

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

M067562575

<b>FACILITY:</b> UNIVERSITY OF MICHIGAN		<b>SRN / ID:</b> M0675
<b>LOCATION:</b> 1239 KIPKE DR, ANN ARBOR		<b>DISTRICT:</b> Jackson
<b>CITY:</b> ANN ARBOR		<b>COUNTY:</b> WASHTENAW
<b>CONTACT:</b> Brandi Campbell , Occupational Safety & Environmental Health		<b>ACTIVITY DATE:</b> 04/13/2022
<b>STAFF:</b> Diane Kavanaugh Vetort	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> MAJOR
<b>SUBJECT:</b> Major Source FCE/PCE over two days: 4/13 Day 1 and 5/9 Day 2. On 4/13 Conducted compliance inspection of Central Power Plant existing boilers & turbines and the NEW Combined heat & power, heat recovery & steam generating system (CHP-HRSG) Turbine / duct burner /boiler. CPP & CHP RATA were also conducted this week Tues-Fri. Observed RATA of BLR 3 today. On 5/9: Inspection NCRC, Auto Lab; Crematory; construction site of new Engine Generators (permit extension). Emailed and mailed to company 6/1/22		
<b>RESOLVED COMPLAINTS:</b>		

**M0675 UNIVERSITY OF MICHIGAN, 1239 Kipke Drive, Ann Arbor, MI 48109**

**CONTACT:** Brandi Campbell (BC), Environment, Health, & Safety, Sr. Environmental Specialist, 734-647-9017, [campbelb@umich.edu](mailto:campbelb@umich.edu)

**AQD:** Diane Kavanaugh Vetort (DKV), Jackson District Office

On April 13, 2022, EGLE AQD conducted an on-site compliance inspection, announced a short time prior, of the Central Power Plant (CPP), at the University of Michigan, Ann Arbor, Michigan. This is a partial compliance evaluation (PCE) of the Full Compliance Evaluation (FCE) of the stationary source. The remaining FCE inspection was conducted on May 9, 2022. A separate email was sent on 4/14/2022 to request the required records for the CPP.

4/13/22 Day 1 inspection covered the FG/EU at the CPP. This is the large primary power plant for the University. The CPP is also the location of the newly installed/operational Combined heat and power unit (CHP) with heat recovery steam generation (HRSG). This week is also the RATA Testing of all the required Boiler CEMS at the CPP, including the new Unit. AQD observed the RATA testing on Wednesday (today) of Boiler 3's CEMS.

During the inspection the following CPP FG/EU were observed: EUB0260-02, EUB0260-06, EUT0260-09, EUT0260-10, FGB0260-03-04, and FGFB0260-CO. Also observed the new EUCPP-CHPHRSG and associated EUBOILER5.

5/09/22 Day 2 inspection covered the Crematory at the UM Hospitals, exempt Engine Test Cells, and the North Campus Research Complex (NCRC) the second largest campus power plant.

The purpose of the inspection is to determine the facility compliance status with the applicable federal and state Air Pollution Control regulations, specifically Act 451, Natural Resources and Environmental Protection, Part 55, Air Pollution Control, the administrative rules, and the conditions of UM's Renewal Operating Permit (ROP) MI-ROP-M0675-2021.

The UM is a major source for criteria pollutants and hazardous air pollutants (HAP) and therefore is subject to one or more Major Source Maximum Achievable Control Technology (MACT) standards. UM also has installed a large number of emergency diesel and natural gas internal combustion engine generators subject to Major Source (MACT) standard (40 CFR 63 Subpart ZZZZ) and the associated New Source Performance Standard (NSPS), 40 CFR Part 60, Subpart IIII or JJJJ. UM operates numerous natural gas and/or fuel oil capable boilers subject to the Major Source Boiler MACT standard (40 CFR 63 Subpart DDDDD) and NSPS 40 CFR 60 Subpart Dc, or Db. UM has some EU/FG subject to Compliance Assurance Monitoring (CAM). The existing gas turbine cogeneration system at CPP is subject to NSPS Subpart GG, and NESHAP Subpart YYYYY. The new CHP is subject to NSPS Subpart KKKK and NESHAP Subpart YYYYY. UM submitted ROP Certifications timely and reported deviations as required during the previous 12 month period (2021 to 2022). UM submitted their 2021 MAERS timely.

AQD observed that the new EUCPP-CHPHRSG is installed and operational. UM submitted the required start-up notification on March 16, 2022. The Unit installation and start up operation was completed on March 4, 2022. The permit requires the NOx and O2 CEMS RATA be conducted according to Appendix A. The Unit is required to conduct complete compliance testing for CO, NOx, VOC, within 180 days of initial startup. Also, within 180 days UM is required to:

SC III. 2. the permittee shall submit, implement and maintain a malfunction abatement plan (MAP) for EUCPP-CHPHRSG.

SC III. 3. the permittee shall submit, implement and maintain a plan that describes how emissions will be minimized during startup and shutdown. Also, III.5. limits events to 60 per 12 month rolling time period.

SC III. 6. the permittee shall implement and maintain an audio/visual/olfactory (AVO) plan for the natural gas piping and associated components to EUCPP-CHPHRSG.

### **COMPLIANCE INSPECTION**

The FCE compliance inspection consists of the UM campus two main power and heating facilities: UM Central Power Plant (CPP) main power and heating plant and North Campus Research Complex (NCRC) power and heating plant for the former Pfizer area complex. In addition, the Crematory was prioritized for this inspection. I also reviewed the site of three new permitted Generators (FGCITENGINES) that obtained AQD approval of a second 18-month extension for installation for PTI 34-20 on December 29, 2021. Initial permit was approved on September 10, 2020. Extension will expire on September 10, 2023. UM has not yet commenced installation.

In addition, UM has exempt Engine Dynamometers as part of campus Lay Auto Lab that are older and have not been inspected previously to my knowledge. I determined an inspection to verify the location and number of these units was needed. In addition, while the (6) Ethylene Oxide Sterilizer processes were not physically inspected, the records were requested, received and reviewed. The EtO area has been inspected in recent years and MAERS records for 2021 were received and reviewed. Brandi informed me that UM plans to cease EtO operation of the units in June/July 2022. At that time, AQD will verify the dismantling / disconnection and/or removal of the Units by inspection.

### **DAY 1 APRIL 13**

Upon my arrival to the CPP at 9:00 AM, I parked in the Palmer St. Parking Ramp and walked to the side door to check in with the Guard and meet with contact Brandi, and Lindsey Wells, AQD-TPU. I observed the two brick stacks, North and South and did not observe any visible emissions. It is noted that the background was completely overcast and my location was too close for the height of the stacks.

UM required a COVID survey online which I conducted prior to arrival. Required PPE is hard hat, hearing and eye protection and photo ID was required.

Brandi, Lindsey and I went immediately to where the consultant, Montrose, was set up for the RATA. It appeared that everything was operating smoothly. Todd, Montrose said they are testing Boiler 3 today and are on the 2nd Run. He showed Lindsey the RATA sheet for Run #1. Average 144.2 flow and Steam 118 lb/hour. Yesterday they conducted Boiler 6 RATA, exhausts to the South Stack and was compliant at about 2%. Today BLR 3 is emitting through the North Stack, natural gas only. Per Brandi, the full test is required in 2023 and will be on both fuels (No. 2 fuel oil).

During Run #3 we observed Conner, of Montrose, where he was set up at the stack port. Lindsey spoke with him. Brandi and I walked down to observe the other CPP Boilers and Turbines. Boiler 4 was not operating. Turbines 9/10 and associated steam boilers 7/8 were operating.

We next observed the Horiba CEM room and Lindsey reviewed these cabinets. Room contains Boiler 6, Boiler 3, and Boiler 4 CEMs but not the new CHP. That Unit is located in the brand new building addition to the existing CPP power plant. The CHP's CEM is located directly next to the Unit. We observed this controlled cabinet during the inspection of the new Turbine system.

We then went to observe the Main Control Room and met with operator Ryan. Lindsey reviewed RATA CEMS data with Ryan. It is noted that the new CHP also has a "Boiler 5" and that was undergoing the last day of its 7 day Drift testing.

During the inspection I observed the Control Screen for the entire plant and recorded the following readings:

**Boilers #2, #4 off line; and Boiler #6 off line**

**Boiler #3 Load 113.7 kpph**

**Boiler #5 Load 53.48 kpph**

**Boilers 7/8 each 37 kpph**

**TOTAL: 244 kpph**

**Generators 1 (5 MW), 6 (15 MW), 8 (5 MW), 9 (3 MW), 10 (3 MW)**

**CT NOx water to fuel ratio T9 and T10 both (0.5%).**

**I reviewed the Diagram screen(s) for the new CHP. It shows where the Urea Tank (ammonia) injection is located and the amount. It read 1% (15.3 ounces) or 3.42 ppm. The Turbine and Boiler are shown and the Ductburner indicates it has 7 associated burners. The panel showed that 1 of 7 was operating at 87%.**

**Brandi and I then met with Melissa, in an office just off the control room. She maintains many of the required monitoring records for the plant. We discussed and viewed several records.**

**Brandi then requested Ryan show us the natural gas meters at Boiler #4. Meters are required by ROP and of course there are numerous in the plant. I observed Boiler 4 natural gas meter was reading 0 scfm which makes sense as this boiler was not operating today. He also showed me the location of the Corealis Meter required for the water / fuel ratio a required monitoring parameter on both Turbines.**

**I took the following readings: NOx select Catalyst; Temperature 81 deg F; and 226 USGPM.**

**We then went into the new building containing the CHP and observed the turbine and the Urea Tank. Everything was obviously new construction and in excellent condition. In the stack area we observed the port locations for testing and the CEMs. We also observed UM has a monitor for Ammonia slip because per Brandi they are so close to campus there was some concern and this is something they did voluntarily to monitor emission. This is not a permit requirement.**

We returned to Montrose testing (Todd's) location prior to leaving. He said they finished Run #6. Lindsey checked numbers with him. It appears UM is likely in compliance based on the first 6 runs. Brandi confirmed all process data will be submitted in the report.

On April 14, 2022 I sent a separate email requesting ROP required compliance records for CPP for the period April 2021 through March 2022. Extra time was allowed and the CPP Records were received on May 3, 2022. They included docs/pdf/xls as follows: July 2021 fuel delivery paperwork and analytical; Fuel oil delivery 01/17/2022; Sulfur Nat Gas DTE Letter; Water Fuel Ratio pdf; CO, VOC, NOx, SO2 mass rate Boiler 6 spreadsheets; Boiler 6 Q1 Fuel Usage; GT9 and GT10 fuel flow meter calculation sheets; April 21 - March 22 CT9 and CT10 Fuel usage; AVO Nat Gas UM CPP Expansion 4/21/22; Boiler Summary Worksheet (MACT); UM NOCS RY2021 Final; Sample Boiler MACT Completed Tune up forms; 12 Month rolling emissions spreadsheet & data; GT9 NOx Flow meter calibration; GT10 NOx Flow meter calibration. In addition, Brandi provided the following comments on the specific records / conditions:

#### **CPP**

##### **EUB0260-02**

SC VI. 1. Fuel usage and emissions calculation records for the period indicated.

**No fuel oil burned during this time period. Boiler 2 performs 5-year stack testing to show compliance and UM provides annual emissions via MAERS.**

SC VI. 2-4. Please submit the most recent fuel oil record(s) as applicable.\*

**No fuel oil burned during this time period.**

**Attached fuel delivery records dated July 21, 2021 along with analytical of delivery August 2021. (July 2021 delivery paperwork.pdf and July 2021 delivery analytical 0821.pdf)**

**Attached fuel delivery records dated January 17, 2022. (Fuel oil delivery 011722.pdf)**

##### **EUB0260-06**

SC VI. 3-6. Please submit the most recent fuel oil record(s) as applicable.\*

**No fuel oil burned during this time period.**

**Attached fuel delivery records dated July 21, 2021 along with analytical of delivery August 2021. (July 2021 delivery paperwork.pdf and July 2021 delivery analytical 0821.pdf)**

**Attached fuel delivery records dated January 17, 2022. (Fuel oil delivery 011722.pdf)**

SC VI. 7. Fuel usage and emissions calculation records for the period indicated.

Attached is a sample Mass Rate for VOC, SO<sub>2</sub>, NO<sub>x</sub>, and CO for 2021 Quarter 2 for natural gas. No fuel oil burned during this time period. (*COMASSRATE6Boiler.xls, VOCMASSRATE6Boiler.xls, NOXMASSRATE6Boiler.xls, and SO2MASSRATE6Boiler.xls*)

EUT0260-09

SC VI. 1. Statement of compliance /information as applicable.

Attached is a DTE letter stating the sulfur content to meet definition of "natural gas" (*SulfurletterUofMJanuary2015.pdf*)

SC VI. 2. Some manner of available record of compliance with this condition.

Attached is a sample graph of water-to-fuel ratio showing continuous monitoring of condition during the requested time period. (*Re Water Fuel Ratio.pdf*)

SC IX. 1. and 2. Statement and example documentation of how maintaining compliance with these applicable Federal standards.

1. UM continuously monitors water to fuel ratio while burning natural gas and fuel oil. UM calibrates the fuel flow meters annually. The NO<sub>x</sub> water flow meter will be calibrated during the 2022 maintenance period. The new meter was installed in 2017 and will be calibrated every 5 years. Please note, the CPP will be revising the calibration schedule and the NO<sub>x</sub> water flow meters will be calibrated annually. Attached are the most current fuel flow meter calibration records. (*GT 9 10 Fuel Flow Meter Calibration Sheets.pdf, GT 9 NOx Flow Meter Calibration.pdf, GT 10 NOx Flow Meter Calibration*)

2. EUT0260-09 was part of the subpart YYYY EPA stay and has until September 2022 to become in compliance. This does not apply during the requested time period.

EUT0260-10

SC VI. 1. Statement of compliance /information as applicable.

Attached is a DTE letter stating the sulfur content to meet definition of "natural gas" (*SulfurletterUofMJanuary2015.pdf*)

SC VI. 2. Some manner of available record of compliance with this condition.

Attached is a sample graph of water-to-fuel ratio showing continuous monitoring of condition during the requested time period. (*Re Water Fuel Ratio.pdf*)

SC VI. 4. Please provide this record.

Attached are the most current calibration records for the fuel flow meters. The NO<sub>x</sub> water flow meter will be calibrated during the 2022 maintenance period. The new meter was installed in 2017 and will be calibrated every 5 years. Please note, the CPP will be revising the calibration schedule and the NO<sub>x</sub> water flow meters will be calibrated annually with the fuel flow meter. (*GT 9 10 Fuel Flow Meter Calibration Sheets.pdf, GT 9 NOx Flow Meter Calibration.pdf, GT 10 NOx Flow Meter Calibration*)

FGB0260-03-04 (EUB0260-03 EUB0260-04)

**SC V1. 1. Fuel usage and emissions calculation records for the period indicated.**

**No fuel oil burned during this time period.**

**SC VI. 2-4. Please submit the most recent fuel oil record(s) as applicable.\***

**No fuel oil burned during this time period.**

**Attached fuel delivery records dated July 21, 2021 along with analytical of delivery August 2021. (*July 2021 delivery paperwork.pdf and July 2021 delivery analytical 0821.pdf*)**

**Attached fuel delivery records dated January 17, 2022. (*Fuel oil delivery 011722.pdf*)**

**FGT0260-CO**

**Fuel usage and emissions calculation records for the period indicated.**

**Attached is the natural gas and fuel oil usage for this time period. FGT0260-CO performs 5-year stack testing, turbine and duct burner maintenance and continuously monitors water-to-fuel ratio. UM provides annual emissions via MAERS. (*April 21 to March 22 CT9 and CT10 Fuel Usage.pdf*)**

**SC VI. 3. Records of hours of operation when firing No. 2 fuel oil**

**Please note, the condition for hours of operation should be SC III.3. Attached is the hours of operation when firing No. 2 fuel oil for GT 9 and GT 10. Also attached is the fuel delivery records for SC VI. 3. (*April 21 to March 22 CT9 and CT10 Fuel Usage.pdf*)**

**SC VI. 2-4. Please submit the most recent fuel oil record(s) as applicable.\***

**Attached fuel delivery records dated July 21, 2021 along with analytical of delivery August 2021. (*July 2021 delivery paperwork.pdf and July 2021 delivery analytical 0821.pdf*)**

**Attached fuel delivery records dated January 17, 2022. (*Fuel oil delivery 011722.pdf*)**

**SC VI. 6-12. Statement of compliance / applicable documentation with CAM.**

**Continuously monitor the water-to-fuel ratio and perform annual maintenance on the turbine as well as calibrate the flow meters.**

**EUCPP-CHPHRSG**

**This Unit commenced operation in early March 2022. Please submit the CHP referenced required plans as they are developed and due:**

**SC III. 2. Within 180 days of operation / Malfunction Abatement Plan**

**Will submit when finalized.**

**SC III. 3. Within 180 days of operation / Start up Shut down emissions minimization plan.**

**Will submit when finalized.**

SC III. 6. Implement and maintain an Audio/Visual/Olfactory (AVO) plan for natural gas. Please submit.

*Attached (AVO NatGas UM CPP Expansion 2022 0421 FNL.pdf)*

SC VI. 6. Records from start up to present available.

*Attached. (12-Month Rolling Emissions Spreadsheet and Data-UM.pdf)*

#### BOILER MACT SUBPART DDDDD RECORDS

Please submit the summary and example report of the compliance and maintenance conducted for this standard for the applicable boilers.

*Attached is a copy of the boiler inventory and tune up schedule. (Boiler summary wrksheet.pdf)*

*Attached is a copy of the annual compliance report. (UM NOCS RY2021 Final.pdf)*

*Attached is a copy of a completed tune-up, one from after April 2021 and one from beginning of 2022. (Sample Boiler MACT completed Tune up forms.pdf)*

I reviewed all the referenced records and it appears UM is in compliance with the indicated conditions and referenced emissions and/or monitoring limits.

On 4/20/22 I sent a separate email requesting records for the remaining EU/FG inspection 5/9/22 DAY 2 of the FCE. Records are requested for the NCRC, Crematory, and the EtO Sterilizers.

#### DAY 2 MAY 9

On this date I met Brandi at 9:30 AM at the Kroger parking lot on Plymouth Road. We drove to the North Campus Research Complex (NCRC) power plant. I observed the stack upon arrival and there were no visible emissions. We walked through the areas of all the boilers, turbine and ductburner. Overall everything appeared to be in good condition and nothing unusual was observed. I met the new plant manager, Bill Little. He accompanied Brandi and I on a portion of the inspection and was with us in the Control room where I met the main plant operator. He verified what was operational today and discussed fuel oil storage areas. Steam production was @ 2900 Kpph today. Fuel storage is separate for the power plant and the emergency generators. He also verified that the boilers are tested monthly with fuel oil. In addition the emergency generators are regularly tested. We then walked outside and I observed the separate stack installed during Pfizer ownership to allow for a portable boiler to be brought in for supplemental power. This is still there but has never been used and would require permit application. We then walked to the two separate buildings to the south containing the Emergency Generators. These were not operating today. Everything related to the NCRC supplies power /heat to this complex only.

**OPERATING:** EUTURBINE, BOILER4 (steam boiler), EUBOILER6

**NOT OPERATING:** EUDUCTBURNER, FGBOILERS1A&1B, FGBOILERS2&3, EUBOILER5, EUB800-GEN1, EUB85-FIREPUMP2, FGB85-EMERGENS, FGPATGENS.

Brandi and I then drove to the Lay Auto Lab on north campus and met with Andrea Boehman, Facilities Manager. He accompanied us during this part of the inspection and fully answered all my questions. UM lab has been operating since the 1950's and has 17 engine test cells for teaching



purposes. Most of these are Graduate Studies and are dependent on the support of auto companies and others supplying engines and funding (to some extent). Fuels used include gasoline, diesel, some amount of various biofuels, and natural gas, however no natural gas projects have been approved per Andrea. UM has a wide variety of testing capabilities, we observed portable Horiba Units and Andrea pointed out a particulate / aerosol sampling device. I inquired about the emissions controls used and was told the engine catalytic converters may have catalysts or blanks or other combinations. They do not have other add on air pollution control. UM has dilute stack emissions and he said they don't find visible emissions to be a problem. There haven't been any complaints to their knowledge and AQD is unaware of any.

Each Cell has two exhausts one for the dynamometer engine test stand and one for the room ventilation. Each room has a fuel meter and on occasion they use fuel storage in smaller cans or larger day tank/ totes. I observed various engines in place in many of the dyno cells, from large 6 liter and smaller 2 liter, and some experimental engines for specific types/component testing. Large engines are primarily from trucks. Andrea said it is possible they could get boat or tractor engines in the future, it depends on the sponser and approved proposal / project. It appeared only 1-2 engines were running today or would be running testing later today. We walked into numerous cells and could see engines set up on the dynos for various testing scenarios and research/educational reasons.

We went outside the building to observe the fuel storage area. There are two separate brick buildings, each contain (3) above ground storage tanks, each tank is 300 gallons. Fuel is delivered here. Next to each brick building is a very large diameter stack and not much taller than the one story building. There are fans inside with access ports and this is the source of the building vacuum. It is very strong and I experienced this trying to open the area access doors.

Following this inspection, I requested that Brandi look into whether UM should be reporting these Rule 285 (2) (g) exempt equipment emissions from the fuel usage /combustion emissions to MAERS and possible include for FEES. Brandi followed up on 5/11/22 verifying the six (3 gasoline and 3 diesel) bulk storage tanks are 300 gallons each. In the last renewal permit exempt equipment demonstration UM estimated 2500 gallons of fuel is used annually; similar to 2021 usage of 2575 gallons. The emission estimate was at that time, and continues to be, well below the 10% Significant emission rate (SER) and is not required to be reported to MAERS.

Brandi and I next went to the main hospital to inspect the Crematory incinerator in the Anatomy Department. We met with the new manager, Clayne Fraser. The Crematory was not operating due to a broken Thermocouple. He said that UM facilities maintenance would be replacing it. The incinerator has one thermocouple in the secondary chamber. Per Clayne they receive bodies from their morgue, medical student classes, and also drums of anatomy parts.

The most recent maintenance work by Matthew's (manufacturer) was to replace the refractory ceiling. The Thermocouple was replaced a couple years ago. The next thing on the schedule is to replace the door. The rest of the refractory will probably also need replacing. Clayne opened the door and I observed the refractory sides and bottom did look worn. Clayne said UM is now establishing a contract with Matthew's for regular maintenance @ 12-18 months and it includes numerous checks of the entire system. They will replace the door.

Per Clayne, they are still conducting Visible Emissions observations during daily cremations. He said the Opacity Monitor in the stack has been working properly.

Brandi and I then drove to the construction site of the new UM Hospital Clinical Towers, location of the permitted FGCITENGINES. This is near the current hospital and will be patient rooms. A large area is cordoned off and the building hole is dug and is under active construction. Brandi pointed out the three sand pads where the Generators will eventually be located in the basement of the building. UM will provide notice of construction commencement when it occurs.

#### RECORDKEEPING REVIEW

AQD received an email response with the DAY 2 records on 5/9/2022. Brandi included responses to each listed request (copied below). All records were reviewed, determined acceptable, and filed.

**1. NCRC (Provide for all below, the Fuel Oil specification(s) as applicable)**

**EUB550-GEN: NOx monthly emissions and Hours of Operation**

***Attached (EUB550-Gen.pdf)***

**EUTURBINE: Fuel Oil purchase record; NOx monthly emissions and Hours of Operation**

***No fuel oil purchased during this period. Attached are NOx records (NCRC Turbine Records.pdf)***

**EUDUCTBURNER: NOx monthly emissions and Hours of Operation**

***Attached (Ductburner 2021.pdf and Ductburner 2022.pdf)***

**EUB800-GEN1: NOx monthly emissions and Hours of Operation**

***Attached (B800 Records.pdf)***

**EUB85-FIREPUMP2: NOx monthly emissions and Hours of Operation**

***Attached (Firepump2 records.pdf)***

**FGBOILERS1A&1B: NOx monthly emissions and Hours of Operation**

***Attached (Boiler1A records 2021.pdf, Boiler1A records 2022.pdf, Boiler1B records 2021.pdf, and Boiler1B records 2022.pdf)***

**FGBOILERS2&3: NOx monthly emissions and Hours of Operation**

***Attached (Boiler2 records 2021.pdf, Boiler2 records 2022.pdf, Boiler3 records 2021.pdf, and Boiler3 records 2022.pdf)***

**FGBOILERS5&6: NOx monthly emissions and Hours of Operation.**

***Attached (Boiler5 records 2021.pdf, Boiler5 records 2022.pdf, Boiler6 records 2021.pdf, and Boiler6 records 2022.pdf)***

**Demonstration of compliance with Opacity monitoring/standard.**

***UM monitors the stacks as well as performs annual maintenance on all units at NCRC. Primary fuel is natural gas and UM is limited to fuel oil use per the Boiler MACT.***

**Demonstration of compliance with NSPS Subpart Dc.**

***UM performs annual maintenance on all Boilers at NCRC. Fuel usage and emissions are recorded monthly. UM provides annual emissions via MAERS.***

**FGB85-EMERGENS: NOx monthly emissions and Hours of Operation**

***Attached (B85Emergens 2021.pdf, B85Emergens 2022.pdf)***

**FGPATHDGENS: Hours of Operation (various SC III. 1., 2., 3.)**

***Attached (Pathology Gens1.pdf, Pathology Gens2.pdf)***

**2. CREMATORY**

#### VI. 1. & 4. Temperature records

**Attached is a sample of 1-hour data for month of June 2021 (MS2\_Crematory temp june2021 sample.pdf).** AQD: I determined this record needs to correlate with the VI.2 record in order to determine compliance during burn/cremation events. I sent a follow up email to Brandi requesting improvement to the records and she revised and resubmitted.

#### VI. 2. Daily cremation records of Time and weight (not personal ID records)

**Attached (Cremated specimens by day 4-1-21 3-1-22 log.pdf)**

#### VI. 3. Quarterly records

**Attached (Crematory percentage log.pdf)**

**VI. 5. Maintenance / service records during the period for Crematory / Control panel / Opacity monitor.**

**Attached (Re\_crematory maintenance log.pdf)**

#### VI. 6. Visible Emissions records

**Attached previously (Cremated specimens by day 4-1-21 3-1-22 log.pdf)**

### 3. EtO Sterilizers

#### VI. 2. Records for January – March 2022.

**Attached (EtO1.pdf, EtO2.pdf, EtO3.pdf, EtO4.pdf, EtO5.pdf, EtO6.pdf)**

**Please note, the EtO sterilizers are in the process of being shut down and removed. You will see the limited usage in the attached records. When the units are completely removed from service and unable to operate due to components being removed and/or cut, UM will contact EGLE and begin process of terminating the air permit.**

#### VI. 3. Monitoring records indicating control equipment compliance.

**Attached are the service records verifying the control equipment continues to be in compliance. While preventative maintenance is being performed, all components are reviewed and repaired if need be.**

**UOFM 8XL 350773 PM 10-2021.pdf**

**UOFM 5XL 722314 PM 10-2021.pdf**

**UOFM 8XL 350774 PM 10-2021.pdf**

**UOFM 50 300261 PM 10-27-21.pdf**

**UOFM 8XL 351021 PM 10-2021.pdf**

**UOFM 50 300263 PM 10-2021.pdf**

**UOFM 8XL 351008 PM 10-2021.pdf**

**UOFM 5XL 722313 PM 10-2021.pdf**

**UOFM 50 300265 PM 10-2021.pdf**

**UOFM 50 300262 PM 10-2021.pdf**

*UOFM 50 300264 PM 10-2021.pdf*

*UOFM 50 300266 PM 10-2021.pdf*

### **COMPLIANCE SUMMARY**

Following the inspection DKV requested some additional information related to the Lay Auto Lab. This was received and resolved. DKV also requested additional information and clarification following review of the Crematory records. UM was advised to better coordinate associated records for compliance purposes. One pending item for future evaluation includes: Crematory temperature monitoring / thermocouple - reviewing for "dip" during one burn in June 2021 and is likely an anomaly. This will be watched for consistent compliant temperatures during burns going forward.

Around July 2022, AQD will verify EtO removal and/or disconnection and/or dismantling in place.

AQD determined that UM is in substantial compliance with their ROP and the applicable federal and state requirements at this time.

NAME \_\_\_\_\_

DATE \_\_\_\_\_

SUPERVISOR \_\_\_\_\_