

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

E851035665

FACILITY: ADRIAN COLLEGE		SRN / ID: E8510
LOCATION: 110 S MADISON ST, ADRIAN		DISTRICT: Jackson
CITY: ADRIAN		COUNTY: LENAWEE
CONTACT: Matt Armentrout , Facilities Operations		ACTIVITY DATE: 07/21/2016
STAFF: Michael Gabor	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled, Announced, Inspection of Adrian College's Bulb Crushing Operation, a Minor Source.		
RESOLVED COMPLAINTS:		

Minor Source Inspection of Adrian College's Bulb Crushing Operation. SRN: E8510.

Facility Contact

Chris Stiver (CS) – Director of Plant Services, Adrian College, cstiver@adrian.edu, (517) 264-3131 (office).

Matt Armentrout (MA) – Facilities Coordinator, Adrian College, marmentrout@adrian.edu, (517) 264-3818 (office).

Purpose

On July 21, 2016, I conducted a scheduled, announced inspection of Adrian College's (AC) bulb crushing operation located in Adrian, Michigan (Lenawee County) at 202 Stratford Drive. The purpose of the inspection was to determine the facility's compliance status with applicable federal and state air pollution regulations, particularly with the Michigan Natural Resources and Environmental Protection Act 451 of 1994, Part 55, Air Pollution Control and the administrative rules, and the conditions of AC's Permit to Install (PTI) number 23-10, issued February 3, 2010. This was the facility's first inspection since the issuance of their PTI.

Facility Location

The facility is located within the city limits of Adrian. It is immediately surrounded by other commercial sources and residential homes / apartments.

Arrival & Facility Contacts

I arrived at approximately 12:48 pm with additional Air Quality Division (AQD) staff, including Brian Carley (BC), Joy Taylor Morgan (JTM), and Eric Hansen (EH). JTM and EH joined me as they conducted mobile mercury (Hg) emissions monitoring before, during, and after fluorescent bulb crushing operations. This inspection was a part of a statewide initiative to inspect all bulb crushing operations and to measure Hg exposure, especially relative to the operator. Upon our arrival, MA met us outside and escorted us inside and introduced us to his supervisor, CS. A pre-inspection conference was held, during which I provided a copy of the Michigan Department of Environmental Quality (MDEQ) brochure entitled *Rights and Responsibilities Environmental Regulatory Inspections and AQD's PTI Exemption Handbook*. The facility representatives extended their full cooperation during the inspection and CS and MA accompanied us during the entire duration of the inspection.

Regulatory Applicability

The facility is a minor source and operates EU-BULBCRUSHER (fluorescent light bulb crusher or crusher) under PTI No. 23-10.

Facility Background

AC's PTI allows them to crush their fluorescent light tubes using a 55-gallon drum outfitted with a Drum-Top Crusher (DTC). The Hg and particulate emissions generated by the bulb crushing operation are captured by a HEPA (high efficiency particulate air) filter and a carbon filter, per permit Special Condition (SC) IV.1. About one 55-gallon drum's worth of waste is generated per year and is sent offsite for disposal using Aircycle, per SC III.6. MA is the assigned person to operate the crusher.

Pre-Inspection Meeting

Prior to conducting the inspection, MA confirmed that the bulb crusher is only 187 feet away from the nearest place of residence (an apartment building located immediately west of AC's maintenance building). This current setback does not meet SC III.3's 200 foot setback requirement. MA indicated that there is no other enclosed area within the maintenance building that they could move the operation and meet this requirement. We then proceeded to the room that housed the bulb crusher.

Onsite Inspection Narrative

We then proceeded to conduct the site tour, which was predominantly led by MA. JTM and EH took background Hg emission measurements. The crushing operation occurred inside a closed off room of AC's maintenance building, which allows them to comply with SC III.7 (which requires all doors and windows to be closed during the crusher's operation).

I observed that the feed chute was sealed while the crusher was not in operation, per SC IV.3, by using a cap. I did not observe any phosphor dust prior and during the operation of the crusher, per Appendix 1's Recommended Best Management Practices (BMP) for DTC item 9 and SCs IV.2 and III.1. I also observed adequate storage practices that appeared to be in compliance with Appendix 2, Recommended BMP for Lamp Handling and Storage. However, I observed one broken 8-foot light bulb tube. I also observed posted procedures. All generated emissions were released indoors and not via a stack, per SC VIII.1. MA also confirmed that they exceeded their daily crushing limit of 100 eight-foot equivalent fluorescent light bulbs, per SC II.1. He showed me the hardcopy records and he emailed them to me after the inspection (attached). MA thought the limit was 400, eight-foot equivalent light bulbs per day, as indicated by AC's PTI's Appendix 3. I stated that that was a typo and that the material limit per SC II.1 should have been followed.

MA also confirmed that the last carbon filter change out occurred on July 20, 2016, approximately 6 years after the installation of the crusher. This is not in compliance with SC III.5, which requires the carbon filter be changed at least once every 2 calendar years. AC never demonstrated to the AQD the effectiveness of the carbon filter, per SC V.1. In addition, MA stated that HEPA filter 1 was replaced at every half drum and new drum intervals and HEPA filter 2 was replaced at a 10 drum interval.

MA started crushing bulbs at 1:31 pm and he wore a respirator, gloves, eye and hearing protection, and a body suite. MA admitted that in the past, he hadn't always worn a respirator. I explained the importance to do so, as it was consistent with the

permit's BMP and for personal Hg exposure protection. He crushed 65 equivalent 8 foot bulbs during the inspection and I did not observe any emission leaks, etc. In addition, JTM and EH continued to conduct Hg emission measurements. Their highest measurement of 14,240 ng/cubed meter occurred at the crusher during operation and measured 10 ng/cubed meter at the fence line.

Post-Inspection Meeting

After the crushing operation concluded, I informed both MA and CS of my findings of several permit SC violations and that I would issue a Violation Notice. Specifically, the operation did not meet the daily, 100 eight-foot fluorescent light bulb material crushing limit, the 200 foot setback requirement of SC III.3, and the requirement to change the crusher's activated carbon filter at least once every two calendar years, per SC III.5. CS indicated that they would most likely remove the crusher from the site and ship off spent light bulbs for processing offsite. I thanked them for their cooperation and assistance, invited them to contact me in the future with any questions or concerns, and we departed the facility at approximately 1:50 pm.

Recordkeeping Review

I reviewed the records required by SC VI.1 a through c and SC VI.3 for August 2015 through July 2016 (attached), and AC appears to be in compliance with these requirements. However, the operation did not meet the daily, 100 eight-foot fluorescent light bulb material crushing limit, per SC II.1. The records noted on August 13, 2015, that 173, 8-foot equivalent bulbs were crushed, on January 6, 2016, 221, 8-foot equivalent bulbs were crushed, and on July 8, 2016, 103, 8-foot equivalent bulbs were crushed. The supplied records appeared to indicate compliance with the 5,000, 8-foot equivalent bulb, per 12-month rolling time period, crushing material limit, per SC II.2.

Compliance Summary

Based upon the visual observations, AC is not in compliance with the requirements of their PTI. I observed several permit SC violations. Specifically, the operation did not meet (1.) the daily, 100 eight-foot fluorescent light bulb material crushing limit per SC II.1 (as noted by their records on August 13, 2015, with 173, 8-foot equivalent bulbs crushed, on January 6, 2016, with 221, 8-foot equivalent bulbs crushed, and on July 8, 2016, with 103, 8-foot equivalent bulbs crushed), (2.) the 200 foot setback requirement of SC III.3, and (3.) the requirement to change the crusher's activated carbon filter at least once every two calendar years, per SC III.5. I will issue a VN for these identified deficiencies.

NAME Michael M. Haber

DATE 7/25/16

SUPERVISOR JR