



REGION 5

CHICAGO, IL 60604

MEMORANDUM

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Alpont Methanol, Oregon, Ohio

FROM: Matthew Walters, Environmental Engineer
AECAB (MN/OH)

THRU: Brian Dickens, Section Supervisor
AECAB (MN/OH)

TO: File

BASIC INFORMATION

Facility Name: Alpont Methanol

Facility Location: 325 N. Lallendorf Road, Oregon, OH

Date of Inspection: June 13, 2024

EPA Inspector(s):

1. Matthew Walters, Environmental Engineer
2. Victoria Nelson, Environmental Engineer

Other Attendees:

1. Jason Adams, Plant Manager, Alpont Methanol

Contact Email Address: jadams@interstatechemical.com

Purpose of Inspection: Synthetic organic chemical manufacturing facility inspection

Facility Type: Methanol and methylate manufacturing

Regulations Central to Inspection: NSPS for the Synthetic Organic Chemicals Manufacturing Industry at 40 C.F.R. Part 60, Subpart VVa, NSPS for Volatile Organic Liquid Storage Vessels at 40 C.F.R. Part 60, Subpart Kb, and federally enforceable PTIO conditions (permit numbers P0133091, P0132649, and P0133628)

Arrival Time: 12:45 p.m.

Departure Time: 2:30 p.m.

Inspection Type:

- ☒ Unannounced Inspection
- ☐ Announced Inspection

OPENING CONFERENCE

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☒ Small Business Resource Information Sheet not provided. Reason: Not a small business.
- ☒ Provided CBI warning to facility

The following information was obtained verbally from Mr. Adams unless otherwise noted.

Company Ownership: Alpont Methanol is a subsidiary of Interstate Chemical Company, Inc. according to the company website.

Process Description:

The facility manufactures two primary products: methanol and alkali metal methylates. Pipeline natural gas is the raw material for methanol production. The natural gas is converted to syngas by steam methane reforming over a nickel catalyst. The syngas is subsequently reacted over a copper catalyst to form crude methanol and water, which is stored in fixed roof tank TK-501. The crude methanol is refined in a two stage distillation process. The first column separates methanol (overhead) and water (bottoms). The wastewater from the first stage bottoms is used as makeup cooling tower water. The second column separates light product impurities to produce AA grade methanol. The refined methanol is stored in internal floating roof (IFR) tanks TK-502, 503, 504, 507, and 513 and the light product is stored in fixed roof tank TK-506.

The facility manufactures methylate by pumping refined methanol to the reaction tower where it is reacted with either sodium hydroxide or potassium hydroxide solution (sodium methylate is the higher demand product). Methylate is the bottoms product of the reaction tower, and the overhead methanol/water phase is distilled in a second tower. The methylate products are stored in fixed roof tanks TK-508 through 512 and 516. The recovered overhead methanol from the distillation is recycled to the reaction tower for stripping flow. The water/residual methanol bottoms are sent to the crude methanol storage tank.

Staff Interview:

- The facility commenced production in June of 2020 and operates 24/7/365.
- All fixed roof tanks are equipped with a closed vent system routed to a wet scrubber vapor recovery device.

- One vapor recovery device is dedicated for methanol process fixed roof tanks and another is dedicated for methylete process fixed roof tanks.
 - The effluents from both vapor recovery devices are routed to the crude methanol storage tank.
- Condition C.1(b)(1)(h) of PTIO P0132649 sets forth the NSPS Subpart VVa LDAR requirements for the methanol plant:
 - The facility's LDAR contractor is TEAM, Inc. The contractor maintains the LDAR database for the facility.
 - LDAR monitoring records were requested for offsite review.
- Conditions C.1(b)(2)(d) and (e) of PTIO P0132649 limit the number of annual operating hours of certain pressure control valves (PCVs) and pressure relief valves (PRVs) discharging to the flare:
 - All reactors and distillation columns at the facility operate with total condensers such that there are no vent streams under normal process conditions.
 - PCVs and PRVs discharge to a vent header and are routed to a flare. Discharge to the vent header only occurs during upset or emergency conditions.
 - The facility specifies PCV opening pressure set points that are below the set pressures of the PRVs to prevent the PRVs from lifting during a process upset.
- Condition C.1(d)(2)(a) of PTIO P0132649 requires the facility to identify and record the hours in which emissions are exhausted to the vent valves identified in Conditions C.1(b)(2)(d) and (e):
 - The facility monitors the position of the PCVs to identify times when emissions are exhausted to the flare.
 - Discharges from the PRVs are not directly monitored but would be apparent because the discharge would create an upset throughout the process.

TOUR INFORMATION

EPA Toured the Facility: Yes

Data Collected and Observations:

- Condition C.1(c)(3) of PTIO P0132649 requires a pilot flame to be maintained at all times in the flare's pilot light burner when the emissions unit is in operation. The facility must properly install, operate, and maintain a device to continuously monitor the pilot flame when the emissions unit is in operation.
 - Inspectors observed a pilot flame at the flare during the facility tour.
 - Inspectors also observed the control room monitoring of the flare:
 - Four temperature sensors are alarmed in the control system.
 - Video confirmation of the flame is available to operators on the monitoring screen.

- Conditions C.3(c)(1)(b) and (c) of PTIO P0132649, Conditions C.3(c)(1)(b) and (c) of PTIO P0133628, and 40 C.F.R. § 60.112b(a)(3)(i)-(ii) require fixed roof tanks with a closed vent system and control device to meet the following specifications: (i) the closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions and (ii) the control device shall be designed and operated to reduce inlet VOC emissions by 95 percent or greater.
 - Inspectors observed organic emissions using a FLIR GFx320 optical gas imaging camera at the conservation vents on fixed roof tanks TK-501 (crude methanol), TK-509 (sodium methylete), and TK-512 (sodium methylete).
 - No organic emissions were observed using the FLIR camera from the vents on the vapor recovery devices.
- Condition C.4(c)(1)(a) of PTIO P0132649 requires methanol tanks TK-502, 503, and 513 to be equipped with a fixed roof in combination with an internal floating roof that meet certain specifications set forth at 40 C.F.R. § 60.112b(a)(1).
 - Inspectors observed organic emissions using the FLIR camera at the conservation vent on the fixed external roof of tank TK-503, which is used as a methanol day tank.
 - The facility indicated that the space between the IFR and external fixed roof is inerted with nitrogen, and therefore emissions from the automatic bleeder valve when the tank is filling should primarily be nitrogen with small amounts of methanol that vaporizes from the sidewalls.
 - Following the inspection, the facility confirmed that TK-503 was being filled and the IFR level was rising at the time of the inspection.
- Inspectors observed possible organic emissions using the FLIR camera at the cooling tower.
 - The facility indicated that water chemistry parameters are monitored daily at an onsite laboratory, including samples from the methanol process wastewater that is used as cooling tower makeup.
 - Water testing data for the first stage bottoms of the methanol distillation process were requested for offsite review.

Photos and/or Videos: were taken during the inspection and are listed in Appendix A.

Field Measurements: were not taken during this inspection.

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

Requested documents:

- Reports from most recent stack tests
- P&IDs for AC-101 and AC-301
- Water chemistry data for 1st stage methanol column bottoms for past month

- LDAR database covering past two years of monitoring (MS Access format)
- Documentation of any corrective actions taken for conservation vents on TK-501, 503, 509, and 512

Concerns: Organic emissions from the conservation vents on TK-501, 503, 509, and 512

DIGITAL SIGNATURES

Report Author: **MATTHEW WALTERS**  Digitally signed by MATTHEW WALTERS
Date: 2024.07.19 13:39:45 -05'00'

Section Supervisor: **BRIAN DICKENS**  Digitally signed by BRIAN DICKENS
Date: 2024.07.22 06:37:20 -05'00'

APPENDICES

A. FLIR Camera Log

APPENDIX A: FLIR CAMERA LOG

Inspector Name: Victoria Nelson **Archival Record Location:** *R5 Electronic Record Center\AECAB Library\Enf_Alpont2_OH_24\Inspection 2024.06.13\FLIR*

Image Number	File Name	Date and Time (EDT)	Description of Image
1	MOV_3446.mp4	6/13/2024 13:42	Crude methanol tank TK-501 (emissions from conservation vent)
2	MOV_3447.mp4	6/13/2024 13:44	Methylate storage tanks TK-509 and 512 (emissions from conservation vents)
3	MOV_3448.mp4	6/13/2024 13:47	IFR methanol day tank TK-503 (emissions from conservation vent on external roof)
4	MOV_3449.mp4	6/13/2024 13:55	Cooling tower (possible emissions)
5	MOV_3450.mp4	6/13/2024 13:59	Air coolers AC-101 and 302
6	MOV_3451.mp4	6/13/2024 14:12	Reciprocating compressor room