in regard to this structure. There is no existing hospital or nursing home nearby. However, there is a teaching hospital under construction. In an 8/8/2019 email with attached satellite image, Ms. Lindsey indicated the teaching hospital will be about 3,100 feet from the anhydrous ammonia tank, well over the 1,000 foot minimum setback distance. This complies with the permit requirement.

Gen. PTI 127-07 SC No. III. 5 states: The permittee shall not operate EU-AMMONIA unless all transfer operations including transport deliveries are performed by a reliable person properly trained and made responsible for proper compliance with all applicable procedures.

INSPECTION RESULT FROM 7/24/2019: COMPLIANCE. I was informed that they do not have transfer operations here, since unlike a farm, they are not transferring ammonia to portable tanks. For deliveries, I was informed that the tank's owner, Tanner Industries, handles delivery of anhydrous ammonia, and has properly trained personnel. As described, this complies with the permit requirement.

Gen. PTI 127-07 SC No. III. 6 states: Nurse and applicator tank storage shall be located no less than 50 feet from the property line; 150 feet from any existing places of residence or pivate or public assembly; 250 feet from a school, apartment building, institutional occupancy; and notless than 1000 feet from a hospital or nursing home.

INSPECTION RESULT FROM 7/24/2019: NA. MBI does not have applicator or nurse tanks or storage thereof,

so this condition is non-applicable. However, I was advised that they do meet the setback criteria, if it was applicable to their anhydrous ammonia storage tank. My review of satellite images in 2016 and N. Hude's measurements using ArcGIS in 2017 during his inspection of MSU, SRN K3249, concurred with this.

Gen. PTI 127-07 SC No. III. 7 states: Nurse tank filling shall only be done from a permanent stationary storage tank.

INSPECTION RESULT FROM 7/24/2019: NA. MBI does not have nurse tanks, nor do they fill them, so this condition is non-applicable.

Gen. PTI 127-07 SC No. III. 8 states: Nurse and applicator tanks shall be filled to no more than 85% of liquid capacity by volume. Storage tanks may be filled according to temperature density correction tables in Rule 7801(b)(11) where tanks have a thermometer well and suitable level gauge.

INSPECTION RESULT FROM 7/24/2019: NA. This does not appear to be applicable, as MBI does not fill either nurse or applicator tanks.

Gen. PTI 127-07 SC No. III. 9 states: Vapor return lines shall be employed whenever necessary to ensure an accidental release from pressure relief valves will not occur during ammonia transfer operations.

INSPECTION RESULT FROM 7/24/2019: COMPLIANCE. I was advised by MSU staff that Tanner Industries has a vapor return line, which they bring with them and use for delivery operations. As described, this complies with the permit requirement .

Gen. PTI 127-07 SC No. III. 10 states: Nitrogen stabilizer shall not be added to any permanent stationary storage tank or to rail or truck transport tanks.

INSPECTION RESULT FROM 7/24/2019: COMPLIANCE. MSU does not add any nitrogen stabilizer, I was told.

Gen. PTI 127-07 IV. <u>DESIGN/EQUIPMENT PARAMETERS</u>:

PTI 127-07 SC No. IV.1 states: All containers shall be fitted with safety relief valves in accordance with Rule 7801(b)(9). Such valves shall be stamped with the date manufactured, and to be replaced, or re-tested and re-certified, at least every five years or more often, if there is evidence of danger or deterioration.

INSPECTION RESULT FROM 7/24/2019: COMPLIANCE. I was advised by MSU staff that the valves were replaced most recently in 2017, following the 2017 inspection by AQD's N. Hude. I did not see a date stamped in the valves, nor does it show up in photos I took. I subsequently emailed Ms. Lindsey, on 8/13/2019, to ask for the date stamped on the valves. On 8/15/2019, she sent an email and photo of the safety relief valves (please see attached). The view showed that the closest valve was stamped with 09E16, which appears to represent the date September 2016. Also, she pointed out that below the date stamp, someone had written 9/21. This appears to satisfy the requirement for being stamped with the date manufactured.

Gen. PTI 127-07 SC No. IV. 2 states: The permittee shall not operate EU-AMMONIA unless a remotely operated internal or external positive shut-off valve is installed to allow access for emergency shut-off of all flow from stationary storage containers.

INSPECTION RESULT FROM 7/24/2019: COMPLIANCE. I was shown that there is a shut-off valve, which is located underneath the anhydrous ammonia tank. During the 3/9/2016 inspection, I was shown that there is a switch inside the building, for this remotely operated shut-off valve. The switch is not required by the general permit to be labeled, but it was labeled "ammonia pump," following the 11/13/2008 AQD inspection.

Gen. PTI 127-07 SC No. IV. 3 states: The permittee shall not operate EU-AMMONIA unless a bulkhead, anchorage, or equivalent system is used at each transfer area so that any break resulting from a pull will occur at a predictable location while retaining intact the valves and piping on the plant side of the transfer area.

INSPECTION RESULT FROM 7/24/2019: NA. It is my understanding that this does not apply because they do not fill nurse tanks, and so there is no transfer area.
Note: The 11/13/2008 inspection report by AQD's Brian Culham states:
Because the MBI tank is small, only [1,000] gallons, it is not fitted with the large port used on agricultural supply mother tanks. There is no bulkhead installation either because the connection to the tank is similar to those on agricultural applicators or nurse tanks.

Gen. PTI 127-07 SC No. IV. 4 states: The permittee shall not operate EU-AMMONIA unless any liquid lines in rail and transport transfer areas are equipped with back pressure check valves and all liquid lines not requiring a back check valve and all vapor lines, are equipped with properly sized excess flow valves. These valves shall be installed on the main container side of the predictable break point at the bulkhead.

INSPECTION RESULT FROM 7/24/2019: NA. I was advised that the anhydrous ammonia tank does not have any transport transfer areas, as they do not transfer anhydrous ammonia to any other tanks. I was advised that there is a shut-off valve between the tank and the building, and two more valves after ammonia is piped into the building by a stainless steel pipe.

Gen. PTI 127-07 SC No. IV. 5 states: All hoses shall be replaced five years after the date of manufacture, or more often, if there is evidence of damage or deterioration.

INSPECTION RESULT FROM 7/24/2019: NA. It is my understanding that this does not apply, as the hoses referenced in the general PTI are for nurse tanks. They have no rubber hoses at the former MBI facility, because:

- *they have a stainless steel supply line, which appeared in good condition, leading from the tank, into the MSU building.*
- *they have a single stainless steel hose, 1 foot in length, to protect plumbing downstream of the hose from pump vibrations. It appeared in good condition.*

Gen. PTI 127-07 SC No. IV. 6 states: Any that any vapor or liquid line, exclusive of couplings, requiring venting after ammonia transfer shall be vented through a water trap of 55 gallons minimum size. Safety water shall not be used for this purpose.

INSPECTION RESULT FROM 7/24/2019: COMPLIANCE. In the 11/13/2008 inspection report by AQD's Brian Culham, he indicated that he did not believe these smaller lines required venting. B. Culham has since retired, but he was the AQD field contact for the agricultural source category (including anhydrous ammonia tanks). My understanding, from the 3/9/2016 inspection, is that Tanner Industries brings their own vapor line, with a portable water trap, when they make deliveries. I was informed that this portable trap may not be 55 gallons in size, but this does not appear to be a violation, because SC No. 1.15 does not appear to apply to this facility. I was later informed by AQD Permit Engineer Andrew Drury that a supplier bringing a small portable water trap is consistent with how deliveries are made to industrial users of ammonia (with appropriate anhydrous ammonia tank air permits tailored to the industrial nature of those sites).

Gen. PTI 127-07 SC No. IV. 7 states: A sign shall be present and conspicuously placed at the facility entrance, stating the emergency phone numbers for the owner, primary operator, local and state police, local fire department, and ambulance service.

INSPECTION RESULT FROM 7/24/2019: COMPLIANCE. There is a small sign at each of two driveway entrances to the site, advising that 911 should be called in the event of an emergency. A person witnessing an anhydrous ammonia leak could theoretically read the sign at a safe distance from the tank. These were installed following a VN which was sent following my 3/9/2016 inspection of the tank. From the 2016 inspection, there is also a sign inside the building with emergency contact information.

Gen. PTI 127-07 V. <u>TESTING/SAMPLING</u>:

NA

Gen. 127-07 VI. MONITORING/RECORDKEEPING:

Gen. PTI 127-07 SC No. VI.1 states: The permittee shall keep, in a satisfactory manner, records of the date, duration, and description of any malfunction or spill occurring from EU-AMMONIA, including the estimated amount of ammonia released into the atmosphere. Do not include trace amounts from normal hose coupling bleed downs. All records shall be kept on file for a period of at least 5 years and made available to the Department upon request.

INSPECTION RESULT FROM 7/24/2019: COMPLIANCE. It is my understanding that there have been no malfunctions or spills. I was informed that their requirements include making an internal incident report, if there was a malfunction or spill.

Gen. PTI 127-07 SC No. VI. 2 requires the permittee to keep, in a satisfactory manner, records of the annual review and approval of the emergency response plan with the local fire department.

INSPECTION RESULT FROM 7/24/2019: COMPLIANCE. It is my understanding that records are kept by their fire department and by Ingham County.

Gen. PTI 127-07 VII. REPORTING:

Gen. PTI 127-07 SC VII. 1 requires the permittee to contact the Pollution Emergency Alert System (PEAS) telephone number (1-800-292-4706), or the AQD District Supervisor immediately, if there is an abnormal release.

INSPECTION RESULT FROM 7/24/2019: COMPLIANCE. MSU staff informed me that the above requirement has been written into their procedures. It is my understanding that there have been no abnormal releases.

Gen. PTI 127-07 VIII. STACK/VENT RESTRICTIONS:

NA.

Gen. PTI 127-07 IX. OTHER REQUIREMENTS:

Gen. PTI 127-07 SC No. IX. 1 prohibits the permittee from replacing or modifying any portion of EU_AMMONIA, or installing new equipment, unless conditions (a), (b), and (c) are all met. The three conditions require that the general permit be updated, that the permittee continue to meet all applicability criteria, and that the permittee keep records of the date and description of any replacement, modification or installation of new equipment.

INSPECTION REULT FROM 7/24/2019: COMPLIANCE. It is my understanding that the tank and portions of the tank have not been replaced. It is my understanding that the required replacement of valves under the PTI would not trigger this requirement. I was advised that MSU has not decided if the tank will be kept or will be removed from the site, as it is seldom used. As an illustration of this, I was told that their usage of ammonia is so low, they have not needed to have a delivery of ammonia in well over a year.

Gen. PTI 127-07 Appendix A:

I & M Program checklist for nurse and applicator tanks, from page 1 of 2 of Appendix A of general PTI:

1. Tank(s) free of leaks: *NA, because there were no nurse or applicator tanks.*
2. Paint in good condition: *NA, because there were no nurse or applicator tanks.*
3. Valves and fittings free from leaks and in good condition: *NA, because there were no nurse or applicator tanks.*

4. Protective guards in place and in good condition: *NA, because there were no nurse or applicator tanks.*
5. Outlet openings on valves and lines free of dirt and rust with protective caps in place: *NA, because there were no nurse or applicator tanks.*
6. Safety relief valves free of debris with rain caps installed? *NA, because there were no nurse or applicator tanks.*
7. Gages, pressure and liquid, are operable: *NA, because there were no nurse or applicator tanks.*
8. Excess flow valves installed and in good condition: *NA, because there were no nurse or applicator tanks.*
9. Valves properly labeled "liquid" and "vapor": *NA, because there were no nurse or applicator tanks.*
10. Vapor and liquid hoses are proper ammonia type and free of damage or deterioration: *NA, because there were no nurse or applicator tanks.*
11. Hoses, including those on nurse tanks, securely clamped to the nipples: *NA, because there were no nurse or applicator tanks.*
12. Hoses suitably racked to prevent kinking and hose on delivery tanks securely fastened to prevent dragging: *NA, because there were no nurse or applicator tanks.*
13. Tanks securely attached: *NA, because there were no nurse or applicator tanks.*
14. Trailer tongues, hitches, and safety chains in sound condition: *NA, because there were no nurse or applicator tanks.*
15. Nurse tank valves locked or capped if site is unattended or not fenced in: *NA, because there were no nurse or applicator tanks.*
16. Nurse tanks properly labeled: *NA, because there were no nurse or applicator tanks.*
17. Five gallon or larger can filled with clean water for transport vehicles: *NA, because there were no nurse or applicator tanks.*
18. Quick disconnects annually reconditioned: *NA, because there were no nurse or applicator tanks.*

I & M program checklist for permanent anhydrous ammonia storage tank, from page 2 of 2 of Appendix A of general PTI:

1. Tank free of leaks: *The tank was free of leaks.*
2. Tank supports in good condition (no cracked or crumbled concrete, etc.): *The steel I-beams which supported the tank were in good condition, with only minor surface rust.*
3. Paint in good condition: *The paint was in good condition, with no peeling or rust.*
4. Equipment locked when not in use: *The valves on the tank were seen to be locked.*
5. Tank properly labeled: *The tank had large labels stating "AMMONIA, ANHYDROUS" and "INHALATION HAZARD."*
6. Valves and fittings free from leaks and in good condition: *Valves and fittings appeared to be free from leaks, and in good condition.*
7. Piping properly supported and guards in place: *The piping appeared to be supported properly, and the tank was surrounded by steel poles which appeared to have been filled with concrete, for protection.*
8. Pipes free of physical damage and rust and properly painted: *The stainless steel piping appeared to be in good condition.*

9. Employees trained in proper filling procedures: *It is my understanding that the tank's owner, Tanner, who makes deliveries of ammonia, has trained employees.*

10. Provisions for bleeding of transfer hose from transport truck: *It is my understanding, from the 3/9/2016 inspection of what was then MBI, that Tanner brings their own portable water trap to the site when they deliver ammonia.*

11. Wheels properly chocked on the transport truck or rail tank car while unloading: *It is my understanding that Tanner does this.*

12. Information and warning signs displayed and in good condition: *Emergency contact signs are at both driveway entrances to the site.*

13. Area free of weeds, trash, and other unsafe conditions: *A large board or side of a wooden crate was leaning against the guard posts around the tank. Mr. Hegge indicated that he had previously requested it be moved elsewhere. He assured me it would soon be removed.*

14. Unused equipment stored out of the way: *As described above, a large board or wooden crate was propped against the guard posts around the tank. It is my understanding that this will soon be removed.*

15. Chemical safety goggles available, and in good condition: *I was advised that they have all kinds of personal protective equipment (PPE) inside the nearby building.*

16. Protective gloves, boots, suits or slickers available and in good condition: *I was advised that they have a wide assortment of PPE inside the nearby building.*

17. Gas masks with ammonia type canisters and refill canisters within date limits available: *I was advised that MSU has its own Haz Mat team. It is my understanding that they have the appropriate equipment.*

18. Emergency clean water, shower or 75 gallon tank available nearby: *I was advised that they have several safety showers available inside the nearby MSU building.*

19. Hoses in good condition: T*here was a stainless steel hose, and stainless steel piping, both in good condition.*

20. Hoses no older than 5 years from date of manufacture and marked: *NA, as there were no rubber hoses, rather a stainless steel hose and piping.*

21. Vapor and liquid hoses are proper ammonia-type and free of damage or deterioration: *NA, as there were no rubber hoses; rather a stainless steel hose and piping.*

22. Hoses suitably racked to prevent kinking: *NA, as there were no rubber hoses; rather, a stainless steel hose and piping.*

23. Hoses, including those on nurse tanks, securely clamped to the nipples: *NA, as there were no rubber hoses; rather, a stainless steel hose and piping.*

24. Gages, pressure and liquid level, operable: *There was a pressure gauge atop the tank, in operating condition, which read 100 psi. They also had a liquid flow gauge. There was no liquid level gauge, however. I was assured that the tank was nearly empty, based on the sound it made when Mr. Hegge rapped a hand on it. A liquid level gauge is not specifically required by the special conditions of this general PTI. However, AQD would recommend having a liquid level gauge installed.*

25. Valves properly labeled "liquid" and "vapor": *I was informed that this is NA, as they do not have nurse tanks to transfer ammonia to.*

26. Safety relief valves within 5 years of manufacture or recertification and marked: *I was advised that the safety relief valves were replaced in 2017, following N. Hude's inspection of this site as part of his overall MSU inspection. I could not see the date they were manufactured or recertified, but this may have been because rain caps were on.*

27. Outlet openings on valves and lines free of dirt and rust with protective caps in place: *Rain caps were in place on all outlet openings that I could see, including the safety relief valves.*

28. Safety relief valves free of debris with rain caps installed: I *did not see the openings on the safety relief valves because they were covered by rain caps.*

29. Safety relief valve manifold operable: *The safety relief valve manifold was pointed out to me as being made of stainless steel, and being covered with a cap to protect it from the elements.*

30. Remote shut-off valve in working order: *I was told that this is capped and protected.*

(End of permit.)

It is my understanding that there is an ammonia sensor on the exterior wall over the storage tank. On 3/9/2016, I had been informed that it will alarm at 30 parts per million of ammonia in the air, the SEL for exposure to ammonia. I was also told in 2016 that it is calibrated twice per year. Additionally, I was advised that there is also a sensor in the line leading into the building, and several sensors inside the building itself. Some of the indoor sensors are at points of use, I was told, and an ammonia monitoring system was said to pull in air from 8 points within the building. Lastly, I had been told in 2016 that a sensor being set off sends a signal throughout the building, as well as the fire department, police department, and MSU Environmental, Health & Safety.

Ammonia Capture System (scrubber), Rule 283(1)(a)(viii):

I did not see the ammonia capture system today, as we did not enter the MSU building next to EU-AMMONIA. The PTI application identifies the Ammonia Capture System as a countercurrent packed column ammonia absorber for liquid and/or gaseous ammonia. It may also be described as a scrubber. It was described in the PTI application, but as the general PTI does not address such a device, it could be consider exempt under Rule 283(1)(a)(viii), per B. Culham's 11/13/2008 inspection activity report. The scrubber was used to control emissions from the AFEX process.

FG-MBIEMERGENG MBI Building; Rule 285(g), 40 CFR Part 63, Subpart ZZZZ:

There are two emergency engines on site and are located near the boiler room on the south side of the building. It would be fitting to include these engines under the flexible group "FG-EMERGEN>500ZZZZ" of the ROP, when it is next renewed.

Per N. Hude's 2017 inspection of this site as part of his overall inspection of MSU, SRN K3249, both engines are classified as:

- "New" being installation after 2002 and 2006 per 63..6590.
- "CI" compression ignition burning diesel fuel
- ">500hp" as both are rated at 680hp
- "located at a major source of HAPS", with MSU, SRN K3249 being the major source of HAPs

EU-EMERGENG1 (west generator); Rule 285(g); 40 CFR Part 63, Subpart ZZZZ:

Cummins Model DFEK-7511871, Compression Ignition, 507kW, 680hp, SN: H110237490, Build Date 08/08/201. This is a diesel fuel-fired engine.

This generator was inspected, during the 3/22/2019 MSU inspection. It was not running, at that time. I was informed it operates monthly, as part of its readiness testing. I did not note the hour meter, at the time of the inspection on 7/24/2019. The digital hour meter read 145.7 hours, as of 8/13/2019, I subsequently saw, while reviewing ran email (attached) from Ms. Lindsey. As of the June 2019 monthly inspection of the generator, the attached form shows hours were 144.6 .

EU-EMERGENG2 (east generator); Rule 285(g); 40 CFR Part 63, Subpart ZZZZ:

Cummins Model DFEK-7511871, Compression Ignition, 507kW, 680hp, SN: H110237489, Build Date 08/08/2011, This is a diesel fuel-fired engine.

This generator was inspected, during the 3/22/2019 MSU inspection. It was not running, at that time. I was informed it operates monthly, as part of its readiness testing. I did not note the hour meter, at the time of the inspection on 7/24/2019. The digital hour meter read 144.7 hours, as of 8/13/2019, I subsequently saw, while reviewing ran email (attached) from Ms. Lindsey. As of the June 2019 monthly inspection of the generator, the attached form shows hours were 143.6.

INSPECTION RESULT FROM 3/22/2019 AND 7/24/2019: COMPLIANCE.. Per determination made by AQD's Nathan Hude, it appears the regulation applicability is 40CFR63 ZZZZ Table 2c.1.

Annual requirements under Subpart ZZZZZ, aka the RICE MACT, are as follows, for these generators:

a. Change oil and filter every 500 hours of operation or annually, whichever comes first.
b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary;
c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

INSPECTION RESULT FROM 3/22/2019 AND 7/24/2019: COMPLIANCE. Based on the records reviewed, it appears they are meeting the regulatory requirements for these engines, as follows:.
a. Oil was reported to have been changed in 2019 on the tank fuel ticket record, and Ms. Lindsey confirmed the oil change was for the generators.
b. Air louvers were inspected. I asked if the air louvers are associated with the air cleaners. Ms. Lindsey advised that the air cleaners are also inspected whenever the oil is changed, and are replaced as necessary. She advised me that in the future, they may be able to identify the air cleaners, on the check list. The louvers therefore appear to be unconnected to the air cleaners
c.. Hoses and belts were inspected in 2019, according to generator monthly inspection sheets provided by Ms. Lindsey (please see attached).

FG-MBIBOILERS PTI 575-85, MBI Building

The permit is for two 400HP (16.7MMBtu) boilers and one 250HP (10.46MMBtu) boiler capable of firing natural gas and no.2 fuel as back-up. They are used for heating the former MBI building, and for providing steam. It is my understanding that for No. 2 fuel oil, they burn only Ultra Low Sulfur Diesel fuel.

As noted by AQD's N. Hude in 2017, The data plates on these boilers indicated the following:

- EU-MBIBOILER1: Cleaver Brooks; SN L80961; 16,738,000 Btu
- EU-MBIBOILER2: Cleaver Brooks; SN L80962; 10,461,000 Btu

Due to the date of installation being on or prior to 1/28/1987, 40CFR60 Dc- Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units does not apply as per paragraph 60.40c(a) which states construction commencement after 6/9/1989.

EU-MBIBOILER1 and EUMBIBOILER2 were not operating at the time of the inspection on 3/22/2019. The smaller boiler, #3, was running. however. No visible emissions were noted from the boiler exhaust stack.

Compliance check with requirements of PTI 575-85:

PTI 575-85 SC 1-13: General Conditions. These are generally applicable to facilities with a permit to install.

PTI 575-85 SC 14 states: The sulfur dioxide emission rates from the boilers shall not exceed 1.11 lbs/MMBtu heat input, based on a 24-hour period. This is equivalent to using oil with a 1.0% sulfur content and a heat value of 18,000 BTU's per pound.

INSPECTION RESULT FROM 3/22/2019 AND 7/24/2019: COMPLIANCE. On 8/13/2019, an email from Ms. Lindsey indicated that the diesel fuel sulfur content is still less than 15 parts per million, as was the case in 2017.

PTI 575-85 SC 15. visible emissions from the boilers shall not exceed a 6 minute average of 20% opacity, except as specified in Rule 301(1)(a).

INSPECTION RESULT FROM 3/22/2019 AND 7/24/2019: COMPLIANCE. No visible emissions were observed from the stack on either of the two days I was at this site in 2019. Boiler #3, was running on 3/22/2019, and no visible emissions from the boiler exhaust stack could be observed.

PTI 575-85 SC 16. Rules 1001, 1003, and 1004 – Verification of sulfur dioxide emission rates from the boilers by testing at owners expense...

INSPECTION RESULT: FROM 3/22/2019 AND 7/24/2019 COMPLIANCE. Per AQD's N. Hude, in his 2017 overall inspection report for MSU, SRN K3249:
- This can be calculated using the sulfur in = sulfur out manual calculation. The boilers NG use is pipeline quality with 20.0 grains per 100 cubic feet of gas. The diesel fuel SDS to include sulfur content was requested on 6/6/17. An updated request was sent 7/3/17. On 7/7/17 a document was emailed providing the SDS for the fuel indicating the sulfur content to be a maximum of 15ppm.

PTI 575-85 SC 17. The exhaust gases from the boilers shall be discharged unobstructed vertically upwards to the ambient air form a stack with a maximum diameter of 54 inches at an exit point not less than 70 feet above the ground.

INSPECTION RESULT FROM 3/22/2019 AND 7/24/2019: NONCOMPLIANCE. Per AQD's N. Hude, in his 2017 overall inspection report for MSU, SRN K3249, the stack is 69 feet and 4 inches in height; this 8 inches too short. Due to the minimal nature of this violation, a Violation Notice was not sent in 2017, and will not be sent in 2019, either. However, AQD intends to reflect the actual stack height in the next ROP renewal cycle.

PTI 575-85 SC 18 states: Applicant shall not substitute any fuels for those described in this permit application which should result in an appreciable change in the quantity or quality of emission of an air contaminant without prior notification.

INSPECTION RESULT: FROM 3/22/2019 AND 7/24/2019 COMPLIANCE- diesel and natural gas are the only fuels in use.

PTI 575-85 SC 19. The fuel usage records shall be kept on file for a period of at least two years and made available to the AQD upon request.

INSPECTION RESULT FROM 3/22/2019 AND 7/24/2019: COMPLIANCE. On 8/13/2019, Ms. Lindsey sent me fuel tank tickets which documented the level of diesel fuel in the boiler fuel tank for the past 12 months. Please see attached.

PTI 575-85 SC 20. Applicant shall not use any reclaimed, recycled and/or contaminated fuel(s) without prior notification to and approval by the AQD.

INSPECTION RESULT: FROM 3/22/2019 AND 7/24/2019: COMPLIANCE. It is my understanding that recycled or reclaimed fuels are not used in these boilers, only natural gas and diesel fuel.

Conclusion:

Overall, MSU's former MBI facility was in compliance. The only instance of noncompliance was previously noted in 2017 by AQD's N. Hude, where the exhaust stack for the three boilers is 8 inches short of the minimum 70 foot stack height required by PTI No. 575-85. Due to the extremely minimal nature of this issue, a Violation Notice will not be sent. However, during the next renewal of MSU's ROP, the MBI permits will be rolled into the ROP, and the ROP will reference the actual stack height.

Note: the text of this report is also entered into the inspection activity report for MSU, SRN K3249.

NAME _____ DATE _____ SUPERVISOR _____