United States Environmental Protection Agency

Region 6 - Enforcement & Compliance Assurance Division

INSPECTION REPORT

Inspection Date(s):	04/21/2022	
Media Program:	Air	
Regulatory Program(s)	Title V	
Company Name:	**Americas Styrenics LLC**	
Facility Name:	**St. James Plant**	
Facility Physical Location:	9901 Hwy 18	
(city, state, zip code)	St. James, LA, 70086	
County/Parish:	St. James Parish	
Facility Phone Number	(225)331-3200	
Facility Contact:	David Thomas	Health, Safety and Environmental (HSE)
	DThomas@amsty.com	
FRS Number:	110056954602	
Identification/Permit Number:	PSD-LA-551 (M14), Title V: 2560-00007-V17	
Media Identifier Number:	AFS 22-093-00013	
NAICS:	325110	
SIC:	2865	

Personnel participating in inspection:		
Sarah Frey	EPA ECD-AT	Inspector
Christopher Williams	EPA-OECA-AED	Chemical Engineer
Richard Helmich, Ph.D.	EPA NEIC	Chemist
David Mahoney	EPA NEIC	Technical Coordinator
Ali Gitipour, Ph.D.	EPA ORD	Chemical Engineer
Sophia Ong	LDEQ	Environmental Scientist
Durrell Morris	Americas Styrenics	Environmental Specialist
Sam Duplessis	Americas Styrenics	Shift Supervisor
David Thomas	Americas Styrenics	Environmental Compliance Manager

EPA Lead Inspector Signature/Date	Sarah Frey	7/12/2022
	Sarah Frey	Date
Supervisor Signature/Date	JAMES LEATHERS Digitally signed by JAMES LEATHERS Date: 2022.07.15 16:25:19 -05'00'	
	James Leathers	Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

EPA inspectors Sarah Frey (Region 6) and Chris Williams (Headquarters) accompanied by Richard Helmich (National Enforcement Investigations Center, "NEIC"), David Mahoney (NEIC), and Ali Gitipour (Office of Research and Development) arrived at the Americas Styrenics LLC – St. James Plant ("AmSty") at 3:30 pm on April 21, 2022 for an unannounced inspection. We were accompanied by Louisiana Department of Environmental Quality inspector Sophia Ong. After watching a safety video in the lobby, we met with Mr. Durell Morris, Environmental Specialist Waste/Water, Sam Duplessis, Shift Supervisor, and David Thomas, Environmental Compliance Manager (by phone). Credentials were presented to Mr. Morris and we informed him that this was an EPA inspection to evaluate potential sources of excess emissions using EPA's Geospatial Measurement of Air Pollution ("GMAP") vehicle and evaluate compliance with the facility's Title V Permit and the Clean Air Act. The scope of the inspection is a partial compliance evaluation ("PCE"). This inspection occurred as part of the Administrator's Multi-Scale Monitoring Project called the Pollution Accountability Team ("PAT").

FACILITY DESCRIPTION

The St. James Plant produces styrene via continuous process. The facility consists of an ethyl benzene ("EB") unit, two (2) styrene monomer ("SM") units, and associate utilities, storage, and loading facilities. The EB unit produces EB from benzene and ethylene using an alkylation process. At the SM units, EB is dehydrogenated to produced styrene. Crude styrene is purified by vacuum distillation. The gas-fired process heaters supply the heat for reaction and regeneration. The steam from the boilers provides heat for the distillation operations. Fuels for combustion sources are natural gas, vent gas, and a mixture of polyethylbenzene, diethylbenzene, and styrene residues. According to Mr. Duplessis, the facility has less than 200 employees.

The St. James Plant is a chemical manufacturing plant that operates under Permit Number 2560-00007-V17 issued October 19, 2021 and Permit Number PSD-LA-551 (M14) issued February 11, 2022.

Section II – OBSERVATIONS

The NEIC GMAP was driven by Mr. Mahoney and the instruments were operated by Mr. Helmich and Mr. Gitipour. A facility representative, Mr. Morris, was present in the GMAP. Conditions were sunny with no cloud cover and moderate winds coming from the northeast to east. Inspectors Dr. Frey, Mr. Williams, and Ms. Ong were escorted by Mr. Duplessis in a secondary vehicle. The GMAP drove on all available plant roads measuring air pollutant concentrations downwind of each of the process areas accessible by road. A full report from the GMAP will be issued by NEIC at a later date.

Downwind of the storage tanks adjacent to tank MF3100, benzene emissions were detected between 30 and 40 parts per billion ("ppb") above baseline.

Downwind of the condensate pumps labeled 4220S and 4220A ("Condensate Pumps"), on the west side of the SM2 process area, the GMAP detected elevated concentrations of volatile organic carbon ("VOC") around 23,000 ppb and benzene around 1,000 ppb. Mr. Williams, Dr. Frey, Ms. Ong, and Mr. Duplessis exited the vehicle to inspect the process area, and the mobile air monitoring vehicle continued to monitor while driving the road located alongside the Condensate Pumps. Mr. Williams observed a sweet odor characteristic of benzene when he approached the Condensate Pumps. Mr. Duplessis confirmed that the odor "smells like benzene," however he indicated that there is no benzene used in the SM2 process area. Mr. Williams observed condensing vapors emitting from two pipe outlets located alongside the Condensate Pumps. Mr. Williams directed the mobile air monitoring vehicle to a position directly adjacent to and downwind of the vapor outlets. GMAP detected higher concentrations of VOC (approximately 42,000 ppb) and benzene (approximately 10,000 ppb) at the location. Mr. Helmich noted that the reading of 10,000 ppb benzene is above the calibration range of the instrument, so its accuracy cannot be determined. Mr. Helmich took air canister samples (NEIC4618, ORD12159, and NEIC00279) at different locations in the plume. Mr. Williams inquired about the source of the vapor outlets. Mr. Duplessis explained that the facility uses steam in the distillation and regeneration process and that the vapor outlets were for the process steam. Mr. Duplessis further explained that it was possible benzene could be entering the steam stream through cracks in the process and that he would have "to confirm with engineering." Using an optical gas imaging camera ("OGI"), Mr. Williams recorded videos MOV_179 and MOV_ 180 of emissions from the vapor outlets. In high sensitivity mode, Mr. Williams observed a plume characteristic of hydrocarbons emanating from the vapor outlet in MOV_180. [AOC 2].

Adjacent to the cooling towers and downwind of a tank referred to by Mr. Duplessis as the "DAF Tank", GMAP detected concentrations of methane greater than 100 parts per million ("ppm") and benzene around 95 ppb. Mr. Williams, Ms. Ong, and Mr. Duplessis exited the vehicle to inspect the process area, and the mobile air monitoring vehicle continued to survey the road alongside the DAF Tank and the boilers. According to Mr. Duplessis the DAF Tank is no longer operating as a Dissolved Air Floatation ("DAF") tank. Currently, the DAF Tank is used as a reservoir to store treated process water prior to discharge. While inspecting the DAF Tank, Mr. Williams observed a rotten egg odor characteristic of sulfur and noted that the tank was almost full of liquid. [AOC 3]. Mr. Williams observed several process boilers upwind of the DAF tank. Mr. Duplessis said that the process boilers combust natural gas to generate heat for the process operations. Using OGI, Mr. Williams recorded significant emissions from three boiler exhaust stacks as video MOV_181. [AOC 4]. No elevated emissions of methane or benzene were detected by GMAP while positioned upwind of the boiler area and DAF tank.

Downwind of the Inhibitor Storage Building, GMAP detected elevated concentrations of VOC ranging from 1500 to 7500 ppb, benzene ranging from 40 to 200 ppb, and toluene ranging from 35 to 100 ppb. Mr. Williams, Dr. Frey, Ms. Ong, and Mr. Duplessis exited the vehicle to inspect the process area, and the GMAP continued to monitor while driving along the roads around the Inhibitor Storage Building. The building was a partial enclosure for tanks, piping and process equipment. Mr. Williams could see into the building and observed tools and other maintenance equipment on the ground. Mr. Williams observed a glue-like odor characteristic of epoxy while downwind of the building. There was a sign in front of the building indicating the presence of Butyldinitrophenol ("DNBP") was contained in the area and that Class B safety equipment is necessary to enter the enclosure. Mr. Williams did not enter the Inhibitor Storage Building. Mr. Helmich took an air canister sample (NEIC4601) while positioned in the plume downwind of the Inhibitor Storage Building. [AOC 5].

The site tour ended at 6:05 P.M. and we returned to the conference room.

Section III – AREAS OF CONCERN

Richard Helmich, Sarah Frey, and Chris Williams conducted a closing conference at Americas Styrenics LLC – St. James Plant at 6:20 P.M. on April 21, 2022 for the inspection. AmSty representatives Mr. Morris, Mr. Duplessis, Mr. Thomas (via phone), Mr. Ben Brignac, Operations Coordinator and Mr. Jacob LaSavia, Plant Manager were in attendance. Mr. Williams explained that at around 4:45 P.M. on Monday April 18, 2022, while driving along the fence line that is adjacent to a sugar cane field and downwind of the storage tanks, GMAP detected above background concentrations of VOC and benzene at ground-level. These recordings on suggested that the AmSty facility was contributing to elevated ambient concentrations of benzene measured offsite. Mr. Helmich and Mr. Williams summarized the plant tour and presented their emissions observations, including the following Areas of Concern. The facility made no claims of confidential business information regarding the three OGI videos recorded. Dr. Frey stated she would make copies of the videos available to the facility following the inspection. We departed the facility at 6:55 P.M.

1) Downwind of the benzene storage area, concentrations of benzene were detected between 30 and 40 ppb. The tanks may need closer inspection to identify potential defects and minimize emissions.

2) On the west side of the SM2 process area, concentrations of VOC and benzene were detected at high levels. VOC reached as high as 42,500 ppb (42.5 ppm) and benzene was detected between 400 and 1,000 ppb and higher, exceeding the instrument's calibration range. Inspectors were told that the SM2 process does not use benzene. One source may be benzene that has leaked into the steam lines and was being released from the condensate pumps. These concentrations of benzene could be hazardous to workers and could be detrimental to the ambient air.

3) Near the Dissolved Air Floatation ("DAF") tank, strong sulfur odors were detected by Mr. Williams. In addition, the GMAP recorded concentrations of benzene ranging from 40 to 200 ppb. The benzene detected could be related to AOC #2 or coming from a nearby source. The DAF tank may need to be evaluated for contaminents before discharging.

4) Downwind of the process boilers, concentrations of methane were detected greater than 100 ppm. The boilers may be experiencing efficiency issues.

5) Downwind of the Inhibitor Storage Building, the GMAP detected elevated concentrations of VOC ranging from 1500 to 7500 ppb, benzene ranging from 40 to 200 ppb, and toluene ranging from 35 to 100 ppb. Inspectors could not enter the area to investigate potential sources. The DNBP building may need further evaluation.

Section IV – FOLLOW UP

On May 2, 2022, Dr. Frey provided electronic copies of the videos recorded during the inspection to Mr. Morris.

On May 2, 2022, an informal conference call was held between Dr. Frey of EPA and AmSty representatives Mr. Thomas, Mr. Morris, and Ms. Kristen Newman. During this call, AmSty provided the following information:

- Stack tests were performed at the boilers during the 3rd quarter of 2021 and no problems were identified at that time. The potential source of the methane may be the DAF tank itself.
- AmSty has started the process of conducting area monitoring for VOCs and Benzene at the fenceline. AmSty offered to share the results of the monitoring with EPA at a future date.
- Maintenance activities at the DNBP building had been completed a few hours prior to the arrival of the inspection team and they believe no ongoing issues exist in the area.
- The boilers, EB unit, and SM1 unit have been shutdown since April 26th due to an operational issue related to the boilers. It was anticipated that the shutdown would last several weeks.

On May 3, 2022, AmSty submitted a written notification to the State of Louisiana regarding a unit shutdown and benzene leak. A copy of the letter can be found in Appendix 2. The notification mentions EPA's identification of a benzene leak on April 21, 2022. On Tuesday, April 26, 2022, a boiler upset triggered the shut down of 4 of the 6 boilers. A fifth boiler was already shutdown for repair. These outages caused all three process units to "trip" and shutdown. During restart of the EB unit, benzene was detected. On Wednesday, April 27, 2022, the EB unit was shutdown to address the benzene leak. On that date, AmSty reported that benzene had leaked into the steam system around 6am. The letter states that the leak was stopped by 4pm on April 27th. The total estimated amount of benzene released is 267 pounds, from April 21 to April 27. The National Response Center was notified on April 29, 2022.

On May 9, 2022, Mr. Morris sent an email update to Dr. Frey.

- A leadership meeting was help on April 25, 2022 in response to the EPA inspection to make a plan to determine the potential root cause of the leaks identified by EPA.
- AmySty staff monitored the area around the DAF tank using a 4-gas meter and optical gas imaging camera. No elevated H_2S or methane was located.
- The DNBP area was evaluated on April 22, 2022, and it is still believed that there are no ongoing issues. As a precaution, carbon canisters were placed on the frac tanks and Method 21 was performed on the frac tanks and carbon canisters.

Section V – LIST OF APPENDICES

Appendix 1 – Photo and Video Log – 3 OGI videos taken April 21, 2022.
Appendix 2 – Follow-Up Notification Report, Incident Number 22-02200 from AmSty to the Department of Public Safety and Corrections, May 3, 2022.

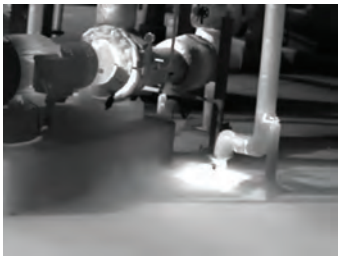
Appendix 1
Video Log

Appendix 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Video Log

Location: **Americas Styrenics St. James Plant**		
City: **St. James**	**St. James Parish**	State: **Louisiana**



File Name: MOV_179.mp4
Date taken: 04/21/2022
Time taken: 5:00 pm
Videographer: Christopher Williams
Description: OGI video of emissions from condensing vapor outlets near Condensate Pumps for AS4202.

File Name: MOV_180.mp4
Date taken: 04/21/2022
Time taken: 5:02 pm
Videographer: Christopher Williams
Description: OGI video of emissions from a condensing vapor outlet near Condensate Pumps for AS4202.

File Name: MOV_181.mp4
Date taken: 04/21/2022
Time taken: 5:20 pm
Videographer: Christopher Williams
Description: OGI video emissions from boiler exhaust stacks.

Appendix 2
Follow-Up Notification Report, Incident Number 22-02200

5/3/22

Jacob L. LaSavia
Plant Manager

Americas Styrenics LLC
9901 Highway 18
St. James, LA 70086

Phone: 225.331.3332
Fax: 225.331.3319
JLLasavia@amsty.com

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May 3, 2022

Certified Mail Receipt # 7020 1290 0000 3493 3399

Department of Public Safety and Corrections
Office of State Police
TESS/Right-to-Know Unit
P.O. Box 66168
Baton Rouge, LA 70896

RE: Follow-up Notification Report
Incident Number: 22-02200
LDEQ Agency Interest No.: 2384

T208352
Connor Gruntz

Dear Sir or Madam:

In accordance with Louisiana Administrative Code (LAC) 33:I.3925 and R.S. 32:1510, Americas Styrenics LLC – St. James Plant (Americas Styrenics), hereby submits its written notification report regarding a unit shutdown and a benzene leak that occurred on April 27, 2022. The initial, verbal notification was made to the Louisiana State Police (LSP) representative Dana, who assigned the incident number 22-02200. Americas Styrenics also notified the St. James Parish Emergency Operations Center (EOC). The National Response Center (NRC) was notified on April 29, 2022. The release did not cause any injuries or offsite impact.

During an inspection by USEPA on Thursday, April 21, 2022, a benzene leak was identified within an operating area of the facility. Americas Styrenics initiated routine area monitoring for personnel safety and to identify the source of the benzene emissions. On Tuesday, April 26, 2022, at approximately 1400 hours, one of Americas Styrenics' six boilers tripped upsetting the steam system and causing three more boilers to shut down. One of the six boilers was already shutdown for repairs. The sudden loss of steam caused all three process units to immediately trip and shutdown. During restart of the EB Unit on the night shift, operations personnel detected higher benzene emissions during monitoring. On Wednesday, April 27, 2022, it was decided by facility management to completely shutdown the Ethylbenzene (EB) to address the leak. Mr. Sam Duplessis provided verbal notification to the Louisiana State Police (LSP) that, at approximately 0611 hours, there was an unauthorized release of benzene (CAS# 71-43-2) into the steam. All personnel were removed from the area during shutdown.

May 3, 2022
Follow-up Notification
Incident Number: 22-02200
Agency Interest No.: 2384

All personnel responding to the leak donned the proper personal protective equipment. Area and fence line monitoring were conducted by operations personnel. Regular updates were provided to LSP until the leak was stopped. The leak was stopped and secured by approximately 1600 hours on Wednesday, April 27, 2022.

Based on review of the available data, Americas Styrenics determined that the leak likely started on April 21, 2022 and was aggravated by the process unit upset on April 26, 2022. The total estimated amount of benzene released since April 21, 2022 was approximately 267 pounds. This release exceeded the Reportable Quantity threshold for benzene.

It is always Americas Styrenics' intent to always operate our Plant in a safe and environmentally responsible manner. If you have any questions or require additional information regarding this matter, please contact Ms. Kristen Newman at (225) 331-3242 or electronically at knewman@amsty.com.

Sincerely,

Jacob L. LaSavia

cc: Mrs. Celena Cage, Assistant Secretary
Louisiana Department of Environmental Quality
Office of Environmental Compliance/SPOC
Post Office Box 4314
Baton Rouge, LA 70821-4341
UNAUTHORIZED DISCHARGE NOTIFICATION REPORT
Certified Mail Receipt # 7020 1290 0000 3493 3405

St. James Parish Emergency Operations Center
Post Office Box 106
Convent, LA 70723-0106
Certified Mail Receipt # 7020 1290 0000 3493 3412