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December 14, 2022

Adam Ortiz
Region 3 Administrator
U.S. Environmental Protection Agency
1600 John F. Kennedy Blvd
Philadelphia, PA 19103
ortiz.adam@epa.gov
Via Certified Mail and Email

RE: Request for Immediate U.S. Environmental Protection Agency (EPA) Action to Abate Benzene Emissions and Other Toxic Air Pollution in Monongahela River Valley Communities in Allegheny County, Pennsylvania

Dear Administrator Ortiz:

The Environmental Integrity Project (EIP), Breathe Project, Carnegie Mellon University CREATE Lab, Valley Clean Air Now, Clean Air Council, Clean Water Action, PennEnvironment Research and Policy Center, PennFuture, Protect Elizabeth Township, and community members respectfully request that the Environmental Protection Agency (EPA) take immediate action to abate benzene emissions and other toxic air pollution in the Monongahela River (Mon) Valley communities in Allegheny County, Pennsylvania near the U.S. Steel Clairton, Irvin Works, and Edgar Thomson plants. Specifically, we urge EPA, at a minimum, to (1) immediately inspect, investigate, and enforce any relief necessary to end and remedy potential violations from sources emitting benzene in the Mon Valley; (2) require U.S. Steel to install and operate a fenceline monitoring system for benzene and other toxics at the Clairton, Irvin Works, and Edgar Thomson plants; and (3) exercise permitting oversight and authority to ensure U.S. Steel plant Clean Air Act permits assure compliance with the law and protection of public health.

Summary

Mon Valley communities near U.S. Steel plants and plant workers are exposed to unacceptably high levels of benzene and other toxic air pollution. U.S. Steel has a long history of non-compliance with the Clean Air Act, and the adverse health risks associated with pollution from U.S. Steel plants in the Mon Valley is well documented. Most recently, the Allegheny County Health Department's (ACHD) Liberty Borough air quality monitor recorded exceedances of the National Ambient Air Quality Standard (NAAQS) for fine particulate matter (PM2.5) on six days in October and November. Hydrogen sulfide levels exceeded state standards more than twenty days in the months of October and November.

In addition to exceedances of PM2.5 and hydrogen sulfide standards at the Liberty Borough monitor, sampling conducted at residential locations near the Liberty Borough monitor and U.S.

Steel plants using EPA Method 325A/B since December of 2021[1] show that benzene concentrations in the Mon Valley community pose a risk to public health. In the month of October, two-week average benzene concentrations were as high as 16.7 µg/m3 at a monitoring station located at a residential property in Glassport, Pennsylvania. At a second home nearby, the two-week average concentration for the same period was 10.4 µg/m3. At these concentrations, residents and workers may be exposed to concentrations that can cause adverse health effects in as little as 24 hours. In addition, the average concentrations of benzene over the past year at these same two locations exceed public health thresholds for chronic exposure.

Exposure to these pollutants at these concentrations poses serious health risks for Mon Valley communities and plant workers. Benzene causes a variety of serious health problems including anemia, nervous system damage, suppression of immune systems, and leukemia.[2] Particulate matter pollution has been linked to a number of health problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing or difficulty breath.[3] Hydrogen sulfide exposure can cause irritation to the eyes and respiratory system, apnea, dizziness, headaches, and weakness.[4]

EIP urges EPA to exercise the full extent of its investigation, enforcement, and emergency powers authorities under the Clean Air Act to take immediate action to abate benzene emissions and other toxic pollution at U.S. Steel plants and in Mon Valley communities as set forth in this letter.

I. Mon Valley Communities Face Unacceptable Health Risks from Air Pollution from U.S. Steel Plants.

The communities living near the U.S. Steel Clairton, Irvin Works, and Edgar Thomson plants are exposed to unacceptably high levels of toxic air pollution. The plants emit significant sources of highly toxic coke oven gas, benzene, particulate matter, hydrogen sulfide, and other harmful pollutants. U.S. Steel has a long history of non-compliance with the Clean Air Act,[5] and the adverse health risks associated with pollution from U.S. Steel plants in the Mon Valley is well documented. According to EPA data, residents in the census tracts where the Liberty Borough monitor and Monitoring Station 01A and 02 are located suffer a high air-pollution related risk of cancer due to coke oven emissions and benzene.[6] In fact, "[a]mong all counties in the US, urban and non-urban, Allegheny County ranks 27th in cancer risk from point source air toxics

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[1] The most recent report from Enthalpy Analytical covers the period of November 8, 2022 to November 22, 2022. We expect results from the November 22, 2022 to December 6, 2022 sampling period on or around December 23, 2022 and will provide those results to EPA as soon as they are available.

[2] Agency for Toxic Substances and Disease Registry, Benzene, https://www.atsdr.cdc.gov/sites/toxzine/benzene_toxzine.html.

[3] Health and Environmental Effects of Particulate Matter (PM), EPA, available at https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm (last accessed Dec. 05, 2022).

[4] Hydrogen Sulfide, The National Institute for Occupational Safety and Health (NIOSH), available at https://www.cdc.gov/niosh/topics/hydrogensulfide/default html#:~:text=Exposure%20to%20hydrogen%20sulfide%20may,from%20exposure%20to%20hydrogen%20sulfide (last accessed Dec. 5, 2022).

[5] *See* Comments from Clean Air Council, Environmental Integrity Project, et al. on Proposed Title V Operating Permit (No. 0052-OP22) 18-24 (Mar. 15, 2022).

[6] AirToxScreen Mapping Tool (Dec. 10, 2022).

emissions, e.g., in the top 1% of all counties."[7] The Air Toxics Cancer Risk is 120 per 1 million for the area within 1.5 miles of the Liberty Borough monitor, and the area is in the 99th percentile (state) and 95-100th (national) percentile for Air Toxics Cancer Risk.[8] For context, EPA estimates that the national average cancer risk from breathing air toxics is 20 per 1 million.[9] Nearly 90% of the point source cancer risk estimated in Allegheny County is attributable to coke oven emissions from the U.S. Steel Clairton plant.[10]

In addition, a study published in 2020 found that asthma rates for children living near air pollution sources in Clairton, Braddock, and other Allegheny County communities were nearly triple (22.5%) compared to the national average (8.5%).[11] African American children living in these communities had the highest asthma rate (26.8%).[12] Two other studies found that emissions from the operation of the Clairton plant after a 2018 fire[13] resulted in negative health impacts on people in the surrounding communities.[14] A University of Pittsburgh study found that the Clairton plant emitted sulfur dioxide at levels 25 times higher than normal and that asthma sufferers living within ten miles of the plant had an 80% greater risk of worse symptoms following the fire.[15] A second study found that the rate of outpatient and hospital emergency department visits by people with asthma in the Clairton area nearly doubled in the months

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[7] *See* Cancer and Environment Network of Southwestern Pennsylvania, National Air Toxics Assessment and Cancer Risk in Allegheny County Pennsylvania – Updated May 2021, available at https://censwpa.org/wp-content/uploads/2021/07/NATA-Factsheet.pdf (summarizing the results of EPA's most recent National Air Toxics Assessment).

[8] EJSCREEN Data Tool (Dec. 10, 2022). This risk may be underestimated. AirToxScreen is a screening tool and EPA cautions against relying too heavily on census-tract level risk estimates. The AirToxScreen estimates of ambient benzene concentrations for the area around the Liberty Borough monitoring stations are significantly lower than the long-term average concentration data recorded by the EIP monitoring stations. For example, the estimated ambient benzene concentration for the census tract where Monitor 01A is located is 0.852 ug/m3, which is 5.5 times less than the long-term average recorded by EIP. Similarly, the census tract where Monitor 02 is located has an estimated ambient benzene concentration of 0.791 ug/m3, 4.5 times less than the long-term average of 3.63 ug/m3 recorded by EIP. Ambient benzene concentrations contribute to the estimated cancer risks in AirToxScreen, and the additional data collected by the EIP monitoring stations suggests that these concentrations may be higher than estimated in AirToxScreen. *See* U.S. Envtl. Prot. Agency, Air Toxics Screening Assessment, 2018 AirToxScreen: Assessment Results, Benzene, available at https://www.epa.gov/AirToxScreen/2018-airtoxscreen-assessment-results. EPA should use all of the data at its disposal—community monitors, fenceline monitors, fenceline monitoring root cause analyses, and models—to update its risk estimates and better protect frontline communities.

[9] U.S. Envtl. Prot. Agency, AirToxScreen Frequent Questions, available at https://www.epa.gov/AirToxScreen/airtoxscreen-frequent-questions#risk1 (Dec. 13, 2021).

[10] *See* Cancer and Environment Network of Southwestern Pennsylvania, National Air Toxics Assessment and Cancer Risk in Allegheny County Pennsylvania – Updated May 2021, available at https://censwpa.org/wp-content/uploads/2021/07/NATA-Factsheet.pdf (summarizing the results of EPA's most recent National Air Toxics Assessment).

[11] Deborah A. Gentile, Tricia Morphew, Jennifer Elliott, Albert A. Presto & David P. Skoner (2020): Asthma Prevalence and Control among Schoolchildren Residing near Outdoor Air Pollution Sites, Journal of Asthma, DOI: 10.1080/02770903.2020.1840584.

[12] *Id.*

[13] U.S. Steel operated the Clairton plant illegally and without required pollution controls for sulfur dioxide, VOCs, and benzene for several months after a fire shut down pollution control rooms.

[14] Don Hopey, Study Links More Asthma Cases to 2018 Clairton Coke Works Fire, Pittsburgh Post-Gazette (June 28, 2011), https://www.post-gazette.com/news/environment/2021/06/28/us-steel-clairton-coke-works-2018-fire-study-air-quality-pollution-asthma-link-toxics-exceedances-mon-valley/stories/202106240138.

[15] *Id.*

following the fire.[16] EPA must act swiftly to protect Mon Valley communities from benzene and other toxic emissions from U.S. Steel plants.

II. PM2.5 and Hydrogen Sulfide Emissions from U.S. Steel Plants Regularly Exceeded Air Quality Standards in October and November of 2022.

In October and November of this year, levels of PM2.5 measured at the Liberty Borough monitor reached or exceeded the PM2.5 24-hour NAAQS of 35 µg/m3 on at least six days: October 11, 21, and 25 and November 22, 23, and 24.[17] Hydrogen sulfide concentrations reached or exceeded the state 24-hour ambient air standard of .005 ppm (on a rolling 24-hour basis) on at least twenty-three days in October and November: October 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 24, 25, and 26 and November 22, 23, 24, 25, 26, and 27.[18] Unfortunately, the months of October and November are not outliers. In March of 2022, for example, ACHD issued a $1.8 million fine against U.S. Steel for more than 2,000 hydrogen sulfide hourly exceedances on 153 days between January 1, 2020 through March 1, 2022.[19]

U.S. Steel's Clairton coking facility is likely the source of recent exceedances.[20] Recently, ACHD analyzed exceedances of the state ambient air quality standard for hydrogen sulfide at the Liberty Borough monitor from January 1, 2020 to March 1, 2022 and concluded that the exceedances "can be attributed entirely to emissions originating at U.S. Steel's Clairton coking facility."[21] In addition, the study also found that concentrations of hydrogen sulfide, sulfur dioxide, and fine particulate matter were all correlated, suggesting U.S. Steel as the source for emissions of all three pollutants at the Liberty Borough monitor.[22] Coke oven emissions from the U.S. Steel plants also include benzene and many other highly toxic pollutants.[23] Thus, individuals living or working in this area face unacceptable health risks from emissions associated with the U.S. Steel plants.

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[16] *Id.*

[17] ACHD Liberty and North Braddock Monitors SO2, H2S, and PM2.5 Data Dec. 24, 2018 to Oct. 31, 2022; Air Pollution, Stench Pummels Mon Valley Over Holiday Period, Nov. 28, 2022, available at https://www.gasp-pgh.org/air-pollution-stench-pummels-mon-valley-over-holiday-period.

[18] ACHD Liberty Monitor Rolling H2S Data; Air Pollution, Stench Pummels Mon Valley Over Holiday Period, Nov. 28, 2022, available at https://www.gasp-pgh.org/air-pollution-stench-pummels-mon-valley-over-holiday-period.

[19] Allegheny County, News Release, Health Department Issues $1.8 Million Fine Against U.S. Steel for H2S Emissions (March 7, 2022).

[20] *See* ACHD Air Quality Program, Analysis and Attribution of Hydrogen Sulfide (H2S) Exceedances at the Liberty Monitoring Site from January 1, 2020 through March 1, 2022 1 (March 3, 2022), available at https://www.alleghenycounty.us/uploadedFiles/Allegheny_Home/Health_Department/Programs/Air_Quality/H2S_Report_03032022.pdf ("Analyses conducted by the Allegheny County Health Department (ACHD) have identified a single source, the U. S. Steel Mon Valley Works Clairton Plant ("U.S. Steel Clairton Plant"), as the cause of the exceedances at ACHD's Liberty monitoring site. ACHD did not identify evidence of any other source contributing to the exceedances.")

[21] *Id.*

[22] *Id.* at 5-6.

[23] U.S. Envtl. Prot. Agency, Coke Oven Emissions (2000), available at https://www.epa.gov/sites/default/files/2016-09/documents/coke-oven-emissions.pdf.

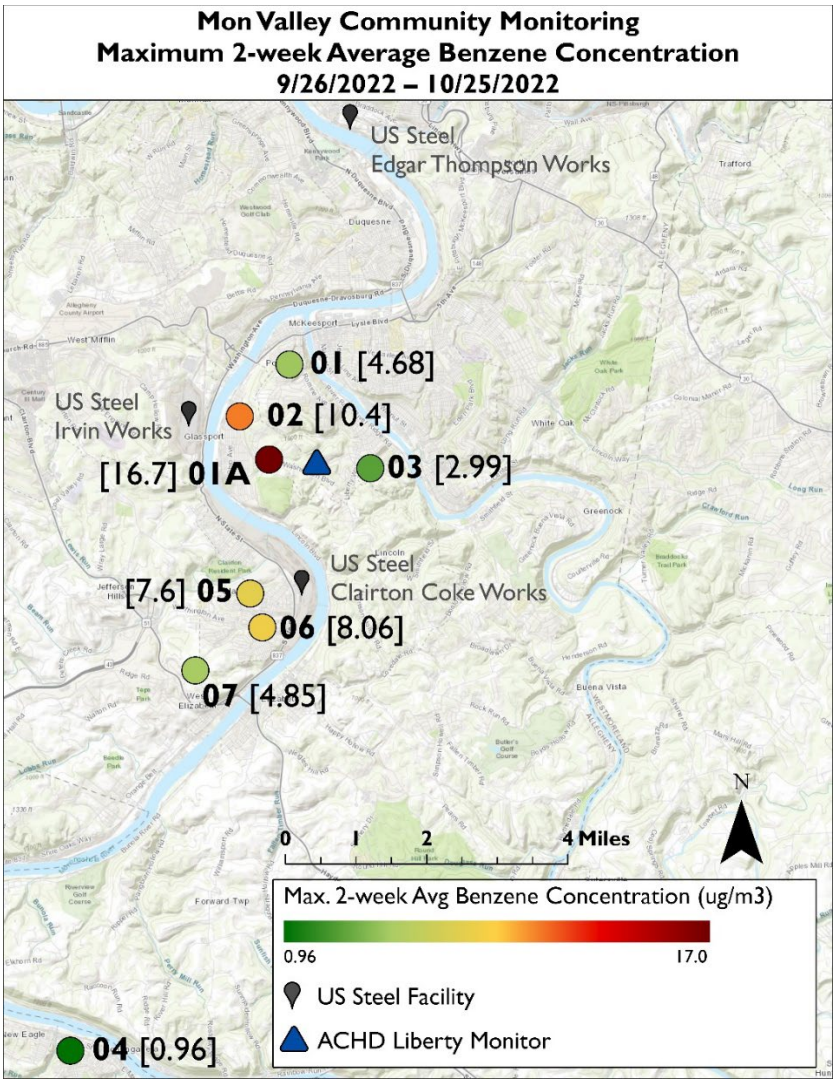
III. Benzene Emissions Pose a Risk to Public Health.

During the month of October while residents were forced to endure high levels of PM2.5 and hydrogen sulfide, passive air monitors located in the community near the U.S. Steel plants recorded alarmingly high concentrations of benzene. EIP, in partnership with the Breathe Project and the Carnegie Mellon University (CMU) Create Lab, installed eight passive benzene monitoring stations in the Mon Valley between 0.6 and 7.25 miles away from the Clairton plant in December of 2021. Six out of the eight monitors are located within two miles of the Clairton and Irvin Works plants.[24] Monitoring Station 01A and 02 in Glassport are located approximately 0.7 and 1.3 miles from the ACHD Liberty Borough monitor, respectively. The passive benzene monitoring tubes are provided and analyzed by Enthalpy Analytical using EPA Method 325A/B. The sampling tubes collect two-week average benzene concentrations and are the same tubes and methods used by refineries to monitor benzene concentrations at fencelines in accordance with federal rules. EIP also collects a blank sample every two-week period. See Attachment A for locations of monitoring stations.

Between September 25, 2022 and October 25, 2022, all eight monitors in the Mon Valley recorded a new peak two-week average concentration compared to prior sampling periods. See Attachment B for laboratory results. During the October 11, 2022 to October 25, 2022 monitoring period, the average concentration of benzene at Monitoring Station 01A was 16.7 µg/m3. Monitoring Station 02 recorded a two-week average concentration of 10.4 µg/m3 for the same period. The map below shows the highest two-week average concentration recorded at each

[24] EIP began collecting data from six monitoring stations on December 20, 2021, while monitoring began at two other locations the following January.

monitoring station between September 25, 2022 and October 25, 2022.



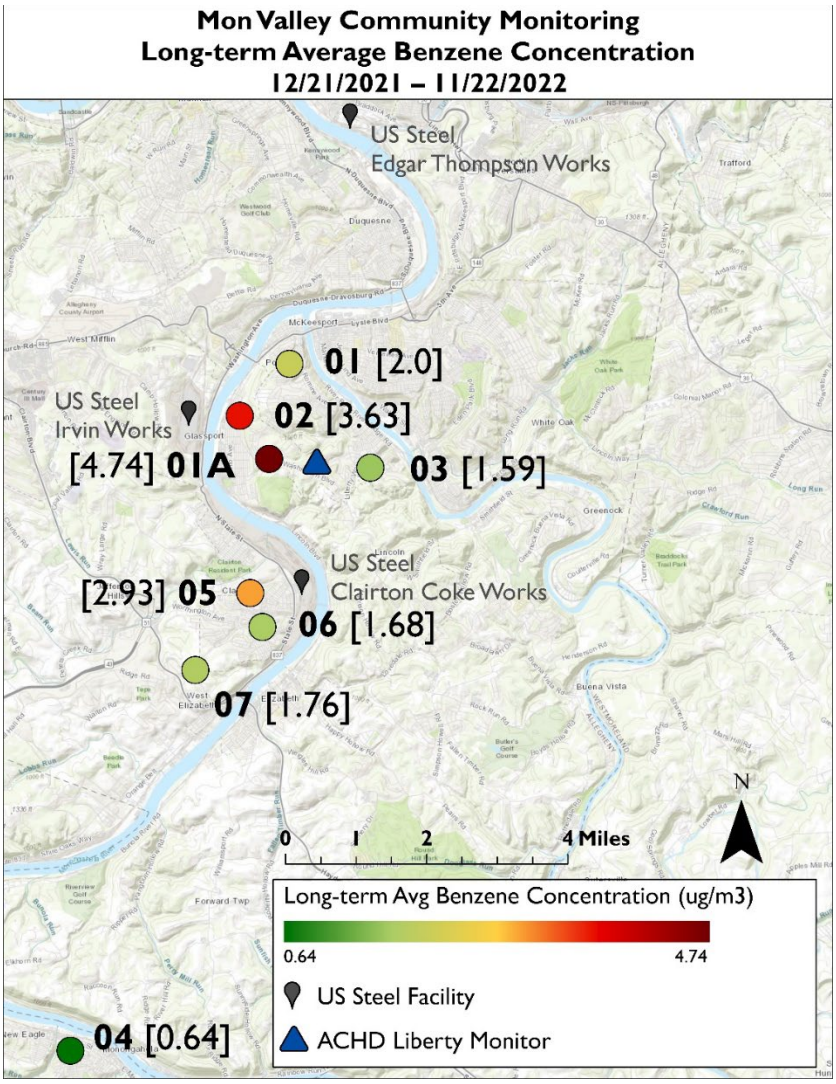
Attachment C provides all two-week average concentrations recorded at each monitoring station since the project began in December of 2021.

With two-week average concentrations this high, it is possible that community members were exposed to concentrations that could have acute adverse health impacts. For example, the U.S. Agency for Toxic Substances Disease Registry's (ATSDR) Minimal Risk Level (MRL) for benzene is 29 µg/m3.[25] The ATSDR estimates that exposure to benzene concentrations above 29 µg/m3 for as little as 24 hours can increase the risk of noncancerous health effects like a weakened immune system.[26] With two-week average concentrations of 16.7 and 10.4 µg/m3, there was likely at least one day during this time frame where the daily average concentration was close to or above the ATSDR MRL. For additional context, federal rules require refineries to

[25] Agency for Toxic Substances and Disease Registry, Minimal Risk Levels for (MRLs) for Hazardous Substances (August 2022), available at https://wwwn.cdc.gov/TSP/MRLS/mrlslisting.aspx.
[26] *Id.*

take action to investigate and reduce benzene emissions where benzene concentrations exceed an annual average of 9 µg/m3. 40 C.F.R. § 63.658. Notably, this standard applies at the refinery's fenceline as opposed to offsite and is meant to avoid the kind of residential exposures that are occurring in communities near the U.S. Steel plants.

In addition, the long-term two-week average at Monitoring Station 01A and 02 are above 3 µg/m3, the California Reference Exposure Level (REL) for benzene. Monitoring Station 05 in Clairton is approaching this threshold at 2.93 µg/m3. The map below shows the long-term average benzene concentration recorded at each Monitoring Station since the project began.



Attachment D also provides the long-term average benzene concentrations at each monitoring station.

California has determined that continuous or repeated eight-hours exposures to benzene concentrations above 3 µg/m3 over several years could increase the risk of noncancerous health effects, such as damage to blood cells and a weakened immune system. Thus, in addition to the

significant pollution documented by the Liberty Borough monitor, the community monitoring results show that communities near the U.S. Steel plants are exposed to unacceptably high levels of benzene and other pollution.

IV. EPA Must Take Immediate Action to Abate Benzene Emissions and Other Toxic Air Pollution.

EPA must use the full extent of its authority to take all actions necessary to reduce the Mon Valley community's exposure to benzene and other toxic pollution. Benzene is a "hazardous air pollutant" under Section 112 of the Clean Air Act and the Allegheny County Health Department State Implementation Plan (SIP). 42 U.S.C. § 7412; Article XXI §2101.20; 66 FR 19724 (Apr. 17, 2001). The Allegheny County Health Department State Implementation Plan (SIP) prohibits emissions of benzene and other toxic pollutants unless the emissions are expressly authorized. Article XXI §2101.11; 67 FR 68935 (Nov. 14, 2002). Here, EPA must, at a minimum, (1) inspect, investigate, and enforce any relief necessary to end and remedy potential violations from sources emitting benzene and other toxics; (2) require U.S. Steel to install and operate a robust fenceline monitoring system for benzene and other toxics at the Clairton, Irvin Works, and Edgar Thomson plants; and (3) exercise permitting oversight and authority to ensure U.S. Steel plant Clean Air Act permits ensure compliance with the law and protect public health.

EPA has the authority to inspect, investigate, and take enforcement and other actions necessary to abate air pollution. 42 U.S.C. §§ 7403, 7414. As part of EPA's inspection, investigation, and enforcement powers, EPA has broad authority to order a plant operator, "on a one-time, periodic or continuous basis, to" install and operate monitoring equipment, perform emission tests, or sample emissions using other methods and procedures that EPA prescribes. *Id.* § 7414(1). Thus, EPA may require plant operators to install and operate a fenceline monitoring system for benzene and other pollutants. *See id.*

EPA is also authorized to use emergency powers[27] under the Clean Air Act "upon receipt of evidence that a pollution source or combination of sources (including moving sources) is presenting an imminent and substantial endangerment to public health or welfare, or the environment." 42 U.S.C. § 7603. "Imminent" endangerment occurs when current conditions indicate threatened or potential harm, "no matter how distant the manifestation of actual harm may be."[28] For example, EPA may "act to seek abatement of emissions reasonably believed to be carcinogenic, even though it is uncertain how long it would take for the emissions to result in actual harm to the individuals."[29] A "substantial" endangerment occurs "where there is a reasonable cause for concern for public health, welfare or the environment if remedial action is not taken."[30] EPA considers several factors to determine whether an endangerment is substantial, including "the quantities of the hazardous substances involved, the nature and degree of their hazards, or the potential for human or environmental exposure . . . ."[31]

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[27] Compliance with a permit does not preclude EPA from exercising its authority under section 303 of the Clean Air Act. 40 C.F.R. § 71.25(d)(3)(i) (permit shield does not alter or effect emergency orders).
[28] U.S. Envt'l Prot. Agency, *Guidance on Section 303 of the Clean Air Act* 5 (Apr. 1999).
[29] *Id.* at 7.
[30] *Id.*
[31] *Id.*

Here, the endangerment to Mon Valley community residents is beyond imminent and is substantial. As described above, residents have already been exposed to dangerously high levels of benzene, as well as other harmful air pollution above national and state air quality standards. The endangerment is substantial because benzene concentrations in October at Monitoring Stations 01A and 02 may have been high enough at times to cause adverse health impacts after even a short-term exposure (i.e., one or several days). In addition, the average benzene concentrations over the past year at these two residential locations are high enough to cause adverse health impacts for individuals living in the area if they breathe in this polluted air over several years. Further, the potential for human or environmental exposure is high. These monitoring stations are located at homes and in the community as opposed to the fenceline of an industrial property, and it is inevitable that residents located near the stations will regularly breathe air polluted by benzene emissions.

EIP urges EPA to use the full extent of its authority under the Clean Air Act to abate benzene and other toxic emissions in the Mon Valley community, including, at a minimum, the following:

- **Immediately inspect, investigate, and enforce all necessary relief to end and remedy potential violations from sources emitting benzene and other toxic emissions.** EPA must inspect and investigate to assure that all appropriate enforcement action is taken to require U.S. Steel to immediately reduce benzene and other toxic emissions to reduce harmful exposure and comply with the law.

- **Require U.S. Steel to install and operate a fenceline monitoring system for benzene and other toxic air emissions.** EPA should require U.S. Steel to perform fenceline monitoring at the Clairton, Irvin, and Edgar Thomson plants using the best available fenceline method, and establish a corrective action level for benzene that assures compliance with emission limits and protects public health. Fenceline monitoring programs at other industrial facilities like refineries and chemical plants have been successful in identifying otherwise hidden emissions and alerting plant operators to pollutant concentrations at property boundaries that pose a health risk to nearby communities.[32]

- **Exercise permitting oversight and authority for sources emitting benzene and other toxic air pollution.** EPA must exercise its full oversight, suspension, and prohibition authorities regarding any current or future air permits for U.S. Steel. *See, e.g.*, 42 U.S.C. § 7661a. The current Clean Air Act Title V permits for the Clairton and Edgar Thomson plants, for example, are expired and woefully inadequate to ensure compliance with the

[32] *See, e.g.*, 40 C.F.R. § 63.658; Consent Decree, U.S. and Louisiana Department of Environmental Quality v. Shell Chemical LP (No. 2:18-cv-1404-EEF-JVM, E.D. La., Feb. 12, 2018) available at https://www.epa.gov/sites/default/files/2018-02/documents/shellchemicallp021218-cd.pdf; Consent Decree, U.S. and Louisiana Department of Environmental Quality v. ExxonMobil Corp and ExxonMobil Oil Corp (No. 4:17-cv-3302, S.D.Tex., Oct. 31, 2017) available at https://www.justice.gov/opa/press-release/file/1007591/download; Consent Decree, U.S. v. Sunoco, Inc. (No.05-02866, E.D. Pa., Aug. 17, 2012) available at https://www.epa.gov/sites/default/files/documents/fourthamendedsunoco-cd.pdf.

Clean Air Act and protect public health. The Clairton Title V permit expired in 2017,[33] and the Allegheny County Health Department (ACHD) has failed to issue a revised permit or deny the application within the timeline mandated by the Clean Air Act. 42 U.S.C. § 7661b(c). The Edgar Thomson permit expired in 2021,[34] and ACHD has also failed to take timely action on the renewal application for this plant.

EIP and our partners filed detailed comments on the draft Title V permits for the Clairton and Edgar Thomson plants in the spring of 2022, which documented numerous deficiencies. EPA must review[35] and strengthen all permits to ensure they include all applicable Clean Air Act requirements and require testing, monitoring, recordkeeping, and reporting requirements to assure compliance.

Conclusion

For the reasons set forth above, EIP and our partners request that EPA immediately take all actions necessary to abate benzene and other toxic emissions in the Mon Valley from the U.S. Steel Clairton, Irvin, and Edgar Thomson plants. We also respectfully request to meet with EPA to discuss this request. Please contact Jen Duggan for additional information or to arrange a meeting.

Sincerely,

/s/ Jen Duggan
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[33] US Steel Clairton Plant Title V ACHD Permit #0052, issued March 27, 2012.
[34] US Steel Edgar Thomson Plant Title V ACHD Permit # 0051, issued April 13, 2016.
[35] The draft permit for the Clairton plant is currently under EPA review. EPA, Title V Operating Permit Public Petition Deadlines, https://www.epa.gov/caa-permitting/title-v-operating-permit-public-petition-deadlines. ACHD has yet to formally transmit the draft permit for the Edgar Thomson plant to EPA. *Id.*

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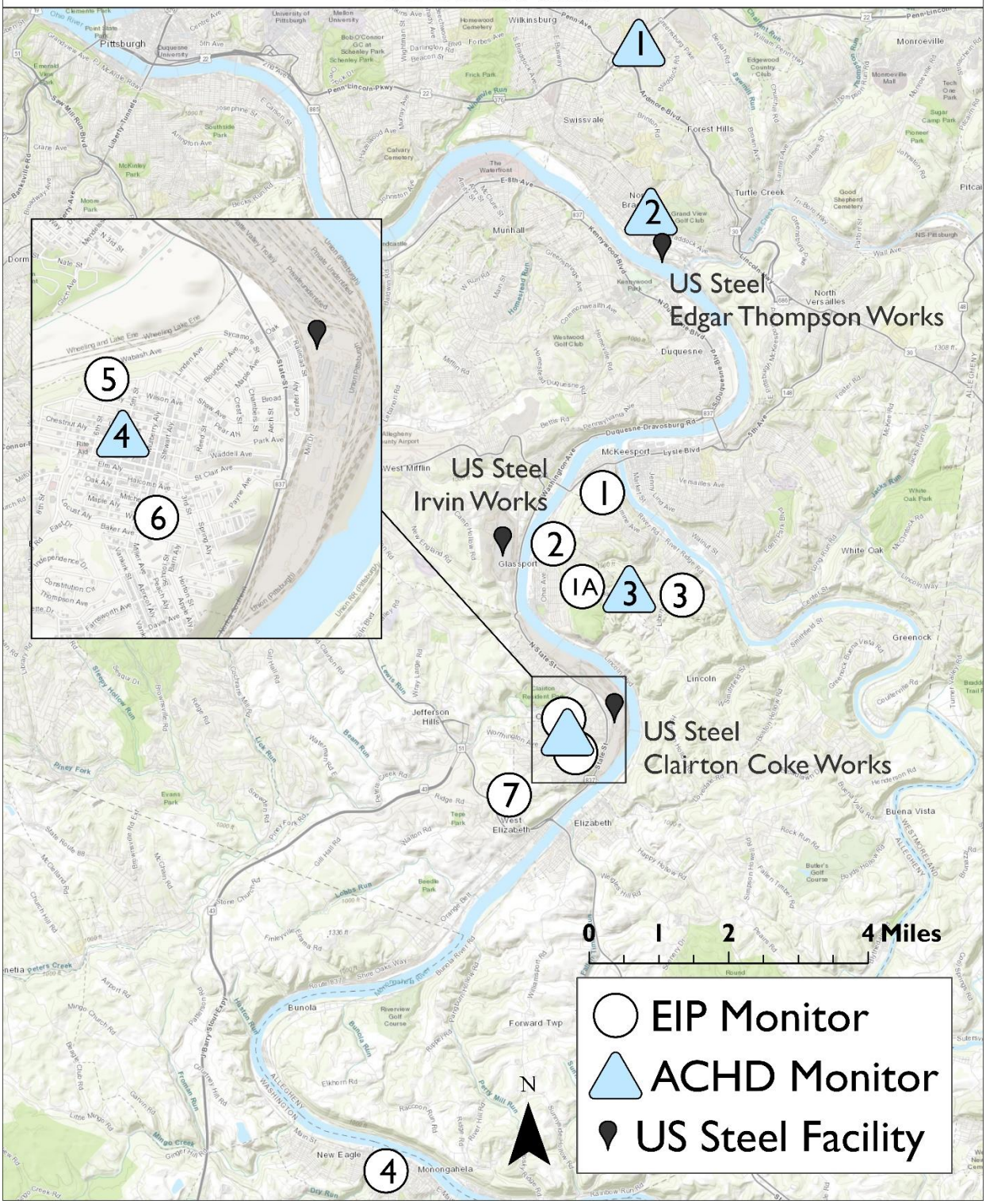
Attachment A

EIP Monitoring Stations, ACHD Monitoring Stations, and US Steel Plants



Attachment B

Environmental Integrity

1000 Vermont Ave. NW
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2022 Sampling Event 21

Mon Valley, PA
Mon Valley Benzene Monitoring Project

Analytical Report
(2022DE121)

EPA Method 325B

Benzene

Enthalpy Analytical, LLC
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800-1 Capitola Drive, Durham, NC 27713

I certify that to the best of my knowledge all analytical data presented in this report:

- Have been checked for completeness
- Are accurate, error-free, and legible
- Have been conducted in accordance with approved protocol, and that all deviations and analytical problems are summarized in the appropriate narrative(s)

This analytical report was prepared in Portable Document Format (.PDF) and contains 29 pages.

Digitally signed by Conor Toomey
Date: 2022.10.31 15:37:55-04'00'

Report Issued: 10/31/2022

ENTHALPY ANALYTICAL

Summary of Results

Enthalpy Analytical

Company: Environmental Integrity

Job No.: 2022DE121-1 EPA Method 325B Analysis

Client No.: Mon Valley Benzene Monitoring Project Site: Mon Valley, PA

Summary

Sample Code	Tube ID	Benzene (ug/m³)	Flag
EIMPA-01-S-20220926	B43616	4.31	
EIMPA-01A-S-20220926	B27889	8.27	
EIMPA-02-S-20220926	B30850	7.06	
EIMPA-02-B-20220926	C00640	0.473	
EIMPA-03-S-20220926	B50578	2.62	
EIMPA-04-S-20220926	B28913	0.959	
EIMPA-05-S-20220926	B15062	5.98	
EIMPA-06-S-20220926	B50918	8.06	
EIMPA-07-S-20220926	B24828	3.22	Rc,TF

Rc: Recollection analysis
TF: Tube Factor (Analyte and/or ISTD) was applied. See narrative for details.

Results

Enthalpy Analytical

Company: Environmental Integrity

Job No.: 2022DE121-1 EPA Method 325B Analysis

Client No.: Mon Valley Benzene Monitoring Project Site: Mon Valley, PA

Benzene

Sample Code	Tube ID	Conc (ug/m³)	Conc (ppbv)	Calc Amt (ng)	Temp (°F)	Uptake Rate (mL/min)	Sample Time (min)	LOD (ug/m³)	LOQ (ug/m³)	LOD (ppbv)	LOQ (ppbv)	Flags
EIMPA-01-S-20220926	B43616	4.31	1.35	60.9	52.3	0.654	21585	0.177	0.382	0.0554	0.120	
EIMPA-01A-S-20220926	B27889	8.27	2.59	117	52.3	0.654	21575	0.177	0.382	0.0555	0.120	
EIMPA-02-S-20220926	B30850	7.06	2.21	99.7	52.3	0.654	21575	0.177	0.382	0.0555	0.120	
EIMPA-02-B-20220926	C00640	0.473	0.148	6.67	52.3	0.654	21575	0.177	0.382	0.0555	0.120	
EIMPA-03-S-20220926	B50578	2.62	0.822	37.0	52.3	0.654	21575	0.177	0.382	0.0555	0.120	
EIMPA-04-S-20220926	B28913	0.959	0.300	13.5	52.3	0.654	21570	0.177	0.382	0.0555	0.120	
EIMPA-05-S-20220926	B15062	5.98	1.87	84.4	52.3	0.654	21563	0.177	0.382	0.0555	0.120	
EIMPA-06-S-20220926	B50918	8.06	2.52	114	52.3	0.654	21563	0.177	0.382	0.0555	0.120	
EIMPA-07-S-20220926	B24828	3.22	1.01	45.4	52.3	0.654	21556	0.177	0.382	0.0555	0.120	Rc,TF

Rc: Recollection analysis
TF: Tube Factor (Analyte and/or ISTD) was applied. See narrative for details.

QC

Enthalpy Analytical

Company: Environmental Integrity

Job No.: 2022DE121-1 EPA Method 325B Analysis

Client No.: Mon Valley Benzene Monitoring Project Site: Mon Valley, PA

QC Samples

Field Sample Type	Sample Code	Benzene	
Blanks (ug/m³)	EIMPA-02-B-20220926	0.473	Pass

Narrative Summary

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Enthalpy Analytical Narrative Summary

Company	Environmental Integrity – Mon Valley Benzene Monitoring Project
Site	Mon Valley, PA
Project	Mon Valley Benzene Monitoring Project
Report #	2022DE121

Custody	Sarah Roberts of Enthalpy Analytical, LLC received the thermal desorption sample tubes on 10/12/2022 after being relinquished by Environmental Integrity. The tubes were received in good condition at a temperature of 15.6 ºC. Prior to, during, and after analysis, the samples were kept under lock with access only to authorized personnel by Enthalpy Analytical, LLC.
Analysis	The thermal desorption tube samples were analyzed for benzene using EPA Method 325B, Volatile Organic Compounds from Fugitive and Area Sources by Thermal Desorption and GC/MS. The Agilent Technologies Model 8890, Gas Chromatograph "Bellatrix" (S/N US2134A052) was equipped with a 5977 Mass Selective Detector (S/N US2007M038) for these analyses. The Perkin-Elmer ATD-650 Thermal Desorber introduced the samples and standards to the analyzer.
Chromatographic Conditions	A copy of the acquisition method (M325B-TD.M) is not included in this report but may be available upon request.
Calibration	All BFB criteria have been met for this analysis. The initial calibration (B101022A) met 30% RSD criteria. The initial calibration verification met 30% recovery criteria. The continuing calibration verifications met 30% difference criteria. The initial and continuing calibration raw data are not included in this report but are available upon request.
QC Notes	All internal standard response and retention time criteria were met for these analyses. The field blank and the lab (method) blank met the requirements of the method. No duplicate samples were analyzed for this project.
Reporting Notes	Due to an instrument (thermal desorber) error, sample EIMPA-07-S-20220926 (Tube ID B24828) was not spiked with internal standard on the initial analysis. The spiking issue was corrected on the reanalysis. Tube factors were manually applied to the result of the reanalysis in order to report the analyte's true value and the data is flagged with "TF" to denote this. The lab does not believe data quality has been affected.

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Enthalpy Analytical Narrative Summary
(continued)

Reporting Notes (cont.)	All samples were purged with pure nitrogen prior to analysis due to expected moisture content. The initial method blank and beginning CCV 5 were also purged to verify no contamination or loss of benzene occurred. A portion of each sample (or calibration standard) was recollected onto the original sample tube after internal standard was added in the initial analysis to allow for reanalysis if necessary. An "Rc" flag indicates that a reanalysis has been performed and the resulting data have been included in the report. As specified in EPA Method 325B, the response factor of the daily continuing calibration standard was used to quantitate all field samples and blanks. All samples were reported as amount in ng catch, and concentration in µg/m3 and ppbv. The results presented in this report are representative of the samples as provided to the laboratory. These analyses met the requirements of the TNI Standard. Any deviations from the requirements of the reference method or TNI Standard have been stated above.

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Sample Custody

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EPA Method 325 A/B
Field Test Data Sheet and Chain of Custody Record

Page 1 # of 2 #

☐ Standard Turn Around Time (10 business days)

☐ Rush Turn Around Time

- All TATs Subject to Approval by Enthalpy Analytical, Inc.
- Unless otherwise specified, sample tubes will be conditioned for re-use 3 business days after submission of results

Site Name: Mon Valley Monitoring Project	**Client Name:**	**PO#:**
Site Address:	**Project Number:**	**Sample Event #**
City:	**Project Manager:** Environmental Integrity Project	**Sorbent:**
State	**Email Address:**	
Zip:	**Telephone #:**	

Location	Sample ID (Tube ID)	Sample, Blank or Duplicate	Start Date	Start Time	Stop Date	Stop Time	Deployed/ Collected by	Ave. Pressure (inHg)	Avg. Ambient Temp. (°F)
01	B43616	S	9-26-22	12 pm	10-11-22	11:45 am	[redacted]		
01A	B27889	S	9-26-22	12:20 pm	10-11-22	11:55 AM			
02	B30850	S	9-26-22	12:30 pm	10-11-22	12:05 pm			
02B	C00640	B	9-26-22	12:30 pm	10-11-22	12:05 pm			
03	B50578	B	9-26-22	12:40 pm	10-11-22	12:15 pm			
04	B28913	B	9-26-22	1:15 pm	10-11-22	12:45 pm			
05	B50062	B	9-26-22	1:55 pm	10-11-22	1:18 pm			
06	B50918	B	9-26-22	2:00 pm	10-11-22	1:23 pm			

Relinquished By (printed):	Relinquished By (signature):	Relinquished Date:	Relinquished Time:
[redacted]	[redacted]	10-11-22	2pm
Recieved By (printed):	**Recieved By (signature):**	**Receipt Date:**	**Receipt Time:**
Sarah Roberts	Sarah Roberts	10/12/22	10:00

Sample Condition Upon Receipt:			Compound List:	Custody Seal intact? Y/N:	Delivery tracking #
				Y	
Ice Temp: 3.0	Blank Temp: 15.6	FLUKE 1		Add Custody Seal # below: 22C083960	

Comments:

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EPA Method 325 A/B
Field Test Data Sheet and Chain of Custody Record

Page # 2 of 2 #

☐ Standard Turn Around Time (10 business days)

☐ Rush Turn Around Time

- All TATs Subject to Approval by Enthalpy Analytical, Inc.
- Unless otherwise specified, sample tubes will be conditioned for re-use 3 business days after submission of results

Site Name:	Mon Valley Monitoring Project	Client Name:	PO#:
Site Address:		Project Number:	Sample Event #
City:		Project Manager: Environmental Integrity project	Sorbent:
State		Email Address:	
Zip:		Telephone #:	

Location	Sample ID (Tube ID)	Sample, Blank or Duplicate	Start Date	Start Time	Stop Date	Stop Time	Deployed/ Collected by	Ave. Pressure (inHg)	Avg. Ambient Temp. (°F)
07	B24828	S	9-26-22	2:09 pm	10-11-22	1:25 pm	[redacted]		

Relinquished By (printed):	Relinquished By (signature):	Relinquished Date:	Relinquished Time:
[redacted]	[redacted]	10-11-22	2 pm
Recieved By (printed):	**Recieved By (signature):**	**Receipt Date:**	**Receipt Time:**

Sample Condition Upon Receipt:			Compound List:	Custody Seal intact? Y/N:	Delivery tracking #
Ice Temp:	Blank Temp:			Add Custody Seal # below:	

Comments:

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Sample Chromatograms

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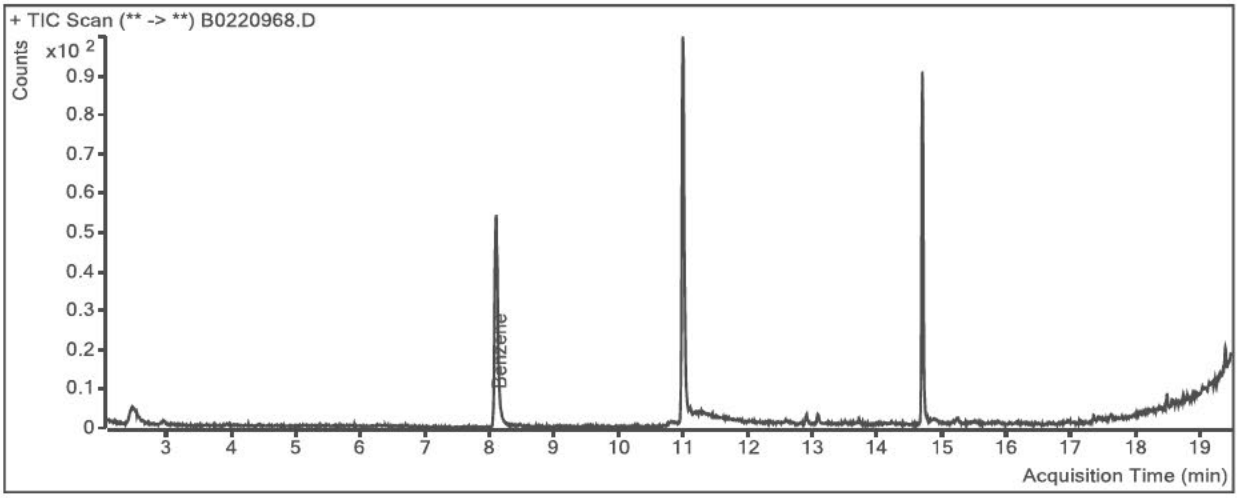
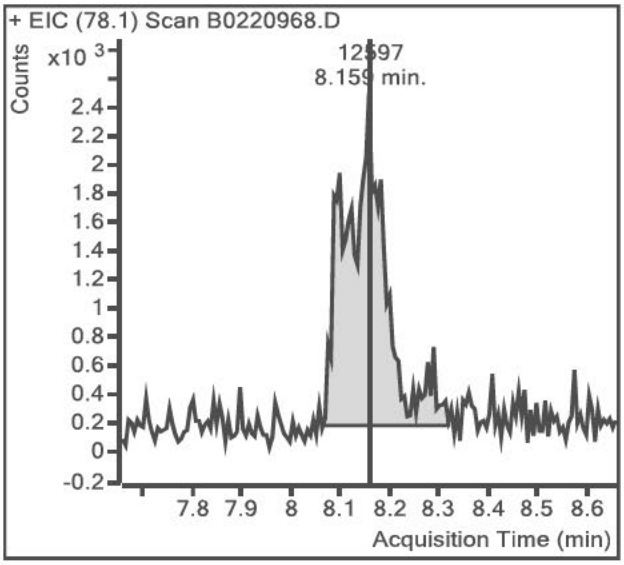
Sample Name	:	2022DE121 Method Blank_1
Sample Info	:	C01563
Data File	:	B0220968.D
Acquisition Date	:	2022-10-15 08:29:41
Instrument Method	:	M325B-TD
Matrix	:	AIR

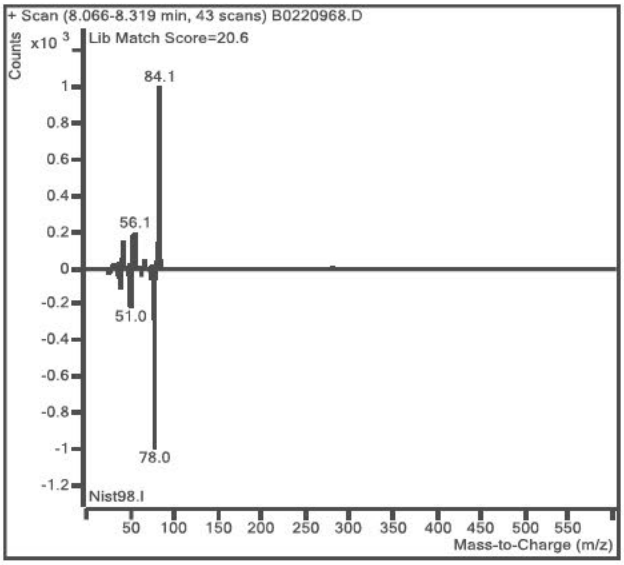


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.10	677,582	
Benzene	8.16	12,597	

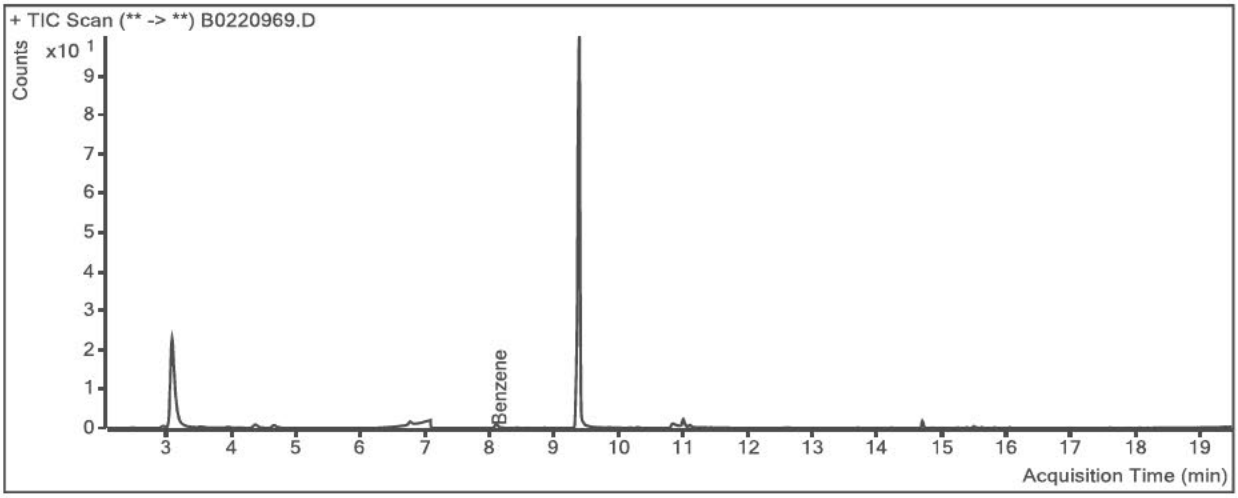
(m)=Manual Integration

Benzene





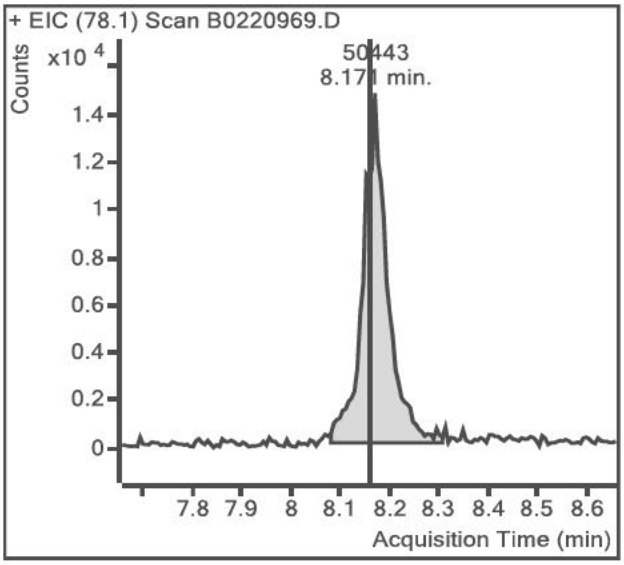
Sample Name	:	EIMPA-02-B-20220926
Sample Info	:	C00640
Data File	:	B0220969.D
Acquisition Date	:	2022-10-15 09:07:05
Instrument Method	:	M325B-TD
Matrix	:	AIR

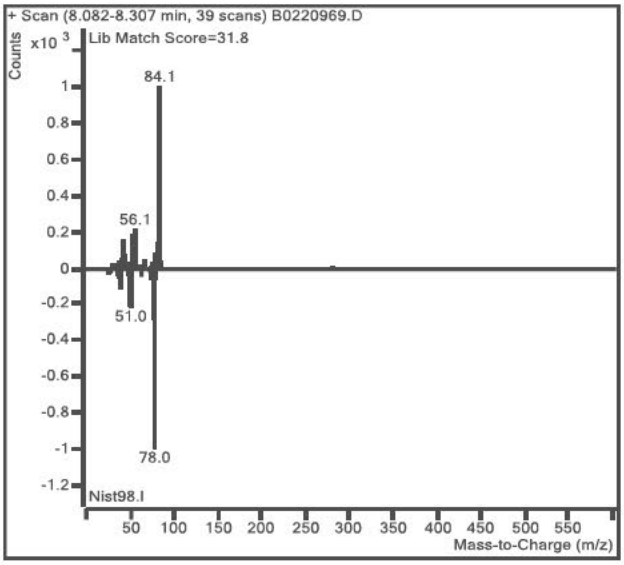


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.10	679,813	
Benzene	8.16	50,443	

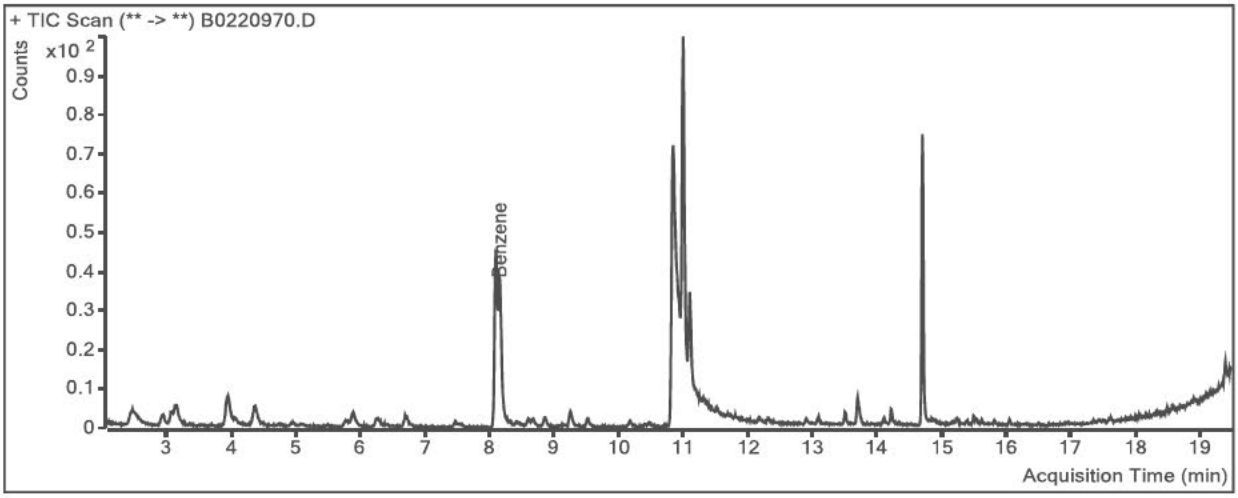
(m)=Manual Integration

Benzene





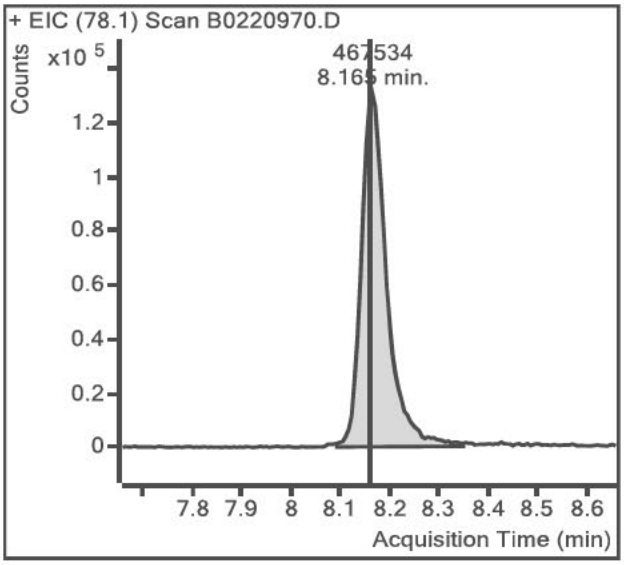
Sample Name	:	EIMPA-01-S-20220926
Sample Info	:	B43616
Data File	:	B0220970.D
Acquisition Date	:	2022-10-15 09:44:32
Instrument Method	:	M325B-TD
Matrix	:	AIR

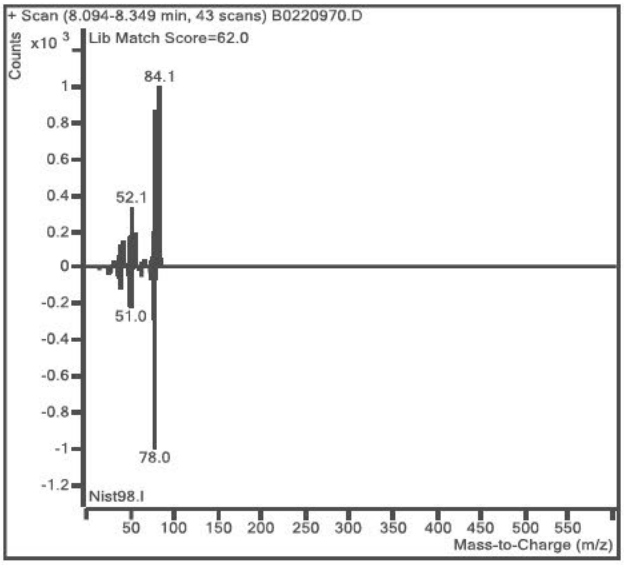


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.10	690,179	
Benzene	8.16	467,534	

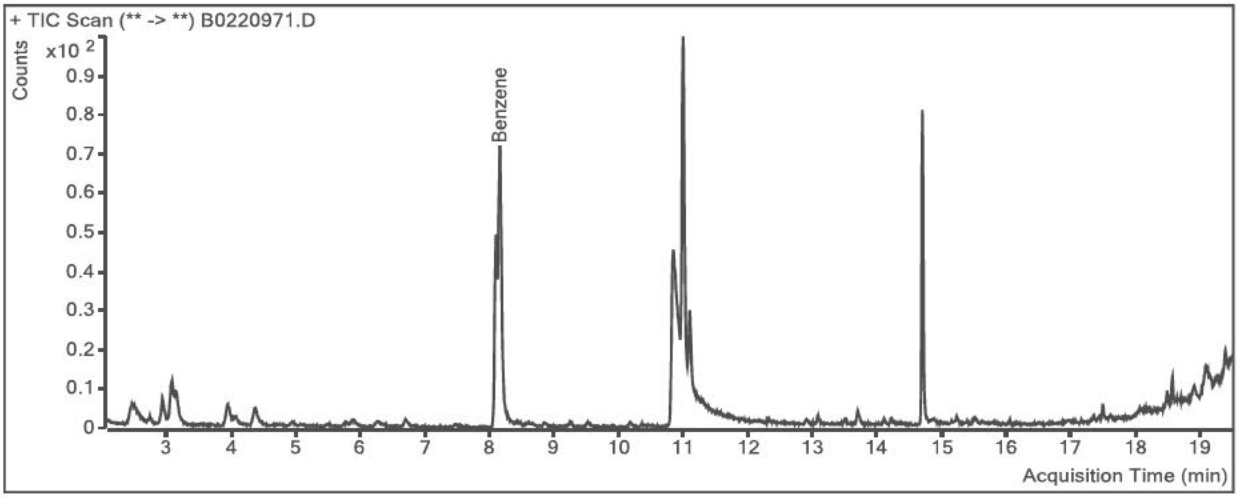
(m)=Manual Integration

Benzene





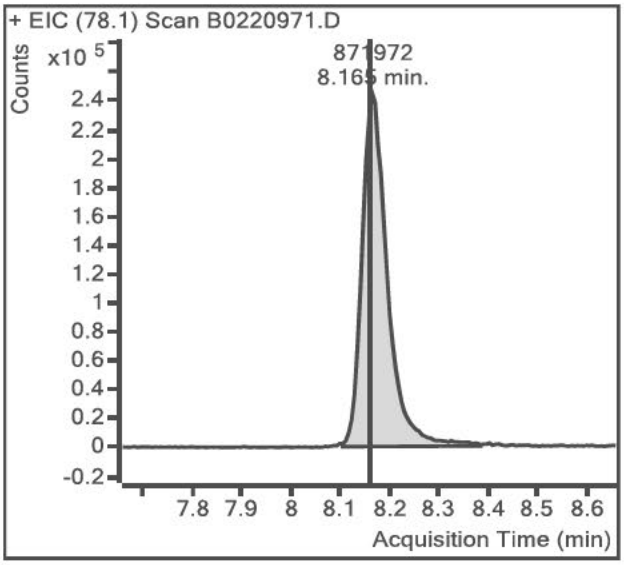
Sample Name : EIMPA-01A-S-20220926
Sample Info : B27889
Data File : B0220971.D
Acquisition Date : 2022-10-15 10:22:02
Instrument Method : M325B-TD
Matrix : AIR

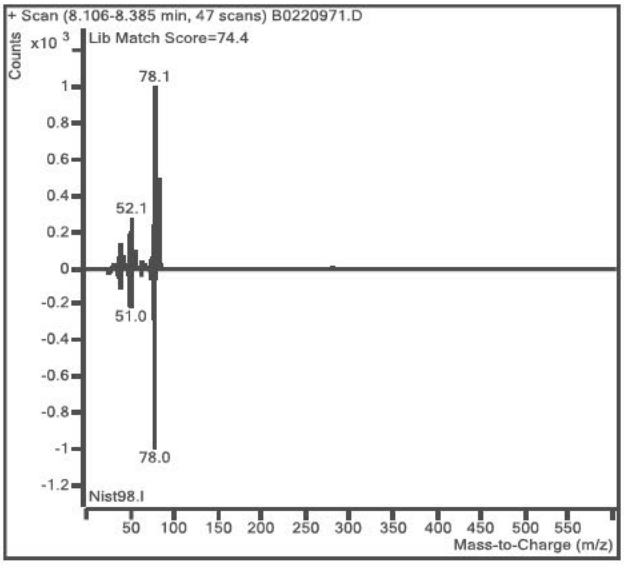


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.10	671,399	
Benzene	8.16	871,972	

(m)=Manual Integration

Benzene





Sample Name	:	EIMPA-02-S-20220926
Sample Info	:	B30850
Data File	:	B0220972.D
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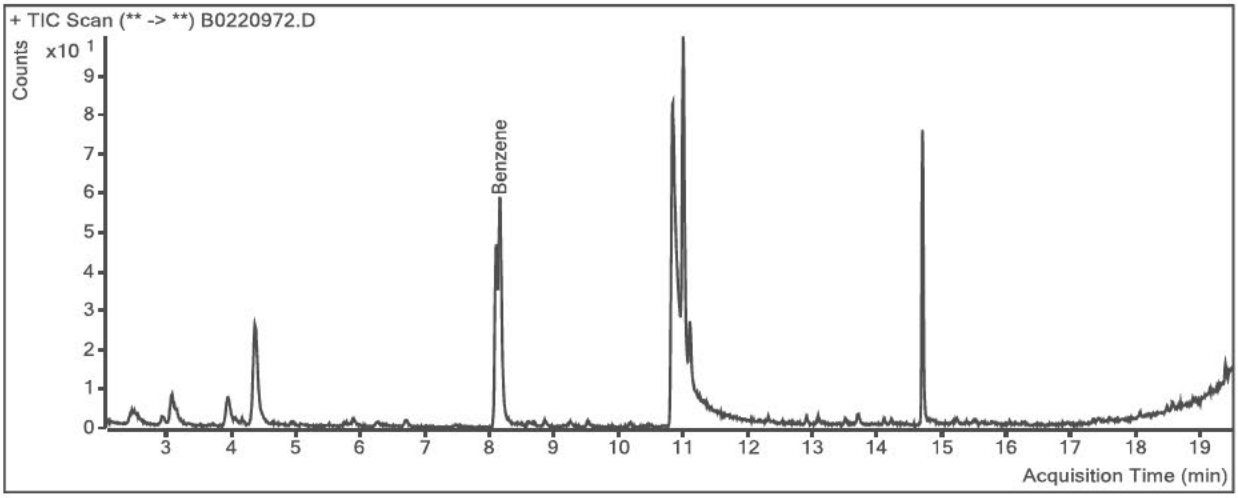
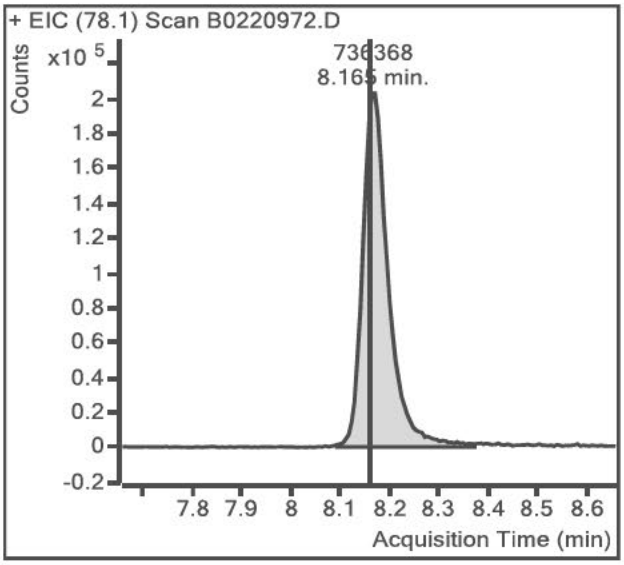
Instrument Method	:	M325B-TD
Matrix	:	AIR

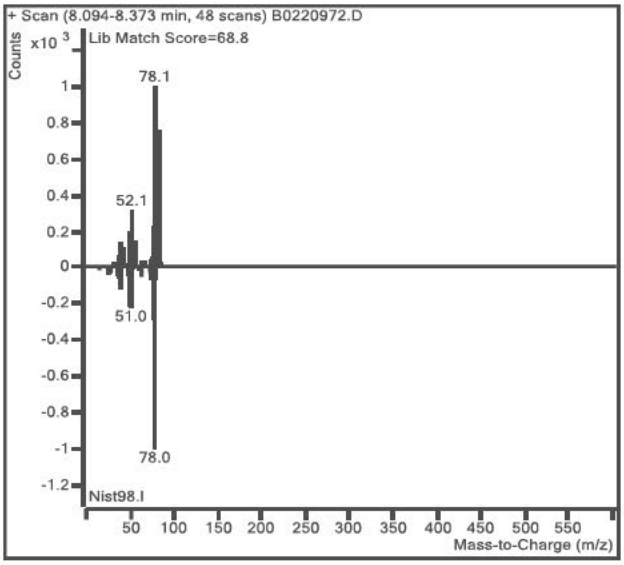


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.10	664,311	
Benzene	8.16	736,368	

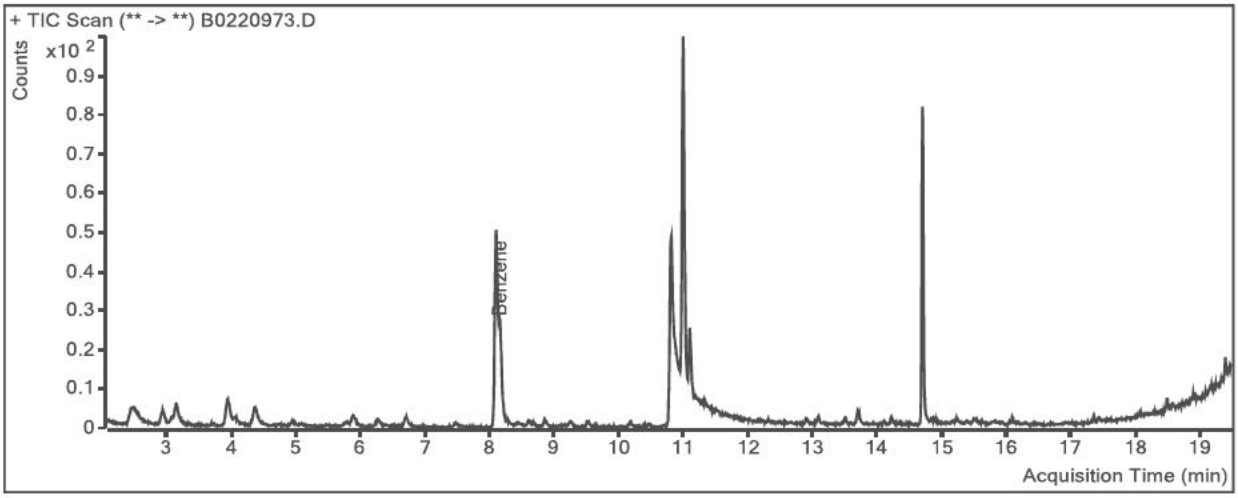
(m)=Manual Integration

Benzene





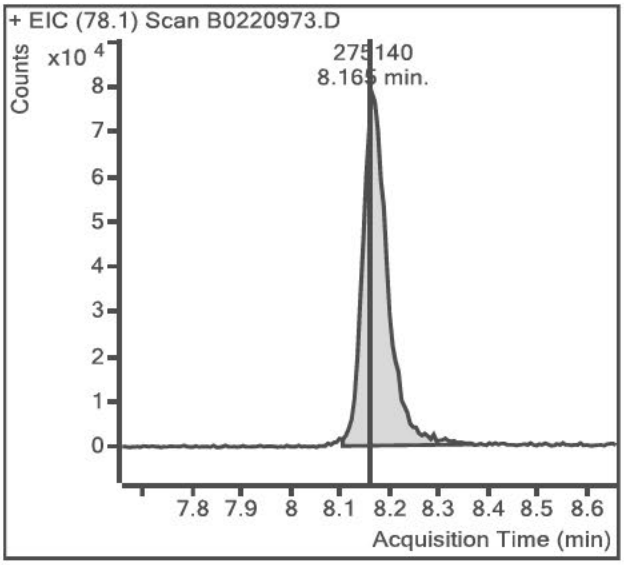
Sample Name : EIMPA-03-S-20220926
Sample Info : B50578
Data File : B0220973.D
Acquisition Date : 2022-10-15 11:36:51
Instrument Method : M325B-TD
Matrix : AIR

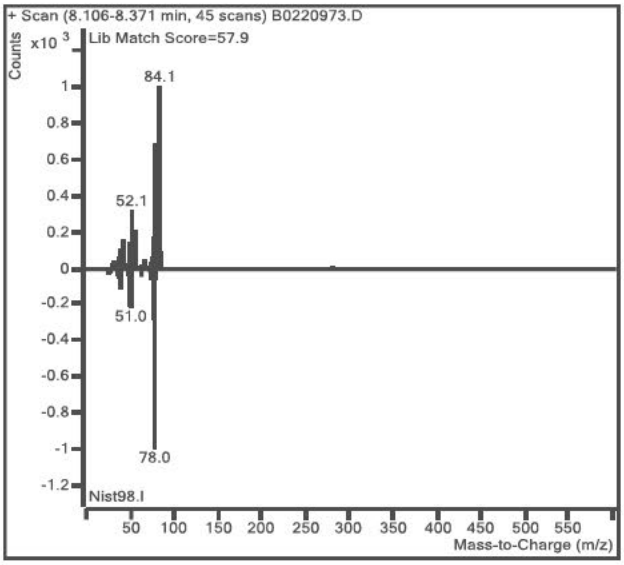


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.10	668,292	
Benzene	8.16	275,140	

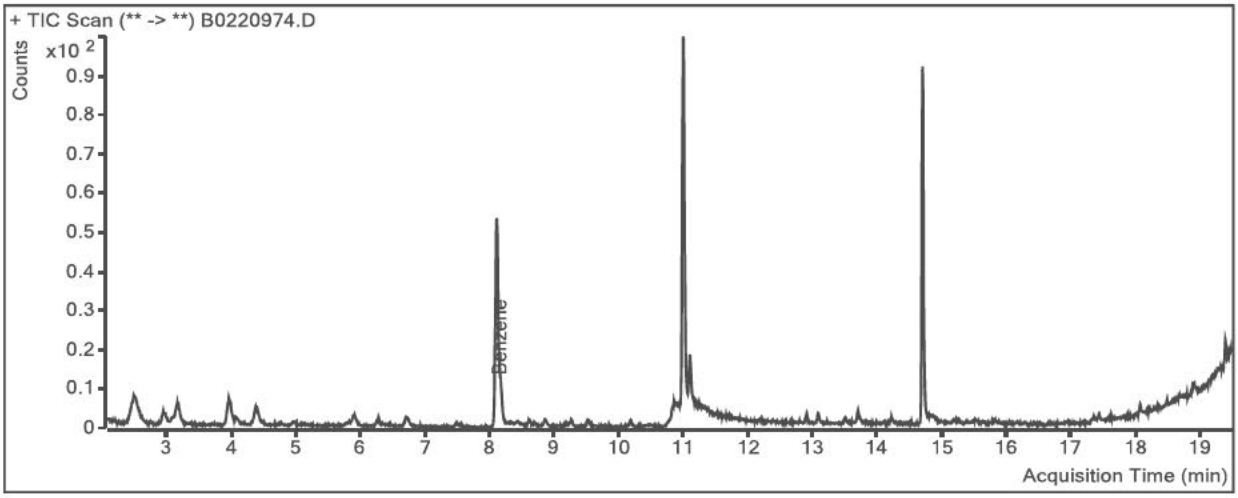
(m)=Manual Integration

Benzene





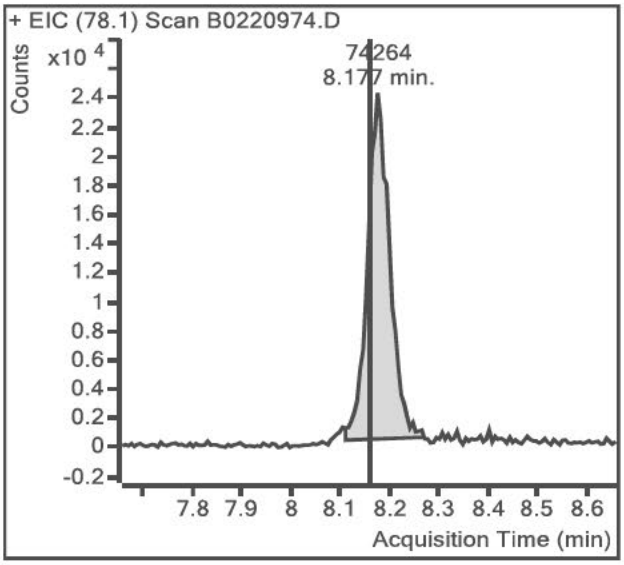
Sample Name	:	EIMPA-04-S-20220926
Sample Info	:	B28913
Data File	:	B0220974.D
Acquisition Date	:	2022-10-15 12:14:17
Instrument Method	:	M325B-TD
Matrix	:	AIR

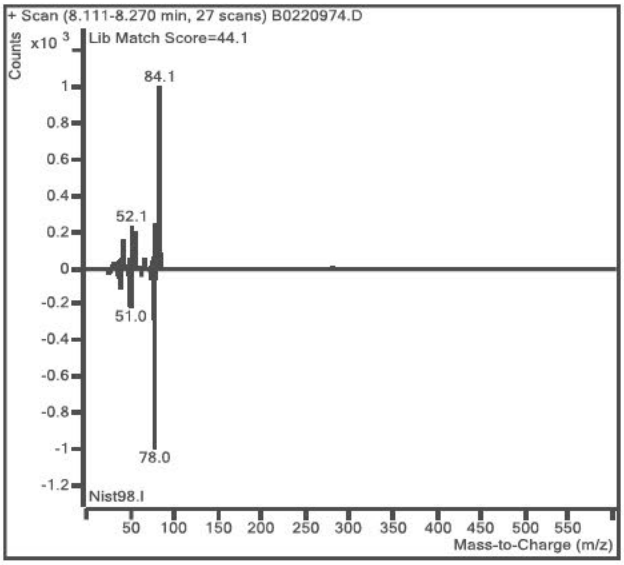


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.10	493,262	
Benzene	8.16	74,264	

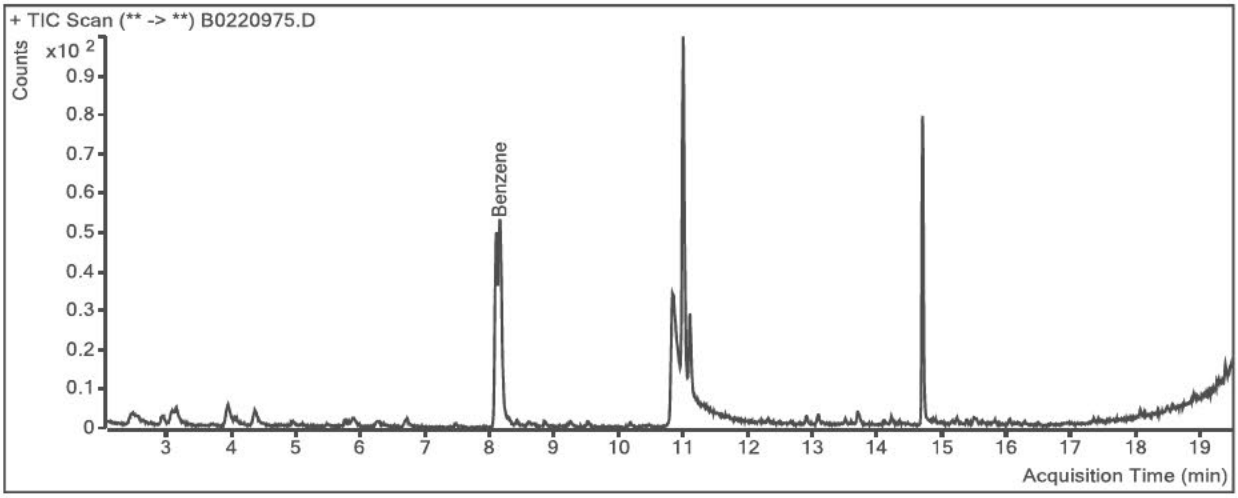
(m)=Manual Integration

Benzene





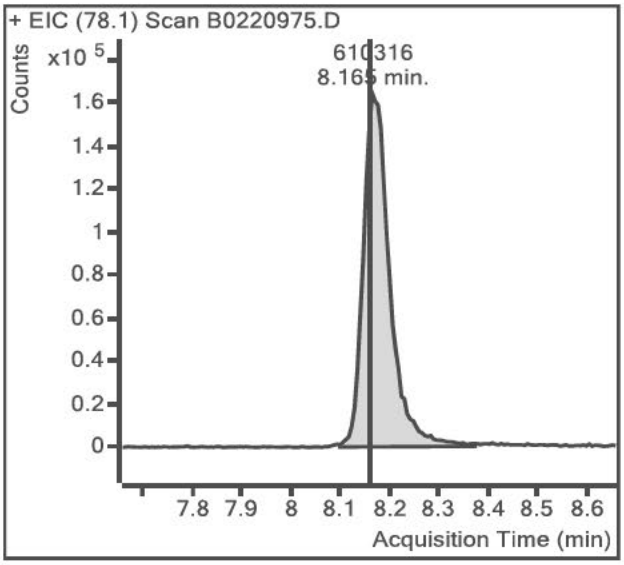
Sample Name	:	EIMPA-05-S-20220926
Sample Info	:	B15062
Data File	:	B0220975.D
Acquisition Date	:	2022-10-15 12:51:42
Instrument Method	:	M325B-TD
Matrix	:	AIR

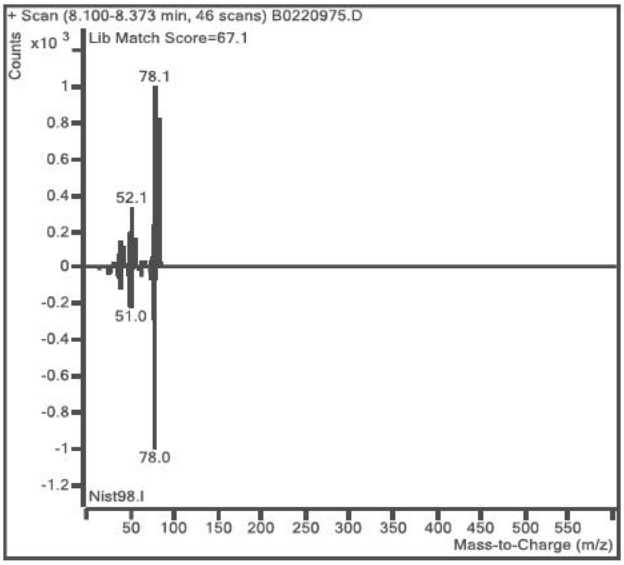


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.10	650,494	
Benzene	8.16	610,316	

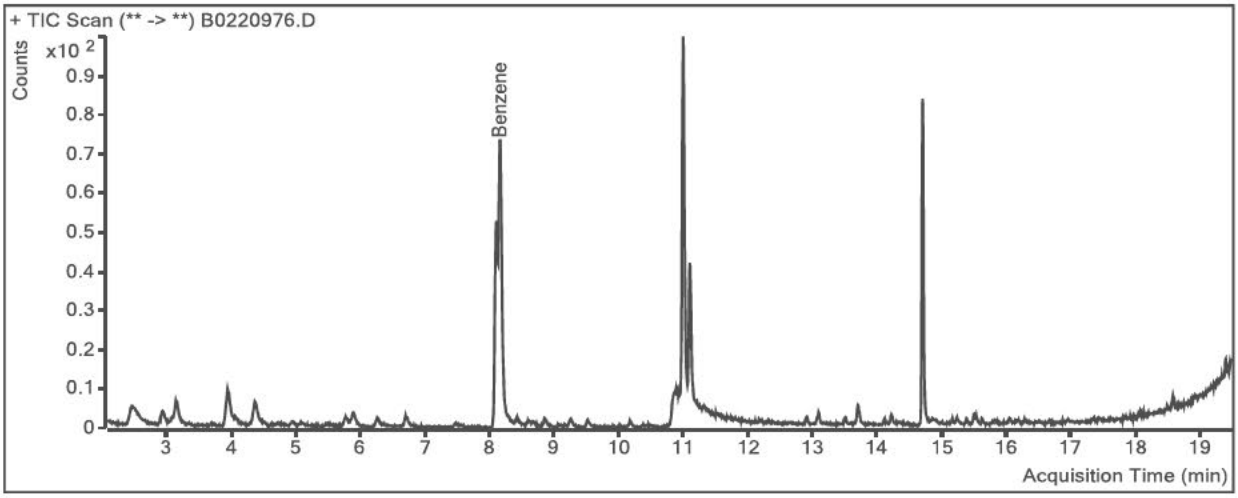
(m)=Manual Integration

Benzene





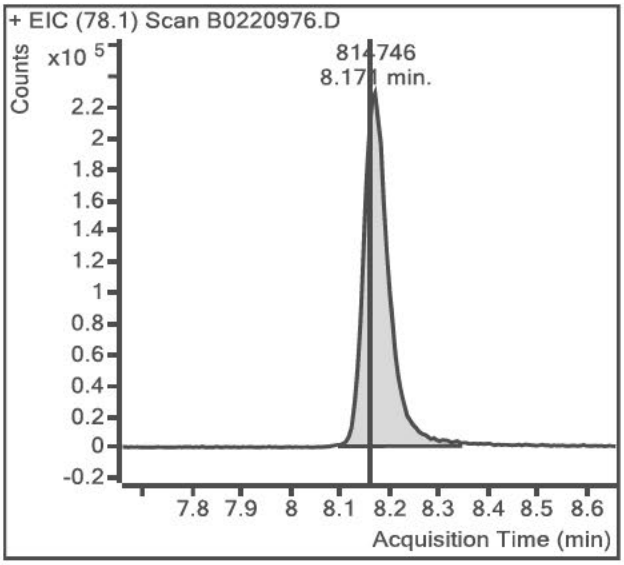
Sample Name	:	EIMPA-06-S-20220926
Sample Info	:	B50918
Data File	:	B0220976.D
Acquisition Date	:	2022-10-15 13:29:06
Instrument Method	:	M325B-TD
Matrix	:	AIR

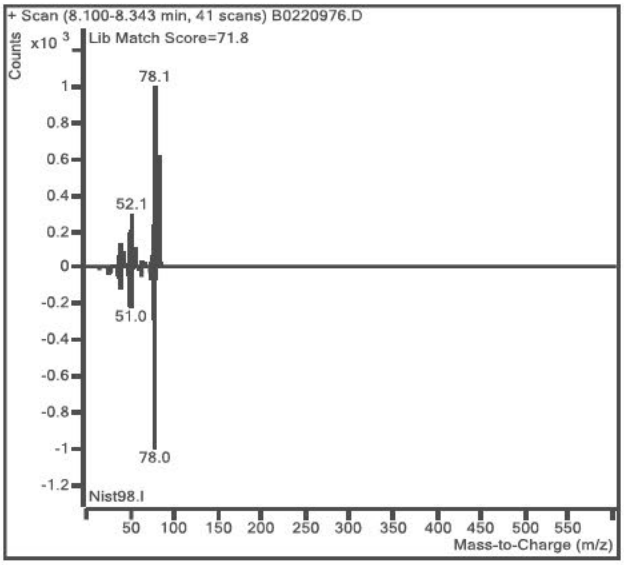


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.10	644,630	
Benzene	8.16	814,746	

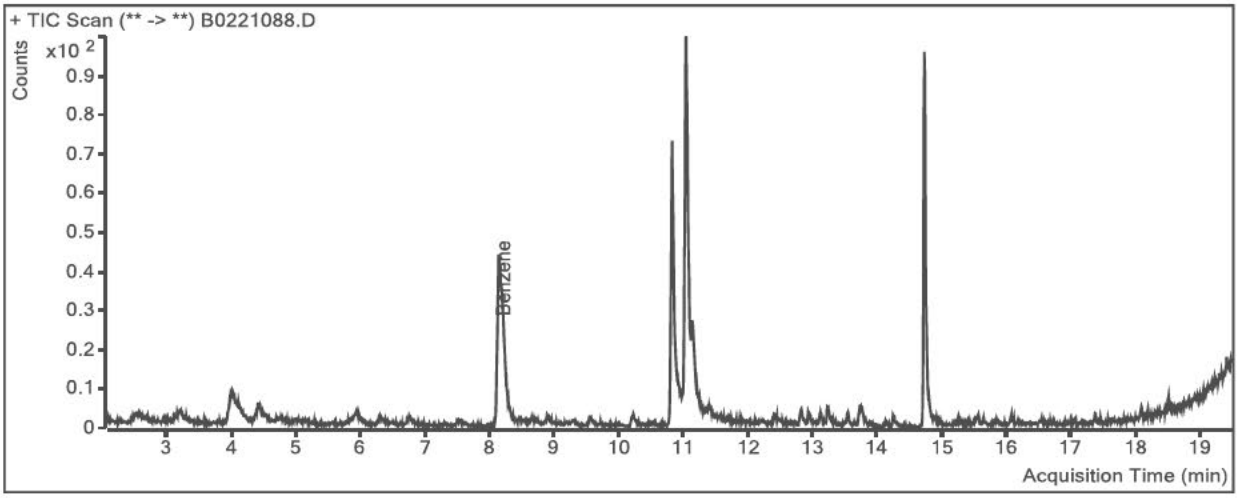
(m)=Manual Integration

Benzene





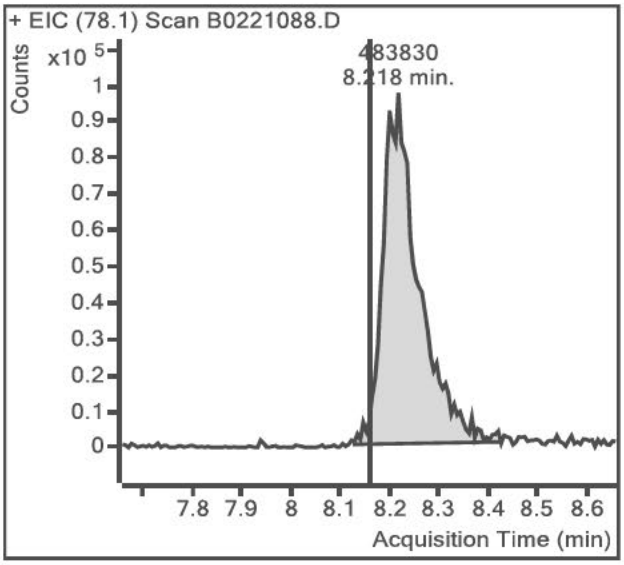
Sample Name	:	EIMPA-07-S-20220926
Sample Info	:	B24828:Recollect
Data File	:	B0221088.D
Acquisition Date	:	2022-10-26 15:46:15
Instrument Method	:	M325B-TD
Matrix	:	AIR

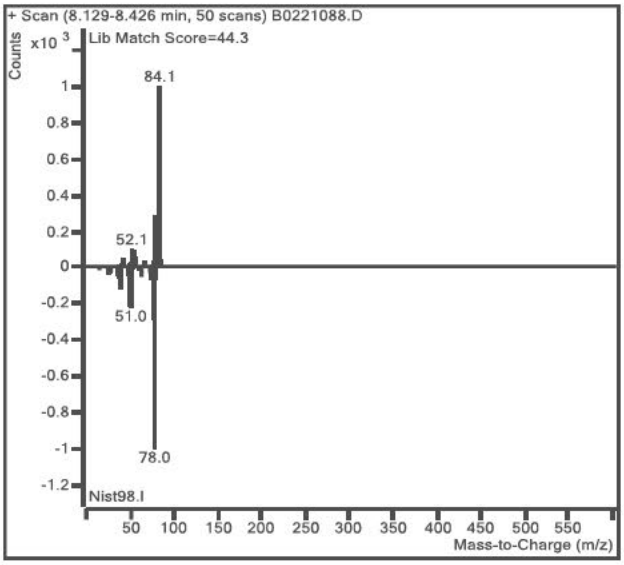


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.10	1,587,558	
Benzene	8.16	483,830	

(m)=Manual Integration

Benzene





Calibration Summary Reports

ENTHALPY
ANALYTICAL

Enthalpy Analytical

Company: Environmental Integrity

Job No.: 2022DE121-1 EPA Method 325B Analysis

Client No.: Mon Valley Benzene Monitoring Project Site: Mon Valley, PA

Benzene Calibration and Blanks

Sample Code	Type	RRF	ICAL RRF	Last CCV RRF	RRF Change	ISTD Change vs ICal	ISTD Change vs Concal	Pass/ Fail	Flags
M325B CCV 5	Cal	1.022	1.137	1.022	-10%	-6.4%		Pass	
M325B CCV 5	Check	1.054	1.137	1.022	-7.3%		-14%	Pass	
2022DE121 Method Blank_1	Blank		1.137	1.022			-14%	Pass	ND
M325B CCV 5	Check	1.055	1.137	1.022	-7.2%		-20%	Pass	TF
M325B CCV 5	Cal	0.926	1.137	0.926	-19%	19%		Pass	
M325B CCV 5	Check	0.934	1.137	0.926	-18%		-5.9%	Pass	

Enthalpy Analytical

Company: Environmental Integrity

Job No.: 2022DE121-1 EPA Method 325B Analysis

Client No.: Mon Valley Benzene Monitoring Project Site: Mon Valley, PA

Calibration Curves

Method	Compound	Level	Cal File	Amount (ng)	Area	ISTD Amt (ng)	ISTD Area	RRF	Dev
B101022A.quantmethod.xml	Benzene	1	B0220871.D	5.39	70520	91.9	878875	1.369	20%
B101022A.quantmethod.xml	Benzene	2	B0220872.D	10.78	121452	91.9	873907	1.185	4.3%
B101022A.quantmethod.xml	Benzene	3	B0220873.D	21.56	242230	91.9	892998	1.157	1.7%
B101022A.quantmethod.xml	Benzene	4	B0220874.D	43.12	463299	91.9	881386	1.121	-1.4%
B101022A.quantmethod.xml	Benzene	5	B0220875.D	107.80	1086362	91.9	869636	1.065	-6.3%
B101022A.quantmethod.xml	Benzene	6	B0220876.D	215.60	2084372	91.9	862730	1.030	-9.4%
B101022A.quantmethod.xml	Benzene	7	B0220877.D	646.81	4704164	91.9	648268	1.031	-9.3%
						Avg:	843971	1.137	
						%RSD:	10%	10%	
B101022A.quantmethod.xml	Benzene	ICV	B0220878.D	64.86	613846	91.9	856100	1.016	-11%

This Is The Last Page Of This Report.

Environmental Integrity

1000 Vermont Ave. NW
Washington, DC 20005

2022 Sampling Event 22

Mon Valley, PA
Mon Valley Benzene Monitoring Project

Analytical Report
(2022DE122)

EPA Method 325B

Benzene

Enthalpy Analytical, LLC
Phone: (919) 850 - 4392 / Fax: (919) 850 - 9012 / www.enthalpy.com
800-1 Capitola Drive, Durham, NC 27713

I certify that to the best of my knowledge all analytical data presented in this report:

- Have been checked for completeness
- Are accurate, error-free, and legible
- Have been conducted in accordance with approved protocol, and that all deviations and analytical problems are summarized in the appropriate narrative(s)

This analytical report was prepared in Portable Document Format (.PDF) and contains 29 pages.

Digitally signed by Conor Toomey
Date: 2022.11.08 14:40:41-05'00'

Report Issued: 11/08/2022

ENTHALPY ANALYTICAL

Summary of Results

Enthalpy Analytical

Company: Environmental Integrity

Job No.: 2022DE122-1 EPA Method 325B Analysis

Client No.: Mon Valley Benzene Monitoring Project Site: Mon Valley, PA

Summary

Sample Code	Tube ID	Benzene (ug/m³)	Flag
EIMPA-01-S-20221011	B31724	4.68	
EIMPA-01A-S-20221011	B44420	16.7	
EIMPA-02-S-20221011	B37574	10.4	
EIMPA-02-B-20221011	B15042		ND
EIMPA-03-S-20221011	B34824	2.99	
EIMPA-04-S-20221011	B27295	0.738	
EIMPA-05-S-20221011	B17462	7.60	
EIMPA-06-S-20221011	B48659	3.00	
EIMPA-07-S-20221011	B38619	4.85	

ND: The analyte was not present above the Method Detection Limit

Results

Enthalpy Analytical

Company: Environmental Integrity

Job No.: 2022DE122-1 EPA Method 325B Analysis

Client No.: Mon Valley Benzene Monitoring Project Site: Mon Valley, PA

Benzene

Sample Code	Tube ID	Conc (ug/m³)	Conc (ppbv)	Calc Amt (ng)	Temp (°F)	Uptake Rate (mL/min)	Sample Time (min)	LOD (ug/m³)	LOQ (ug/m³)	LOD (ppbv)	LOQ (ppbv)	Flags
EIMPA-01-S-20221011	B31724	4.68	1.47	61.6	51.9	0.654	20130	0.190	0.405	0.0595	0.127	
EIMPA-01A-S-20221011	B44420	16.7	5.24	221	51.9	0.654	20171	0.189	0.404	0.0593	0.127	
EIMPA-02-S-20221011	B37574	10.4	3.27	138	51.9	0.654	20169	0.189	0.404	0.0593	0.127	
EIMPA-02-B-20221011	B15042				51.9	0.654	20169	0.189	0.404	0.0593	0.127	ND
EIMPA-03-S-20221011	B34824	2.99	0.935	39.4	51.9	0.654	20175	0.189	0.404	0.0593	0.127	
EIMPA-04-S-20221011	B27295	0.738	0.231	9.74	52.0	0.654	20175	0.189	0.404	0.0593	0.127	
EIMPA-05-S-20221011	B17462	7.60	2.38	100	52.0	0.654	20173	0.189	0.404	0.0593	0.127	
EIMPA-06-S-20221011	B48659	3.00	0.940	39.6	52.0	0.654	20173	0.189	0.404	0.0593	0.127	
EIMPA-07-S-20221011	B38619	4.85	1.52	64.0	52.0	0.654	20174	0.189	0.404	0.0593	0.127	

ND: The analyte was not present above the Method Detection Limit

QC

Enthalpy Analytical

Company: Environmental Integrity

Job No.: 2022DE122-1 EPA Method 325B Analysis

Client No.: Mon Valley Benzene Monitoring Project Site: Mon Valley, PA

QC Samples

Field Sample Type	Sample Code	Benzene	
Blanks (ug/m³)	EIMPA-02-B-20221011	ND	Pass

Narrative Summary

Enthalpy Analytical Narrative Summary

Company	Environmental Integrity – Mon Valley Benzene Monitoring Project
Site	Mon Valley, PA
Project	Mon Valley Benzene Monitoring Project
Report #	2022DE122

Custody	Sarah Roberts of Enthalpy Analytical, LLC received the thermal desorption sample tubes on 10/26/2022 after being relinquished by Environmental Integrity. The tubes were received in good condition at a temperature of 13.4 ºC. Prior to, during, and after analysis, the samples were kept under lock with access only to authorized personnel by Enthalpy Analytical, LLC.
Analysis	The thermal desorption tube samples were analyzed for benzene using EPA Method 325B, Volatile Organic Compounds from Fugitive and Area Sources by Thermal Desorption and GC/MS. The Agilent Technologies Model 8890, Gas Chromatograph "Percy" (S/N US2039A031) was equipped with a 5977 Mass Selective Detector (S/N US2038M030) for these analyses. The Perkin-Elmer ATD-650 Thermal Desorber introduced the samples and standards to the analyzer.
Chromatographic Conditions	A copy of the acquisition method (M325B-TD.M) is not included in this report but may be available upon request.
Calibration	All BFB criteria have been met for this analysis. The initial calibration (P090122A) met 30% RSD criteria. The initial calibration verification met 30% recovery criteria. The continuing calibration verifications met 30% difference criteria. The initial and continuing calibration raw data are not included in this report but are available upon request.
QC Notes	All internal standard response and retention time criteria were met for these analyses. The field blank and the lab (method) blank met the requirements of the method. No duplicate samples were analyzed for this project.

ENTHALPY ANALYTICAL

Enthalpy Analytical Narrative Summary
(continued)

Reporting Notes	All samples were purged with pure nitrogen prior to analysis due to expected moisture content. The initial method blank and beginning CCV 5 were also purged to verify no contamination or loss of benzene occurred. A portion of each sample (or calibration standard) was recollected onto the original sample tube after internal standard was added in the initial analysis to allow for reanalysis if necessary. An "Rc" flag indicates that a reanalysis has been performed and the resulting data have been included in the report. As specified in EPA Method 325B, the response factor of the daily continuing calibration standard was used to quantitate all field samples and blanks. All samples were reported as amount in ng catch, and concentration in µg/m3 and ppbv. The results presented in this report are representative of the samples as provided to the laboratory. These analyses met the requirements of the TNI Standard. Any deviations from the requirements of the reference method or TNI Standard have been stated above.

Sample Custody

ENTHALPY ANALYTICAL

EPA Method 325 A/B Field Test Data Sheet and Chain of Custody Record

Page # 1 of # 2

☐ Standard Turn Around Time (10 business days)

☐ Rush Turn Around Time

- All TATs Subject to Approval by Enthalpy Analytical, Inc.
- Unless otherwise specified, sample tubes will be conditioned for re-use 3 business days after submission of results

Site Name: Manvalley Monitoring Project	Client Name:		PO#:
Site Address:	Project Number:		Sample Event #
City:	Project Manager: Environmental Integrity Project		Sorbent:
State	Email Address:		
Zip:	Telephone #:		

Location	Sample ID (Tube ID)	Sample, Blank or Duplicate	Start Date	Start Time	Stop Date	Stop Time	Deployed/ Collected by	Ave. Pressure (inHg)	Avg. Ambient Temp. (°F)
01	B31724	S	10-11-22	11:45 Am	10-25-22	11:15 Am	[redacted]		
01a	B44470	S	10-11-22	11:55 Am	10-25-22	12:01 pm			
02	B37574	S	10-11-22	12:05 pm	10-25-22	12:14 pm			
02B	B15042	B	10-11-22	12:05 pm	10-25-22	12:41 pm			
03	B34824	S	10-11-22	12:15 pm	10-25-22	12:30 pm			
04	B27295	S	10-11-22	12:45 pm	10-25-22	1:00 pm			
05	B17467	S	10-11-22	1:15 pm	10-25-22	1:31 pm			
06	B48659	S	10-11-22	1:23 pm	10-25-22	1:36 pm			

Relinquished By (printed):	Relinquished By (signature):	Relinquished Date:	Relinquished Time:
[redacted]	[redacted]	10-25-22	215 pm
Recieved By (printed):	**Recieved By (signature):**	**Receipt Date:**	**Receipt Time:**
Sarah Roberts	Sarah Roberts	10/26/22	10:00

Sample Condition Upon Receipt:	Compound List:	Custody Seal intact? Y/N:	Delivery tracking #
GOOD		No	
Ice Temp: 1.0 / Blank Temp: 13.4 / FLUKE 1		Add Custody Seal # below: N/A	

Comments:

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ENTHALPY ANALYTICAL

EPA Method 325 A/B Field Test Data Sheet and Chain of Custody Record

Page # 2 of # 2

☐ Standard Turn Around Time (10 business days)

☐ Rush Turn Around Time

- All TATs Subject to Approval by Enthalpy Analytical, Inc.
- Unless otherwise specified, sample tubes will be conditioned for re-use 3 business days after submission of results

Site Name: Mon Valley Monitoring Project	Client Name:		PO#:
Site Address:	Project Number:		Sample Event #
City:	Project Manager: Environmental Integrity Project		Sorbent:
State	Email Address:		
Zip:	Telephone #:		

Location	Sample ID (Tube ID)	Sample, Blank or Duplicate	Start Date	Start Time	Stop Date	Stop Time	Deployed/ Collected by	Ave. Pressure (inHg)	Avg. Ambient Temp. (°F)
07	238619	S	10-11-22	1:28P	10-25-22	142pm	[redacted]		

Relinquished By (printed): [redacted]	Relinquished By (signature): [redacted]	Relinquished Date: 10-25-22	Relinquished Time: 215pm
Recieved By (printed): Sarah Roberts	Recieved By (signature): Sarah Roberts	Receipt Date: 10/26/22	Receipt Time: 10:00
Sample Condition Upon Receipt: GOOD	Compound List:	Custody Seal Intact? Y/N: No	Delivery tracking #
Ice Temp: 1.0 / Blank Temp: 13.4 / FLUKE 1		Add Custody Seal # below: N/A	

Comments:

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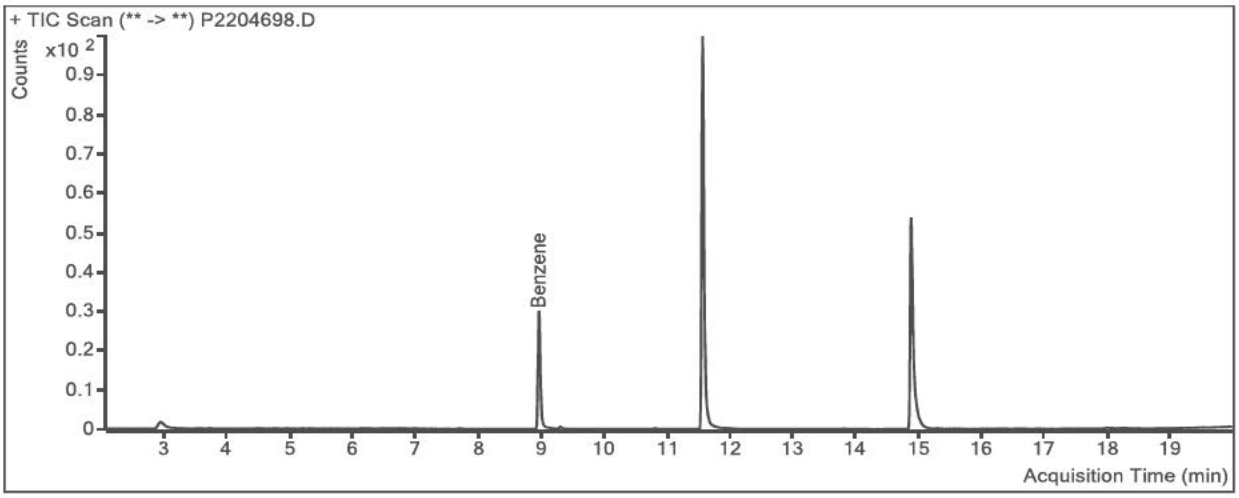
Sample Chromatograms

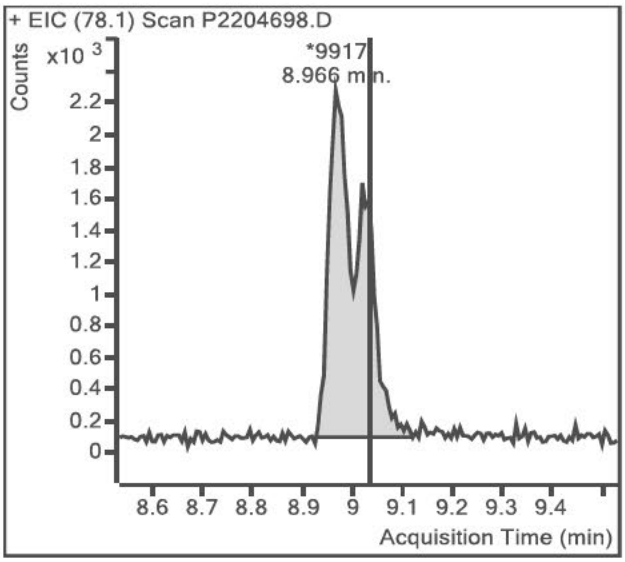
Sample Name : 2022DE122 Method Blank-1
Sample Info : C16159
Data File : P2204698.D
Acquisition Date : 2022-11-01 07:20:46
Instrument Method : M325B-TD
Matrix : AIR

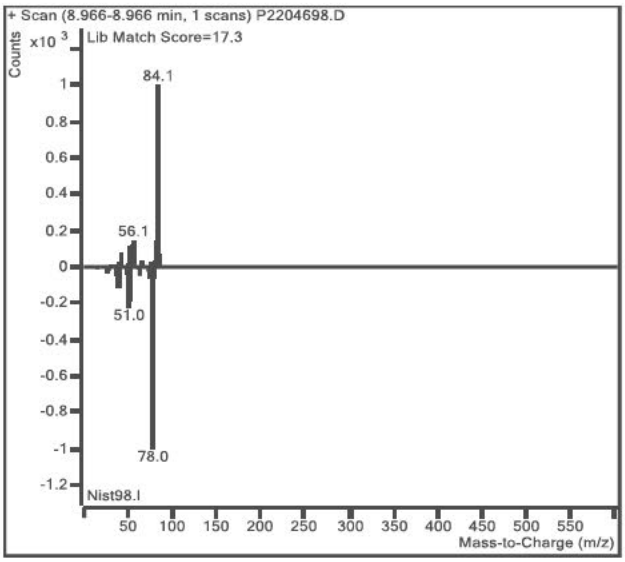


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.97	886,282	
Benzene	9.03	9,917	m

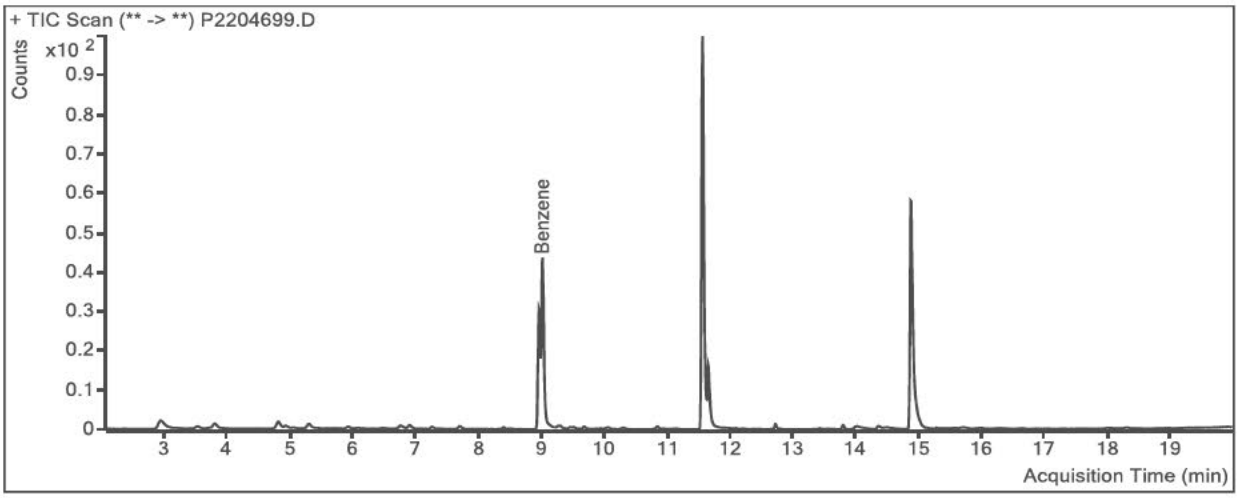
(m)=Manual Integration

Benzene





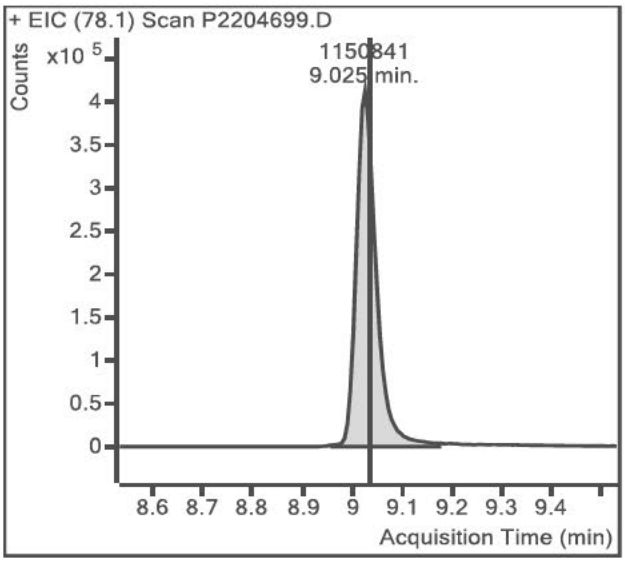
Sample Name	: EIMPA-02-S-20221011
Sample Info	: B37574
Data File	: P2204699.D
Acquisition Date	: 2022-11-01 07:57:55
Instrument Method	: M325B-TD
Matrix	: AIR

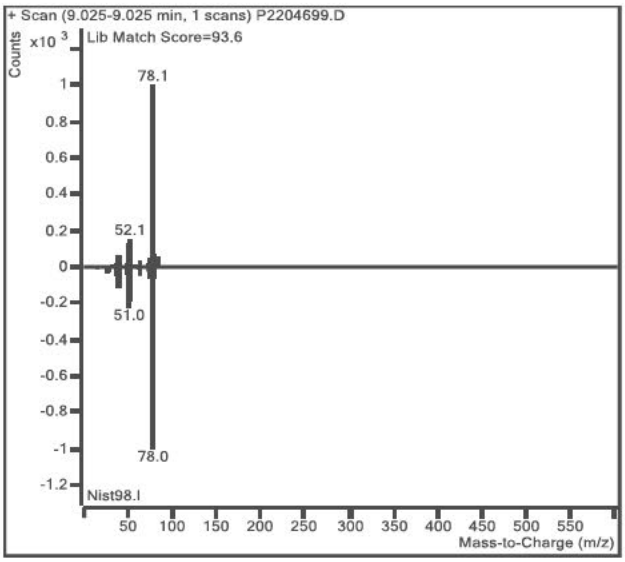


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.97	896,543	
Benzene	9.03	1,150,841	

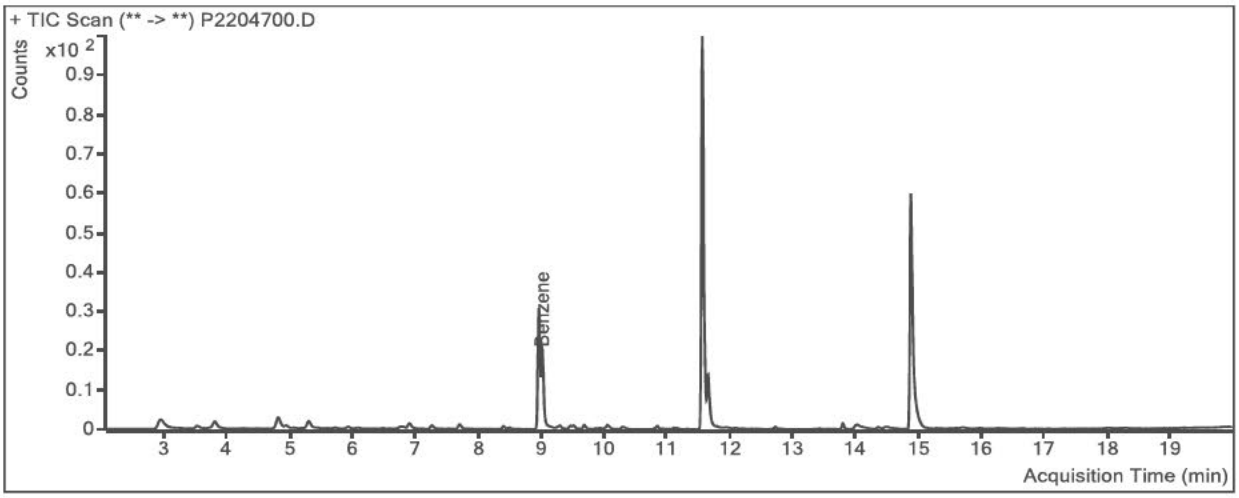
(m)=Manual Integration

Benzene





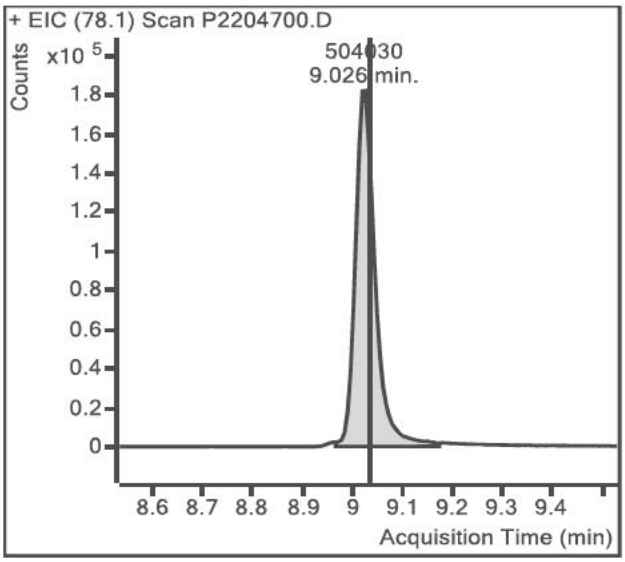
Sample Name	: EIMPA-01-S-20221011
Sample Info	: B31724
Data File	: P2204700.D
Acquisition Date	: 2022-11-01 08:35:04
Instrument Method	: M325B-TD
Matrix	: AIR

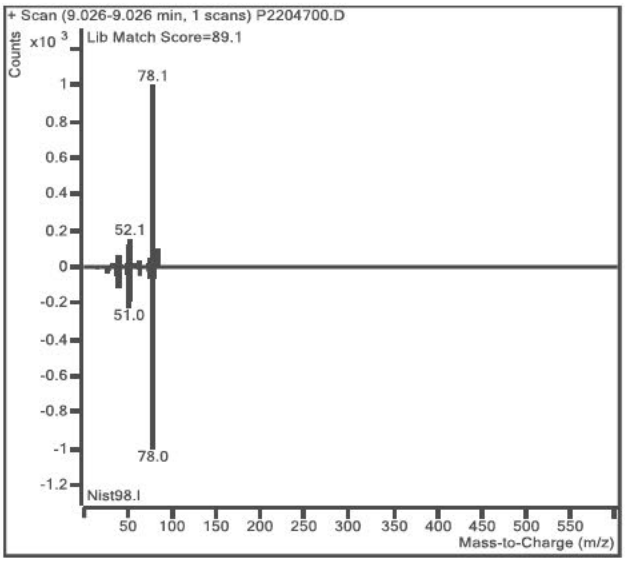


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.97	877,902	
Benzene	9.03	504,030	

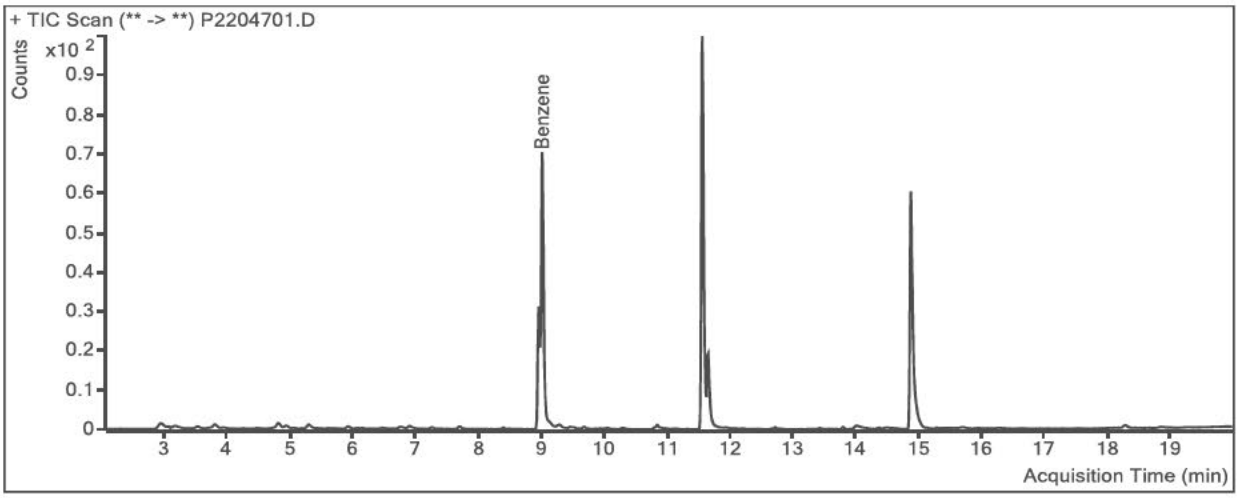
(m)=Manual Integration

Benzene





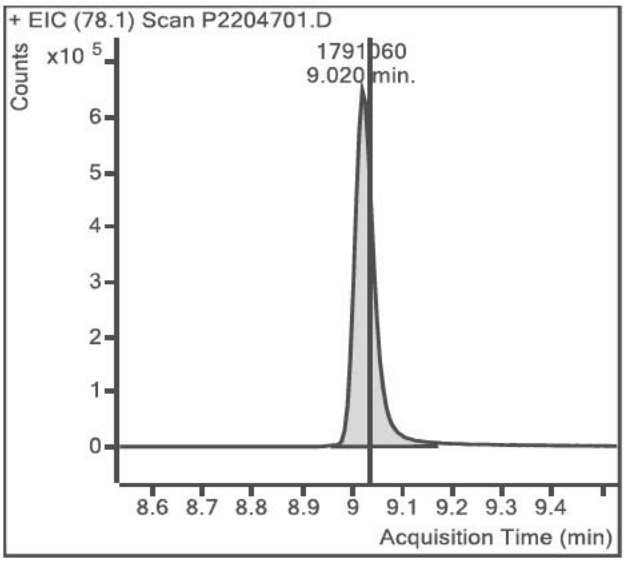
Sample Name	: EIMPA-01A-S-20221011
Sample Info	: B44420
Data File	: P2204701.D
Acquisition Date	: 2022-11-01 09:12:12
Instrument Method	: M325B-TD
Matrix	: AIR

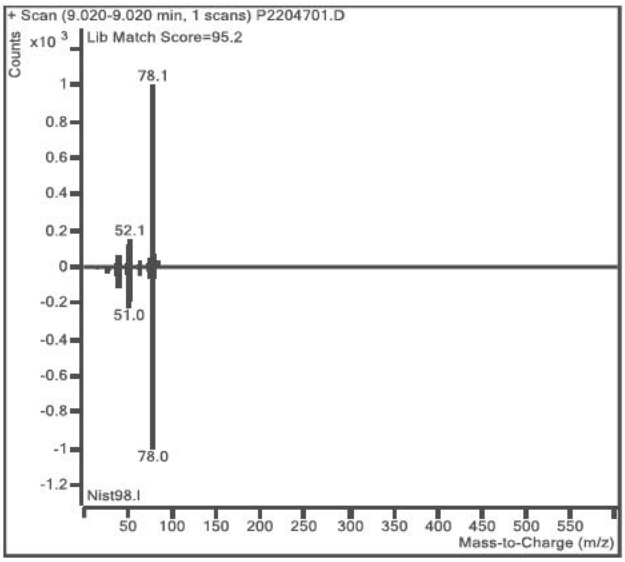


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.97	870,646	
Benzene	9.03	1,791,060	

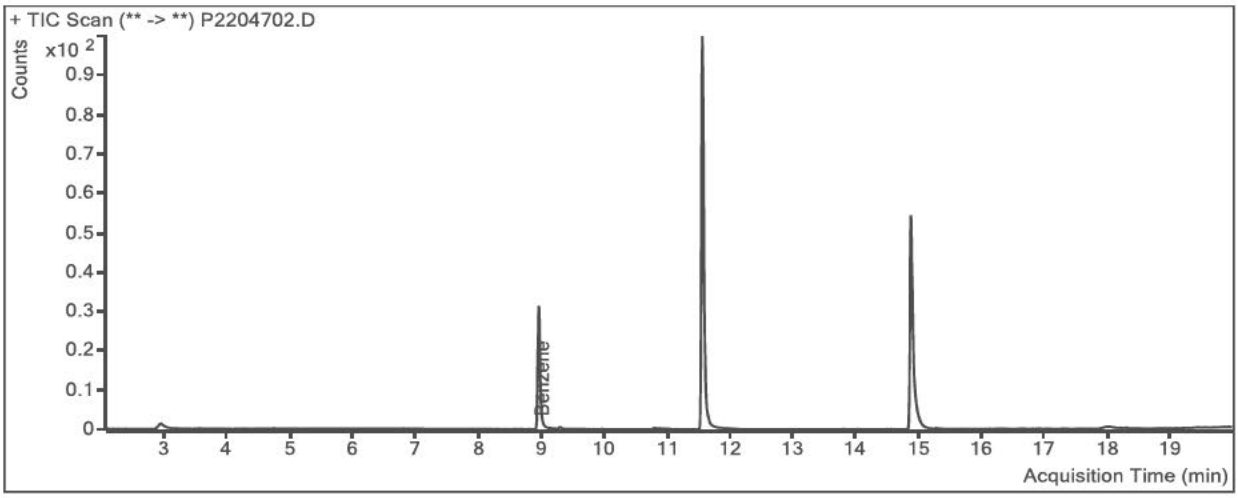
(m)=Manual Integration

Benzene





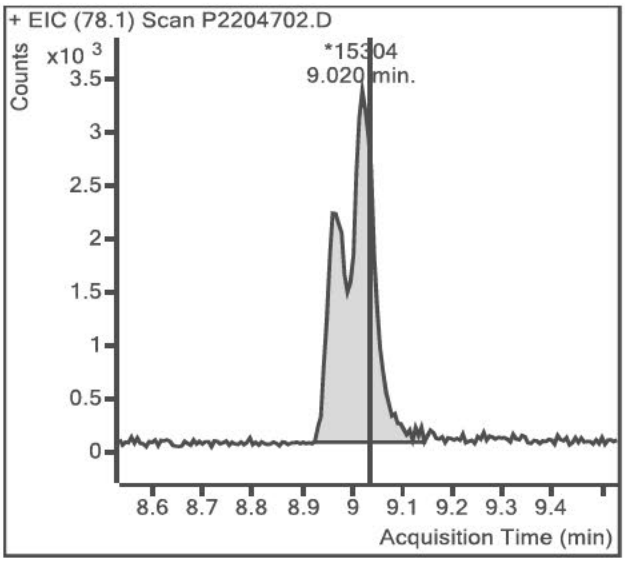
Sample Name	: EIMPA-02-B-20221011
Sample Info	: B15042
Data File	: P2204702.D
Acquisition Date	: 2022-11-01 09:49:19
Instrument Method	: M325B-TD
Matrix	: AIR

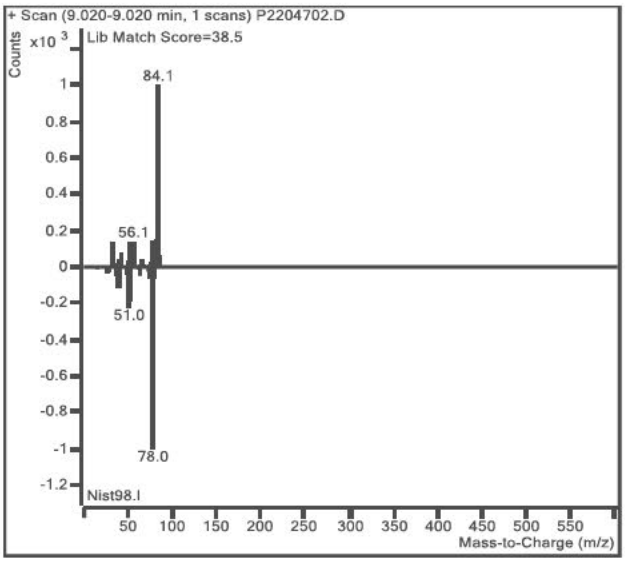


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.97	879,096	
Benzene	9.03	15,304	m

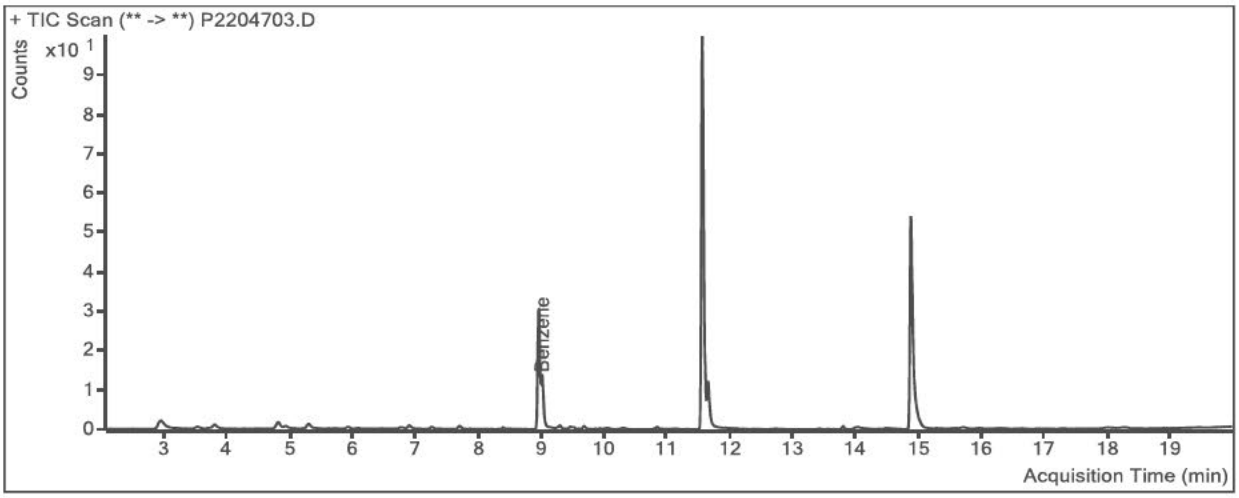
(m)=Manual Integration

Benzene





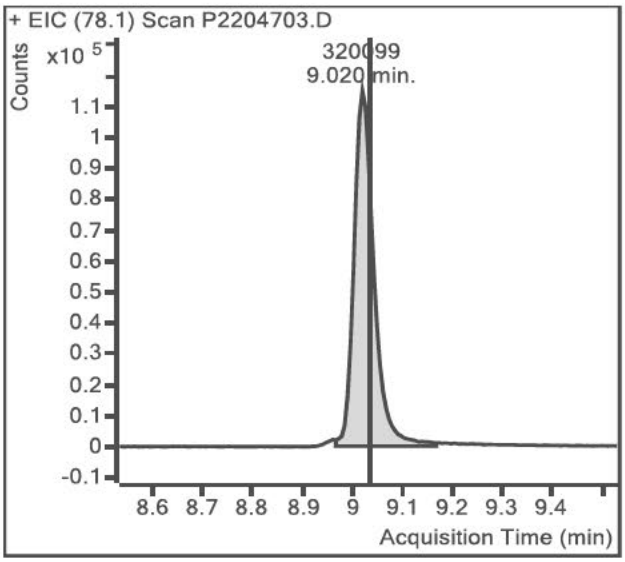
Sample Name	: EIMPA-03-S-20221011
Sample Info	: B34824
Data File	: P2204703.D
Acquisition Date	: 2022-11-01 10:26:30
Instrument Method	: M325B-TD
Matrix	: AIR

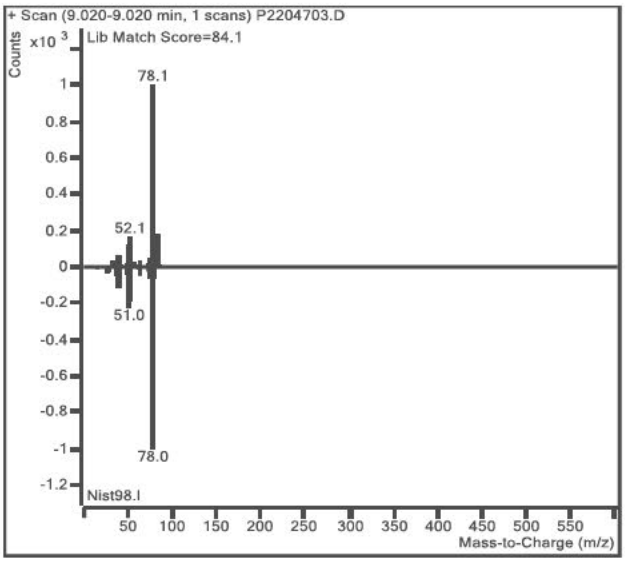


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.97	871,714	
Benzene	9.03	320,099	

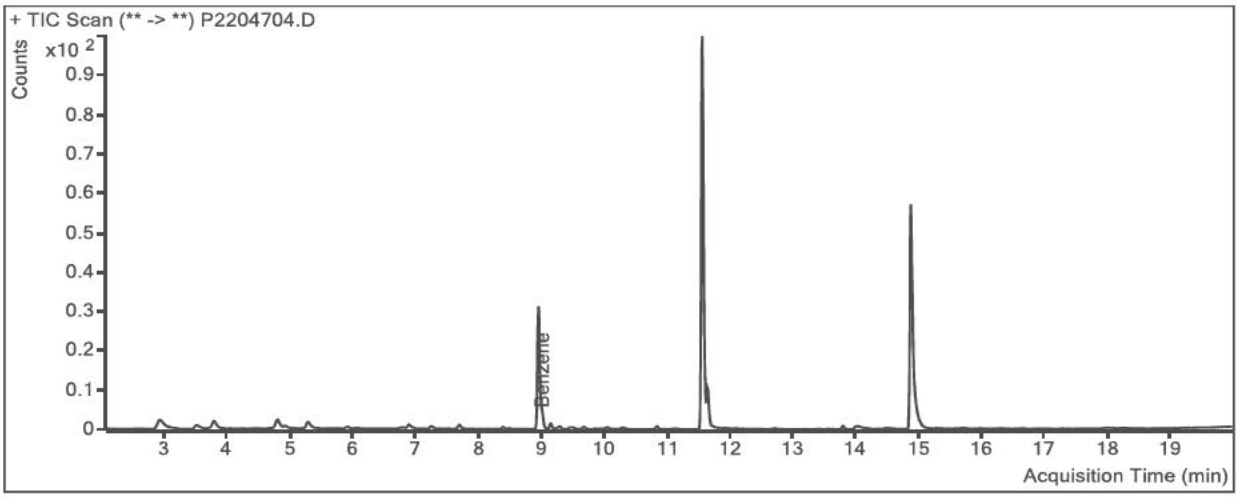
(m)=Manual Integration

Benzene





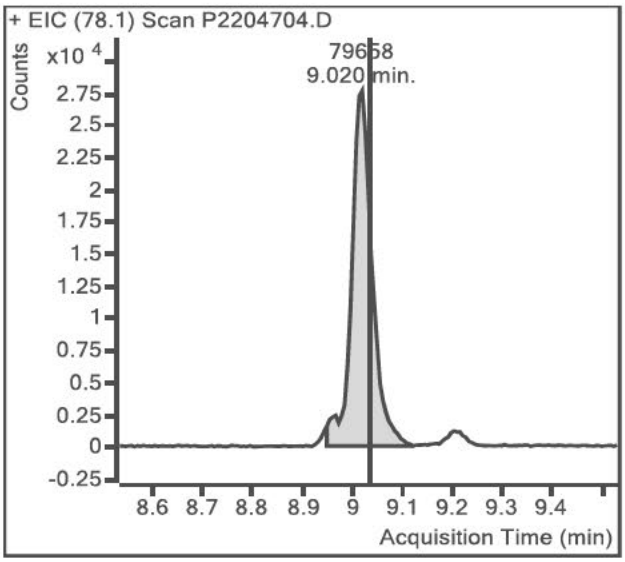
Sample Name	:	EIMPA-04-S-20221011
Sample Info	:	B27295
Data File	:	P2204704.D
Acquisition Date	:	2022-11-01 11:03:36
Instrument Method	:	M325B-TD
Matrix	:	AIR

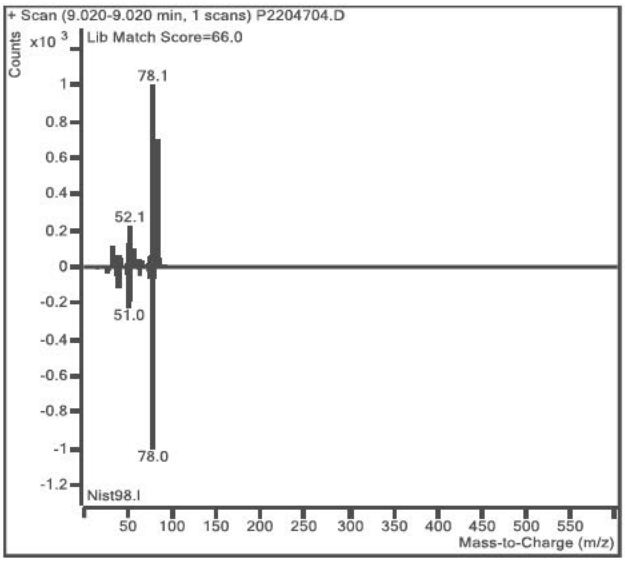


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.97	877,234	
Benzene	9.03	79,658	

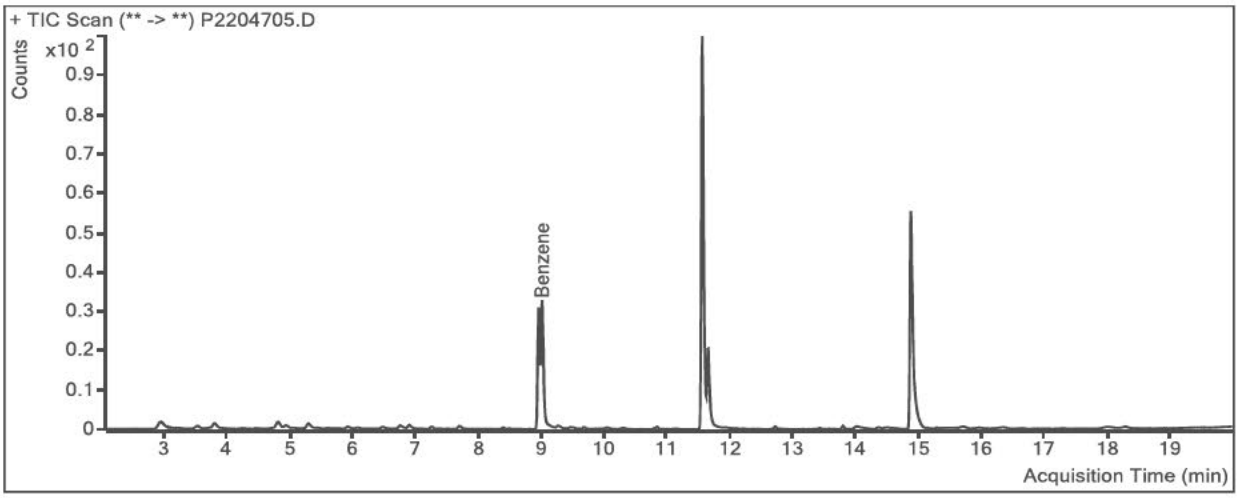
(m)=Manual Integration

Benzene





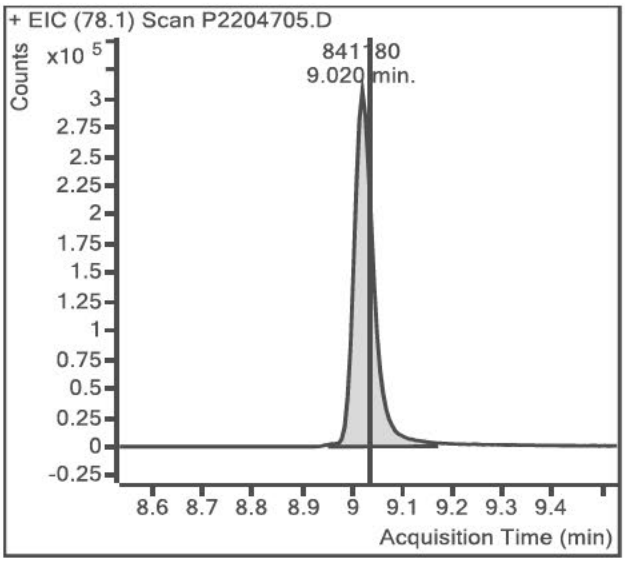
Sample Name : EIMPA-05-S-20221011
Sample Info : B17462
Data File : P2204705.D
Acquisition Date : 2022-11-01 11:40:45
Instrument Method : M325B-TD
Matrix : AIR

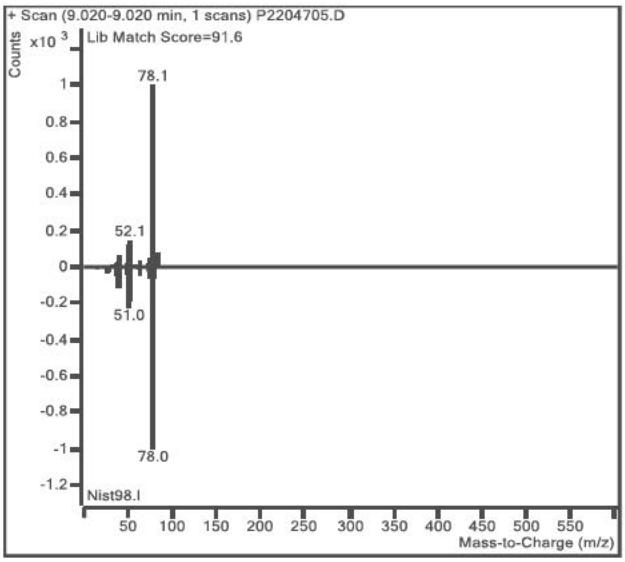


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.97	899,922	
Benzene	9.03	841,180	

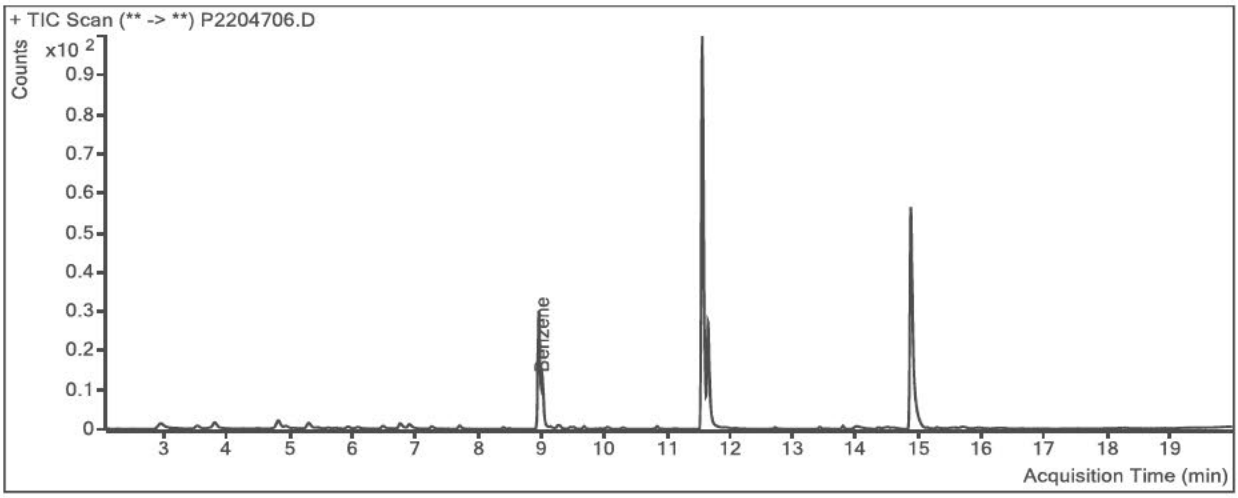
(m)=Manual Integration

Benzene





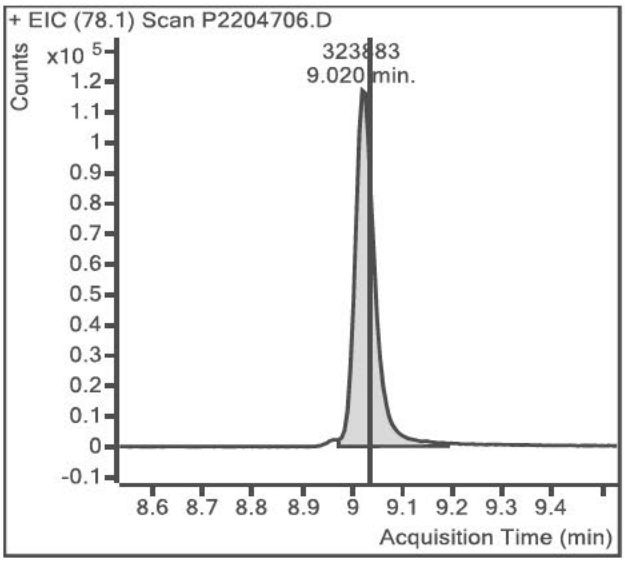
Sample Name	: EIMPA-06-S-20221011
Sample Info	: B48659
Data File	: P2204706.D
Acquisition Date	: 2022-11-01 12:18:02
Instrument Method	: M325B-TD
Matrix	: AIR

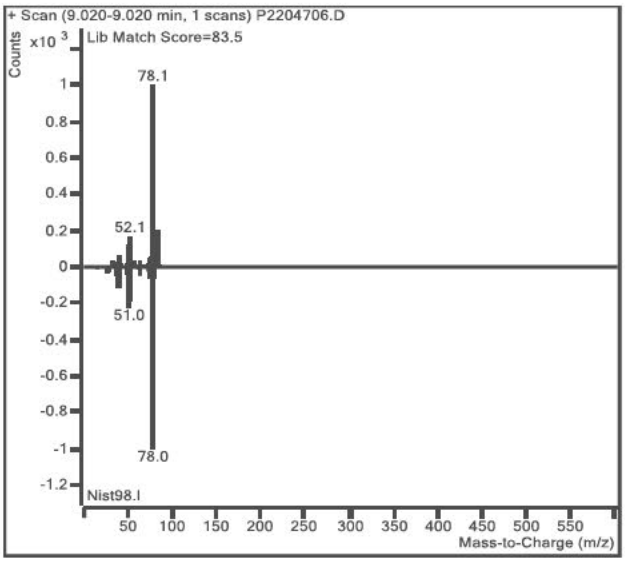


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.97	878,031	
Benzene	9.03	323,883	

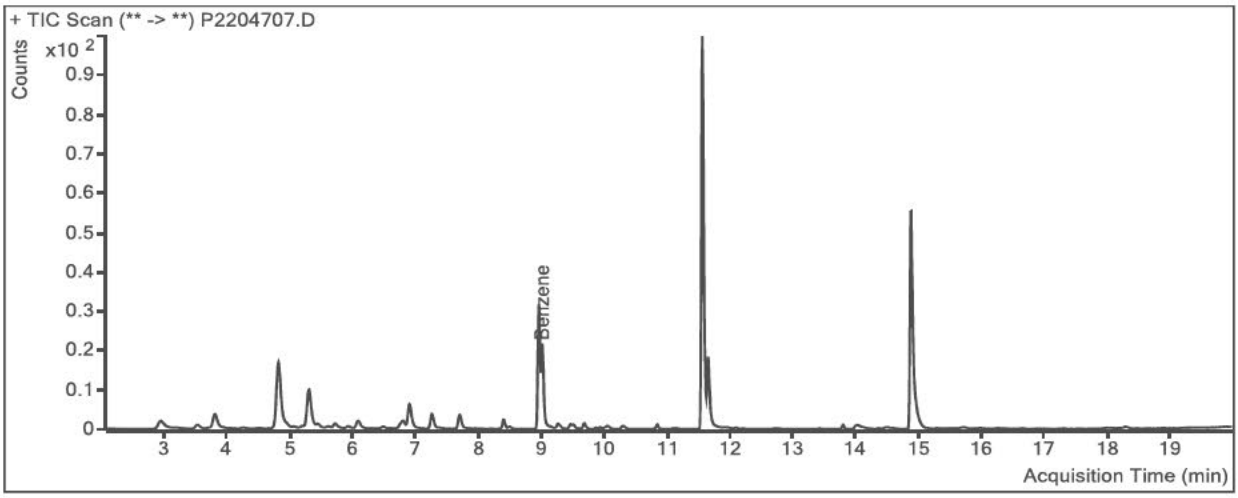
(m)=Manual Integration

Benzene





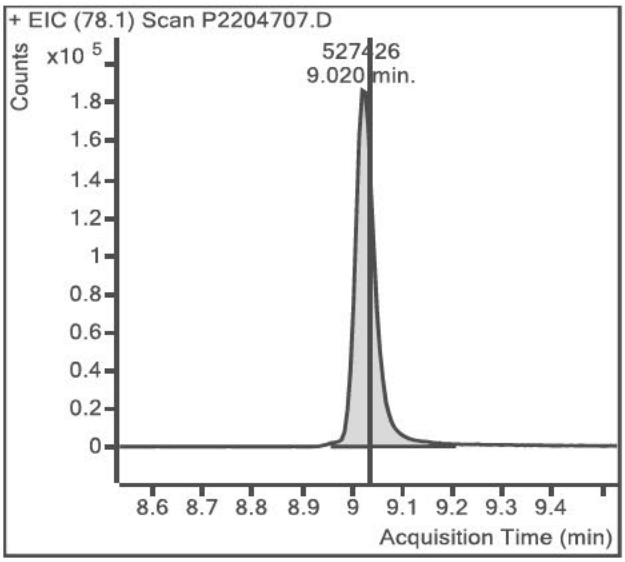
Sample Name : EIMPA-07-S-20221011
Sample Info : B38619
Data File : P2204707.D
Acquisition Date : 2022-11-01 12:55:12
Instrument Method : M325B-TD
Matrix : AIR

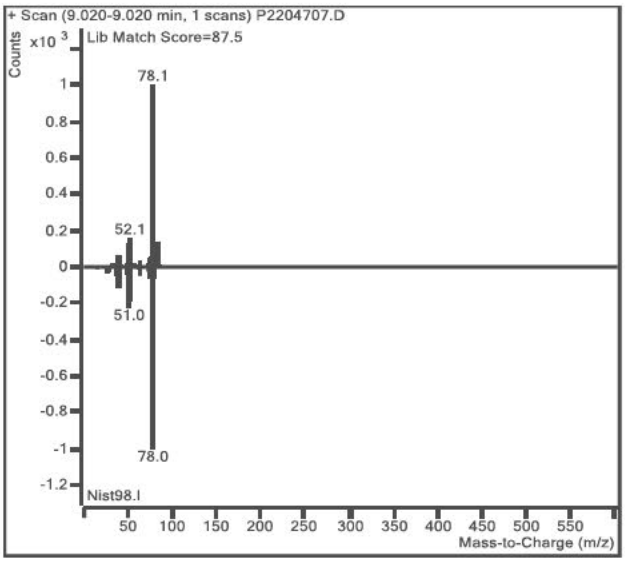


Compound	Retention Time	Response	Flags
benzene-d6 (IS)	8.97	884,550	
Benzene	9.03	527,426	

(m)=Manual Integration

Benzene





Calibration Summary Reports

ENTHALPY
ANALYTICAL

Enthalpy Analytical

Company: Environmental Integrity

Job No.: 2022DE122-1 EPA Method 325B Analysis

Client No.: Mon Valley Benzene Monitoring Project Site: Mon Valley, PA

Benzene Calibration and Blanks

Sample Code	Type	RRF	ICAL RRF	Last CCV RRF	RRF Change	ISTD Change vs ICal	ISTD Change vs Concal	Pass/ Fail	Flags
M325B CCV 5	Cal	0.861	0.890	0.861	-3.3%	2.3%		Pass	
M325B CCV 5	Check	0.827	0.890	0.861	-7.2%		3.5%	Pass	
2022DE122 Method Blank-1	Blank		0.890	0.861			3.0%	Pass	ND
M325B CCV 5	Check	0.852	0.890	0.861	-4.3%		1.2%	Pass	

Enthalpy Analytical

Company: Environmental Integrity

Job No.: 2022DE122-1 EPA Method 325B Analysis

Client No.: Mon Valley Benzene Monitoring Project Site: Mon Valley, PA

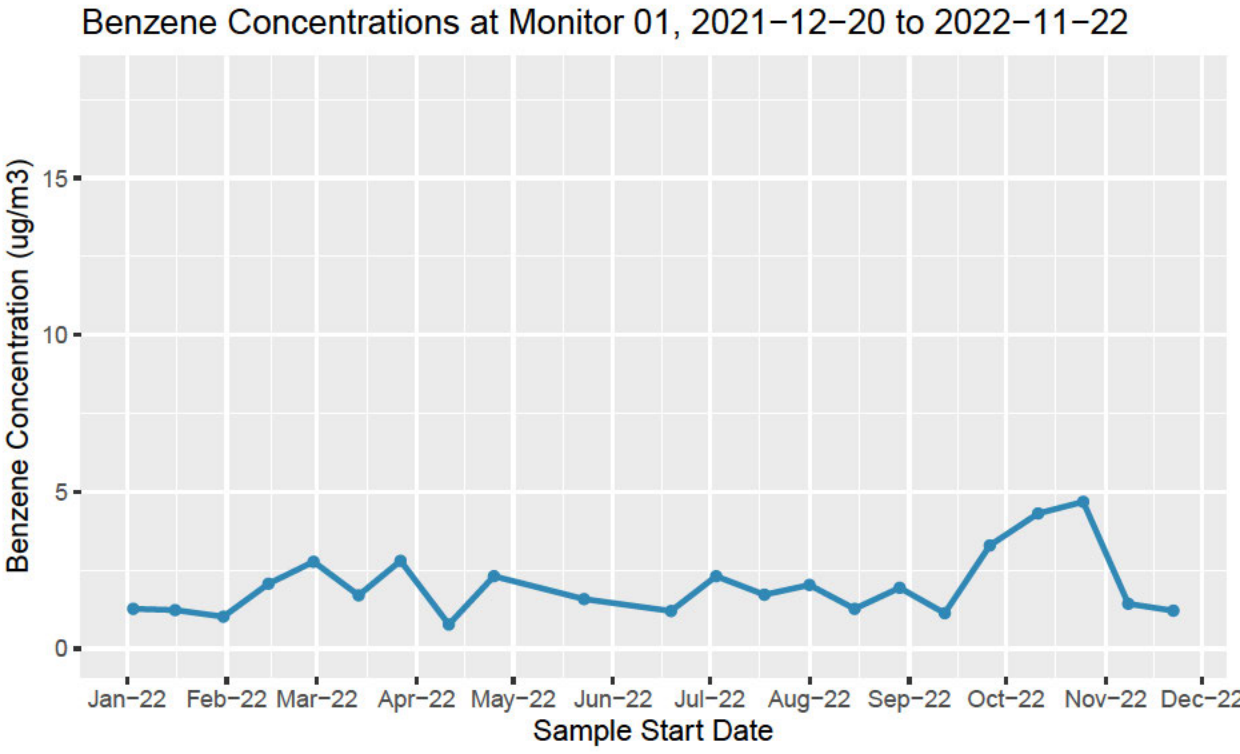
Calibration Curves

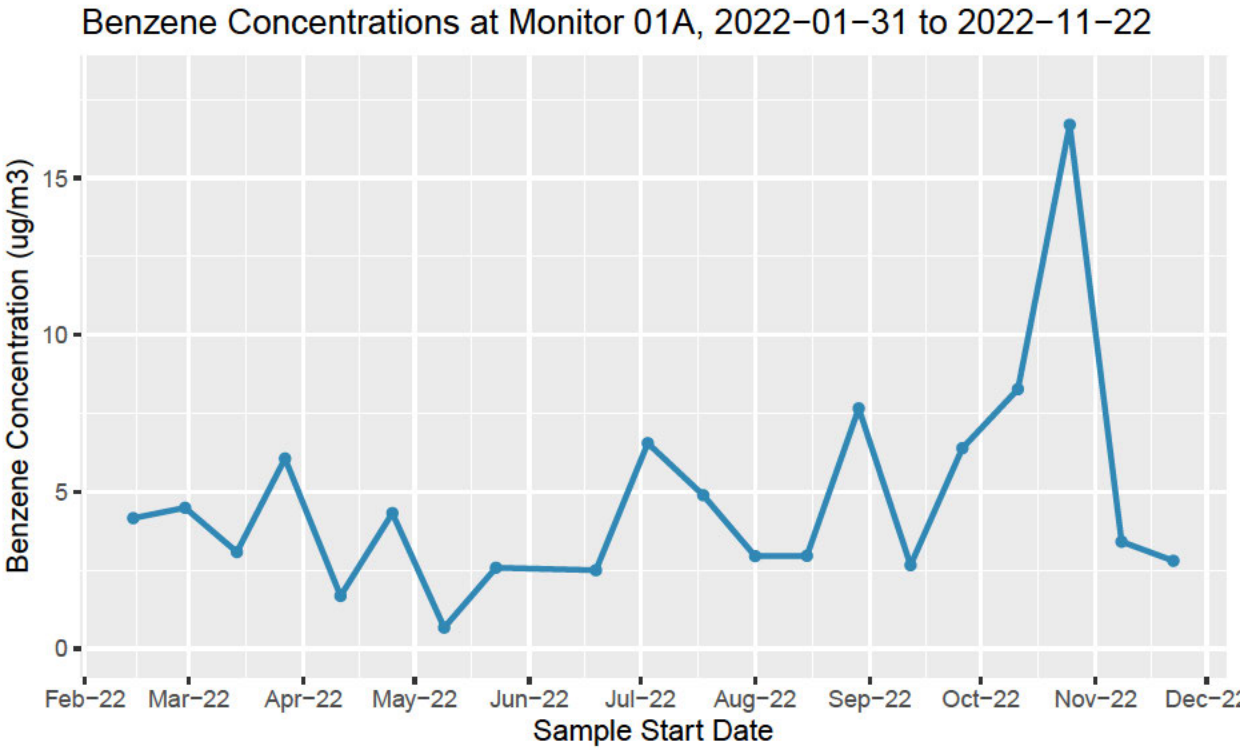
Method	Compound	Level	Cal File	Amount (ng)	Area	ISTD Amt (ng)	ISTD Area	RRF	Dev
P090122A.quantmethod.xml	Benzene	1	P2203424.D	5.34	49374	92.4	855374	1.000	12%
P090122A.quantmethod.xml	Benzene	2	P2203425.D	10.67	89164	92.4	838594	0.921	3.4%
P090122A.quantmethod.xml	Benzene	3	P2203426.D	21.34	172330	92.4	859268	0.869	-2.4%
P090122A.quantmethod.xml	Benzene	4	P2203427.D	42.69	333931	92.4	834820	0.866	-2.7%
P090122A.quantmethod.xml	Benzene	5	P2203428.D	106.72	813732	92.4	825256	0.854	-4.1%
P090122A.quantmethod.xml	Benzene	6	P2203429.D	213.44	1636697	92.4	831655	0.852	-4.3%
P090122A.quantmethod.xml	Benzene	7	P2203430.D	640.31	5072714	92.4	841127	0.871	-2.2%
						Avg:	840870	0.890	
						%RSD:	1.5%	6.0%	
P090122A.quantmethod.xml	Benzene	ICV	P2203431.D	64.21	457430	92.4	796822	0.826	-7.2%

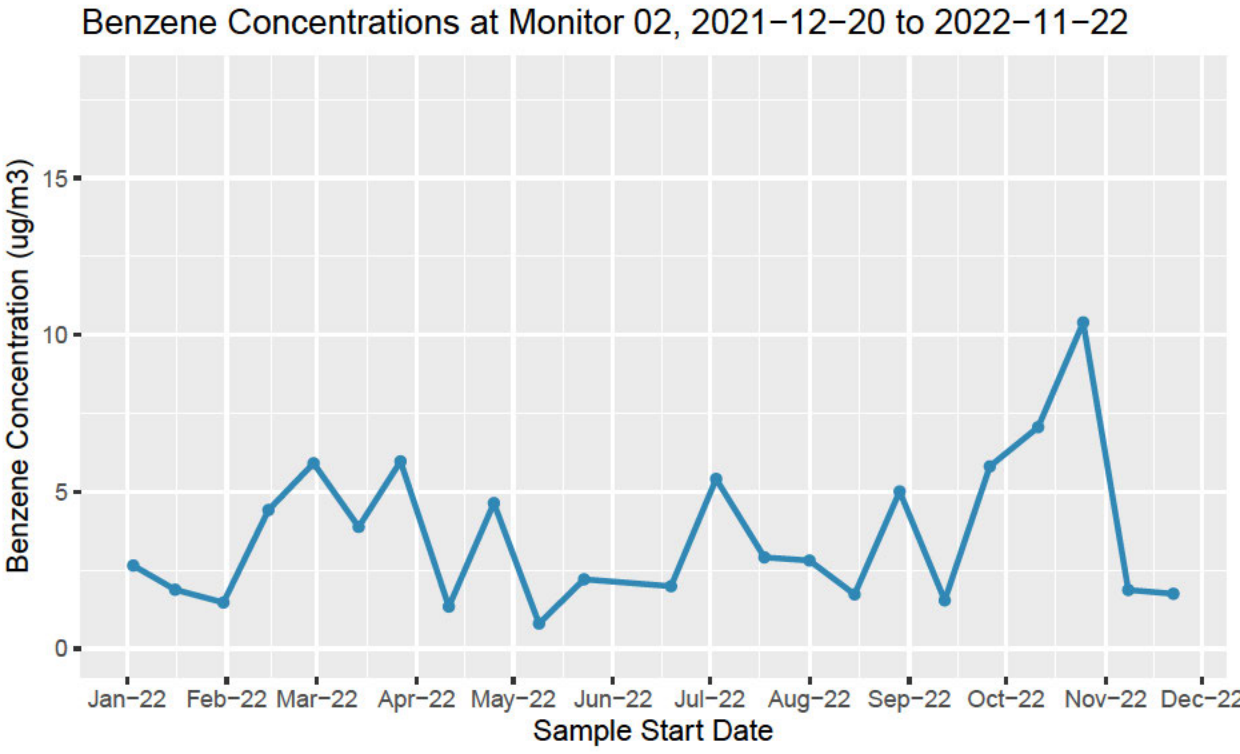
This Is The Last Page Of This Report.

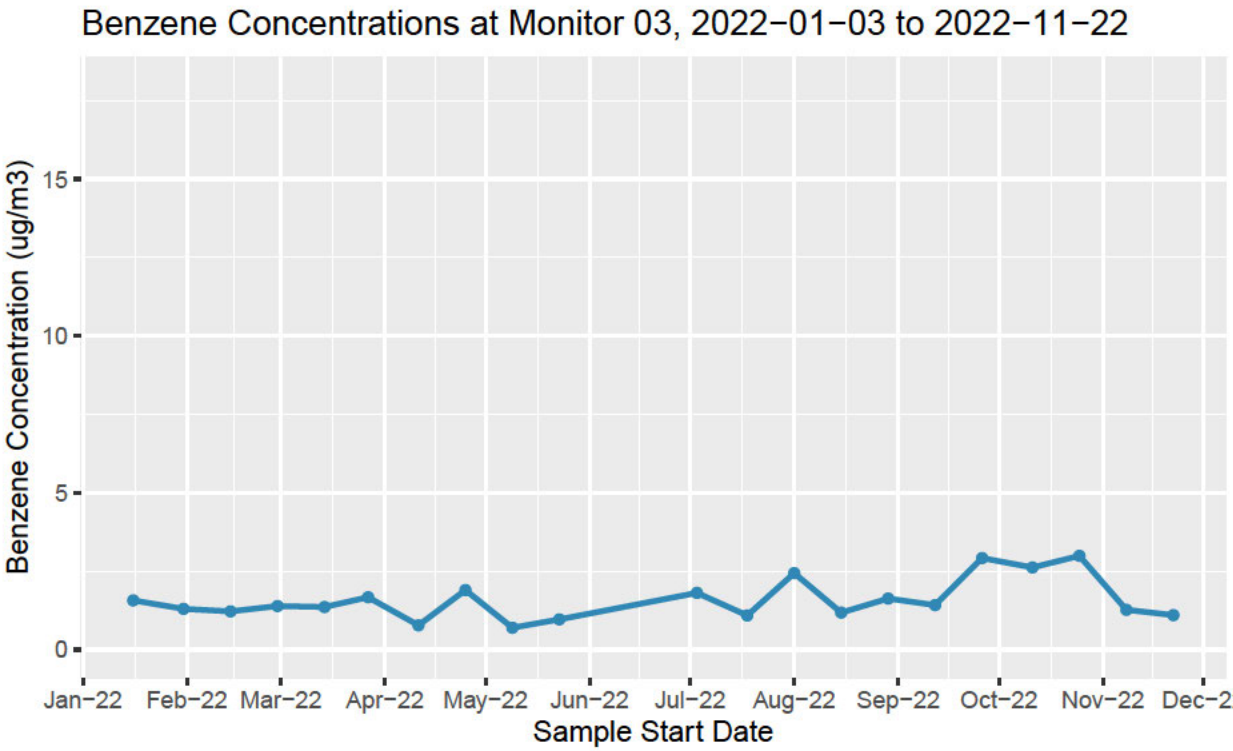
ENTHALPY
ANALYTICAL

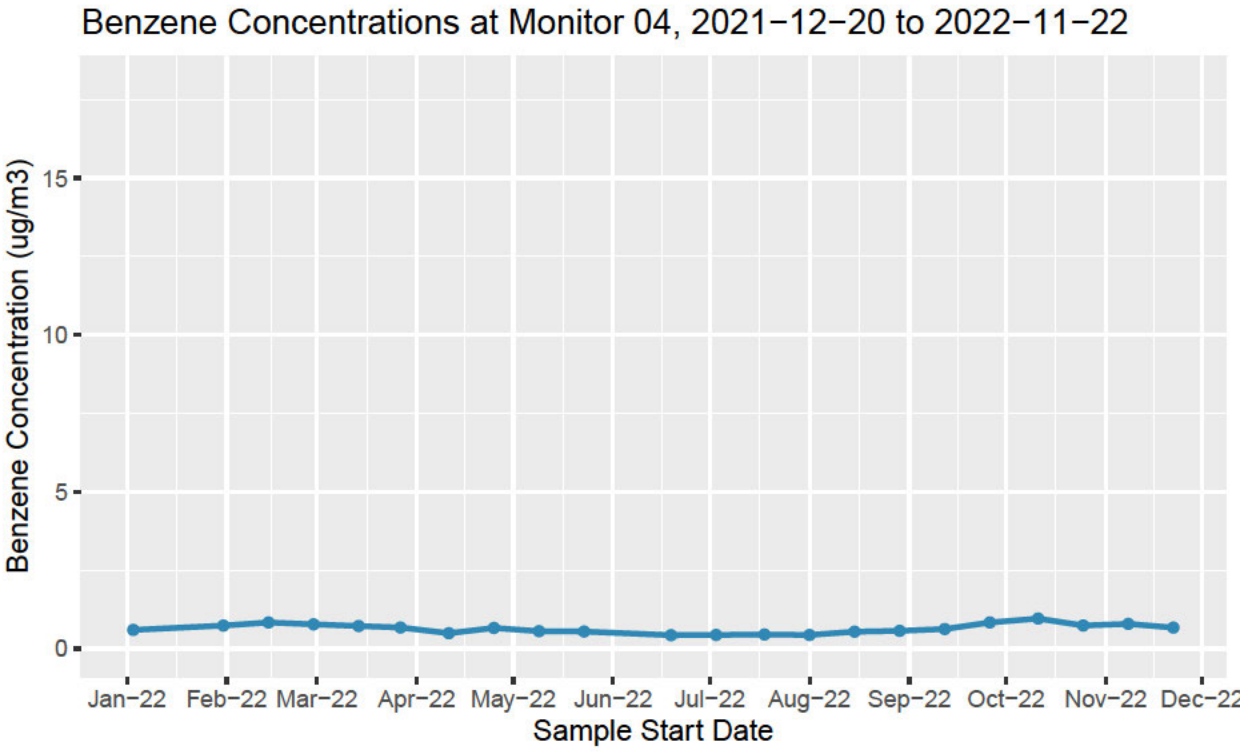
Attachment C

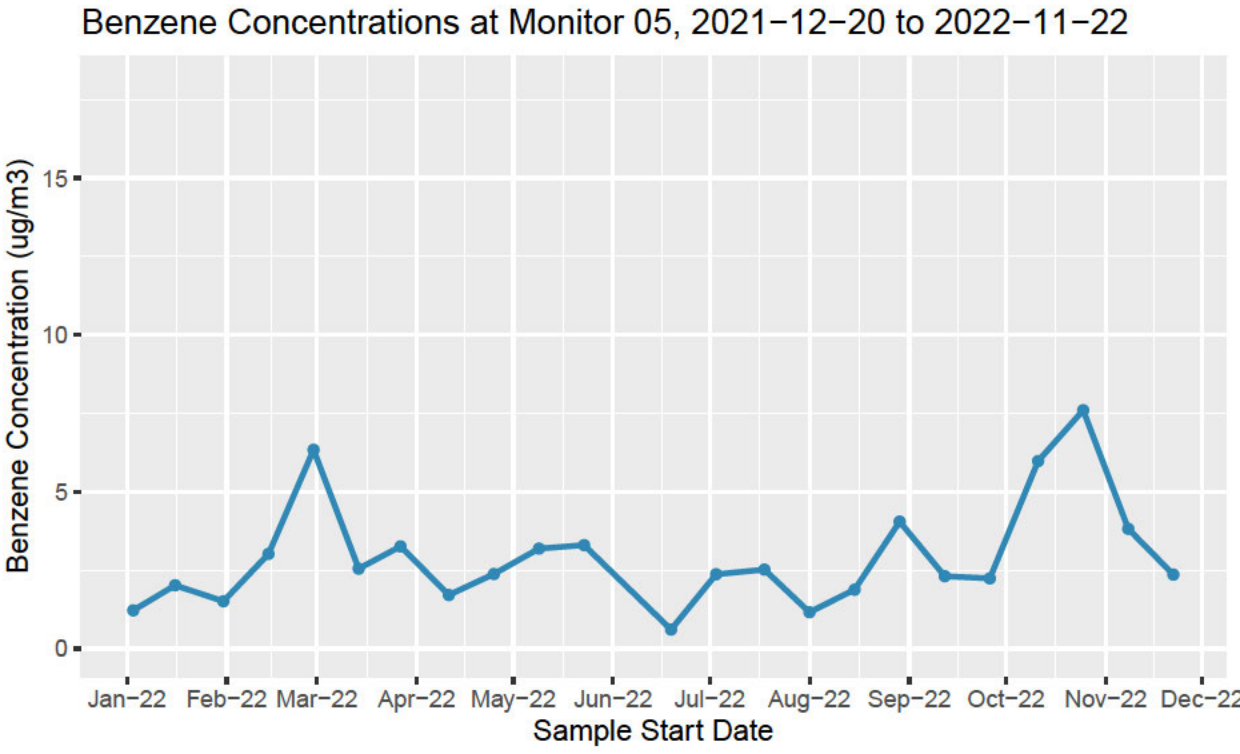

Benzene Concentrations at Monitor 01, 2021−12−20 to 2022−11−22
Benzene Concentration (ug/m3)
15
10
5
0
Jan−22
Feb−22
Mar−22
Apr−22
May−22
Jun−22
Jul−22
Aug−22
Sep−22
Oct−22
Nov−22
Dec−22
Sample Start Date

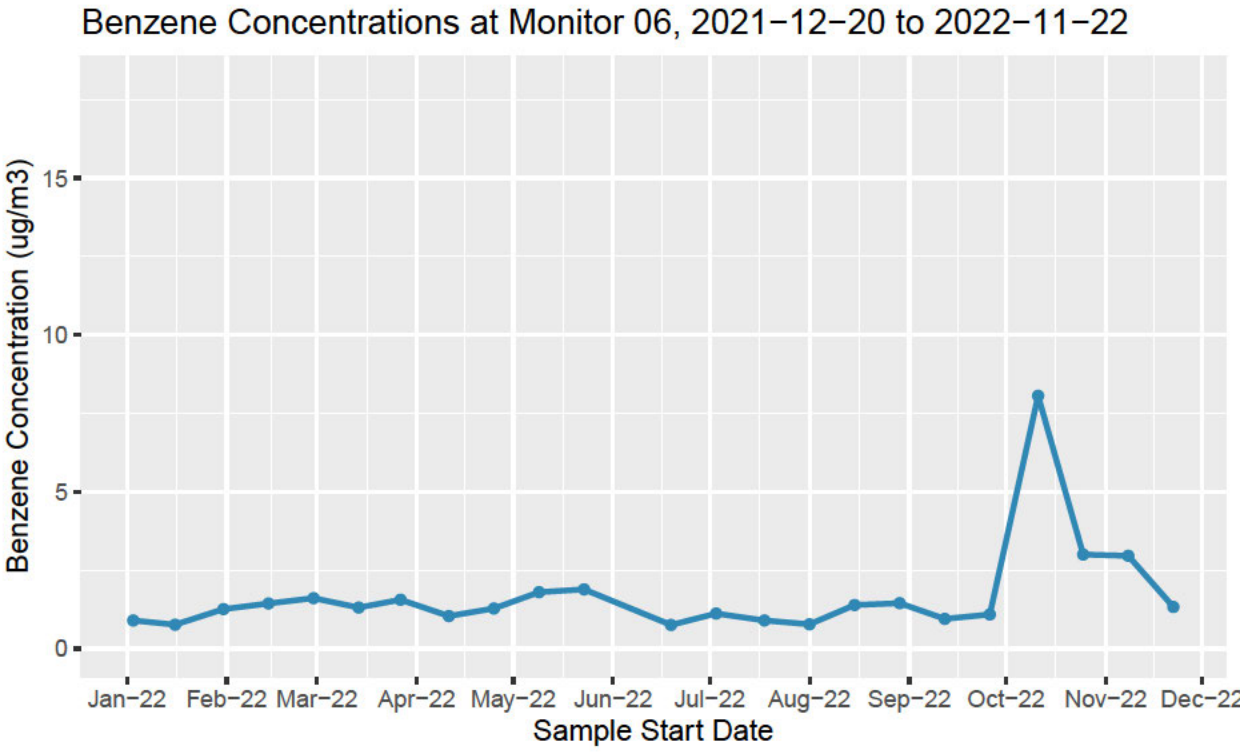

Benzene Concentrations at Monitor 01A, 2022−01−31 to 2022−11−22
Benzene Concentration (ug/m3)
15
10
5
0
Feb−22
Mar−22
Apr−22
May−22
Jun−22
Jul−22
Aug−22
Sep−22
Oct−22
Nov−22
Dec−22
Sample Start Date

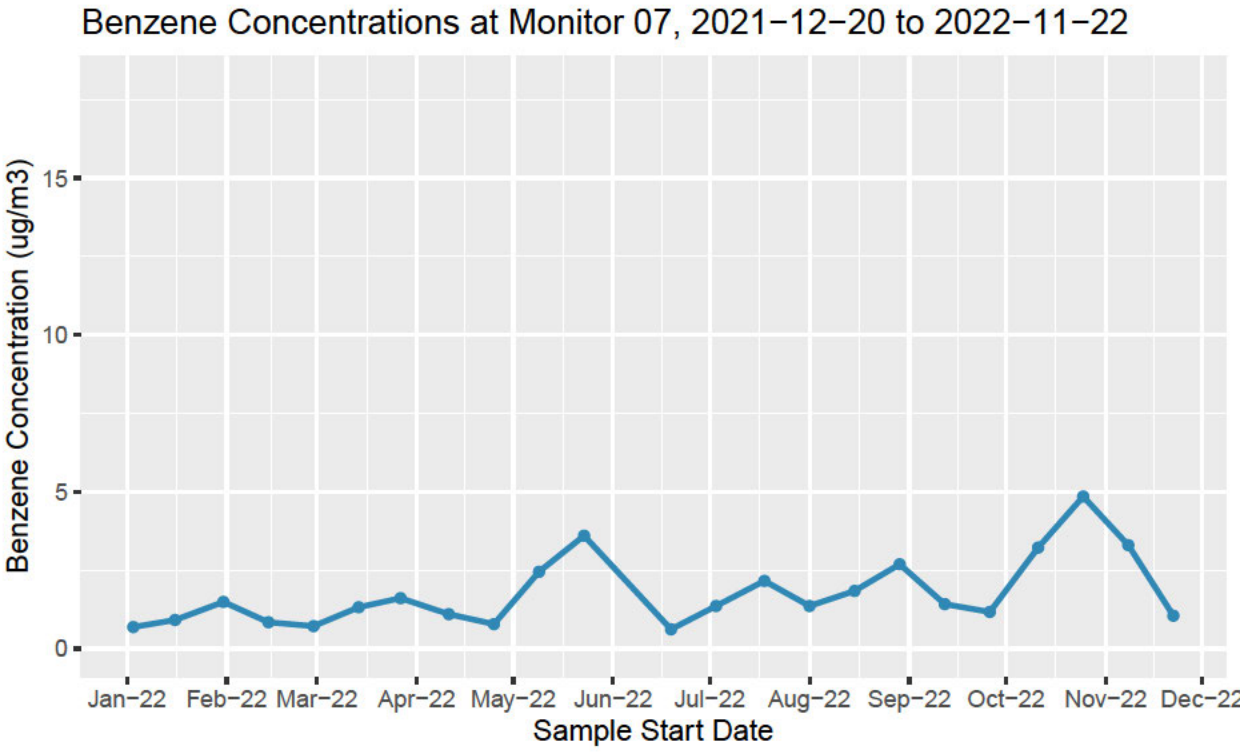

Benzene Concentrations at Monitor 02, 2021−12−20 to 2022−11−22
Benzene Concentration (ug/m3)
15
10
5
0
Jan−22
Feb−22
Mar−22
Apr−22
May−22
Jun−22
Jul−22
Aug−22
Sep−22
Oct−22
Nov−22
Dec−22
Sample Start Date


Benzene Concentrations at Monitor 03, 2022−01−03 to 2022−11−22
Benzene Concentration (ug/m3)
15
10
5
0
Jan−22
Feb−22
Mar−22
Apr−22
May−22
Jun−22
Jul−22
Aug−22
Sep−22
Oct−22
Nov−22
Dec−22
Sample Start Date

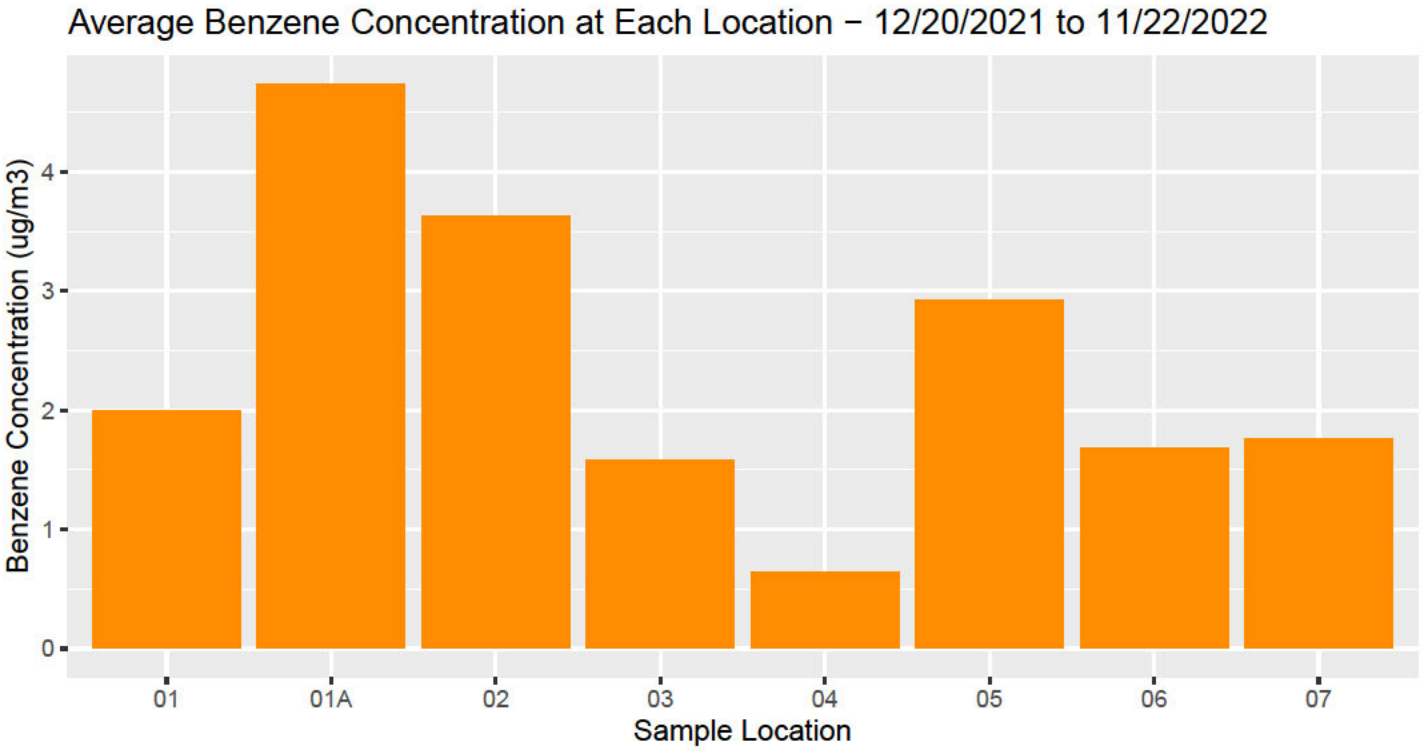

Benzene Concentrations at Monitor 04, 2021−12−20 to 2022−11−22
Benzene Concentration (ug/m3)
15
10
5
0
Jan−22
Feb−22
Mar−22
Apr−22
May−22
Jun−22
Jul−22
Aug−22
Sep−22
Oct−22
Nov−22
Dec−22
Sample Start Date


Benzene Concentrations at Monitor 05, 2021−12−20 to 2022−11−22
Benzene Concentration (ug/m3)
15
10
5
0
Jan−22
Feb−22
Mar−22
Apr−22
May−22
Jun−22
Jul−22
Aug−22
Sep−22
Oct−22
Nov−22
Dec−22
Sample Start Date


Benzene Concentrations at Monitor 06, 2021−12−20 to 2022−11−22
Benzene Concentration (ug/m3)
15
10
5
0
Jan−22
Feb−22
Mar−22
Apr−22
May−22
Jun−22
Jul−22
Aug−22
Sep−22
Oct−22
Nov−22
Dec−22
Sample Start Date


Benzene Concentrations at Monitor 07, 2021−12−20 to 2022−11−22
Benzene Concentration (ug/m3)
15
10
5
0
Jan−22
Feb−22
Mar−22
Apr−22
May−22
Jun−22
Jul−22
Aug−22
Sep−22
Oct−22
Nov−22
Dec−22
Sample Start Date

Attachment D


Average Benzene Concentration at Each Location − 12/20/2021 to 11/22/2022
Benzene Concentration (ug/m3)
0
1
2
3
4
01
01A
02
03
04
05
06
07
Sample Location