

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

N662863956

FACILITY: Dow Chemical Company		SRN / ID: N6628
LOCATION: 99 Tiernan, BAY CITY		DISTRICT: Bay City
CITY: BAY CITY		COUNTY: BAY
CONTACT: Scott Clearwater , Project Manager		ACTIVITY DATE: 08/02/2022
STAFF: Kathy Brewer	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: On site inspection and records review		
RESOLVED COMPLAINTS:		

I (KB) conducted an announced inspection of the Dow Chemical Company (Dow) air stripping unit located at 99 Tiernan St. in Bay City MI. The air stripper is part of a groundwater remediation process at a remediation site located at the former Dow “West Tank Farm” on Prairie Street in Bay City.

The current system is permitted under PTI No. 47-15B. The site SRN is N6628. The PTI incorrectly lists the SRN as B6628. The PTI application also listed B6628 as the SRN.

The system is primarily a source of VOCs.

During the inspection we viewed the groundwater influent locations, the air stripper facility and reviewed on site records. Based on the inspection findings the facility appeared to be in compliance with applicable air regulations.

Attached

gpm lift station flows December 2020 – July 2022

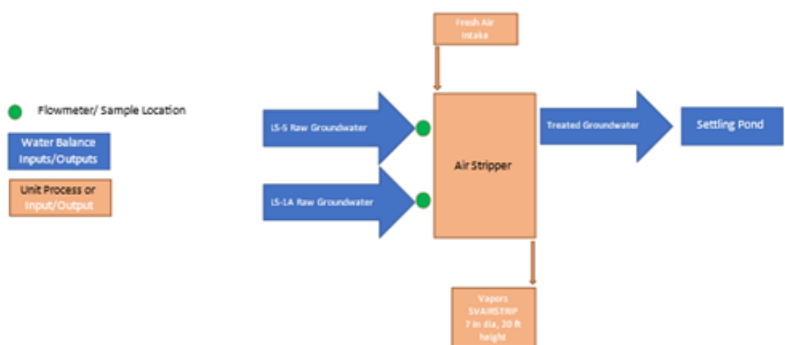
flow record field data sheet March 2022, July 19, 2022

VOC emissions -12 month rolling average January 2021, August 2021, March 2022

lift stations sampling report July 19, 2022

EUGROUNDWATER:compliant

Air Discharge Permit Flow Diagram
Dow Chemical Company, Bay City MI



The site collects groundwater and pumps from two lift stations to the air stripper. The air stripper has 5 baffled chambers with a venturi above each chamber that are vented to a common header then to atmosphere via SVAIRSTRIP. Blowers provide flow for the venturi and chamber air flows. The system can operate 24/7.

In November 2020 the site received the current PTI that allowed removal of a biotower that operated post air stripper chamber. The current PTI requires Dow to monitor and record the total VOC concentration, the concentration of each TAC, and the flow rate of the water influent stream. Previously, Dow was required to monitor and record the total VOC concentration of the effluent stream exiting the unit. VOC emissions are now based on the water influent stream with the assumption that 100% of influent VOCs are emitted.

Emissions

Total monthly water flow and inlet concentration from the most recent sample analysis are used to determine combined influent ug/l used calculate to VOC lbs/hr. The method detection limit is used in calculations when a non-detect analytical result is reported.

Records review for the months of January 2021, August 2021 and March 2022 indicate the facility is in compliance.

SC I.1 , SC VI.3.

Pollutant	limit	January 2021	Aug 2021	Mar 2022
VOC	0.8 TPY 12 month rolling	0.0593 TPY 12 month rolling*	0.1875 TPY 12 month rolling**	0.1112 TPY 12 month rolling

*Only includes 2 months of data. Permit was received on November 23, 2020. Tracking commenced in December 2020.

**Only includes 9 months of data. Permit was received on November 23, 2020. Tracking commenced in December 2020.

The facility uses the PTI Appendix A Groundwater Remediation Emission Calculation and Recordkeeping for documenting emissions. The March 2022 calculations were reviewed in detail.

$$C \frac{\text{lbs}}{\text{hr}} = A \frac{\text{gal}}{\text{min}} \times 60 \frac{\text{min}}{\text{hr}} \times 8.34 \frac{\text{lbs}}{\text{gal}} \times B \times 10^{-6}$$

$$D \frac{\text{tons}}{\text{month}} = C \frac{\text{lbs}}{\text{hr}} \times 0.0005 \frac{\text{ton}}{\text{lbs}} \times 24 \frac{\text{hrs}}{\text{day}} \times 31 \frac{\text{days}}{\text{month}}$$

A = 218 gpm B = 316 ug/L C = 0.0345 lbs/hr D = 0.0128 tons/month

The July 19, 2022 lift station sample results showed 190 ug/l Benzene and 40 ug/l Ethylbenzene at LS-5 and non-detected at A/S-INF(LS-1A/EW-13). Flows recorded on July 19, 2022 were 152 gpm at LS-5 and 63.1 gpm at A/S-INF.

The PTI does not specify any Material Limits, Process/Operations Restrictions, Design/Equipment Parameters, or Testing/Sampling Special Conditions.

The following stack information was confirmed during the inspection.

Stack ID	Maximum exhaust diameter (inches)	Minimum height above ground (feet)	Description
SVAIRSTRIP	7	10	Vent to atmosphere post venturi and baffled water chambers

NAME 

DATE 8/18/2022

SUPERVISOR 