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

M067532238

FACILITY: UNIVERSITY OF MICHIGAN		**SRN / ID:** M0675
LOCATION: 1239 KIPKE DR, ANN ARBOR		**DISTRICT:** Jackson
CITY: ANN ARBOR		**COUNTY:** WASHTENAW
CONTACT: Brandi Campbell , Occupational Safety & Environmental Health		**ACTIVITY DATE:** 11/19/2015
STAFF: Diane Kavanaugh-Vetort	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: List this as PCE inspection related to new temporary PTI No. 176-15 for modification to existing Crematory Incinerator. Also, is for conducting a test observation of temporary permit required Test Burns (compliance mechanism). AQD observe for VE and odor.		
RESOLVED COMPLAINTS:		

U of M Contacts: Brandi Campbell, Senior Environmental Specialist, Occupational Safety & Environmental Health, (734) 647-9017; Dean Mueller, Supervisor-Crematory; Dennis (?), Medical, Architecture and Engineering

AQD: Diane Kavanaugh Vetort, Michael Gabor and Zachary Durham

On this date the Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD) conducted a partial compliance evaluation (PCE) of the Crematory EU-10213-02 at the University of Michigan, 1239 Kipke Dr., Ann Arbor. The purpose of the inspection was to determine the facility's compliance status with applicable federal and state air pollution control regulations, specifically Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), the administrative rules, and conditions of MI-ROP-M0675-2014 and PTI No. 176-15.

UM applied for and AQD issued PTI 176-15 as a Temporary permit to allow for the modification of the existing human Crematory Incinerator (Unit) to operate without the required Induction Fan. The permit allows UM to operate the Unit without the fan during a 6 month period provided operation includes test burns at various loads accompanied by record keeping and exhaust stack observations for visible emissions (VE) and odors. UM has conducted some of the testing over the past few weeks. This week they proposed to conduct the "worst case" full load type testing with a cold-start, larger weight load, and during a windy, cooler day. The PTI requires they notify AQD District prior to conducting the full-load test burn. I scheduled our observation with Brandi for this date and brought two new AQD Jackson District staff with me, Michael Gabor and Zachary Durham to participate in the observation and inspection.

Dean Mueller is in charge of this department at UM and operates their one Matthews Crematory Incinerator. UM receives whole body donations and receives anatomical parts from the Hospitals. We met with Dean in his office and discussed their plan today. I reviewed the binder he is keeping with all the required records to date and it appeared to be complete and in compliance with permit requirements. I requested UM submit copies of the entire record to me following the expiration of this permit. Dean also mentioned that UM has recently changed to a more environmentally friendly type of plastic bag for remains called "CFPolyscrim".

Dean explained today the plan is to cold-start the Incinerator and burn 376 pounds over the three hour period. The load today is from the hospital (pathological) and is in fiber drums (look like cardboard) with plastic liners. Per Dean these remains are higher in moisture usually. In addition, Dean said he has another load of 330 pounds of these containers that can be added to the incinerator at the end of the first load. This could be added without totally cooling down unit prior to starting the second load. He said this would be another non-typical operation to test the Unit. I agreed his plan sounded acceptable. AQD plans to observe the stack and the Unit operating parameters during the test burn.

Per Dean, normally get hospital load only once per month. Normally when they are cremating whole bodies they do two per day, one in the morning and one in the afternoon.

The Unit is located in a separate room off of Dean's office. I verified the Unit was off and that this would be a cold-start. Dean had already placed the load into the Unit. The control panel is digital and there is a graph screen for temperature and this is where download continuous data. Unit runs mostly automated.

Dean enters the load weight and duration of burn which he did while we were there. He started the Unit and we observed the temperature began to slowly ramp up and also adjusts for oxygen.

There is a smoke transmitter type opacity monitor in the stack connected to an alarm on the control panel. I observed it is located in the portion of the stack as it exits the Unit. We observed the light come on at the stack opacity meter indicating it was on. Dean and Brandi did not know what it is set at for opacity. They also did not know the Incinerator temperature maximum /minimum set points. Brandi offered to find out this information.

The permit required minimum temperature is 1600 degrees F. During the test burns I observed they did get to and exceed the minimum temperature during the burns. Dean confirmed that Matthews is contracted for annual maintenance inspections of the entire Unit.

PTI 176-15 limits Unit to PM 0.20 lbs/1000 lbs; 20% opacity and maximum 750 lbs/charge. The secondary combustion chamber has a minimum temperature requirement of 1600 degrees F. with continuous recordkeeping. Daily records of burn duration, description and weight are required. Maintenance records are also required. Uncertified VE are allowed during the load burns without the induction fan and are to be conducted at start-up, 15 minutes in to burn, mid-test and at the end. The Appendix contains guidelines (standard in current Crematory permits).

Brandi, Dean, Michael, Zach and I went outside on the balcony/walkway to observe the stack. This is the nearest and only location from the Crematory level area to observe the stack outside. The balcony/walkway is in an alcove of sorts and the height of the building obscured the exact location of the sun, however it was to the south and east of our location.

We observed the Unit's exhaust stack, from this location, at start-up and approximately mid-way during the load burn. I observed there were no VE other than heat waves from the stack during all observations. Michael and Zachary completed EPA Certified Method 9 training recently for the first time and they concurred there were no VEs observed.

During the inspection I also requested to observe the stack from the roof. Brandi and Dean contacted Dennis (did not get his last name) to allow us access to the roof. Dennis is with UM's architecture/engineering/design and is in charge of the project that will remove the Induction fan if all continues to go well during the temporary permit test burns. Dennis said they plan to do some modeling of the exhaust in the coming month or so to make sure there is no odor or smoke entering the surrounding buildings. On the roof we could see the balcony down below us and we were able to get in the appropriate location to observe the stack with the sun directly behind us. We did not observe any VEs during this time.

AQD finds the balcony is acceptable for periodic spot checks of the stack. It has quick and easy access and UM will be able to tell if there is smoke. However the roof where the stack is located is the most appropriate location to conduct formal VEs and to double check the stack in certain conditions. This was communicated to Brandi.

During the observation I obtained readings from the Unit's control panel. It counts down the burn duration. One reading showed temperature was at 1401 degrees F at 2hrs:41min remaining. We had just observed the stack before this and saw no VEs. I later observed the Temperature read: 1653 degrees F with 1hr:40min remaining. At this point Dean cracked open the crematory door for us to see the burn and it was going very strong. He determined that he would add the second load, 330 additional pounds, in about 40 minutes.

NOTE: On this date UM was also conducting formal performance testing of one natural gas emergency generator pursuant to the RICE MACT and specifically, 40 CFR Part 60, Subpart JJJJ, New Source Performance Standard for SI-RICE. Mark Dziadosz, TPU was also present at the test site. Brandi drove us to observe this testing at another UM location (arrived there @11:00 am) and then we returned to the Crematory office (@ 12:30 pm). A separate MACES report documents the observation.

Upon our return we observed the end of the prior run and the temperature was 1653 degrees F. Dean

shut off the Unit and it normally cools down for 60 minutes. Instead he opened the door to add the additional 330 pound load, at temperature reading 1143 deg F. and we then all went outside to observe the stack from the balcony location. No VEs were observed.

It appears at this time the Crematory Unit is operating properly without the need for the induction fan. UM plans to continue test burns during the coming colder weather to make sure there are no smoke or odor issues that come with changing conditions. A decision will then be made and the induction fan will likely be totally removed. The PTI 176-15 will expire and the original existing permit will need to be modified to remove the induction fan requirement.

AQD requested and will receive all required records from the test burns. Final compliance is pending completion of test burns and review of all records.

NAME Diane K. Victor DATE 11/23/15 SUPERVISOR