

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

P076845883

FACILITY: Velsicol Chemical Corporation Superfund Site		SRN / ID: P0768
LOCATION: 4324 North Street, SAINT LOUIS		DISTRICT: Lansing
CITY: SAINT LOUIS		COUNTY: GRATIOT
CONTACT: Thomas Alcamo, Remedial Project Manager		ACTIVITY DATE: 03/16/2018
STAFF: Michelle Luplow	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled, announced compliance inspection to determine compliance with SRD #1-16SA/1-16SB		
RESOLVED COMPLAINTS:		

Inspected by: Michelle Luplow (AQD, author), Brent Bodnar (WRD, LDO), Renee Pionk (WRD, Central)

Remediation activities contacts:

Scott Pratt, Project Manager, Jacobs (scott.pratt@jacobs.com)
Matt Baltusis, MDEQ Superfund Section (baltusism@michigan.gov)
Thomas Alcamo, EPA Region V (alcamo.thomas@epa.gov)

Purpose

Conducted an announced, scheduled compliance inspection of remediation of the Velsicol Chemical Corporation Superfund (NAPL/DBCP Area 1) site to determine compliance with Substantive Requirements Document (SRD) No. 1-16SA for the insitu thermal treatment system (ISTT) with associated thermal oxidizer, wet scrubber, and activated carbon units.

Facility Background/Regulatory Discussion

The Velsicol Chemical Corporation (formerly Michigan Chemical Corporation) historically produced the chemicals PBB, a fire retardant, and DDT, a pesticide, resulting in contamination of the soils and groundwater within and surrounding the Velsicol site.

The EPA and MDEQ are jointly performing remediation of the soils and groundwater in stages. Area 1 is the first phase of remediation, Area 2 is planned to be the second phase of remediation, and the third phase will likely involve the remediation of the Velsicol Burn Pit, a satellite disposal area for wastes and residues from the Velsicol Plant site, which is considered a separate Superfund site (see attached map for all areas). Remediation of Area 1 is being conducted under SRD # 1-16SB issued June 14, 2018. The original SRD, # 1-16SA was issued June 26, 2017, but was updated per request from Thomas Alcamo, EPA, who requested that rather than replacing carbon canisters when "breakthrough" of a concentration of 20% or more of the influent into the first canister occurred, the carbon canisters be replaced when a VOC concentration of 1,000 µg/m³ is detected between the first and second canister. EPA demonstrated that if emissions from the system stayed at a maximum of 1,000 µg/m³, the Velsicol site would be emitting a maximum of 0.025 tpy VOC if they operated 24 hours per day, 365 days per year, and at maximum flow rate. The AQD LDO and Permits Section determined that this was accepted, and therefore the Testing/Sampling conditions were revised to require replacement of the carbon if breakthrough occurs at 1,000 µg/m³ VOC.

ISTT involves heating the subsurface soil and groundwater via a series of electrically powered heaters. The heat volatilizes the contaminants, the vapors of which are captured and treated via a Thermal Oxidizer (RTO), acid gas scrubber, and vapor-phase granular activated carbon (VGAC), to polish the exhaust from the thermal oxidizer system before discharging to atmosphere. There is also waste water discharge from this process that is regulated under the DEQ Water Resources Division. It takes 120 days to reach temperature, before being kept at temperature for 90 days for treatment. There will be an additional 3 weeks of post-treatment with no additional heat transferred to the ground.

Jacobs (project management team) began injecting heat into the soil on February 26, 2018 and began operating the blowers and RTO on March 5, 2018. S. Pratt said that the temperature of the soil at the time of inspection was 20°C (68°F), not hot enough to generate any volatile contaminants from the soil/ground water. He expects to start seeing collection of contaminants at a soil temperature of 100°C).

Remediation is planned to occur at least until mid-October 2018.

S. Pratt said there are 7 air monitoring stations that have been placed throughout the property in response to residents' concerns. The stations monitor for 13 VOCs and DDT.

Inspection:

WRD staff and I arrived at the Velsicol site at approximately 10:00 a.m. on March 16, 2018 and met with Scott Pratt, Project Manager. S. Pratt provided us with a tour of the facility. Attached are photos taken by Brent Bodnar, WRD, of various locations throughout the site.

EUREMEDIATION

This SRD is for the soil and groundwater remediation, the exhaust stream of which is cooled, and the moisture knocked out, prior to the exhaust stream being treated by a staged treatment system: thermal oxidizer > caustic acid scrubber > 2 dual-stage activated carbon systems.

Emission Limits, Monitoring/Recordkeeping, and Reporting

Velsicol is limited to 0.03 tpy VOC per 12-month rolling time period, as determined at the end of each calendar month, records are to be kept for VOC emissions, and the EPA is required to report monthly and 12-month rolling VOC emissions, which includes flow rate and total VOC concentration of the effluent stream of the first stage activated carbon canister, 30 days following the end of the month in which the data was collected. The EPA has been submitting all required reporting through July 2018 and are documented in MACES. Total rolling VOC's from March – July 2018 was 0.0014 tons.

There are currently no Materials Limits for EUREMEDIATION.

Process/Operational Restrictions

A malfunction abatement plan (MAP) is required for this site, and shall include a complete preventative maintenance program, identification of the source and air-cleaning device operating variables to be monitored to detect a malfunction or failure, and a description of the corrective procedures or operational changes that shall be taken in the event of a malfunction. The final, approved MAP was submitted to the AQD on February 22, 2018.

Design/Equipment Parameters & Monitoring/Recordkeeping

The thermal oxidizer is required to be operated in a satisfactory manner, which includes maintaining a minimum temperature of 1750°F, a 60-minute average combustion chamber temperature of 1800°F (based on instantaneous block average readings collected at least every 15 minutes), and a device of which should be installed, calibrated and maintained to monitor and record the temperature at least once every 15 minutes.

I requested that S. Pratt provide me with temperature data records for the 1st – 7th of May – August 2018. Jacobs records the temperature data on 5-minute increments and 60-minute block averages. Attached are the 60-minute block average data. After review of the 60-minute block average data it appears that the RTO has been operating above 1800°F for each 60-minute block average. I also reviewed the 5-minute increment continuous data for these weeks and found that there were periods of time where the RTO chamber temperature was below the minimum 1750°F requirement; however, Jacobs noted for each of these data points that the wellfield field block valve was closed, indicating that there was no flow to the treatment system, the treatment system was not operating. I will follow up with S. Pratt, accordingly, to understand the nature of the events that led to the wellfield block valve closures.

The SRD also requires that the caustic scrubber be satisfactorily operated between 6.0 and 8.0, and that the pH be continuously monitored and recorded (a data point at least once every 15 minutes). As with the RTO combustion temperature, Jacobs also records pH at 5-minute increments. There were periods where the pH was out of operating range, exceeding the 8.0 maximum; however, it was also during these times that the wellfield field block valve was closed, and therefore there was no flow to the control devices. The pH data for the 1st-7th of May – August 2018 was reviewed, and a sample of the records is included.

The temperature and pH during the inspection were 1814°F and 6.9, respectively, and a flow rate into the RTO of 1483 cfm.

Testing/Sampling & Monitoring/Recordkeeping

Breakthrough of the first carbon canister in the dual-stage activated carbon system is required to be tested at least once per week. Breakthrough is defined as a concentration of 1,000 µg/m³ or more. If breakthrough is detected, the permittee is required to switch to the other activated carbon system, replace the carbon in the first

canister, and reverse the operating order of the vessels. Records of each carbon change are required to be kept; however, S. Pratt said there have been no carbon changes since operations began. The weekly effluent stream concentration from the first stage carbon canister is also required to be kept. Within the monthly VOC emissions reporting which EPA submits to the DEQ, are the weekly carbon "midfluent" concentration data in mg/m³. Converting the data to µg/m³, the highest midfluent concentration was 424 µg/m³ during the week of July 24, 2018. Demonstrating that the carbon of the first stage was not required to be replaced from March 2018 – July 2018 (see attached).

Compliance statement: The MDEQ RRD Superfund Section in conjunction with the EPA Region V are in compliance with SRD # 1-16SA/1-16SB at this time.

NAME M. J. Zelen DATE 9/21/18 SUPERVISOR B. M.

