



CITY OF SIGNAL HILL

2175 Cherry Avenue • Signal Hill, California 90755-3799

THE CITY OF SIGNAL HILL
WELCOMES YOU TO A SPECIAL
HOUSING AUTHORITY MEETING
November 13, 2025

The City of Signal Hill appreciates your attendance. Citizen interest provides the Authority with valuable information regarding issues of the community. This meeting will begin at 6:00 pm. There is a public comment period at the beginning of the meeting. Any person wishing to comment shall be allotted three minutes per distinct item. Any meeting may be adjourned to a time and place stated in the order of adjournment.

The agenda is posted 72 hours prior to each meeting on the City's website and outside of City Hall. The agenda and related reports are also available for review online at www.cityofsignalhill.org.

To participate:

- In-person Participation: Council Chamber of City Hall, 2175 Cherry Avenue, Signal Hill, California.
- To make a general public comment or comment on a specific agenda item, you may also submit your comment, limited to 250 words or less, to the City Clerk at cityclerk@cityofsignalhill.org not later than 4:00 p.m. on Thursday, November 13, 2025. Written comments will be provided electronically to the Authority and attached to the meeting minutes. Written comments will not be read into the record.

Housing Authority Members receive no compensation.

(1) **CALL TO ORDER – 6:00 P.M.**

(2) **ROLL CALL**

CHAIR JONES
VICE CHAIR HANSEN
MEMBER COPELAND
MEMBER HONEYCUTT
MEMBER WOODS

(3) **PUBLIC BUSINESS FROM THE FLOOR ON ITEMS NOT LISTED ON THE AGENDA
(SPEAKERS WILL BE GIVEN THREE MINUTES FOR EACH DISTINCT ITEM)**

(4) EXECUTIVE DIRECTOR REPORT

- a. PROPOSED AMENDMENT TO THE EXCLUSIVE NEGOTIATION AGREEMENT WITH NATIONAL COMMUNITY RENAISSANCE OF CALIFORNIA (NATIONAL CORE)

Summary:

Staff has negotiated and is presenting revised terms of an Exclusive Negotiation Agreement (ENA) by and between the City, Housing Authority, and National Community Renaissance of California, a California nonprofit public benefit corporation (National CORE). The Orange Bluff ENA expires on November 15, 2025, and supports efforts to develop the Orange Bluff Affordable Housing Projects. The ENA for the Walnut Bluff Project has been satisfied. The Walnut Bluff project is located on a two-acre property at the northwest corner of East Willow Street and Walnut Avenue, consisting of approximately 83 affordable homes for individuals and families earning below 80% of the area median income (AMI). The Orange Bluff Project is located on an 8.6-acre property on the south side of East 28th Street, between Orange Avenue and Gundry Avenue, and consists of approximately 297 affordable homes.

Since the original ENA was negotiated, National CORE has experienced significant impacts from a changing financial environment due to changing funding priorities at the State level. In response, National CORE is pursuing funding through the Affordable Housing and Sustainable Communities (AHSC) program, funded by the Greenhouse Gas Reduction Fund. The AHSC program prioritizes larger, denser projects that promote greenhouse gas reductions through sustainable design, location efficiency, and transit connectivity. To strengthen its competitiveness for AHSC funding, National CORE is now evaluating a scattered-sites approach, which could include both the Orange Bluff and Walnut Bluff sites and a third alternative public or privately owned site.

Staff recommends the City Council and Housing Authority Board approve the proposed ENA between the City of Signal Hill, the Signal Hill Housing Authority, and National CORE substantially in the form presented, for the development of the Orange Bluff Workforce Housing project and the 28th & Walnut or Alternative Site. Staff further recommends extending the ENA deadline to September 15, 2027 for the Orange Bluff Project and July 15, 2026 for the 28th & Walnut or Alternative Site. In addition, staff has identified a need to amend the ENA to include language that allows for the identification and consideration of an alternative site, either publicly or privately owned, should the originally proposed site not be available or feasible for development.

Strategic Plan Goal(s):

- Goal No. 1 Financial Stability: Ensure the City's long-term financial stability and resilience.

Goal No. 3 Economic Development: Improve the local economy, support local businesses, and create a vibrant downtown core.

Goal No. 4 Infrastructure: Maintain and improve the City's physical infrastructure, water system, and recreational spaces.

Recommendation(s):

Staff recommends the City Council and Housing Authority Board approve the proposed amendments to the Exclusive Negotiation Agreement (ENA) between the City of Signal Hill, the Signal Hill Housing Authority, and National Community Renaissance (National CORE) substantially in the form presented for the development of two proposed workforce housing projects known as Orange Bluff and an alternative potential site as follows:

1. Approve the revised ENA between the City of Signal Hill, the Signal Hill Housing Authority, and National CORE, extending the ENA deadlines to September 15, 2027 for the Orange Bluff Project and July 15, 2026 for 28th & Walnut or Alternative Site.
2. Authorize the City Manager to effectuate all documents related to this action.

(5) HOUSING AUTHORITY AGENDA--NEW BUSINESS

MEMBER WOODS
MEMBER HONEYCUTT
MEMBER COPELAND
VICE CHAIR HANSEN
CHAIR JONES

(6) ADJOURNMENT

The next regular meeting of the Signal Hill Housing Authority will be held on Tuesday, January 13, 2026, at 7:00 p.m., in the Community Room of the Signal Hill Public Library, 1800 E. Hill Street, Signal Hill, CA 90755. Special meetings will be held as needed to conduct Authority business.

PUBLIC PARTICIPATION

If you need special assistance beyond what is normally provided to participate in City meetings, the City will attempt to accommodate you in every reasonable manner. Please call the City Clerk's office at (562) 989-7305 at least 48 hours prior to the meeting to inform us of your particular needs and to determine if accommodation is feasible.



STAFF REPORT

11/13/2025

AGENDA ITEM

**TO: HONORABLE MAYOR
AND MEMBERS OF THE CITY COUNCIL**

**HONORABLE CHAIR
AND MEMBERS OF THE HOUSING AUTHORITY**

**FROM: CARLO TOMAINO
CITY MANAGER**

**BY: ALFA LOPEZ
ASSISTANT TO THE CITY MANAGER/
ECONOMIC DEVELOPMENT MANAGER**

**SUBJECT: PROPOSED AMENDMENT TO THE EXCLUSIVE NEGOTIATION AGREEMENT
WITH NATIONAL COMMUNITY RENAISSANCE OF CALIFORNIA (NATIONAL
CORE)**

Summary:

Staff has negotiated and is presenting revised terms of an Exclusive Negotiation Agreement (ENA) by and between the City, Housing Authority, and National Community Renaissance of California, a California nonprofit public benefit corporation (National CORE). The Orange Bluff ENA expires on November 15, 2025, and supports efforts to develop the Orange Bluff Affordable Housing Projects. The ENA for the Walnut Bluff Project has been satisfied. The Walnut Bluff project is located on a two-acre property at the northwest corner of East Willow Street and Walnut Avenue, consisting of approximately 83 affordable homes for individuals and families earning below 80% of the area median income (AMI). The Orange Bluff Project is located on an 8.6-acre property on the south side of East 28th Street, between Orange Avenue and Gundry Avenue, and consists of approximately 297 affordable homes.

Since the original ENA was negotiated, National CORE has experienced significant impacts from a changing financial environment due to changing funding priorities at the State level. In response, National CORE is pursuing funding through the Affordable Housing and Sustainable Communities (AHSC) program, funded by the Greenhouse Gas Reduction Fund. The AHSC program prioritizes larger, denser projects that promote greenhouse gas reductions through sustainable design, location efficiency, and transit connectivity. To strengthen its competitiveness for AHSC funding, National CORE is now evaluating a scattered-sites approach, which could include both the Orange Bluff and Walnut Bluff sites and a third alternative public or privately owned site.

Staff recommends the City Council and Housing Authority Board approve the proposed ENA between the City of Signal Hill, the Signal Hill Housing Authority, and National CORE substantially in the form presented, for the development of the Orange Bluff Workforce Housing project and the 28th & Walnut or Alternative Site. Staff further recommends extending the ENA deadline to September 15, 2027 for the Orange Bluff Project and July 15, 2026 for the 28th & Walnut or Alternative Site. In addition, staff has identified a need to amend the ENA to include language that allows for the identification and consideration of an alternative site, either publicly or privately owned, should the originally proposed site not be available or feasible for development.

Strategic Plan Goal(s):

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Goal No. 4 Infrastructure: Maintain and improve the City's physical infrastructure, water system, and recreational spaces.

Recommendation(s):

Staff recommends the City Council and Housing Authority Board approve the proposed amendments to the Exclusive Negotiation Agreement (ENA) between the City of Signal Hill, the Signal Hill Housing Authority, and National Community Renaissance (National CORE) substantially in the form presented for the development of two proposed workforce housing projects known as Orange Bluff and an alternative potential site as follows:

1. Approve the revised ENA between the City of Signal Hill, the Signal Hill Housing Authority, and National CORE, extending the ENA deadlines to September 15, 2027 for the Orange Bluff Project and July 15, 2026 for 28th & Walnut or Alternative Site.
2. Authorize the City Manager to effectuate all documents related to this action.

Fiscal Impact:

There is no fiscal impact associated with amending the Exclusive Negotiation Agreement with National CORE.

Background:

The City's Certified Housing Element identifies two sites owned by Signal Hill Petroleum (SHP) for future development of workforce housing. Orange Bluff is an 8.6-acre property located on the south side of East 28th Street between Orange Avenue and Gundry Avenue. Walnut Bluff is a 2-acre property located at the northwest corner of East Willow Street and Walnut Avenue. The City Council entitled both sites to accommodate 85 units of workforce housing on Walnut Bluff and 297 units on Orange Bluff. Developing these sites helps the City provide new affordable housing opportunities and meet its Regional Housing Needs Assessment (RHNA) allocation for the current Housing Element

cycle, totaling 517 units.

The City Council and Housing Authority Board approved the selection of National CORE through a Notice of Funding Availability. In April 2024, the City Council authorized the City Manager to execute an ENA with National CORE. The ENA committed available and future City and Housing Authority funding and set performance milestones aligned with the City's desired development timeline. Both workforce housing sites contain active and abandoned oil wells. As both the property owner and development partner, Signal Hill Petroleum has provided technical expertise throughout this process.

During site evaluations, National CORE and SHP determined the Orange Bluff property presents significantly more complex and costly remediation challenges than initially anticipated. As a result, National CORE requires additional time to complete its due diligence and assess the financial feasibility of the Orange Bluff site as an income-restricted residential project. Due to the expected delays with the Orange Bluff project, the City Manager, under his authority, revised the ENA, separating it into two schedules to allow both projects to move forward. The ENA outlines a specific timeframe for National CORE to meet its performance requirements. National CORE has made significant progress in its due diligence for the Walnut Bluff site and negotiated site control with Signal Hill Petroleum, recently executing a Letter of Intent for site acquisition.

The City Council and Housing Authority subsequently approved an Affordable Housing Agreement with National CORE for the development of the Walnut Bluff property. The Walnut Bluff Workforce Housing Project, including the acquisition, development, and remediation costs, totals \$51,515,329. The City's loan, in the amount of \$6,550,000, funds the financing gap for this project. National CORE has continued implementing the performance schedule outlined in the Affordable Housing Agreement and is securing additional sources of funding that comprise the capital stack for this project.

Analysis:

Since executing the ENA, there have been challenges associated with the two project sites outside the control of the City, National CORE, and SHP. First, due to the State budget's multibillion-dollar operating deficit, the State Legislature and Governor temporarily suspended funding for programs such as the Infill Infrastructure Grant (IIG) and other affordable housing initiatives. National CORE identified the IIG program, in particular, as a possible source of funding for infrastructure improvements; National CORE continues advocating for the reinstatement of these funds. As further discussed below, the State has also reprioritized the use existing affordable housing funding for permanent supportive housing. The current funding landscape means that there is a significantly diminished pool of State money available for affordable housing developers which makes funding applications much more competitive.

Walnut Bluff Workforce Housing Project

National CORE successfully negotiated with SHP to acquire the property; the two parties are now finalizing the terms and conditions of a Purchase and Sale Agreement. In order to make the project financing feasible for this site, SHP discounted the value of the property by 50%, which enabled the two parties to advance negotiations. National CORE also made significant progress designing the site layout, which is comprised of 86 units, and a Boys and Girls Club. The total cost of the project, including acquisition, development, and remediation, is \$51,515,329. The City Council previously authorized a loan totaling \$6,550,000 to close the financing gap.



National CORE also completed its site analysis, which included further study of environmental conditions due to a recent change in State law regarding oil operations and health protection zones. National CORE and SHP prepared a supplemental Human Health Risk Assessment (HHRA) to determine that the Walnut Bluff safe is suitable for residential development. SHP and National CORE were very diligent in ensuring the oil activity with proximity to the proposed Walnut Bluff development would not create health risks for future residents. The HHRA concluded that the proximity to previous and current oil operations does not pose a health risk to future residents. Staff has attached the HHRA for the City Council's information (Attachment A).

Orange Bluff Workforce Housing Project

The Orange Bluff property is approximately 8.6 acres, which is generally much larger than the average affordable housing site which is typically two to three acres. The property's size makes site acquisition and development much more costly, even at a discounted price, for an affordable housing developer. The Orange Bluff property also contains oil wells and requires soil remediation, which will add to its development cost. In summary, while the Orange Bluff site can be developed as a future housing site, developing the entire property as an affordable housing site is cost prohibitive and the property is better suited as a potential market rate development with two acres set aside for an affordable multifamily project. This potential change would increase the opportunities to develop the property by relying more on private equity investment than on competitive and limited State funding opportunities. National CORE and SHP would jointly pursue market rate development partners for this property and report back to the City Council.

Affordable Housing and Sustainable Communities Program

As noted previously, one of the most significant challenges to developing the two workforce housing sites is that the State of California has substantially reduced funding availability for affordable housing projects. In other instances, the State has reprioritized its available affordable housing funding for permanent supportive housing projects that supports that State's initiatives to reduce homeless population. National CORE identified an alternative source of funding called the AHSC program, that could potentially fill the funding gap left by the Infill Infrastructure Grant program.

The AHSC Program links the development of affordable housing with investments in sustainable transportation infrastructure to address climate change and housing affordability simultaneously. Funded by California's Cap-and-Trade program through California Climate Investments, the AHSC program is administered jointly by the Strategic Growth Council and the Department of Housing and Community Development. The goal of the AHSC program is to reduce greenhouse gas emissions by decreasing vehicle miles traveled, also known as VMT, by integrating communities within proximity to jobs and essential services. AHSC also provides grants and loans for affordable housing, the development of new bike lanes, sidewalks, transit stops, and urban greening efforts.

Since 2015, the AHSC program has invested more than \$4 billion, funding over 200 projects statewide. This investment has resulted in the creation of over 20,000 new affordable homes and is projected to avoid an estimated 5.7 million metric tons of GHG emissions. Over half of these investments have directly benefited disadvantaged communities, promoted environmental equity and provided significant financial relief to households through reduced transportation and housing costs. The program requires collaboration between housing developers, local governments, and transit agencies, representing a comprehensive, multi-sector approach to building healthier, more sustainable, and equitable communities across California.

Proposed Approach using AHSC Funding

To advance development of the City's workforce housing projects, National CORE proposes leveraging the AHSC funding source and applying for funding based on the scattered site model. As noted, the Orange Bluff site requires a significantly higher capital investment compared to available State funding; therefore, the Orange Bluff site is not likely suitable as part of the AHSC funding application. The proposed approach would require National CORE to apply for funding for the Walnut Bluff property and an alternative site discussed below, both of which National CORE believes are financially feasible based on current funding availability and market conditions.

Potential Alternative Sites:

As discussed above, there have been challenges associated with the availability of State funding for workforce housing projects. The primary purpose of the proposed item this evening is to recommend extending the ENA to allow National CORE time to pursue alternative approaches to fulfilling its obligations to the City. As a precursor to this discussion, National CORE identified one alternative site for discussion purposes that could be a potential replacement for the Orange Bluff property in the near-term and is committed to exploring additional properties. The following section of this report briefly summarizes a potential candidate site and other options; staff is not requesting that the City Council take final action related to the properties below.

28th Street and Walnut Avenue Property

The 28th & Walnut site is located on a 1.3-acre property at the southwest corner of East 28th Street and Walnut Avenue in Signal Hill. The project site could support a single 3 to 4-story residential building with approximately 60 units and a leasing and property management office, a 1,000 square foot community room, and a private office for support services. A surface parking lot could potentially accommodate approximately 64 stalls. The potential project site could include a total of 60 affordable apartment homes for individuals and families earning below 80% of the AMI with a mix of one, two, and three-bedroom units. One (1) three-bedroom unit will be reserved for an onsite property manager. Onsite amenities will include a children's playground, shaded BBQ, outdoor lounge and dining areas, and multiuse lawn. The Hope through Housing Foundation would also offer onsite programs and services, providing residents with the resources and support they need to thrive.

Alternative Sites:

National CORE is requesting time to conduct additional due diligence and would be required to submit entitlement applications to request a zone change if required, for an alternative site. \Staff has included the 28th and Walnut property in the proposed updated ENA as an option for the City Council's consideration. However, there may be additional privately owned sites that could be suitable for development, potentially in conjunction with a market-rate development. Staff will work with National CORE to identify additional potential sites for feasibility and will return to the City Council with an amendment to the ENA for another possible site once it has been identified. Staff's review will consider currently available public and privately owned properties as possible options for this alternative site.

Amendments to the Exclusive Negotiation Agreement

The proposed revised ENA includes several key updates to ensure that the City, Housing Authority, and National CORE can continue moving forward with the development of the Walnut Bluff and Orange Bluff affordable housing projects despite changes in the broader financial environment (Attachment B). The revisions are intended to preserve the City's ability to facilitate meaningful affordable housing opportunities and to maintain flexibility as project conditions evolve.

The most significant change is the addition of language providing flexibility for National CORE to explore the option of developing a third site along with the Orange Bluff Project. This modification allows the City and National CORE to identify and consider other publicly or privately owned properties should the originally proposed site become unavailable or infeasible for development. The inclusion of this provision ensures the ENA remains viable and adaptable, allowing the City and National CORE to respond to changing site conditions and funding opportunities.

In addition, the ENA revisions acknowledge the shifts in the affordable housing financing landscape that have affected National CORE's ability to secure certain previously anticipated funding sources. These external changes reflect the broader economic and funding challenges currently impacting affordable housing development throughout the region. The updated ENA accommodates these challenges by providing flexibility in the project's timeline and negotiation period, allowing additional time for funding applications, feasibility analysis, and site evaluation.

The ENA has also been updated to reflect National CORE's pursuit of funding through the State's AHSC program. This program, supported by the Greenhouse Gas Reduction Fund, favors larger,

denser projects that promote sustainability and greenhouse gas reduction through transit access, active transportation, and energy efficiency. The revised ENA supports National CORE's exploration of a scattered-sites approach, which could enhance the competitiveness of the Orange Bluff Project for AHSC funding and align with state sustainability goals.

Overall, the proposed updates to the ENA strengthen the City's partnership with National CORE, provide the flexibility needed to adapt to evolving financial and site conditions, and reaffirm the City's ongoing commitment to expanding affordable housing opportunities within the community.

Recommendation

Staff recommends that the City Council and the City of Signal Hill Housing Authority amend the Exclusive Negotiation Agreement with National CORE to accommodate the proposed inclusion of language to allow for the consideration of potential alternative sites and extend the development timeframes for the Orange Bluff project.

The recommended action would extend the ENA deadlines to September 15, 2027 for the Orange Bluff Project and July 15, 2026 for the 28th & Walnut or Alternative Site project, adding a potential third workforce housing site to the schedule and result in the potential of an additional sixty (60) units of housing. These additional units would provide much-needed housing opportunities for local residents and families, supporting the community's goal of increasing access to safe, affordable workforce housing.

Reviewed for Fiscal Impact:

Siamlu Cox
Administrative Services Officer/Finance Director

Attachments:

- A. Human Health Risk Assessment: Walnut Bluff Development
- B. National CORE Exclusive Negotiation Agreement (ENA)
- C. Revised ENA

June 23, 2025

via email

Ms. Colleen T. Doan
Community Development Manager
City of Signal Hill
2175 Cherry Avenue
Signal Hill, California 90755

**RE: Memorandum – Study of Human Health Risks Due to Outdoor Air Exposure at Proposed Walnut Bluff Development, City of Signal Hill, California 90755, dated April 16, 2025
prepared by Catalyst Environmental Solutions**

Dear Ms. Doan:

The Study of Human Health Risks Due to Outdoor Air Exposure at Proposed Walnut Bluff Development, City of Signal Hill, California 90755, dated April 16, 2025, prepared by Catalyst Environmental Solutions (Catalyst) was received and reviewed on April 16, 2025.

Catalyst estimated cancer risk due to exposure to benzene only and all petroleum-related chemicals of potential concern (COPCs) measured during the month of October 2024 onsite in outdoor air using acceptable regulatory agency guidance.

Catalyst excluded the benzene concentration of 3.2 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) detected in October 2024 at onsite location WB05 and used Dixon's Outlier Test to statistically demonstrate this detected concentration was an outlier. Catalyst also performed additional air sampling during December 2024 at four locations and recorded detected concentrations of benzene at $1.7 \mu\text{g}/\text{m}^3$, $1.7 \mu\text{g}/\text{m}^3$, $1.7 \mu\text{g}/\text{m}^3$ and $1.9 \mu\text{g}/\text{m}^3$, all greater than the concentrations of benzene detected in October. Catalyst did not include these five detected concentrations of benzene in their risk estimates.

Mearns Consulting LLC (Mearns) was able to replicate Catalysts' risk estimates. Mearns also estimated cancer risk for benzene only and all petroleum-related COPCs including the five detected concentrations of benzene: $3.2 \mu\text{g}/\text{m}^3$, $1.7 \mu\text{g}/\text{m}^3$, $1.7 \mu\text{g}/\text{m}^3$, $1.7 \mu\text{g}/\text{m}^3$ and $1.9 \mu\text{g}/\text{m}^3$ omitted by Catalyst. The results are presented below.

Benzene Cancer Risk Calculations

Scenario	Benzene Cancer Risk	All Petroleum-Related COPCs Cancer Risk
MATES V – Regional All Data	1.1×10^{-5}	1.0×10^{-5}
Catalyst Walnut Bluff Offsite Samples	1.0×10^{-5}	1.1×10^{-5}
Catalyst Walnut Bluff Onsite Samples	8.6×10^{-6}	1.0×10^{-5}
Walnut Bluff Onsite Samples including WB05, and 4 samples collected in December 2024	1.47×10^{-5}	1.6×10^{-5}

The Mearns calculated risk estimate 1.47×10^{-5} for benzene and 1.6×10^{-5} for all petroleum-related COPCs includes the five data points for benzene ($3.2 \mu\text{g}/\text{m}^3$, $1.7 \mu\text{g}/\text{m}^3$, $1.7 \mu\text{g}/\text{m}^3$, $1.7 \mu\text{g}/\text{m}^3$ and $1.9 \mu\text{g}/\text{m}^3$) omitted by Catalyst, is greater than the risk estimates calculated by Catalyst, is within the regulatory agency acceptable risk range of 1×10^{-4} to 1×10^{-6} and less than the SCAQMD Air Toxics Hotspots threshold of 1×10^{-4} . Excluding the detected concentration of $3.2 \mu\text{g}/\text{m}^3$, that Catalyst identified as an outlier, from the benzene cancer risk calculations results in a benzene cancer risk of 1.4×10^{-5} , which is not statistically different from the risk calculation 1.47×10^{-5} .

The benefit of including all detected concentrations of benzene in the onsite risk calculations is a more robust risk estimation due to exposure of the outdoor concentrations of benzene detected in the 28 days samples were collected from two separate months with different conditions. The different conditions make the dataset more representative of onsite conditions to which the future site occupants will be exposed.

Comparing Onsite Results to MATES V

The dataset analyzed in the MATES V Study included 60 days of data collected over a 12 month period in 2018-2019 to account for seasonal variability. The dataset analyzed in the Catalyst study included 14 days of data collected in October 2024 only. The differences between the MATES V Study and the Catalyst study include the duration of the data collection, the year of the data collection and the seasonal data collection. As demonstrated by the data collected by Catalyst in December 2024 with greater detected concentrations of benzene than the October dataset, seasonal variability occurs.

Mearns agrees with Catalysts' conclusions that the onsite risk due to exposure to benzene (1.47×10^{-5}) and petroleum-related COPCs (1.6×10^{-5}) is comparable to the risk estimations in the MATES V Study (1×10^{-5}), is less than the SCAQMD Air Toxics Hotspots threshold of 1×10^{-4} , and is within the regulatory agency acceptable risk range of 1×10^{-4} to 1×10^{-6} .

Please do not hesitate to contact me should you have any questions.

Sincerely,



Susan L. Mearns, Ph.D.

Mearns Consulting LLC



Study of Human Health Risks Due to Outdoor Air Exposure at Proposed Walnut Bluff Development

City of Signal Hill, California

April 16, 2025

Prepared for:

City of Signal Hill
2175 Cherry Avenue
Signal Hill, CA 90755

Prepared By:

Catalyst Environmental Solutions
315 Montana Avenue, Suite 311
Santa Monica, CA 90403

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GLOSSARY

AQMD	South Coast Air Quality Management District
ATSDR	Agency for Toxic Substances and Disease Registry
BTEX	benzene, toluene, ethylbenzene, total xylenes
Comparable	used herein to mean similar in quality and quantity
COPC	chemical of potential concern
CSM	Conceptual Site Model
CVOCs	chlorinated volatile organic compounds
DTSC	California Department of Toxic Substances Control
EPC	Exposure Point Concentration
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
ILCR	individual incremental lifetime cancer risk
MATES V	Multiple Air Toxics Exposure Study V
OEHHA	California's Office of Environmental Health Hazard Assessment
Offsite	Monitoring and sampling locations studied herein not located on the Site labelled WB17, WB18, labelled WB19
Onsite	Walnut Bluff property, including monitoring and sampling locations WB01 through WB16
PCE	Tetrachloroethene
PID	Photo-ionization detector
ppbv	parts per billion by volume
Region / Regional Report	Air quality and associated risks documented in the MATES V Study Study of Human Health Risks Due to Exposure to Outdoor Air [at the] Proposed Walnut Bluff Development
REL	Reference Exposure Level
RL	reporting limit
RME	Reasonable Maximum Exposure
RSL	Regional Screening Levels
AEGL	Acute Exposure Guideline Level
USDOE	United States Department of Energy
AGV	acute Air Guidance Values
SCAQMD	South Coast Air Quality Management District
SHP	Signal Hill Petroleum
Site	Walnut Bluff property
SL	screening level
µg/m ³	micrograms per cubic meter, also known as parts per billion by mass
UCL	upper confidence level
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds

ABSTRACT

On behalf of the City of Signal Hill (City), Catalyst Environmental Solutions Corporation (Catalyst) evaluated the quality of, and potential risks to human health posed by, outdoor air at an approximately 2-acre property located at the corner of Willow Street and Walnut Avenue in the City of Signal Hill, Los Angeles County, California (Site). This Site is currently owned by Signal Hill Petroleum (SHP). The quality of outdoor air was characterized by 14-day, 1-day, and 1 hour time integrated samples collected between October 1 and October 15, 2024 and by 4 onsite 14-day samples collected in December 2024. The samples were collected from 14 locations distributed across the Site and from 3 nearby properties also owned by SHP. The samples were analyzed by a California certified laboratory method TO-15sim to provide measurable concentrations of volatile organic compounds (VOCs). The results indicate that the 14-day analytical results and risks based on the onsite samples and offsite samples are comparable to the risks presented in the South Coast Air Quality Management District's Multiple Air Toxics Exposure Study V (MATES V) performed for the broader Los Angeles basin in 2018 and 2019. In summary, the onsite air quality measured in October 2024 poses no additional measurable risk to human health compared with offsite and regional conditions, and the outdoor air quality measured at the Site is comparable to regional air quality conditions characterized by the MATES V study.

SECTION 1

Introduction

On behalf of the City of Signal Hill (City), Catalyst Environmental Solutions Corporation (Catalyst) prepared this Study of Human Health Risks Due to Exposure to Outdoor Air at the Proposed Walnut Bluff Development (Report) located at the corner of Willow Street and Walnut Avenue in the City of Signal Hill, Los Angeles County, California (Site; Figure 1). The overall purpose of this Report is to present the findings from the assessment of human health risks posed by volatile organic compounds (VOCs) detected in outdoor air samples collected at the Site between October 1 and October 15, 2024.

The Site consists of an approximately two-acre parcel that is currently owned by Signal Hill Petroleum (SHP) and is used for oil extraction with eight wells onsite, consisting of four abandoned wells, two idle wells, and two active wells (Figure 2). The City plans to support redevelopment of this property that will include an apartment building and separate recreational building.

Prior to redevelopment, we understand that SHP has plans to remove relic infrastructure and remediate the parcel to standards that support residential land use. In addition, development of the Site will require engineering controls (e.g., methane mitigation system) to be installed sub-slab of all proposed buildings to mitigate risks and hazards due to the potential for volatile organic compounds (VOCs) and methane vapor intrusion from the subsurface.

Because two of the wells on the Site will remain active for oil and gas production following development, the City commissioned the *Work Plan for Human Health Risk Assessment* (Catalyst 2024) to evaluate the potential human health risks posed by outdoor air to future residents and recreational users of the Site. The objective was to collect site-specific outdoor air data to support an assessment of potential human health risks posed by VOCs in outdoor air.

The scope of work involved: 1) reviewing existing air quality data documented in the Multiple Air Toxics Exposure Study V (MATES V) for the Los Angeles basin as provided by the South Coast Air Quality Management District (SCAQMD) ; 2) collecting air quality data to characterize outdoor air quality on and adjacent to the Site; and 3) analyzing the collected data to prepare a site-specific assessment of potential human health risks. The investigation was conducted in accordance with the most current methods recommended by the California Department of Toxic Substances Control (DTSC), California's Office of Environmental Health Hazard Assessment (OEHHA), and the U.S. Environmental Protection Agency (USEPA). This report documents the methods and results of the study and assessment of potential human health risks.



Figure 1. Site Location Map (Source: Mearns Consulting, LLC 2021)

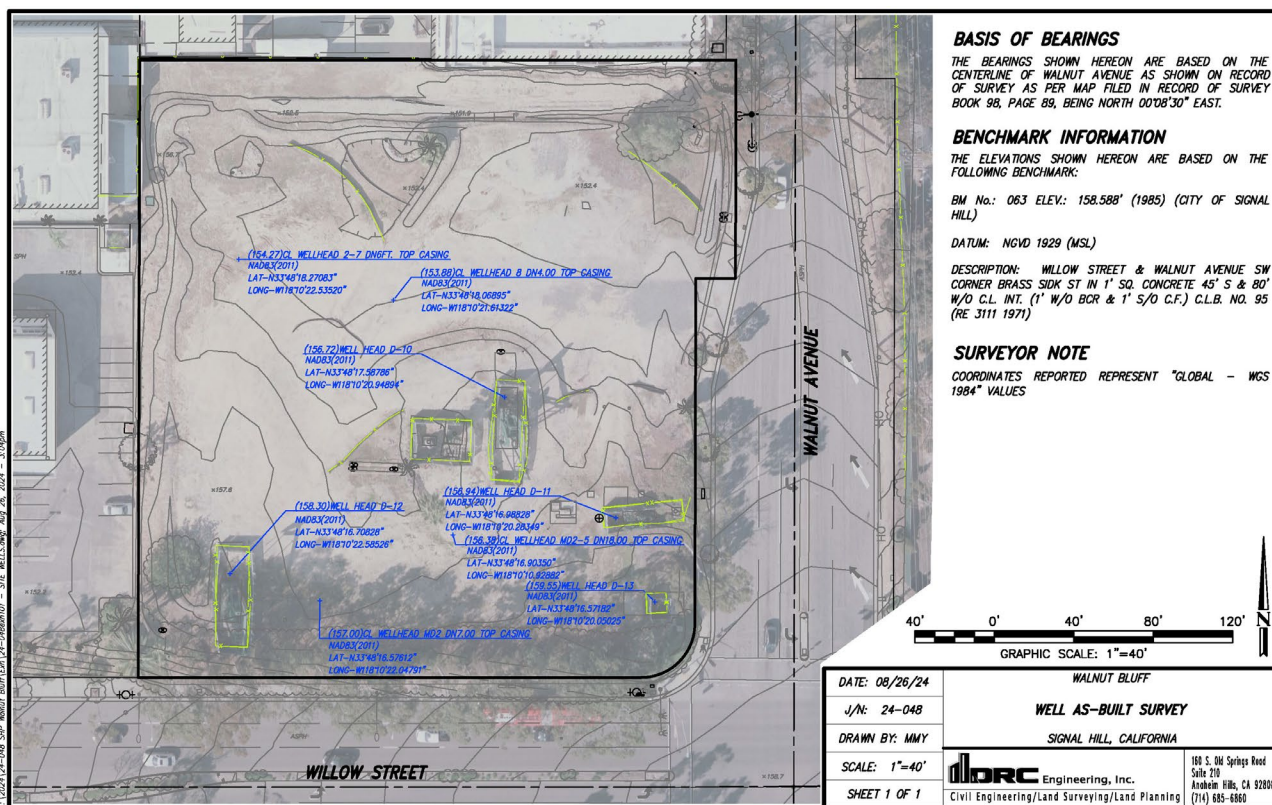


Figure 2. Site Map with Oil and Gas Well Locations (Source: SHP, 2021)

SECTION 2

Study Design Framework

The *Work Plan for Human Health Risk Assessment*, consisting of an air quality monitoring and sampling plan, was developed to characterize air quality at the Site and its vicinity and to generate the data required to support an assessment of potential human health risks. More specifically, the study was designed to generate data to enable evaluations of:

- Air quality impacts from VOCs (if measurable) associated with each of the onsite active and idle wells
- Concentrations of VOCs in outdoor air at the Site
- Effects (if any) of wind direction, temperature, and barometric pressure on outdoor air quality
- Cumulative cancer risk and chronic and acute noncancer hazards posed by potential exposure to outdoor air at the Site.

The Study Design was based on these two key assumptions:

- Onsite active, idle, and previously abandoned oil and gas wells are potential sources of measurable concentrations of VOCs to outdoor air
- Outdoor air in the vicinity of the Site, including air upwind from the Site and in the Los Angeles region contain measurable concentrations of VOCs.

Catalyst also required the following support during the implementation of the Study:

- Routine SHP operations would continue without regard nor alteration due to the study
- Security would be installed to ensure that all monitoring equipment would be protected and not subjected to tampering.
 - We note that security consisted of temporary chain-link fencing installed around the entire Site and 24-hour video surveillance. No trespassing nor tampering of the monitoring equipment was observed.

SECTION 3

Field Methods

The study consisted of real-time monitoring of outdoor air quality, collection of outdoor air samples, and measurement of meteorological parameters. All data were collected during October 1 through October 15, 2024 at the locations shown on Figures 3 and 4. This section describes the means and methods employed to collect these data.

3.1 Monitoring and Sampling Locations

Monitoring and sampling were performed over a 14-day period at 16 onsite and 3 offsite locations. At each location (onsite, offsite, and meteorological), the sampling and monitoring devices were deployed vertically within the breathing zone, approximately 3 to 5 feet above ground surface. As discussed in Section 3.1.3, the dominant wind direction in September 2023 and September 2024 was primarily from the southwest/west-southwest with a subdominant direction from the west-northwest; this wind direction informed some of the location-selection rationale provided in Table 1. Table 1 below provides the rationale for each sampling and monitoring location.

Table 1. Sampling Locations

Site ID	Onsite/Offsite	Location Description and Rationale
WB1	Onsite	Located upwind and crosswind from one of the wells (API #03708973) that will remain active
WB2	Onsite	Located at one of the wells that will remain active (API #03708973)
WB3	Onsite	Located upwind and crosswind of one of the wells (API #03708973) that will remain active and along the western property margin
WB4	Onsite	Located upwind and crosswind on the property, and just west of the proposed residential building in the northern portion of the Site
WB5	Onsite	Located within the footprint of the proposed residential building
WB6	Onsite	Located in the center of the proposed residential building in the northern portion of the Site, and along the upwind margin of the property for wind towards the southeast
WB7	Onsite	Located within the footprint of the proposed residential building

Site ID	Onsite/Offsite	Location Description and Rationale
WB8	Onsite	Located along the east side of the proposed residential building in the northern portion of the Site, and along the downwind margin of the property for wind towards the southeast
WB9	Onsite	Located at the middle eastern side of the property and largely along the downwind side of the property
WB10	Onsite	Located at one of the wells that will remain active in the center of the Site (API #03708971)
WB11	Onsite	Located at an idle well that is proposed for abandonment (API #03708975)
WB12	Onsite	Located at an idle well that is proposed for abandonment (API #03708972)
WB13	Onsite	Located in the center of the proposed recreational building in the southern portion of the Site
WB14	Onsite	Located at the western side of the proposed recreational building
WB15	Onsite	Weather station in the southwest quadrant of the Site
WB16	Onsite	Weather station in the northeast quadrant of the Site
WB17	Offsite	Located offsite, upwind and/or crosswind at a nearby SHP facility
WB18	Offsite	Located offsite, upwind and/or crosswind near the 405 freeway at SHP Drill Site #1 located at 805 East Spring Street
WB19	Offsite	Located offsite, upwind and/or crosswind at the SHP Town Center Northwest site

3.1.1 Onsite Air Quality Monitoring and Sampling Locations

Air quality monitoring and sampling was performed at 14 onsite sampling locations (WB1 through WB14) and weather monitoring was performed at 2 onsite locations (WB15, WB16), as shown in Figure 3. The onsite sampling locations were selected to characterize outdoor air quality in the vicinity of:

- two active wells
- two idle wells
- area within the footprint of the proposed residential apartment building
- area within the footprint of the proposed recreational building
- along the upwind, crosswind and downwind margins of the property
- offsite areas upwind, crosswind, and downwind of the property.

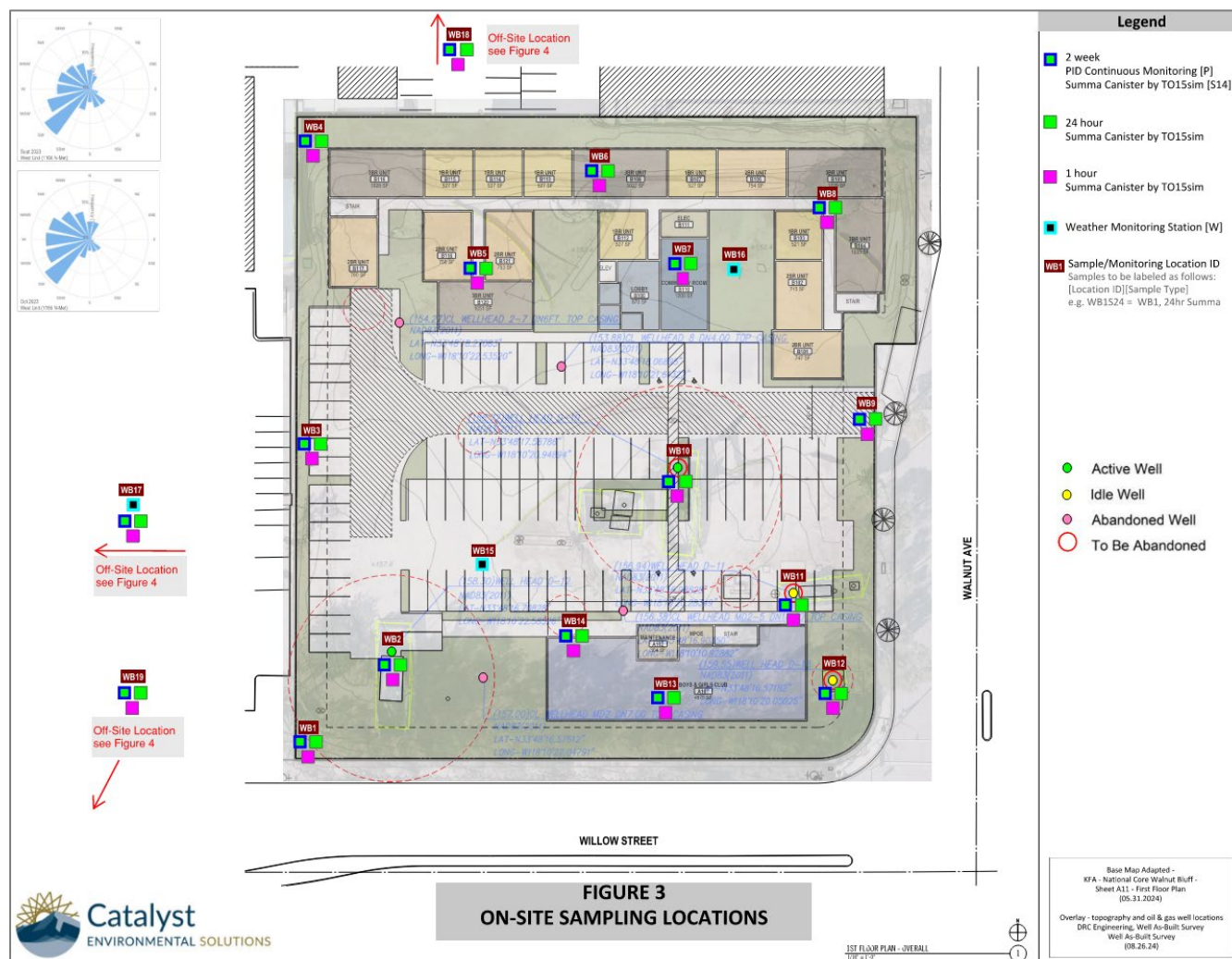


Figure 3. Onsite Sampling Plan

3.1.2 Offsite Air Quality Monitoring and Sampling Locations

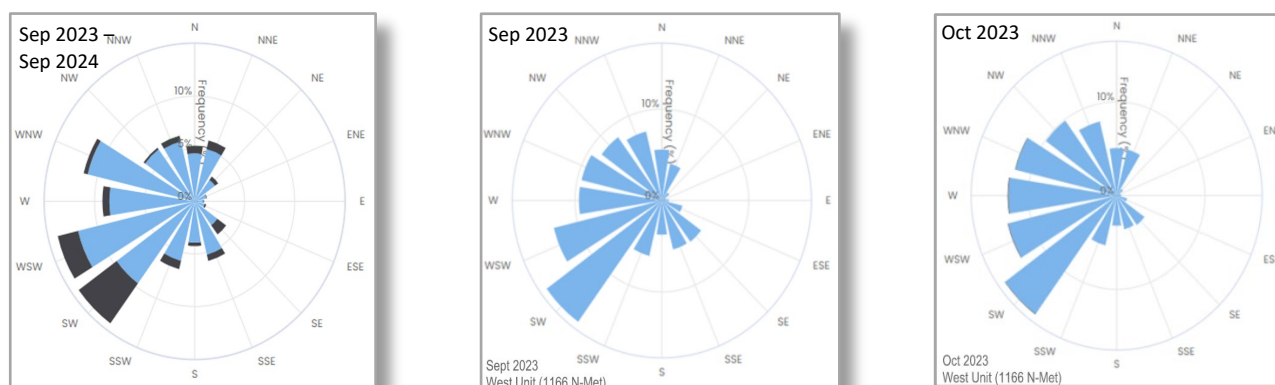
Air quality monitoring and sampling were performed at three offsite study locations (WB17 through WB19) as shown in Figure 4. The three offsite sampling locations were selected to characterize outdoor air quality at similar SHP facilities upwind or crosswind from the Site. SHP provided access to the three offsite locations.



Figure 4. Offsite Sampling Plan

3.1.3 2023 and 2024 Wind Directions

Wind direction and speed are important phenomena to consider when evaluating air quality in an outdoor environment. The leftmost wind rose below is for the period between September 12, 2023 and September 11, 2024 measured at the SHP facility located at 1215 E 29th Street in the City of Signal Hill, which is approximately 0.35-miles northwest of the Site (provided by SHP). This wind rose indicates that the dominant wind direction at that time was primarily from the southwest/west-southwest with a subdominant direction from the west-northwest (see adjacent figure). Similarly, SHP provided the center and rightmost wind roses at other nearby facilities in the City, which show similar dominant and sub-dominant wind directions in the months of September 2023 and October 2023. It was assumed that the dominant and subdominant wind directions at the Site were similar to these wind roses and would remain similar during the time of the study.



3.1.4 Weather Monitoring Locations

Monitoring of meteorological conditions was performed at three locations. Two locations (WB15, WB16) were located onsite, and one location (WB17) was located offsite. At each location, a Lufft WS600 meteorological monitoring station was installed and maintained to measure and record every 15 minutes throughout the study period: wind direction, wind speed, air temperature, and absolute air pressure (aka, barometric pressure). Refer to Section 4.1 for the measurements of actual wind direction and wind speed during this study.

3.2 Air Quality Monitoring and Sampling

This task involved the collection of outdoor air quality data to characterize both onsite and offsite conditions. Over a period of 14 continuous days, the monitoring and sampling program involved the following collection of continuous and concurrent data as well as time-integrated air quality samples at each of the locations shown on Figures 3 and 4, as follows:

- Continuous measurements of total concentrations of VOCs using a photo-ionization detector meter (PID) for 14 days
- 14-day time integrated air samples
- 24-hour time integrated air samples
- 1-hour time integrated air samples
- Continuous measurements of meteorological parameters.

Field data sheets are provided in Appendix A.

3.2.1 Continuous Photo-Ionization Detection Monitoring – 14-Days

Air quality was monitored continuously at the 14 onsite sample locations and the 3 offsite sample locations using PIDs configured to measure in parts per billion by volume (ppbv, or ppb) and record the total concentration of VOCs every 15-seconds. The data were evaluated to identify:

- Changes in VOC concentrations over time at each monitoring location
- Correlations (if any) between VOC concentrations, time, wind speed and direction, and barometric pressure
- Overall range of total VOC concentrations in air
- Diurnal variation in the concentration of total VOCs at each of the monitoring locations. The diurnal distribution of relatively higher and lower concentrations was used to identify the optimal time interval(s) during a 24-hour period to collect 1-hour air samples for laboratory analysis that will likely yield the highest daily VOC concentrations in outdoor air, as described below.

The PID meters were supplied by Field Environmental Instruments (FEI), located in Signal Hill. Prior to deployment, the PIDs were calibrated by FEI following the manufacturer's instructions. Calibration certificates are provided in Appendix H. The PIDs deployed at the Site were the ppbRAE 3000 or multiRAE Pro manufactured by Rae Systems in San Jose, California. All PIDs were secured onto a rigid tripod, measured VOCs at 4 to 5 feet above grade, and were powered by a dedicated battery.



3.2.2 Time-Integrated Sampling – 14-Days

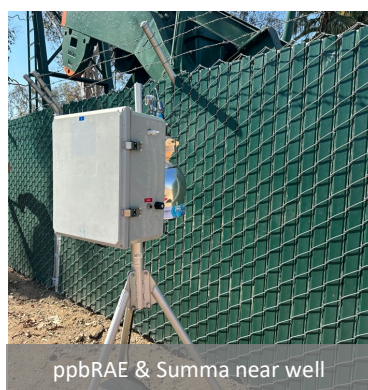
Six-liter Summa canisters were deployed on October 1, 2024 at each location also containing a PID to collect 14-day time-integrated samples over the duration of the study. Enthalpy Analytical in Orange, California, a State of California certified laboratory, provided Summa canisters and 14-day flow controllers, and analyzed the Summa canisters for VOCs using USEPA Method TO-15sim. Charts 1 through 17 depict the PID measurements and the 14-day sampling interval at all sampling locations.

Each 6-liter Summa sample canister was fitted with a vacuum gauge and a flow controller to collect the sample over an approximately 14-day period. Each canister, flow controller, and gauge was individually certified clean by the analytical laboratory. After the canisters were set in the breathing zone in their respective locations, the initial vacuum reading was recorded on field forms. Canisters were confirmed to be at a minimum vacuum of 27-inches of mercury prior to use. After 14 days, the valve on the Summa canister was closed and the final vacuum was

measured and recorded. Each canister was labeled appropriately, and a chain-of-custody manifest was completed onsite to accompany the samples to the lab.

The following items were recorded for each sample:

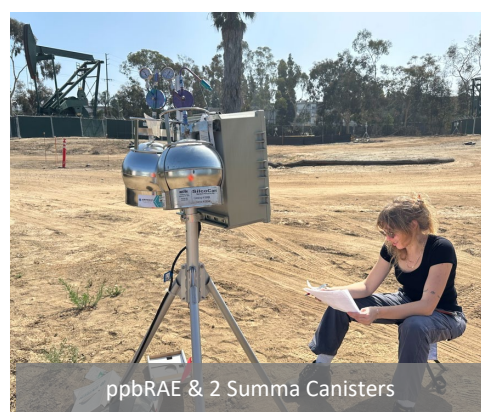
- Sample location (including figure and photographs)
- Canister and flow regulator identification numbers
- Initial vacuum
- Time and date that sample collection began and ended
- Final vacuum.



3.2.3 Time-Integrated Sampling – 1-Hour

The PID measurements recorded during the first six days at each monitoring location were evaluated to identify the daylight hour when the highest PID measurements were typically recorded. For safety reasons, collection of the 1-hour air sample was limited to daylight hours. Table 3 summarizes the 1-hour sampling timeframe selected for each location. Charts 1 through 17 depict the PID measurements and the 1-hour sampling interval at all sampling locations.

The six-liter summa canisters were deployed on October 9, 2024 in a similar manner to the 14-day samples. Pace Analytical, a State of California certified laboratory, supplied the Summa canisters and flow controllers, and analyzed the air samples for VOCs by USEPA Method TO-15sim.



3.2.4 Time-Integrated Sampling – 24-Hours

The PID measurements recorded during the first six days at each monitoring location were evaluated to identify the day of the week that corresponded with relatively higher measurements of VOCs compared to other days. However, the PID data yielded no indication that any particular day of the week corresponded with relatively higher concentrations than any other day. Therefore, the 6-liter Summa canisters for collecting a 24-hour air sample were deployed at each sampling location on October 10, 2024, the day following the collection of the 1-

hour air sample. Charts 1 through 17 depict the PID measurements and the 24-hour sampling intervals at all sampling locations.

The six-liter Summa canisters were deployed on October 10, 2024 in a similar manner to the 14-day samples. Pace Analytical, a State of California certified laboratory, supplied the Summa canisters and flow controllers, and analyzed the air samples for VOCs by USEPA Method TO-15sim.

3.2.5 Deviations From Work Plan

Location WB07 was sampled for 1 hour. However, the summa canister arrived at the laboratory fully evacuated and could not be analyzed. Because the study generated data from 13 other locations on the Site, the lack of a 1-hour sample at this location is considered to be an insignificant deviation and does not materially affect the results and conclusions presented herein.

All offsite outdoor air sampling locations were adjusted to locations shown in Figure 4 as follows:

- WB17 was changed because the County Assessor's office did not provide access for this study.
- WB18 was changed to avoid conflict with oil and gas well infrastructure.
- WB19 was changed to avoid conflict with oil and gas well infrastructure.

The above changes are slight and considered immaterial to the overall findings in this study.

Following publication of the Work Plan, feedback from Dr. Susan Mearns (City consultant) and the City as well as discussions with SHP (property owner) and National Core (potential buyer) resulted in modifying the scope of work to remove overt monitoring and sampling at the abandoned wells. Instead, the study evaluated outdoor air quality throughout the Site, which includes the area containing the previously abandoned wells, but did not overtly measure outdoor air quality at each of the abandoned well locations. Because the study generated multiple samples from 14 locations across the Site, and because samples purposefully collected adjacent to active and idle wells did not yield concentrations significantly different from samples collected further away from these wells (as discussed herein below), the lack of samples deployed precisely above abandoned well locations is considered to not materially affect the results and conclusions presented herein.

3.3 Personnel and Procedures

All environmental work was performed by qualified Catalyst environmental personnel who supervised the field activities and oversaw all phases of the work including managing subcontractors. All field procedures (e.g., permitting, sampling protocol, chain-of-custody, preparation of a Health and Safety Plan, etc.) followed City of Signal Hill, Los Angeles County, and State of California guidelines, as well as Catalyst's Standard Operating Procedures.

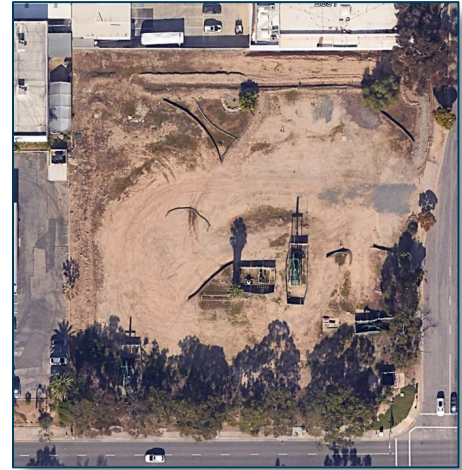
3.4 Site Safety

A site-specific Health, Safety, and Environmental Plan (HSE) was developed in accordance with the California Occupational Safety and Health Administration (Cal-OSHA) guidelines for Hazardous Waste Operations Standards (Title 29 CFR, Section 1910.120) and California Code of Regulations (Title 8 CCR, Section 5192). The HSE Plan provided field personnel with an understanding of the potential chemical and physical hazards, protection of any offsite receptors, procedures for entering the Site, health and safety procedures, and emergency response to

hazards should they occur. In addition, the HSE Plan addressed the appropriate level of Personal Protective Equipment (PPE) for onsite workers during activities at the Site. A copy of the HSE was present onsite at all times and kept in an easily accessible location.

3.5 Site Security and Access Control

Because the scope of work involved the use of various air quality monitoring and sampling equipment on a continuous basis, site security measures were implemented to protect the safety of site workers and integrity of the study, prevent unauthorized access to the Site, and reduce risk of equipment damage, theft, and vandalism. The security measures used included: 1) installation of temporary fencing with locking gates around the perimeter of the Site and offsite monitoring locations where no permanent fencing existed; 2) installation of video cameras and remote monitoring; 3) deployment of security lighting; and, 4) where feasible, equipment was set back a minimum of 20 feet from property lines to ensure public safety and the safety of the equipment.



SECTION 4

Monitoring and Sampling Results

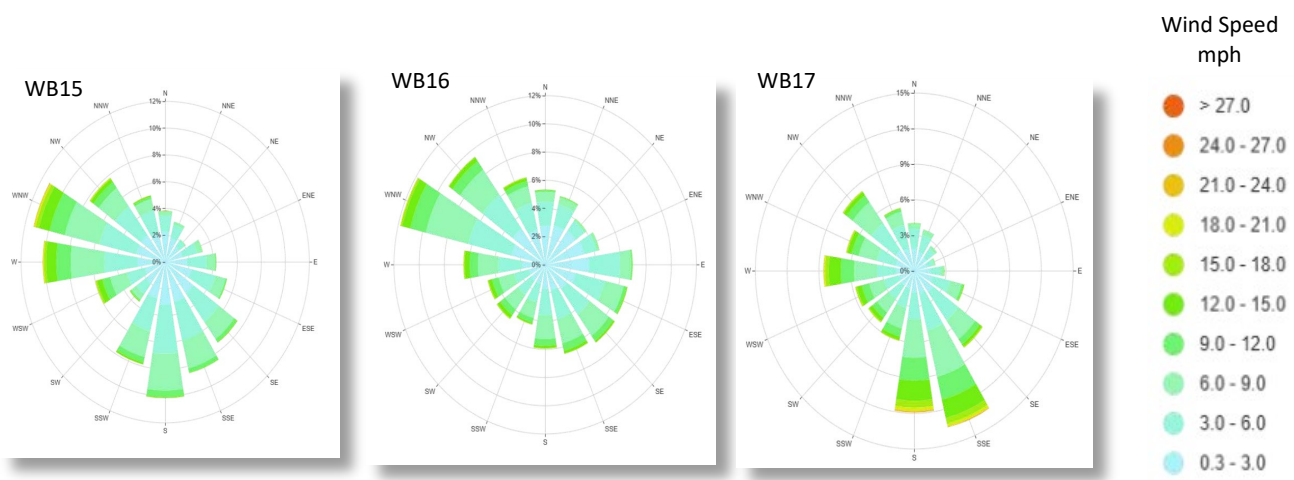
This section presents the data resulting from the monitoring and sampling scope described in Section 3.

4.1 Meteorological Data

Section 3.1.4 presents the wind directions recorded near the Site from September 2023 through September 2024, and in the months of September and October 2023, which showed the dominant wind direction was primarily from the southwest/west-southwest with a subdominant direction from the west. During this October 2024 study, the meteorological stations (WB15, WB16, and WB17) measured and recorded wind direction, temperature, and barometric pressure. Charts 27 through 29 present wind direction and wind speed on a wind rose. Charts 30 to 32 present wind speed, temperature, and barometric pressure. The data show that temperature and barometric pressure fluctuated within the normal and anticipated range for the season and therefore, are interpreted to have not materially affected the representativeness of the results presented herein.

As shown below, the dominant west-northwest wind direction measured at the onsite locations WB15 and WB16 and the dominant south-southeast offsite location WB17 differed from the dominant west-southwest 2023 direction. However, the subdominant wind direction from the west recorded in 2023 matches reasonably well with the onsite dominant wind direction from the west and west-northwest. Charts 30 through 32 present the histograms of the wind speed measured from October 1 through October 15, 2024.

As discussed in detail in Section 5, because the offsite, onsite, and regional concentrations and risks are comparable, the inconsistency between the anticipated and actual wind directions is considered immaterial to the conclusion drawn in this report.



4.2 PID Monitoring

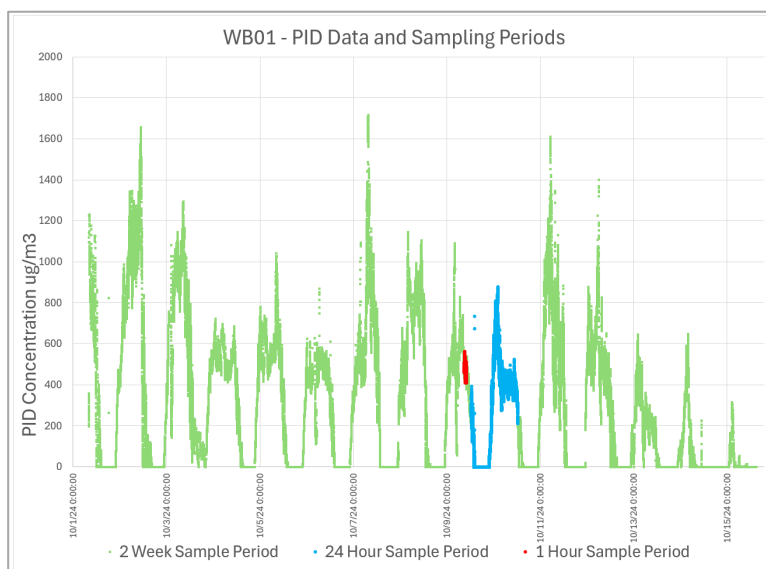
Measurements of total VOC concentrations were recorded every approximately 15 seconds at each of the 14 onsite (WB01 - WB14) and 3 offsite (WB17 - WB19) monitoring stations. These data are presented graphically in two forms utilizing two different X-axes.

4.2.1 PID Measurements versus Calendar Day

Charts 1 through 17 present the PID measurements with the x-axis structured chronologically by day. The y-axis for the charts for all locations was selected to display the data that represents measurements of air quality.

An example chart, with PID measurements at WB01, is provided here. The charts are color coded to show the following:

- Green depicts the entire duration of the 14-day time integrated air sample
- Blue depicts the entire duration of the 24-hour air sample
- Red depicts the entire duration of the 1-hour air sample.



It is noted that because bump test events were performed during the monitoring period, the data collected at each location also include concentrations considerably higher than those actually present in outdoor air. The bump tests involved briefly exposing the PID sensor to 10ppm of isobutylene gas to evaluate if the PID reads the concentration as expected. An appropriate PID response confirms the detector reliably measures VOCs. Bump tests were performed by FEI and field notes were not recorded. If the y-axis was adjusted to include the bump

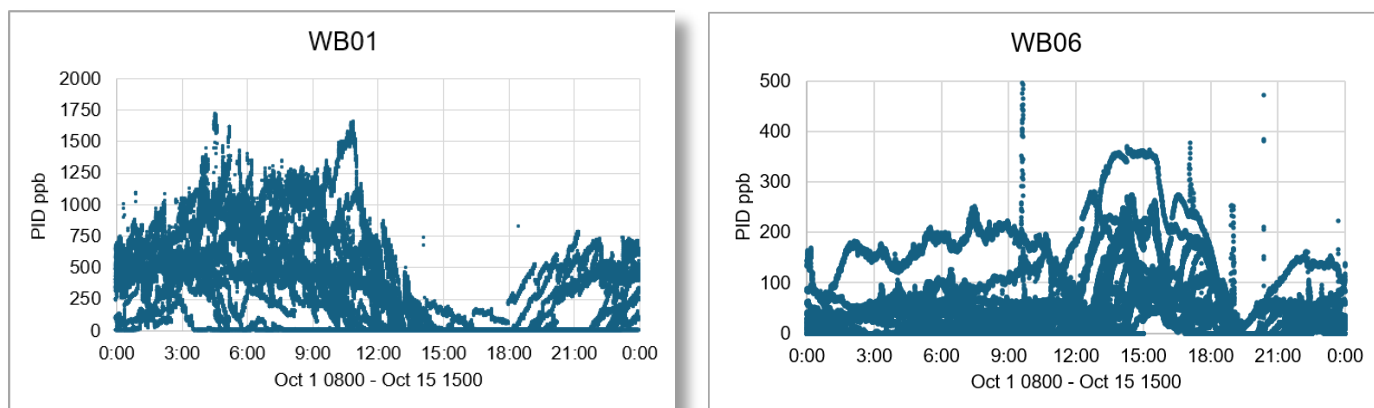
test events, then the diurnal patterns would be too subtle to observe. It is also noted that to avoid graphically calling unnecessary attention to the bump test events, the PID data are plotted as points, rather than lines connecting each data point.

4.2.2 PID Measurements versus 24-hour Day

Most of the locations yielded PID data that show diurnal variations over time. It is postulated that these diurnal fluctuations are associated with both anthropogenic factors, such as vehicle traffic patterns, and meteorological patterns, such as changes in wind direction. The potential significance of the relatively higher PID measurement revealed within the diurnal fluctuations was evaluated via the collection of 1-hour outdoor air samples as discussed in Section 4.3.3. Understanding the causes of these diurnal patterns is beyond the scope of this study and the causes are considered to be immaterial to the risk assessment objectives of this study.

Nonetheless, in an attempt to gain some further insight into these diurnal patterns, the same PID data were plotted with the X-axis structured as a 24-hour day. Chart 18 presents these PID measurements with the charts ordered sequentially by monitoring location. Chart 19 is organized to show locations with similar diurnal patterns. The y-axis for the charts for all locations was selected to display the data that represents measurements of air quality, excluding bump test events.

For example, PID measurements at WB01 show a diurnal pattern with low total VOC concentrations routinely recorded by the PID between 2pm and 6pm. Other locations with a similar pattern are WB07, WB13, WB14, and WB19.

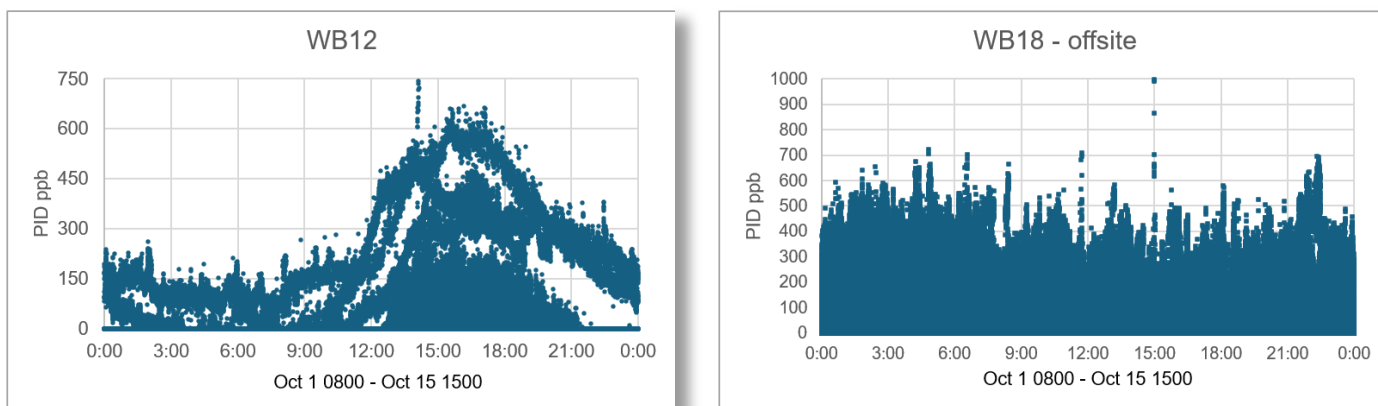


A different pattern emerges with PID measurements at WB06, which shows a diurnal pattern with slightly lower concentrations routinely recorded around 12pm, slightly higher concentrations recorded around 2pm to 6pm, followed by a rapid decline at about 7pm. Other locations with a similar pattern are WB03, WB05, WB08, WB09, and WB10.

PID measurements at WB12 show a diurnal pattern with marked rise in total VOC concentrations routinely recorded in the afternoon. One other location with this pattern is the offsite location WB17.

There are also locations that yielded PID concentrations with either no discernable pattern or a pattern that was not replicated at other monitoring locations. For example, the WB18 location.

It is also noted that PID data recorded at WB04 produced total VOC concentrations considerably lower than all other locations. Similarly, PID data recorded at WB11 also produced mainly very low total VOC concentrations. Repeated bump tests of the PID at these locations were performed and the ppbRAE demonstrated proper function. The relatively unusual PID data recorded at these locations cannot be explained. Regardless, as shown below, the air quality samples collected at WB04 and WB11 reveal total VOC concentrations similar in magnitude to those collected throughout the study.



4.3 Air Quality Samples

4.3.1 Screening Criteria

The analytical data tables compare the measured concentrations with the following chronic screening criteria:

- DTSC (2022a) HHRA Note 3 residential air screening levels for carcinogenic risks (SLc)
- DTSC (2022a) HHRA Note 3 residential air screening levels for noncarcinogenic hazard (SLnc)
- USEPA (2024) Regional Screening Levels for residential air carcinogenic risk (RSLc)
- USEPA (2024) Regional Screening Levels for residential air noncarcinogenic hazard (RSLnc).

It is important to note that not all detected VOCs have DTSC SLs, not all detected VOCs have USEPA RSLs, and that some detected VOCs have neither or both.

4.3.2 14-Day Air Samples

Laboratory analytical results for these samples are summarized in Table 2. Laboratory analytical reports are presented in Appendix E. These data are used in Section 5 to evaluate human health chronic cancer risks and noncancer hazards. The following summarizes those VOCs that exceed chronic screening levels.

- Petroleum-related VOCs
 - Benzene ranged narrowly at the onsite and offsite locations from 0.72 $\mu\text{g}/\text{m}^3$ to 0.99 $\mu\text{g}/\text{m}^3$, and as discussed below there is an outlier concentration of 3.2 $\mu\text{g}/\text{m}^3$ at WB05. Concentrations at all onsite and offsite locations exceeded both the SLc and RSLc.

- Naphthalene ranged onsite from below the reporting limit of 0.052 $\mu\text{g}/\text{m}^3$ to 0.14 $\mu\text{g}/\text{m}^3$, and ranged offsite from below the reporting limit of 0.058 $\mu\text{g}/\text{m}^3$ to 0.073 $\mu\text{g}/\text{m}^3$. Naphthalene exceeded the RSLc at three locations, WB10, WB11, and WB13.
- Nonpetroleum-related VOCs
 - Carbon tetrachloride ranged narrowly at the onsite and offsite locations from 0.45 $\mu\text{g}/\text{m}^3$ to 0.47 $\mu\text{g}/\text{m}^3$. There are six onsite locations and one offsite location that equaled the SLc and RSLc of 0.47 $\mu\text{g}/\text{m}^3$.
 - Chloroform ranged narrowly at the onsite and offsite locations from 0.13 $\mu\text{g}/\text{m}^3$ to 0.17 $\mu\text{g}/\text{m}^3$. Concentrations at all onsite and offsite locations exceeded the RSLc.

4.3.3 1-Hour Air Samples

Laboratory analytical results for these samples are summarized in Table 3. Laboratory analytical reports are presented in Appendix G. These data are used in Section 5 to evaluate human health acute noncancer hazards.

The following summarizes those VOCs that exceed chronic screening levels. It is important to note that because chronic screening levels are considerably lower than acute screening levels, the comparison of chronic screening levels to the 1-hour VOC concentrations provides a very conservative list of VOCs that might pose a risk and hazard. Acute noncancer hazards are appropriately assessed in Section 5.

- Petroleum-related VOCs
 - Benzene ranged narrowly at the onsite and offsite locations from 0.88 $\mu\text{g}/\text{m}^3$ to 1.9 $\mu\text{g}/\text{m}^3$. Concentrations at all onsite and offsite locations exceeded both the SLc and RSLc.
 - Naphthalene narrowly ranged at the onsite and offsite locations from 0.13 $\mu\text{g}/\text{m}^3$ to 0.38 $\mu\text{g}/\text{m}^3$. Concentrations at all onsite and offsite locations exceeded the RSLc.
- Nonpetroleum-related VOCs
 - Carbon tetrachloride ranged narrowly at the onsite and offsite locations from 0.49 $\mu\text{g}/\text{m}^3$ to 0.51 $\mu\text{g}/\text{m}^3$. Concentrations at all onsite and offsite locations exceeded both the SLc and RSLc.
 - Chloroform ranged narrowly at the onsite and offsite locations from 0.19 $\mu\text{g}/\text{m}^3$ to 0.27 $\mu\text{g}/\text{m}^3$. Concentrations at all onsite and offsite locations exceeded the RSLc.
 - 1,2 Dichloroethane exceeded the RSLc at three onsite locations and one offsite location. All exceedances were reported at 0.11 $\mu\text{g}/\text{m}^3$.

4.3.4 24-Hour Air Samples

Laboratory analytical results for these samples are summarized in Table 4. Laboratory analytical reports are presented in Appendix F. These data are not used in Section 5 to evaluate chronic human health risks because the 14-day samples better represent the average concentration to which a receptor might be exposed. But, because longer term time-integrated 14-day samples run a greater risk of disturbance (e.g., physical, meteorological) to sample integrity, these 24-hour samples are used herein to evaluate if the 14-day samples reasonably represent site conditions over the longer term. The following summarizes those VOCs that exceed chronic screening levels.

- Petroleum-related VOCs
 - Benzene ranged narrowly at the onsite and offsite locations from 0.68 $\mu\text{g}/\text{m}^3$ to 1.1 $\mu\text{g}/\text{m}^3$. The high concentration of 1.1 $\mu\text{g}/\text{m}^3$ was reported at the onsite location WB10 and the offsite location WB19. Concentrations at all onsite and offsite locations exceeded both the SLc and RSLc.

- Naphthalene narrowly ranged at the onsite and offsite locations from 0.13 $\mu\text{g}/\text{m}^3$ to 0.43 $\mu\text{g}/\text{m}^3$. Concentrations at all onsite and offsite locations exceeded the RSLc.
- Nonpetroleum-related VOCs
 - Carbon tetrachloride ranged narrowly at the onsite and offsite locations from 0.46 $\mu\text{g}/\text{m}^3$ to 0.50 $\mu\text{g}/\text{m}^3$. Concentrations at all but one onsite location and all offsite locations exceeded both the SLc and RSLc of 0.47 $\mu\text{g}/\text{m}^3$.
 - Chloroform ranged narrowly at the onsite and offsite locations from 0.14 $\mu\text{g}/\text{m}^3$ to 0.17 $\mu\text{g}/\text{m}^3$. Concentrations at all onsite and offsite locations exceeded the RSLc.

Overall, the 1-day samples yielded concentrations reasonably comparable to the 14-day sample concentrations suggests that concentrations are relatively consistent each day throughout this 14 day monitoring period.

4.3.5 Comparison Of 14-Day, 24-Hour, and 1-Hour Samples

Charts 20 through 24 compare the concentrations of petroleum-related VOCs measured in the 14-day, 24-hour, and 1-hour samples. Chart 25 compares the concentrations of 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene in 14-day samples, these two VOCs were not analyzed in the 1-hour and 24-hour samples.

In nearly all cases, the highest concentrations were detected in the 1-hour samples and the lowest concentrations were measured in the 14-day samples. This distribution validates the overall intent of the sampling strategy, which was to capture the long-term average concentration in the 14-day samples and the likely higher concentrations (based on PID data) in the 1-hour samples. It is noted that, again in most cases, the concentrations measured in the 24-hour and 14-day samples are quite comparable. This comparison indicates that daily average concentrations do not vary significantly over longer, in this case 2-week, time horizons. An example comparison chart is provided below for benzene, which includes the outlier concentration at WB05 as discussed below in Section 4.4.



4.3.6 Data Quality Evaluation

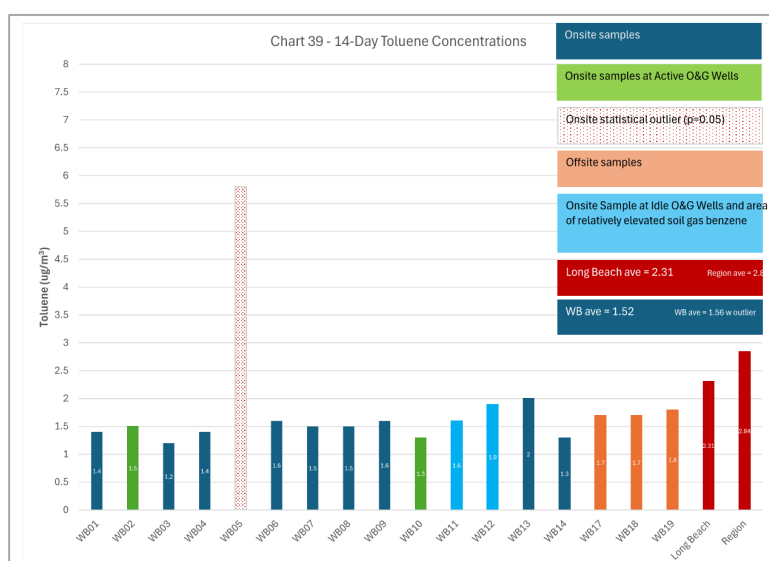
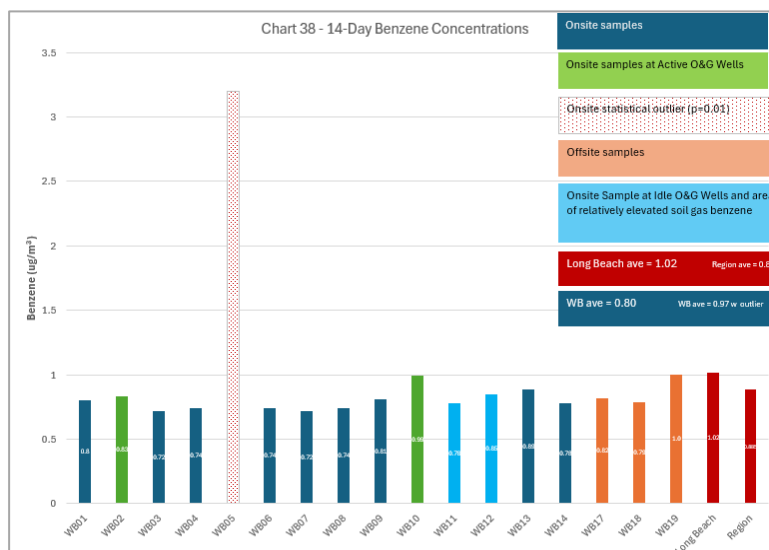
The laboratory analytical reports and field sampling sheets were evaluated to identify potential issues that could impact the quality and/or representativeness of the samples and data reported by the laboratory. The Laboratory Data Review Checklist for the Air Samples was completed and the analytical data returned by Pace Analytical and Enthalpy Analytical, are provided in Appendix B. No significant quality control issues were identified. Therefore, the data are considered reliable and reasonably representative of Site conditions.

4.4 Statistical Outliers

Two statistical outliers were identified in the 14-day sample dataset, one for benzene and one for toluene, both at WB05. Onsite outdoor air benzene concentrations in the 14-day samples ranged from 0.72 to 3.2 µg/m³. Dixon's Outlier Test identifies the benzene concentration of 3.2 µg/m³ in the WB05 sample as a statistically significant outlier at $p=0.01$ (Appendix C). Similarly, onsite outdoor air toluene concentrations in the 14-day samples ranged from 1.2 to 5.8 µg/m³. Dixon's Outlier Test identifies toluene concentration of 5.8 µg/m³ in the WB05 sample as a statistically significant outlier based at $p=0.01$ (Appendix C).

A “p” value of 0.01 means that the test has a 99% chance that the results were not due to chance and the outlier designation is statistically significant. Furthermore, it is reasonable to conclude that benzene and toluene in the 14-day sample at WB05 are unlikely to be representative of outdoor air quality at that location because:

- 1-hour samples collected when the PID revealed relatively higher concentrations of VOCs during the day did not contain relatively higher concentrations of benzene nor toluene compared to other 1-hour samples,
- WB05 is not located adjacent to an oil well, and because samples located adjacent to active and idle wells did not yield relatively higher concentrations of benzene and toluene,
- Concentrations at locations that are crosswind, upwind, and downwind (WB04, WB06, WB03, WB10, WB07) to WB05 show no corresponding effects indicating the absence of any similarly elevated concentrations coming onsite towards WB05 or elevated concentrations downwind from WB05, it is reasonable to conclude that benzene and toluene in the 14-day sample at WB05 are unlikely to be representative of outdoor air quality at that location WB05.



Therefore, the benzene and toluene concentrations in the 14-day sample at WB05 are not utilized herein to evaluate chronic risks posed by outdoor air at the Site. Exclusion of the outliers in the calculation of risks is consistent with USEPA 2002 and USEPA 2000.

Excluding the outlier, onsite outdoor air benzene concentrations ranged from 0.72 to 0.99 µg/m³. This rather tight range is slightly less than the offsite outdoor air benzene concentrations, which ranged from 0.79 to 1.0 µg/m³. Excluding the toluene outlier, onsite outdoor air toluene concentrations ranged from 1.2 to 2 µg/m³. This rather tight range is slightly higher than the offsite outdoor air toluene concentrations, which ranged from 1.7 to 1.8 µg/m³. As discussed further below, this range in concentrations is comparable to those reported in MATES V.

A graphic depiction of the WB05 benzene and toluene outlier are shown above. Nonetheless, in order to further evaluate the benzene and toluene outliers at WB05, a second round of 14-day sampling occurred in December 2024 at 4 sampling locations as described below.

4.4.1 Field Methods for Outlier Evaluation in December 2024

From December 2 to December 16, 2024, six-liter Summa canisters were utilized at 4 locations (WB02, WB03, WB05, and WB10) to collect 14-day time-integrated samples. Enthalpy Analytical in Orange, California, a State of California certified laboratory, provided Summa canisters and 14-day flow controllers, and analyzed the Summa canisters for VOCs using USEPA Method TO-15sim. In addition, monitoring of meteorological conditions was performed at WB16 with a Lufft WS600 meteorological monitoring station that was set to record the following every 15 minutes throughout the study period: wind direction, wind speed, air temperature, and absolute air pressure (aka, barometric pressure).

Each 6-liter Summa sample canister was fitted with a vacuum gauge and a flow controller to collect the sample over an approximately 14-day period. Each canister, flow controller, and gauge was individually certified clean by the analytical laboratory. After the canisters were set in the breathing zone in their respective locations, the initial vacuum reading was recorded on field forms. Canisters were confirmed to be at a minimum vacuum of 27-inches of mercury prior to use. After 14 days, the valve on the Summa canister was closed and the final vacuum was measured and recorded. Each canister was labeled appropriately, and a chain-of-custody manifest was completed onsite to accompany the samples to the lab.

The following items were recorded for each sample:

- Sample location (including figure and photographs)
- Canister and flow regulator identification numbers
- Initial vacuum
- Time and date that sample collection began and ended
- Final vacuum.

4.4.2 Findings

Charts 43 through 48 compare concentrations from October and December 2024 of benzene, toluene, ethylbenzene, xylenes, naphthalene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene. As shown, individual VOC concentrations in December were relatively similar to each other across the four samples including benzene and toluene concentrations. Benzene concentrations ranged from 1.7 to 1.9 $\mu\text{g}/\text{m}^3$ and toluene concentrations ranged from 3.2 to 3.4 $\mu\text{g}/\text{m}^3$.

The overall December concentrations are higher than those measured in October, excluding the outliers benzene and toluene at WB05. These results support the conclusion that the concentrations of benzene and toluene measured at WB05 in October were outliers and not representative of outdoor air quality at the WB05 sampling location. These results also indicate that variability in concentrations month over month exists at the Site.

The windrose from WB16 in December 2024 is provided in Chart 49. The dominant wind direction measured (easterly) differed from the October 2024 direction. Chart 50 presents the histogram of the wind speed measured from December 2 to December 16, 2024.

4.5 Petroleum Hydrocarbon Fingerprint

The primary focus of this study is on petroleum-related VOCs and on chlorinated solvents that reportedly might have been a component of some products used during periodic servicing and maintenance of the onsite oil and gas extraction wells. Nevertheless, all VOCs detected in 1-hour, 24-hour, and 14-day samples and are evaluated herein and in the assessment of potential human health risks.

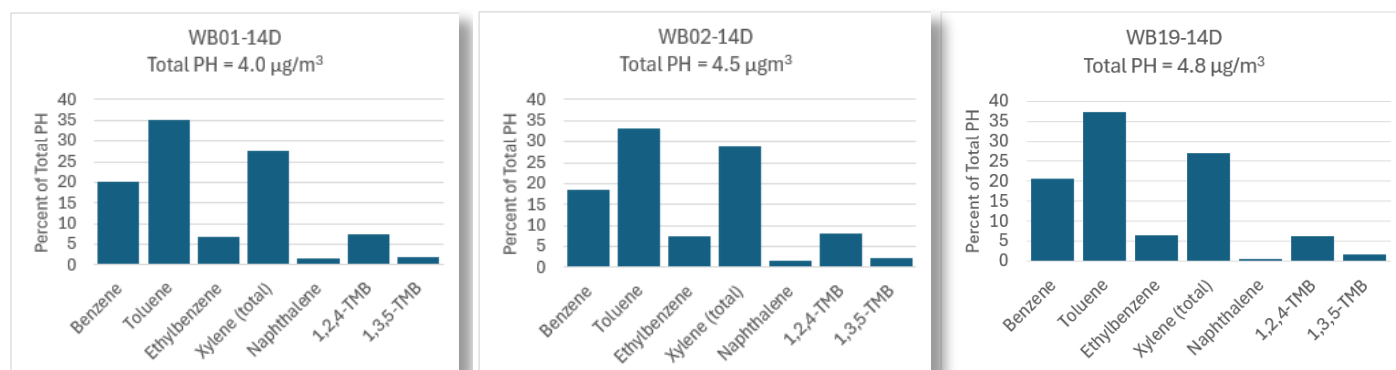
Petroleum related VOCs were routinely measured in all 14-day, 24-hour, and 1-hour air samples: benzene, toluene, ethylbenzene, total xylenes (collectively referred to as BTEX), naphthalene, 1,2,4- trimethylbenzene, and 1,3,5 -trimethylbenzene..

The 14-day samples collected in October 2024 revealed just one onsite location, WB13 at $0.08 \mu\text{g}/\text{m}^3$, with a measurable concentration of the chlorinated VOC (CVOC) tetrachloroethene (PCE). None of the 24-hour samples contained measurable CVOCs. Four of the fourteen onsite 1-hour samples contained measurable PCE with an average concentration of $0.11 \mu\text{g}/\text{m}^3$. For comparison, the average PCE concentration in all MATES V regional data is $0.20 \mu\text{g}/\text{m}^3$ and the average PCE concentration at the MATES V Long Beach location was $0.22 \mu\text{g}/\text{m}^3$, both above all onsite measurements of PCE.

To evaluate if the distribution of these seven petroleum-related VOCs varied or remained similar regardless of sampling location, the normalized concentrations (as percent of total) of these seven petroleum-related VOCs are plotted and compared. These plots can be considered as fingerprints that graphically depict relative concentrations. Chart 26 displays the fingerprints at all 14 onsite and 3 offsite locations sampled in October 2024, and MATES V all regional data, October 2018 data, and Long Beach October 2018 data. The fingerprints were inspected to identify:

- Obvious differences among the fingerprints in pattern, which would be indicative of source(s) at one or more locations that would alter the fingerprint relative to other locations.
- Obvious similarities among the fingerprints in pattern, which could be indicative of similar conditions at each of the locations, such as being dominated by regional air quality conditions.

The three fingerprints depicted here are from WB01, located at the southwest corner upwind from the Site and near the road, at WB02 adjacent to an active oil production well, and the most distant offsite location WB19 that is in a parking lot and more distant from adjacent active roads. The onsite and offsite fingerprints show similar



patterns. Comparing the MATES fingerprint with the onsite fingerprints shows they are comparable.

SECTION 5

Assessment of Human Health Risks

The objective of this assessment of potential human health risks is to evaluate potential human health risks associated with outdoor air quality and future residential land use of the property, which includes a residential apartment building and a Boys & Girls Club recreational facility. As discussed above, the two oil production wells

that were operating during this study will remain active on the property following development. It is important to note here that this assessment of potential human health risks and the findings and conclusions herein are limited to conditions represented by the samples collected during 2 weeks in October 2024.

Because oil and gas operations are the only known historical and current uses of the Site, it would be reasonable to focus this assessment of potential human health risks on VOCs related to petroleum and servicing of the oil production wells, the latter of which reportedly might include CVOCs. Nonetheless, this assessment of potential human health risks provides a full assessment of all detected VOCs in onsite outdoor air.

As discussed above, outdoor air samples were collected at receptor height from 14 locations across the property in October to provide a reasonable estimate of outdoor air exposures to VOC concentrations. Specifically, continuous 14-day air samples and peak 1-hour air samples were collected for the purpose of assessing potential onsite cancer risks and chronic noncancer hazards and onsite acute noncancer hazards, respectively.

It is noted that the air sampling described herein occurred prior to anticipated remediation of elevated VOC concentrations in soil gas, which have been separately investigated and reported to be present at elevated concentrations in the southeastern portion of the Site (Mearns Consulting, 2021). Consequently, it remains possible that following remediation, the outdoor air quality at the Site might improve.

The assessment of potential human health risks provides upper-bound estimates of individual incremental lifetime cancer risk (ILCR)¹ and noncancer hazard for the theoretical Reasonable Maximum Exposure (RME) for adult and child receptors based on exposures to VOCs in outdoor air. The RME approach utilized herein is consistent with DTSC (2015, 2022a,b) and USEPA (1989) human health risk assessment guidance and is a conservative measure that overestimates potential risks USEPA (1989), thus ensuring the protection of public health, including sensitive subpopulations.

The assessment of potential human health risks was conducted following standardized risk assessment methods consistent with DTSC and USEPA risk assessment guidance, including, but not limited to, the following guidance documents, as applicable:

- USEPA. 1987. The Risk Assessment Guidelines of 1986
- USEPA. 1989. Risk Assessment Guidance for Superfund, Volume I, Health Evaluation Manual, Part A
- USEPA. 2009. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment)
- USEPA. 2011. Exposure Factors Handbook: 2011 Edition
- USEPA. 2014. Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors
- DTSC. 2015. Preliminary Endanger Assessment Guidance Manual
- DTSC. 2018. California Toxicity Criteria Rule
- USEPA. 2019. Guidelines for Human Exposure Assessment
- DTSC. 2019. Human Health Risk Assessment (HHRA) Note Number 1: Recommended DTSC Default Exposure Factors for Use in Risk Assessment at California Hazardous Waste Sites and Permitted Facilities
- DTSC. 2022a. Human Health Risk Assessment (HHRA) Note Number 3, DTSC-modified Screening Levels (DTSC-SLs)
- DTSC. 2022b. Human Health Risk Assessment (HHRA) Note Number 4: Guidance for Screening Level Human Health Risk Assessments

¹ Throughout this report “ILCR” and “cancer risk” have the same meaning and are used interchangeably.

- USEPA (2024) Regional Screening Levels (RSLs). November.

Consistent with DTSC and USEPA risk assessment guidelines, the assessment of potential human health risks is organized as follows:

- Exposure Assessment
- Toxicity Assessment
- Risk Characterization.

5.1 Exposure Assessment

Exposure Assessment is the process of quantitatively characterizing exposure concentrations and potential human intake (e.g., dose). Exposure assessment results are subsequently integrated with toxicity information from the Toxicity Assessment (Section 5.2) into the Risk Characterization (Section 5.3) to assess potential health risks.

The Exposure Assessment comprises the following components:

- Selection of chemicals of potential concern (COPCs)
- Data useability evaluation for risk assessment
- Identification of human receptors
- Exposure pathways analysis and development of a Conceptual Site Model (CSM)
- Derivation of Exposure Point Concentrations (EPCs)
- Summarize human exposure factors.

5.1.1 Selection of Chemicals of Potential Concern (COPCs)

For this assessment of potential human health risks, any VOC detected in at least one onsite 14-day outdoor air sample or in at least one onsite 1-hour outdoor air sample was selected as a COPC. The TO-15sim analytical method applied to the 14-day outdoor air samples comprised 48 VOCs, of which 21 VOCs were detected in at least one sample of outdoor air. The TO-15sim analytical method applied to the 1-hour air samples comprised 30 VOCs, of which 16 VOCs were detected in at least one sample.

For the 14-day air samples, in total, 7 petroleum-related VOCs were detected and selected as COPCs, and 14 non-petroleum-related VOCs were detected and selected as COPCs. The 7 petroleum-related VOCs are benzene, toluene, ethylbenzene, total xylenes, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene. For the 1-hour air samples, in total, 7 petroleum-related VOCs were detected and selected as COPCs, and 9 non-petroleum-related VOCs were detected and selected as COPCs.

5.1.2 Data Usability Evaluation

The purpose of the data useability evaluation is to ensure that the analytical data collected and used for the assessment of potential human exposure are of sufficient quality with respect to sample size and analytical detection limits. As detailed below, both the number of samples (sample size) and data quality are sufficient for the assessment of potential human health risks.

For the chronic 14-day outdoor air sample data set, a total of 14 onsite samples were collected, which is a sufficient sample size for calculating EPCs (USEPA 2022). All petroleum-related VOCs selected as COPCs were detected in each of the 14 onsite samples with the exception of naphthalene which was detected in 10 of 14 samples. The

maximum reporting limit (RL) for naphthalene of $0.058 \mu\text{g}/\text{m}^3$ is lower than the lowest DTSC (2022a) residential air screening level (SL) of $0.083 \mu\text{g}/\text{m}^3$. Therefore, it is concluded that sample size and detection limits for onsite COPCs are sufficient for assessing chronic exposures in the assessment of potential human health risks.

For VOCs not selected as COPCs (e.g., not detected in any sample), RLs were lower than screening levels for all VOCs with the exception of 1,1,2,2-tetrachloroethane, 1,2-dibromoethane, benzyl chloride, bromodichloromethane, and vinyl chloride for which RLs exceeded either DTSC (2022a) SLs or USEPA (2024) RSLs. However, since these VOCs were never detected in any 1-hour, 24-hour, or 14-day onsite outdoor air sample it is reasonable to conclude that these VOCs were not present at detectable concentrations in outdoor air at the Site in October 2024.

For the acute 1-hour outdoor air sample data set, a total of 13 onsite samples were collected, which is a sufficient sample size for calculating EPCs (USEPA 2022). In contrast to the 14 14-day onsite air samples discussed above, there are only 13 1-hour air samples as the WB07 Summa canister was depressurized when received by the analytical laboratory, and therefore, did not contain an air sample. The cause is unknown. In addition, the analytical laboratory used for the acute 1-hour samples does not report results for 1,2,4-trimethylbenzene or 1,3,5-trimethylbenzene. For VOCs not selected as COPCs (e.g., not detected in any sample), all RLs were lower than available screening levels. The one missing sample and the absence of 1-hour sample results for 1,2,4-trimethylbenzene or 1,3,5-trimethylbenzene are expected to not impact the outcome of the assessment of potential human health risks.

5.1.3 Exposure Pathways Analysis and Development of the Conceptual Site Model (CSM)

The ultimate goal of the Exposure Pathways Analysis is to identify those potential exposure pathways to outdoor air that would be considered complete exposure pathways for the quantitative assessment of potential human health risks based on future land use, identification of future human receptors, identification of sources of contamination and receiving media, chemical fate and transport in receiving media, and identification of exposure points and exposure routes (USEPA 1989).

Based on the planned future land use of the property (residential), the following exposure pathways are anticipated to become present:

- The human receptors expected to be present on the property following future development are residential adults and children as well as adults and children using the planned Boys & Girls Club.
- Sources of potential contamination to outdoor air following development are expected to be the two active and two idle oil and gas wells whereby VOCs may be released to the outdoor air during continuous operation and periodic servicing of these wells. In addition, residual VOCs in subsurface soils (e.g., soil gas) following remediation may also be released to the outdoor air.
- The primary chemical fate and transport process is dispersion within outdoor air of such potential emissions, if any, which would cause concentrations to reduce with increased distance from the point of release.
- Human exposure points for short term acute exposure (i.e. 1 hour) may be any discreet location on the property and would be represented by the maximum detected concentration of each identified COPC.
- Human exposure points for long term chronic exposure may be all accessible locations on the property and would be represented by the 95% upper confidence limit on the mean (95% UCL) concentration of each identified COPC across the Site.

The Exposure Pathways Analysis is summarized in the Conceptual Site Model (CSM) presented in Figure 5.

5.1.4 Exposure Point Concentrations

Consistent with DTSC (2015) and USEPA (1989) risk assessment guidance, EPCs for chronic exposures are estimated as the site-wide 95% UCL 14-day outdoor air concentration for each COPC as measured at all 14 onsite locations. 95% UCLs are estimated herein using USEPA (2022) ProUCL ver. 5.2 software. Exceptions for benzene and toluene are the exclusion of the benzene outlier of 3.2 $\mu\text{g}/\text{m}^3$ and the toluene outlier of 5.8 $\mu\text{g}/\text{m}^3$, both measured at WB05, from the 95% UCL calculations. As discussed in Section 4.4 both outliers are considered to be not representative of Site conditions.

EPCs for acute exposures are the maximum 1-hour maximum outdoor air concentration for each COPC measured at any one of the 14 onsite sample locations. The chronic 14-day EPCs and the acute 1-hour maximum EPCs for each COPCs are summarized in the risk characterization tables presented in the Risk Characterization section. The ProUCL outputs are presented in Appendix D.

5.1.5 Human Exposure Factors

The human exposure factors applicable to the inhalation exposure pathway for adults and children are those embedded within the DTSC (2022a) SLs, which are consistent with the residential human exposure factors recommended by DTSC (2019) exposure factor guidelines and consistent with those embedded within the USEPA (2024) RSLs. The key chronic residential exposure factors are exposure time of 24 hours/day, exposure frequency of 350 days/year, and exposure duration of 20 years for adults and 6 years for children. For acute exposures the only applicable exposure factor is the exposure time of 1 hour.

5.2 Toxicity Assessment

Toxicity Assessment is the process of assessing the relationship between human intake of a chemical (e.g., dose) and the corresponding toxic response. This process is also known as dose-response assessment. The results of the dose-response assessment are generally referred to as toxicity values. Over the past 30 years, dose-response assessments have been routinely performed by State and Federal regulatory agencies that publish toxicity values for various types of health effects and exposure pathways.

Consistent with the approach used in this assessment of potential human health risks for the Exposure Assessment, the chronic noncancer- and cancer-based toxicity values used are embedded within the DTSC (2022a) SLs and USEPA (2024) RSLs. Preferentially using DTSC (2022a) SLs and secondarily USEPA (2024) RSLs ensures compliance with the DTSC (2018) Toxicity Criteria Rule.

For assessing 1-hour acute exposures, acute toxicity values were obtained from multiple sources when available. The preferred source of acute toxicity values is OEHHHA's acute Reference Exposure Levels (RELs). For COPCs without OEHHHA acute RELs, the USEPA's Acute Exposure Guideline Levels (AEGLs; USEPA 2019) are the next preferred source, and in the absence of either acute RELs or AEGLs, then the U.S. Department of Energy (USDOE) Protective Action Criteria (PAC; USDOE 2018) are selected as acute toxicity values. For two COPCs (naphthalene and tetrachloroethene) acute toxicity values were not available from any of these sources but were available from the Minnesota Department of Health as acute Air Guidance Values (AGVs).

As with the exposure parameters described above in Section 5.1.3, the toxicity values described in this Section are also presented in the risk characterization tables in Section 5.3.

5.2.1 MATES V – Summary Description

To date, the SCAQMD has evaluated and reported regional air quality in the Los Angeles basin in five separate studies, entitled Multiple Air Toxics Exposure Study (MATES). The four most recent MATES studies occurred during 1998-1999 (MATES II), 2005 (MATES III), 2012-2013 (MATES IV), and 2018-2019 (MATES V). The most recent study, MATES V, was performed between May 2018 and April 2019 and consisted of monitoring air quality at ten different locations by collecting a total of 528 samples, consisting of approximately 50 to 60 samples per location. The nearest MATES V sampling location is the Long Beach monitoring location, at 1710 East 20th Street in Signal Hill, 1 mile south of Walnut Bluff.

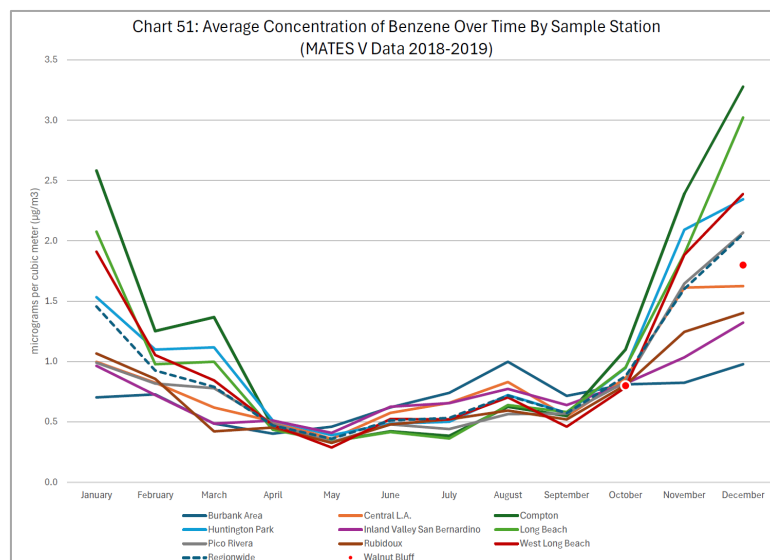
Unlike conventional risk assessments, which utilize the 95% UCL to estimate risks, MATES V assessed risk by using the average concentrations. It is recognized that the MATES V study and findings predate the study reported herein by 6 years. Another important difference is that the MATES V study collected samples approximately every 6 weeks over the course of 12 months. In contrast, this Report presents results and calculates risk based on a single sampling event covering two weeks in October 2024.

Nonetheless, the MATES V study is considered herein to be the most comprehensive and relevant assessment of risk posed by outdoor air quality to human health in the region. Therefore, the findings from the MATES V study are used here to compare with the findings from this study and to evaluate if potential additional human health risks are posed to human health by outdoor air at the Site.

5.2.2 MATES V – Data Trends

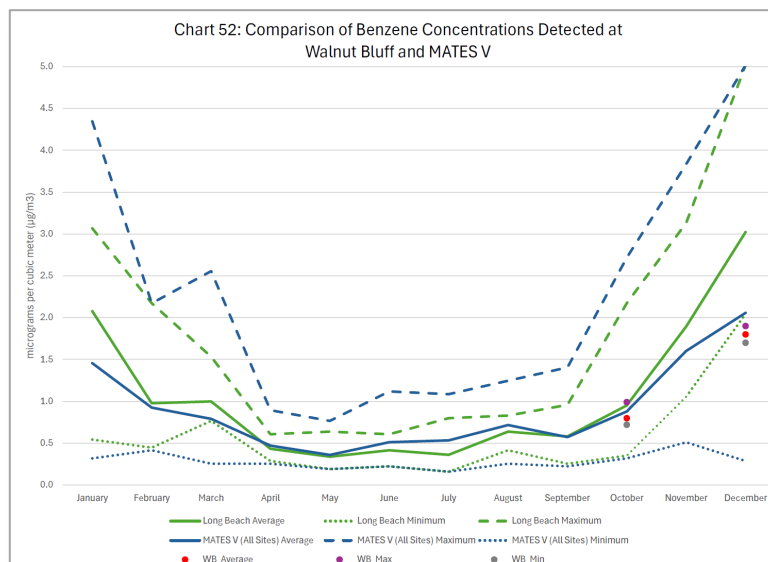
As described above, samples of outdoor air at the Site were collected in October and December 2024. The concentrations of VOCs measured in December were generally higher than concentrations measured in October.

The adjacent Chart 51 shows the average MATES V benzene concentration by monitoring station and the region along with the average benzene concentration measured at the Site. The chart shows that the Site data are comparable with the trends revealed in the MATES V data.



To further assess these trends, the adjacent Chart 52 shows the maximum, average, and minimum concentrations of benzene measured at the nearby MATES V Long Beach station, the regional MATES V data, and Site data. Similar to the preceding chart, the maximum, average, and minimum concentrations measured at the Site are also comparable with, and in some cases slightly lower than, the MATES V data.

Taken together, these charts indicate that the increase trend in on-Site concentrations measured in December are comparable to increase trends revealed in the MATES V data.



5.3 Risk Characterization

Risk Characterization is the process of integrating exposure and toxicity information to characterize potential health risks. Under this process, chronic cancer risks are estimated for individual carcinogens, and the total risk from all carcinogens combined, referred to as the cumulative cancer risk, is then calculated by summing the cancer risks for all carcinogenic COPCs.

A similar process is employed for chronic and acute noncancer hazards whereby chronic and acute noncancer hazards are estimated for individual COPCs, referred to as Hazard Quotients (HQs), and cumulative noncancer hazard, referred to as the Hazard Index (HI), is then calculated by summing the individual chronic and acute noncancer HQs, respectively.

5.3.1 Cancer Risk and Noncancer Hazard Calculations and Equations

The equations used to calculate cancer risk, chronic HQs, and acute HQs are as follows:

$$ILCR = EPCc / SLc \times 1 \times 10^{-6}$$

Where,

ILCR = Incremental Lifetime Cancer Risk (unitless)

EPCc = chronic EPC

defined herein as the 95% UCL air concentration ($\mu\text{g}/\text{m}^3$) based on 14-day continuous onsite air monitoring data

SLc = cancer-based screening level ($\mu\text{g}/\text{m}^3$)

$$\text{Chronic HQ} = \text{EPCc} / \text{SLnc}$$

Where,

Chronic HQ = Chronic Hazard Quotient (unitless)

EPCc = chronic EPC

defined herein as the 95% UCL air concentration ($\mu\text{g}/\text{m}^3$) based on 14-day continuous onsite air monitoring data

SLnc = noncancer-based screening level ($\mu\text{g}/\text{m}^3$)

$$\text{Acute HQ} = \text{EPCa} / \text{AREL}$$

Where,

Acute HQ = Acute Hazard Quotient (unitless)

EPCa = acute EPC

defined herein as the maximum 1-hour air concentration ($\mu\text{g}/\text{m}^3$)

AREL = Acute Reference Exposure Level ($\mu\text{g}/\text{m}^3$)

Cumulative cancer, non-cancer hazard, and acute risks:

Cumulative ILCR = Σ ILCR for individual carcinogenic COPCs

Chronic HI = Σ chronic HQs for individual COPCs

Acute HI = Σ acute HQs for individual COPCs

Potential cancer risks, chronic noncancer hazards and acute noncancer hazards associated with measured onsite outdoor air VOC concentrations are presented in Tables 5 and 6, respectively, and summarized below. Potential cancer risks and chronic noncancer hazards associated with measured offsite outdoor air VOC concentrations are presented in Table 7 and summarized below. For perspective and transparency, risk assessment findings are presented separately for petroleum-related COPCs, non-petroleum-related COPCs, and all COPCs combined.

While the standard default comparison threshold for cancer risk is 1×10^{-6} (ATSDR 2024) and DTSC, the USEPA (1994) National Contingency Plan (NCP) defines the range of acceptable cancer risks as 1×10^{-6} to 1×10^{-4} . However, the NCP explains that the point of departure for screening risks is 1×10^{-6} , such that regulatory approval of risks up to 1×10^{-4} requires a Site-specific risk assessment or some other technically defensible justification, such as background or regional conditions. Falling within this range is the SCAQMD Air Toxics Hotspots threshold of 1×10^{-4} , which also characterizes the regional risks posed by outdoor air quality as reported in MATES V (SCAQMD, 2021).

5.3.2 Incremental Lifetime Cancer Risks

For individual petroleum-related COPCs, estimated onsite cancer risks ranged from 2.8×10^{-7} to 8.6×10^{-6} . Benzene, with an ILCR of 8.6×10^{-6} , is the only petroleum-related COPC exceeding the default cancer risk threshold of 1×10^{-6} (Table 5). The onsite cumulative cancer risk for petroleum-related COPCs was 1.0×10^{-5} , which exceeds the default cancer risk threshold of 1×10^{-6} , but is less than the SCAAQMD Air Toxics Hotspots threshold of 1×10^{-4} . As described further below, this level of risk from outdoor onsite air is comparable to the regional risks in the MATES V study.

In the absence of benzene, the onsite cumulative risk associated with petroleum-related COPCs is 1.3×10^{-6} . This clearly demonstrates that benzene is the only significant driver of petroleum-related VOCs. This discussion is also focused on benzene because benzene is the one petroleum-related “risk driver” COPC measured in both onsite outdoor air samples, offsite outdoor air samples, and the MATES regional monitoring studies.

For individual non-petroleum-related COPCs, estimated cancer risks ranged from 1.7×10^{-7} to 2.3×10^{-6} . The non-petroleum-related COPCs exceeding the default cancer risk threshold of 1×10^{-6} were trichlorofluoromethane with an ILCR of 2.3×10^{-6} , chloroform with an ILCR of 1.3×10^{-6} , and methylene chloride with an ILCR of 1.1×10^{-6} . The cumulative cancer risk for non-petroleum-related COPCs was 5.9×10^{-6} .

The cumulative cancer risk for all COPCs, petroleum-related hydrocarbons and non-petroleum-related hydrocarbons, combined was 1.6×10^{-5} .

5.3.3 Chronic Noncancer Hazards

For individual petroleum-related COPCs, chronic noncancer HQs ranged from 3.1×10^{-4} for ethylbenzene to 0.27×10^{-1} for benzene all below the target chronic noncancer HQ of 1 (Table 5). The cumulative chronic noncancer HI for petroleum-related COPCs was 3.2×10^{-1} , well below the target chronic noncancer HI of 1.

For individual non-petroleum-related COPCs, chronic noncancer HQs ranged from 1.4×10^{-5} for chloroethane to 5.3×10^{-1} for trichlorofluoromethane all below the target chronic noncancer HQ of 1. The cumulative chronic noncancer HI for non-petroleum-related COPCs was 0.67, well below the target chronic noncancer HI of 1.

The cumulative noncancer HI for all COPCs, petroleum-related hydrocarbons and non-petroleum-related hydrocarbons, combined was 0.99, equivalent to the target chronic noncancer HI of 1.

5.3.4 Acute Noncancer Hazards

For individual petroleum-related COPCs, acute noncancer HQs ranged from 5.7×10^{-6} for ethylbenzene to 7.0×10^{-2} for benzene, all below the target acute noncancer HQ of 1 (Table 6). The cumulative acute noncancer HI for petroleum-related COPCs was 7.4×10^{-2} , well below the target acute noncancer HI of 1.

For individual non-petroleum-related COPCs, acute noncancer HQs ranged from 5.5×10^{-7} for 1,2-dichloroethane to 1.8×10^{-3} for chloroform all below the target acute noncancer HQ of 1. The cumulative acute noncancer HI for non-petroleum-related COPCs was 2.1×10^{-3} , well below the target acute noncancer HI of 1.

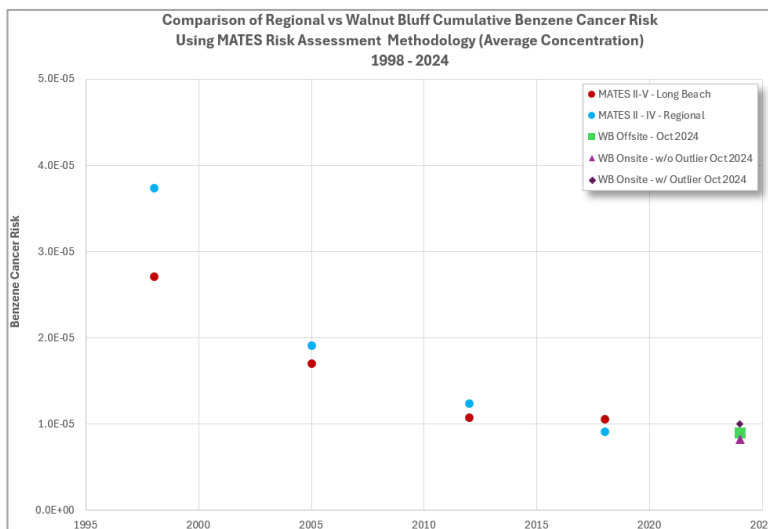
The cumulative noncancer HI for all COPCs, petroleum-related hydrocarbons and non-petroleum-related hydrocarbons, combined was 0.076, also well below the target acute noncancer HI of 1.

5.3.5 Comparison of Onsite, Offsite, and Regional MATES V Benzene Cancer Risks

The focus of this discussion is on benzene because benzene is the “driver” for onsite petroleum-related COPC cancer risks of 1.0×10^{-5} , which exceeds the 1×10^{-6} default cancer risk threshold (Table 5).

Charts 33 through 37 compare the estimated cancer risk posed by benzene, toluene, ethylbenzene, total xylenes, and naphthalene onsite and offsite with risk provided in MATES II, II, III, IV, and V for the region and at the Long Beach location. The chart for benzene, is provided here.

As shown in these Charts and in Table 8, regional outdoor air benzene concentrations and corresponding cancer risk estimates decreased over time from 1998-1999 to 2005 to 2012-2013 to 2018-2019, respectively, and corresponding cancer risk estimates from 4.2×10^{-5} to 1.7×10^{-5} to 1.1×10^{-5} to 1.1×10^{-5} , respectively.



It is important to note here that the MATES studies calculate cancer risk using average concentration, whereas USEPA and DTSC require the calculation of estimated risk to be based on the 95% UCL. However, for comparison purposes only, Charts 33 through 37 present risk based on average concentrations at the Site Walnut Bluff.

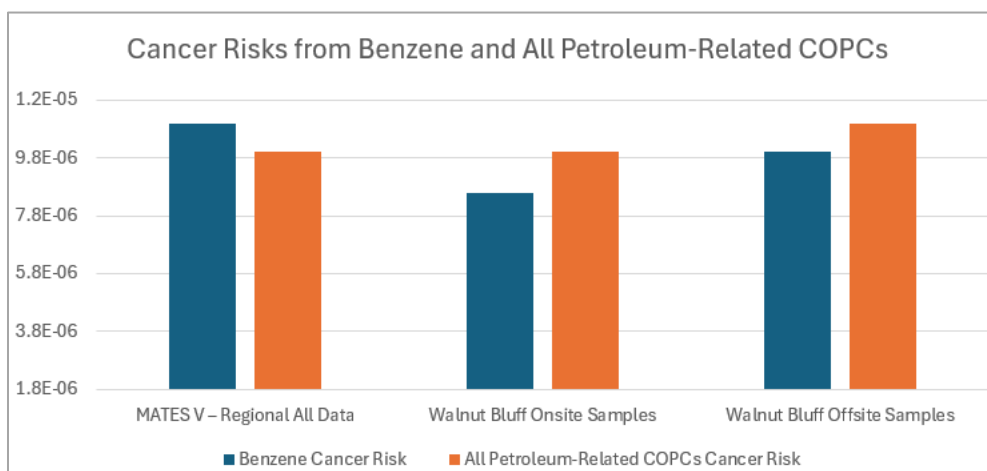
By definition, the arithmetic average concentration is always less than the 95% UCL (USEPA 2022). Therefore, the risks calculated using the 95% UCL of the Walnut Bluff study data should be considered more conservative than cancers risk based on MATES average concentrations. And by extension, comparisons of cancer risks between this study and the MATES data are also conservative. Were this study to assess cancer risk using the arithmetic average (an approach that does not comport with DTSC nor USEPA protocol), then this assessment of potential human health risks would conclude cancer risks lower than presented, and likely lower than the regional cancer risks presented in MATES V.

The most recent regional monitoring cancer risk estimates associated with 95% UCL benzene is comparable to the offsite outdoor air cancer risk estimates (1.0×10^{-5}) or the onsite outdoor air cancer risk estimate (8.6×10^{-6}).

A more granular version of the above information depicts concentrations measured at each onsite and offsite Walnut Bluff sampling location with MATES V regional and Long Beach data are provided in Charts 38 through 42. Collectively, these data show that overall concentrations, and by extension risks and hazards, measured in this Walnut Bluff study are also comparable to the MATES V study.

For the purpose of comparing onsite and offsite cancer risk estimates, cancer risks for petroleum-related COPCs were also calculated for the offsite sampling locations. Since there were only 3 offsite sampling locations, there was an insufficient sample size for calculating a 95% UCL. As such, cancer risk estimates for offsite outdoor air samples were conservatively based on the maximum detected concentrations. Calculations presented in Table 7 show that the cumulative cancer risk associated with petroleum-related COPCs in offsite outdoor air is 1.1×10^{-5} , approximately the same as the cumulative cancer risk associated with petroleum-related COPCs in onsite outdoor air of 1.0×10^{-5} .

Scenario	Benzene Cancer Risk	All Petroleum-Related COPCs Cancer Risk
MATES V – Regional All Data	1.1E-05	1.0E-05
Walnut Bluff Offsite Samples	1.0E-05	1.1E-05
Walnut Bluff Onsite Samples	8.6E-06	1.0E-05



5.4 Discussion of Findings and Uncertainties

The Walnut Bluff outdoor air sampling study was specifically designed to collect appropriate data for assessing potential acute and chronic human exposures, specifically maximum 1-hour concentrations of VOCs and continuous 14-day concentrations of VOCs, respectively. Although any VOC detected in any sample was selected as a COPC, the focus of the assessment of potential human health risks is on current and historical land use (e.g., operation of oil and gas wells). As such, individual COPC and cumulative acute hazards, chronic hazards, and cancer risks are presented in prior sections for petroleum-related COPCs and non-petroleum-related COPCs.

For petroleum-related and non-petroleum COPCs combined, all individual acute HQs and cumulative acute HIs are well below the target HQ and HI of 1.0. All individual chronic HQs as well as petroleum-related and non-petroleum-related cumulative chronic HIs are also below the target HQ and HI of 1.0. The chronic HI for petroleum-related and non-petroleum-related COPCs combined is 0.99, slightly less than the target HI of 1.

The default cancer risk threshold of 1×10^{-6} for petroleum-related COPCs, non-petroleum related VOCs, and all COPCs is exceeded in the onsite 14-day outdoor air samples, the offsite 14-day outdoor samples, and also the MATES V study. The range of cumulative petroleum-related cancer risks is relatively small, from 1.0×10^{-5} to 1.5×10^{-5} . The onsite, offsite, and regional (MATES V) benzene concentrations and corresponding cancer risk estimates from all VOCs are comparable.

As noted above in Section 5.2.1, there are important differences between the MATES V study and this Walnut Bluff study. Nonetheless, the MATES V study is considered to be the most comprehensive and relevant assessment of risk posed by outdoor air quality in the region and is used herein to compare with the findings from this study and assessment of potential human health risks posed by outdoor air at the Site.

Although uncertainty is inherent to the risk assessment process, the decisions made in the risk assessment process are biased towards the protection of human health. The key areas of uncertainty generally include (1) exposure assumptions, (2) toxicity data extrapolations, and (3) risk calculations based on the 95% UCL and not the arithmetic average. It is generally recognized that these uncertainties result in the over-estimation of health risk, thus ensuring the protection of human health.

SECTION 6

Conclusions

The following key conclusions are based on the findings presented above:

- In summary, the onsite air quality measured in October 2024 poses no additional measurable risk to human health compared with offsite and regional conditions, and the outdoor air quality measured at the Site is comparable to regional air quality conditions characterized by the MATES V study.
- The study was implemented as designed and the few minor deviations are considered to have not materially affected the data nor the findings.
- The 14-day analytical results and risks based on the onsite samples and offsite samples are comparable to the risks presented in the MATES V regional data.
- The concentrations of petroleum-related hydrocarbons measured in the onsite 14-day samples collected in October 2024 and MATES V samples collected between May 2018 and April 2019 are comparable.
- The onsite cumulative cancer risk for petroleum-related COPCs was 1.0×10^{-5} , which exceeds the default cancer risk threshold of 1×10^{-6} , but is less than the SCAAQMD Air Toxics Hotspots threshold of 1×10^{-4} . This level of risk from outdoor onsite air is comparable to the regional risks in the MATES V study.
- Concentrations in the 1-hour samples typically exceed concentrations measured in the 14-day samples. This means that the 1-hour sampling interval identified based on the PID data accurately identified the daytime period associated with higher concentrations. The assessment of potential human health risks demonstrates that the higher concentrations measured in the 1-hour samples do not pose an acute noncancer hazard.
- Benzene and toluene in the October 14-day air sample collected at WB05 are statistical outliers. The source of these concentrations is unknown, but based on the entirety of the data, they are considered unrepresentative of onsite conditions.
 - A second deployment of 14-day sampling occurred in December 2024 at 4 sampling locations including WB05. The individual VOC concentrations, including benzene and toluene, measured in the 4 December samples were relatively similar. Therefore, the December data provide further indication that the concentrations of benzene and toluene measured at WB05 in October were merely outliers and not indicative of a source at the sampling location. Consequently, it is appropriate to exclude the outliers from the estimates of onsite risk.
- The concentrations of petroleum hydrocarbons measured in the 14 onsite 14-day samples and 3 offsite 14-day samples are similar, which indicates that onsite risks and offsite risks are similar. It is important to recognize that the land use of both the onsite and offsite are similar and consist of SHP properties with active oil and gas operations.
- The increase in on-Site concentrations measured from October to December are comparable to monthly increases revealed in the MATES V data.
- The Final MATES V report documents a decrease of 40% in cumulative cancer risk from MATES IV. However, the Final MATES V report also shows that between MATES IV and MATES V, benzene concentrations reduced

by only 10% indicating that the 30% of the decrease in cumulative cancer risk between MATES IV and MATES V was due largely to the decrease in carcinogenic VOCs unrelated to petroleum. Therefore, assuming no significant changes to petroleum-related hydrocarbons in the regional air quality has occurred since the MATES V study was performed (which could be evaluated by others once the pending Mates VI study is published), it is reasonable to conclude that the Site not a significant source of additional:

- measurable concentrations of petroleum-related hydrocarbons
 - measurable cumulative cancer risk due to petroleum-related hydrocarbons
 - acute noncancer hazard due to petroleum-related hydrocarbons.
 - cumulative chronic noncancer hazard due to petroleum-related hydrocarbons.
- It is important to note here that this assessment of potential human health risks is based solely on samples collected at the Site during 2 weeks in October 2024. The onsite data collected in October and December 2024 reveal seasonal variability at the Site that is comparable to the MATES V data.

SECTION 7

References

- ATSDR. 2024. Public Health Assessment Guidance Manual (PHAGM). Agency for Toxic Substances and Disease Registry.
- Catalyst. 2024. Workplan for Human Health Risk Assessment Proposed Walnut Bluff Development.
- DTSC. 2015. Preliminary Endanger Assessment Guidance Manual. Department of Toxic Substances Control. October.
- DTSC. 2018. Toxicity Criteria Rule. September 4. Department of Toxic Substances Control. 22 CA ADC § 68400.5.
- DTSC. 2019. Human Health Risk Assessment (HHRA) Note Number 1: Recommended DTSC Default Exposure Factors for Use in Risk Assessment at California Hazardous Waste Sites and Permitted Facilities. Department of Toxic Substances Control. April 9.
- DTSC. 2022a. Human Health Risk Assessment (HHRA) Note Number 3, DTSC-modified Screening Levels (DTSC-SLs). Department of Toxic Substances Control. May.
- DTSC. 2022b. Human Health Risk Assessment (HHRA) Note Number 4: Guidance for Screening Level Human Health Risk Assessments. Department of Toxic Substances Control. March 29.
- Mearns Consulting. 2021. Human Health Risk Assessment, Northwest Corner E. Willow St. and Walnut Avenue, Walnut Bluff, Signal Hill, California. Mearns Consulting LLC. June 16.
- SCAQMD. 2021. Multiple Air Toxics Exposure Study V (MATES V). South Coast Air Quality Management District. August.
- USEPA. 1994. National Oil and Hazardous Substances Pollution Contingency Plan (NCP). CFR40 Chapter I Subchapter J Part 300.
- USEPA. 1998. Linear Low dose Extrapolation for Cancer Risk Assessments: Sources of Uncertainty and How They Affect the Precision of Risk Estimates. Scientific Advisory Panel (SAP) Meeting. July.
- USEPA. 1989. Risk Assessment Guidance for Superfund, Volume I, Health Evaluation Manual, Part A. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. December.
- USEPA. 2000. Guidance of Data Quality Assessment, Practical Methods of Data Analysis, EPA QA/G-9. July.
- USEPA. 2002. Calculation UIPper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Site. December.
- USEPA. 2022. ProUCL Version 5.2.0 Technical Guide. U.S. Environmental Protection Agency, Office of Research and Development.
- USEPA. 2024. Regional Screening Levels (RSLs). U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. November.

Tables



Table 2
1 Hour Ambient Air Samples
Proposed Walnut Bluff Development - City of Signal Hill, CA

Sample ID	Date	Time	1,1,2-Trichloro-1,2,2-trifluoroethane	1,1-Difluoroethane	1,2-Dichloroethane	1,4-Dichlorobenzene	Benzene	Carbon tetrachloride	Chloroform	Dichlorodifluoromethane	Ethylbenzene	Naphthalene	o-Xylene	p- & m-Xylenes	Tetrachloroethene	Toluene	Trichlorofluoromethane
			µg/m3														
DTSC SLc			--	--	--	--	0.1	0.47	--	--	--	--	--	--	0.46	--	--
DTSC SLnc			--	--	--	--	3.1	42	--	--	--	--	--	--	42	310	1300
RSLs C			--	--	0.11	0.26	0.36	0.47	0.12	--	1.1	0.08	--	--	11	--	--
RSLs NC			5200	42000	7.3	830	31	100	2	100	1000	3.1	100	100	42	5200	--
WB01-1H	10/9/2024	9:00 - 9:59	0.53	1.1	0.11	0.09	1.8	0.5	0.25	2.3	0.57	0.22	0.65	2	<0.1	2.8	1.2
WB02-1H	10/9/2024	10:31 - 11:31	0.52	1.1	0.093	0.12	1.4	0.49	0.27	2.3	0.75	0.29	0.86	2.6	0.081	2.8	1.2
WB03-1H	10/9/2024	10:35 - 11:33	0.52	1.1	0.093	0.11	1.4	0.5	0.23	2.3	0.81	0.20	0.91	2.8	0.09	2.6	1.2
WB04-1H	10/9/2024	10:47 - 11:46	0.52	1.2	0.091	0.1	1.4	0.5	0.23	2.3	0.74	0.17	0.82	2.5	<0.1	2.6	1.2
WB05-1H	10/9/2024	11:06 - 12:08	0.52	1.1	0.092	0.093	1.3	0.5	0.2	2.3	0.58	0.38	0.64	1.8	<0.1	2.3	1.2
WB06-1H	10/9/2024	10:43 - 11:42	0.52	1.2	0.093	0.1	1.4	0.49	0.23	2.3	0.66	0.23	0.74	2.2	<0.1	2.6	1.2
WB07-1H	10/9/2024	8:36 - 9:42	Can arrived evacuated and could not be analyzed.														
WB08-1H	10/9/2024	11:11 - 12:11	0.53	1.1	0.088	0.086	1.4	0.5	0.21	2.3	0.56	0.16	0.62	1.7	<0.1	2.6	1.3
WB09-1H	10/9/2024	11:22 - 12:24	0.53	1	0.086	0.093	1.3	0.5	0.22	2.4	0.72	0.34	0.9	2.4	<0.1	2.7	1.3
WB10-1H	10/9/2024	11:17 - 12:20	0.52	1.1	0.089	0.1	1.8	0.51	0.22	2.4	0.61	0.25	0.64	1.9	<0.1	7.2	1.3
WB11-1H	10/9/2024	11:52 - 12:51	0.52	0.89	0.1	0.11	1.8	0.5	0.19	2.3	0.67	0.31	0.75	2.1	0.077	2.8	1.3
WB12-1H	10/9/2024	11:58 - 12:58	0.53	1.7	0.1	0.085	1.7	0.5	0.2	2.4	0.8	0.30	0.92	2.6	0.072	3	1.3
WB13-1H	10/9/2024	9:10 - 10:09	0.52	0.98	0.11	0.093	1.9	0.5	0.22	2.3	0.57	0.24	0.65	1.9	<0.1	2.9	1.2
WB14-1H	10/9/2024	9:18 - 10:19	0.52	0.99	0.11	0.097	1.9	0.5	0.24	2.3	0.58	0.23	0.68	2	<0.1	3.2	1.2
WB17-1H	10/9/2024	13:30 - 14:37	0.53	0.67	0.07	0.08	0.88	0.5	0.19	2.4	0.61	0.18	0.67	2	0.074	1.7	1.3
WB18-1H	10/9/2024	13:52 - 14:56	0.53	0.8	0.073	0.092	1.1	0.5	0.2	2.4	0.52	0.13	0.56	1.5	0.12	2.5	1.3
WB19-1H	10/9/2024	9:52 - 10:54	0.54	1.1	0.11	0.091	1.6	0.5	0.23	2.4	0.69	0.77	0.78	2.4	<0.1	2.8	1.2

Notes:

SLc - - DTSC (May 2022) HHRA Note 3 residential air screening level for carcinogenic effects unless otherwise specified.

SLnc - DTSC (May 2022) HHRA Note 3 residential air screening level for noncancer effects unless otherwise specified.

RSLs C- USEPA (May 2024) Regional Screening Levels for residential air carcinogenic

RSLs NC- USEPA (May 2024) Regional Screening Levels for residential air Noncarcinogenic

µg/m3 - micrograms per cubic meter

highlighted where above screening criteria

Table 3
24 Hour Ambient Air Samples
Proposed Walnut Bluff Development - City of Signal Hill, CA

Sample ID	Date	1,1,2-Trichloro-1,2,2-trifluoroethane	1,1-Difluoroethane	1,2-Dichloroethane	1,4-Dichlorobenzene	Benzene	Carbon tetrachloride	Chloroform	Dichlorodifluoromethane	Ethylbenzene	Naphthalene	o-Xylene	p- & m-Xylenes	Toluene	Trichlorofluoromethane
		µg/m3													
DTSC SLc		--	--	--	--	0.097	0.47	--	--	--	--	--	--	--	--
DTSC SLnc		--	--	--	--	3.1	42	--	--	--	--	--	--	310	1300
RSLs C		--	--	0.11	0.26	0.36	0.47	0.12	--	1.1	0.083	--	--	--	--
RSLs NC		5200	42000	7.3	830	31	100	2	100	1000	3.1	100	100	5200	--
WB01-24H	10/9 - 10/10/2024	0.52	0.43	0.07	<0.050	0.74	0.47	0.15	2.30	0.29	0.21	0.32	0.94	1.30	1.20
WB02-24H	10/9 - 10/10/2024	0.50	0.44	0.07	0.08	0.88	0.46	0.17	2.30	0.36	0.43	0.38	1.00	1.90	1.20
WB03-24H	10/9 - 10/10/2024	0.52	0.48	0.06	<0.050	0.70	0.48	0.17	2.40	0.25	0.16	0.29	0.79	1.20	1.20
WB04-24H	10/9 - 10/10/2024	0.52	0.45	0.07	<0.050	0.85	0.48	0.15	2.30	0.28	0.18	0.33	0.93	1.40	1.20
WB05-24H	10/9 - 10/10/2024	0.52	0.45	0.07	<0.050	0.91	0.49	0.15	2.30	0.39	0.19	0.50	1.40	2.00	1.20
WB06-24H	10/9 - 10/10/2024	0.52	0.42	0.07	<0.050	0.68	0.48	0.16	2.30	0.25	0.14	0.28	0.82	1.20	1.20
WB07-24H	10/9 - 10/10/2024	0.51	0.45	0.06	<0.050	0.71	0.47	0.16	2.30	0.25	0.14	0.27	0.75	1.20	1.20
WB08-24H	10/9 - 10/10/2024	0.52	0.43	0.07	<0.050	0.69	0.48	0.14	2.30	0.26	0.15	0.29	0.80	1.20	1.20
WB09-24H	10/9 - 10/10/2024	0.53	0.42	0.07	<0.050	0.86	0.49	0.32	2.30	0.38	0.17	0.49	1.40	1.80	1.20
WB10-24H	10/9 - 10/10/2024	0.52	0.43	0.07	<0.050	1.10	0.48	0.15	2.30	0.47	0.28	0.41	1.40	1.70	1.20
WB11-24H	10/9 - 10/10/2024	0.52	0.44	0.07	<0.050	0.69	0.49	0.14	2.40	0.27	0.12	0.29	0.85	1.20	1.20
WB12-24H	10/9 - 10/10/2024	0.52	0.44	0.07	<0.050	0.73	0.49	0.15	2.20	0.27	0.17	0.32	0.89	1.30	1.20
WB13-24H	10/9 - 10/10/2024	0.53	0.44	0.07	<0.050	0.72	0.49	0.17	2.30	0.26	0.15	0.29	0.79	1.20	1.20
WB14-24H	10/9 - 10/10/2024	0.53	0.43	0.07	<0.050	0.73	0.49	0.15	2.20	0.24	0.13	0.27	0.77	1.30	1.20
WB17-24H	10/9 - 10/10/2024	0.52	0.47	0.07	<0.050	0.92	0.50	0.15	2.20	0.34	0.22	0.40	1.10	2.20	1.20
WB18-24H	10/9 - 10/10/2024	0.52	0.48	0.07	<0.050	0.94	0.49	0.14	2.20	0.51	0.21	0.64	1.90	2.10	1.20
WB19-24H	10/9 - 10/10/2024	0.51	0.45	0.08	<0.050	1.10	0.49	0.14	2.30	0.33	0.16	0.36	1.10	1.50	1.20

Notes:

SLc - - DTSC (May 2022) HHRA Note 3 residential air screening level for carcinogenic effects unless otherwise specified.

SLnc - DTSC (May 2022) HHRA Note 3 residential air screening level for noncancer effects unless otherwise specified.

RSLs C- USEPA (May 2024) Regional Screening Levels for residential air carcinogenic

RSLs NC- USEPA (May 2024) Regional Screening Levels for residential air Noncarcinogenic

µg/m³ - micrograms per cubic meter

highlighted where above screening criteria

Table 4
2 Week Ambient Air Samples
Proposed Walnut Bluff Development - City of Signal Hill, CA

Sample ID	Date	1,2,4-Trimethylbenzene	1,2-Dichloroethane	1,3,5-Trimethylbenzene	1,4-Dichlorobenzene	Benzene	Bromomethane	Carbon Tetrachloride	Chloroethane	Chloroform	Chloromethane	Ethylbenzene	1,1,2-Trichloro-1,2,2-trifluoroethane	Freon 114	Dichlorodifluoromethane	Methylene Chloride	Naphthalene	Styrene	Tetrachloroethene	Toluene	Trichlorofluoromethane	Xylene (total)	m,p-Xylenes	o-Xylene
		ug/m3																						
DTSC SLc		--	--	--	--	0.097	--	0.47	--	--	--	--	--	--	--	--	--	--	0.46	--	--	--	--	--
DTSC SLnc		--	--	--	--	3.1	--	42	--	--	--	--	--	--	--	--	--	940	42	310	1300	--	--	--
RSLs C		--	0.11	--	0.26	0.36	--	0.47	--	0.12	--	1.1	--	--	--	100	0.083	--	11	--	--	--	--	--
RSLs NC		63	7.3	63	830	31	5.2	100	4200	2	94	1000	5200	--	100	630	3.1	1000	42	5200	--	100	100	100
WB01-14D	10/1 - 10/15/2024	0.30	0.063	0.074	<0.066	0.8	0.08	0.46	<0.029	0.14	0.99	0.27	0.46	0.11	2.3	0.55	0.059	0.1	<0.075	1.4	1.1	1.1	0.79	0.32
WB02-14D	10/1 - 10/15/2024	0.37	0.066	0.10	<0.060	0.83	0.084	0.45	0.049	0.16	0.99	0.33	0.44	0.12	2.3	0.60	0.077	0.12	<0.068	1.5	1	1.3	0.90	0.35
WB02-14D-R2	12/2 - 12/16/2024	1.2	0.1	0.34	0.082	1.9	0.15	0.44	<0.026	0.19	1.1	0.88	0.46	0.1	2.2	0.84	0.15	0.41	0.1	3.3	1.1	3.5	2.50	0.95
WB03-14D	10/1 - 10/15/2024	0.24	0.062	0.055	<0.060	0.72	0.082	0.47	<0.026	0.17	1.0	0.25	0.47	0.12	2.3	0.59	<0.052	0.076	<0.068	1.2	1.1	0.99	0.71	0.28
WB03-14D-R2	12/2 - 12/16/2024	0.92	0.097	0.26	0.092	1.7	0.16	0.45	<0.026	0.2	1.1	0.73	0.47	0.1	2.2	0.93	0.11	0.46	0.11	3.2	1.1	3.2	2.3	0.89
WB04-14D	10/1 - 10/15/2024	0.29	0.062	0.065	<0.060	0.74	0.075	0.47	<0.026	0.16	1.0	0.26	0.47	0.12	2.3	1.2	<0.052	0.11	<0.068	1.4	1.1	1.1	0.76	0.3
WB05-14D	10/1 - 10/15/2024	0.29	0.061	0.074	<0.072	3.2**	0.084	0.46	<0.032	0.16	1.0	0.26	0.46	0.11	2.3	0.76	0.074	0.13	<0.081	5.8**	1.1	1.0	0.73	0.29
WB05-14D-R2	12/2 - 12/16/2024	1.3	0.096	0.33	0.09	1.7	0.15	0.45	<0.029	0.19	1.1	0.72	0.47	0.1	2.2	0.91	0.16	0.47	0.12	3.4	1.1	3.1	2.3	0.87
WB06-14D	10/1 - 10/15/2024	0.26	0.062	0.065	<0.060	0.74	0.081	0.47	0.045	0.15	1.0	0.28	0.46	0.12	2.3	0.62	<0.052	0.11	<0.068	1.6	1.1	1.0	0.74	0.29
WB07-14D	10/1 - 10/15/2024	0.29	0.061	0.065	<0.060	0.72	0.085	0.46	0.088	0.14	0.99	0.26	0.46	0.12	2.3	0.67	0.059	0.12	<0.068	1.5	1.1	0.99	0.71	0.28
WB08-14D	10/1 - 10/15/2024	0.27	0.062	0.061	<0.066	0.74	0.08	0.47	0.058	0.14	1.0	0.26	0.47	0.12	2.3	0.74	<0.058	0.099	<0.075	1.5	1.1	0.98	0.70	0.28
WB09-14D	10/1 - 10/15/2024	0.29	0.063	0.068	<0.060	0.81	0.092	0.47	0.042	0.18	1.0	0.27	0.47	0.12	2.3	2.8	0.078	0.12	<0.068	1.6	1.1	1.1	0.79	0.31
WB10-14D	10/1 - 10/15/2024	0.50	0.072	0.14	<0.060	0.99	0.083	0.46	<0.026	0.15	0.98	0.45	0.46	0.12	2.3	0.85	0.14	0.13	<0.068	1.3	1.1	1.5	1.2	0.37
WB10-14D-R2	12/2 - 12/16/2024	1.10	0.1	0.3	<0.060	1.9	0.15	0.45	<0.026	0.2	1.1	0.84	0.46	0.1	2.2	0.87	0.06	0.36	0.12	3.2	1.1	3.3	2.5	0.87
WB11-14D	10/1 - 10/15/2024	0.30	0.061	0.073	<0.060	0.78	0.089	0.47	0.089	0.14	1.0	0.27	0.47	0.12	2.3	0.57	0.086	0.13	<0.068	1.6	1.1	1.1	0.78	0.31
WB12-14D	10/1 - 10/15/2024	0.32	0.062	0.074	<0.060	0.85	0.081	0.46	0.10	0.14	1.0	0.29	0.46	0.12	2.3	0.57	0.059	0.14	<0.068	1.9	1.1	1.2	0.83	0.33
WB13-14D	10/1 - 10/15/2024	0.35	0.065	0.085	<0.066	0.89	0.083	0.46	<0.029	0.17	1.0	0.31	0.46	0.11	2.3	0.60	0.12	0.32	0.08	2.0	1.1	1.3	0.94	0.37
WB14-14D	10/1 - 10/15/2024	0.27	0.063	0.067	<0.060	0.78	0.085	0.46	<0.026	0.13	1.0	0.26	0.46	0.11	2.3	0.59	0.057	0.086	<0.068	1.3	1.1	1.1	0.75	0.3
WB17-14D	10/1 - 10/15/2024	0.33	0.062	0.085	<0.066	0.82	0.084	0.46	0.032	0.14	1.0	0.3	0.46	0.11	2.3	0.53	0.072	0.13	<0.075	1.7	1.1	1.2	0.89	0.35
WB18-14D	10/1 - 10/15/2024	0.44	0.062	0.11	<0.072	0.79	0.11	0.47	0.035	0.14	1.1	0.3	0.47	0.12	2.4	0.56	0.073	0.13	<0.081	1.7	1.1	1.2	0.88	0.35
WB19-14D	10/1 - 10/15/2024	0.30	0.067	0.081	<0.066	1	0.08	0.45	0.069	0.13	1.0	0.31	0.45	0.11	2.3	0.50	<0.058	0.18	<0.075	1.8	1.1	1.3	0.95	0.37

Notes:

SLc -- DTSC (May 2022) HHRA Note 3 residential air screening level for carcinogenic effects unless otherwise specified.

** determined to be a statistical outlier and excluded from all calculations of risk per Section 4.4

SLnc - DTSC (May 2022) HHRA Note 3 residential air screening level for noncancer effects unless otherwise specified.

RSLs C- USEPA (May 2024) Regional Screening Levels for residential air carcinogenic

RSLs NC- USEPA (May 2024) Regional Screening Levels for residential air Noncarcinogenic

µg/m3 - micrograms per cubic meter

highlighted where above screening criteria

Table 5
Characterization of Potential Chronic Human Health Risks
Associated with Onsite Outdoor Air Exposure
Proposed Walnut Bluff Development

Analyte	N	Detects	Percent FOD	Max Outdoor Air (µg/m ³)	95% UCL Outdoor Air (µg/m ³)	*	Res SLc (µg/m ³)		Res SLnc (µg/m ³)	*	Cancer Risk	Hazard Quotient
Petroleum Hydrocarbons												
Benzene	13	13	100	1.0	0.84		0.097		3.1		8.6E-06	2.7E-01
Toluene	13	13	100	2.0	1.6		NTV		310		-	5.3E-03
Ethylbenzene	14	14	100	0.45	0.31		1.1	2	1,000	2	2.8E-07	3.1E-04
m,p-Xylenes	14	14	100	1.2	0.87		NTV		100	2	-	8.7E-03
o-Xylene	14	14	100	0.37	0.33		NTV		100	2	-	3.3E-03
Naphthalene	14	10	71	0.14	0.086		0.083		3.1	2	1.0E-06	2.8E-02
1,2,4-Trimethylbenzene	14	14	100	0.50	0.34		NTV		63	2	-	5.4E-03
1,3,5-Trimethylbenzene	14	14	100	0.14	0.086		NTV		63	2	-	1.4E-03
Cumulative Cancer Risk and Hazard Index											1.0E-05	3.2E-01
Non-Petroleum Hydrocarbons												
1,2-Dichloroethane	14	14	100	0.072	0.065		NTV		NTV		-	-
Bromomethane	14	14	100	0.092	0.085		NTV		5.2	2	-	1.6E-02
Carbon Tetrachloride	14	14	100	0.47	0.47		0.47		42		9.9E-07	1.1E-02
Chloroethane	14	7	50	0.10	0.060		NTV		4,200	2	-	1.4E-05
Chloroform	14	14	100	0.18	0.16		0.12	2	2.0	2	1.3E-06	8.0E-02
Chloromethane	14	14	100	1.0	1.0		NTV		94	2	-	1.1E-02
Freon 113	14	14	100	0.47	0.47		NTV		5,200	2	-	9.0E-05
Freon 114	14	14	100	0.12	0.12		NTV		NTV		-	-
Freon 12	14	14	100	2.3	2.3	1	NTV		100	2	-	2.3E-02
Methylene Chloride	14	14	100	2.8	1.1		1		420		1.1E-06	2.7E-03
Styrene	14	14	100	0.32	0.16		NTV		940		-	1.6E-04
Tetrachloroethene	14	1	7.1	0.080	0.080	1	0.46		42		1.7E-07	1.9E-03
Trichlorofluoromethane	14	14	100	1.1	1.1		0.48	2	2.1	2	2.3E-06	5.3E-01
Cumulative Cancer Risk and Hazard Index											5.9E-06	6.7E-01
Total Cumulative Cancer Risk and Hazard Index³											1.6E-05	9.9E-01

Notes:

N = sample size

FOD = frequency of detection.

95% UCL = 95% upper confidence limit on the mean concentration calculated using USEPA (2022) ProUCL (version 5.2) statistical software.

Res SLc - - DTSC (2022a) HHRA Note 3 residential air screening level for carcinogenic effects unless otherwise specified. June.

Res SLnc - DTSC (2022a) HHRA Note 3 residential air screening level for noncancer effects unless otherwise specified. June.

NTV = no toxicity/screening value available

1. Insufficient data for calculating 95% UCL using standard USEPA (2022) methods. Value shown is the lower of the 95% UCL calculated using the 1/2 detection limit method or the maximum concentration.

2. USEPA (2024) Regional Screening Levels for residential air. November.

3. Total Cumulative Cancer Risk and Hazard Index is the combined cancer risks and hazard indices from petroleum hydrocarbons and non-petroleum hydrocarbons.

Table 6
Characterization of Potential Acute Human Health Risks
Associated with Onsite Outdoor Air Exposure
Proposed Walnut Bluff Development

Analyte	Max 1-Hour (µg/m ³)	Acute REL (µµg/m ³)	Source	Acute Hazard Quotient (unitless)
Petroleum Hydrocarbons				
Benzene	1.9	27	OEHHA	7.0E-02
Ethylbenzene	0.81	143,297	AEGL	5.7E-06
Naphthalene	0.38	200	AGV	1.9E-03
Toluene	7.2	5,000	OEHHA	1.4E-03
o-Xylene	0.92	22,000	OEHHA	4.2E-05
p- & m-Xylenes	2.8	22,000	OEHHA	1.3E-04
Total Xylenes ²	3.7	22,000	OEHHA	1.7E-04
Cumulative Acute Hazard Index				7.4E-02
Non-Petroleum Hydrocarbons				
1,1,2-Trichloro-1,2,2-trifluoroethane	0.53	NTV	-	-
1,1-Difluoroethane	1.7	NTV	-	-
1,2-Dichloroethane	0.11	200,000	PAC	5.5E-07
1,4-Dichlorobenzene	0.12	NTV	-	-
Carbon tetrachloride	0.51	1,900	OEHHA	2.7E-04
Chloroform	0.27	150	OEHHA	1.8E-03
Dichlorodifluoromethane	2.4	NTV	-	-
Tetrachloroethene	0.09	20,000	AGV	4.5E-06
Trichlorofluoromethane	1.3	NTV	-	-
Cumulative Acute Hazard Index				2.1E-03
Total Cumulative Acute Hazard Index¹				7.6E-02

Notes:

OEHHA = California Office of Environmental Health Hazard Assessment (2024) Acute Reference Exposure Levels

AEGL = U.S. Environmental Protection Agency (2019) Acute Exposure Guideline Level

PAC = U.S. Department of Energy (2018) Protective Action Criteria

AGV = Minnesota Department of Health (2024) acute Air Guidance Values (AGVs)

NTV = no toxicity/screening value available.

1. Total Cumulative Acute Hazard Index is the combined acute hazard indices from petroleum hydrocarbons and non-petroleum hydrocarbons.

2. Total Xylenes not included in the cumulative HI calculations as this would result in double-counting xylenes whereby the cumulative HI for o-xylene + the cumulative HI for m&p-xylene is greater than the cumulative HI for Total Xylenes.

Table 7
Characterization of Potential Chronic Human Health Risks
Associated with Offsite Ambient Air Exposure to Petroleum-Related COPCs
Proposed Walnut Bluff Development

Analyte	N	Detects	Percent FOD	Max Outdoor Air (µg/m3)	95% UCL Outdoor Air (µg/m3)	*	Res SLc (µg/m3)		Res SLnc (µg/m3)	*	Cancer Risk	Hazard Quotient
Petroleum Hydrocarbons												
Benzene	3	3	100	1.0	1.0	1	0.097		3.1		1.0E-05	3.2E-01
Toluene	3	3	100	1.8	1.8	1	NTV		310		-	5.8E-03
Ethylbenzene	3	3	100	0.31	0.31	1	1.1	2	1,000	2	2.8E-07	3.1E-04
m,p-Xylenes	3	3	100	0.95	0.95	1	NTV		100	2	-	9.5E-03
o-Xylene	3	3	100	0.37	0.37	1	NTV		100	2	-	3.7E-03
Naphthalene	3	2	67	0.073	0.073	1	0.083		3.1	2	8.8E-07	2.4E-02
1,2,4-Trimethylbenzene	3	3	100	0.44	0.44	1	NTV		63	2	-	7.0E-03
1,3,5-Trimethylbenzene	3	3	100	0.11	0.11	1	NTV		63	2	-	1.7E-03
Cumulative Cancer Risk and Hazard Index											1.1E-05	3.7E-01

Notes:

N = sample size

FOD = frequency of detection.

95% UCL = 95% upper confidence limit on the mean concentration calculated using USEPA (2022) ProUCL (version 5.2) statistical software.

Res SLc - - DTSC (2022) HHRA Note 3 residential air screening level for carcinogenic effects unless otherwise specified. June.

Res SLnc - DTSC (2022) HHRA Note 3 residential air screening level for noncancer effects unless otherwise specified. June.

NTV = no toxicity/screening value available

1. Insufficient data for calculating 95% UCL using standard USEPA (2022) methods. Value shown is the lower of the 95% UCL calculated using the 1/2 detection limit method or the maximum concentration.

2. USEPA (2024) Regional Screening Levels for residential air. May.

Table 8
Comparison of Regional and Walnut Bluff
Average Outdoor Air Petroleum Hydrocarbon Concentrations
Proposed Walnut Bluff Development

Study	Benzene µg/m ³		Toluene µg/m ³		Ethylbenzene µg/m ³		Xylenes µg/m ³		Naphthalene µg/m ³	
	Long Beach	Regional	Long Beach	Regional	Long Beach	Regional	Long Beach	Regional	Long Beach	Regional
MATES II 1998-1990	2.6	3.6	7.9	13	1.4	2.1	6.1	9.8	ND	ND
MATES III 2005	1.7	1.9	5.7	7.5	0.94	1.2	4.5	4.3	ND	0.20
MATES IV 2012-2013	1.0	1.2	2.8	4.0	0.48	0.90	1.9	3.0	0.08	0.10
MATES V 2018-2019	1.0	0.88	2.3	2.8	0.42	0.49	1.7	2.1	ND	0.061
WB Offsite- Oct 2024	0.87		1.7		0.30		1.2		0.073	
WB Onsite - Oct 2024	0.80		1.5		0.29		1.1		0.081	
Study	Benzene cancer risk		Toluene noncancer hazard index		Ethylbenzene cancer risk		Xylenes noncancer hazard index		Naphthalene cancer risk	
	Long Beach	Regional	Long Beach	Regional	Long Beach	Regional	Long Beach	Regional	Long Beach	Regional
MATES II 1998-1990	2.7E-05	3.7E-05	2.6E-02	4.2E-02	1.3E-06	1.9E-06	6.1E-02	9.8E-02	--	--
MATES III 2005	1.7E-05	1.9E-05	1.8E-02	2.4E-02	8.6E-07	1.1E-06	4.5E-02	4.3E-02	--	1.8E-07
MATES IV 2012-2013	1.1E-05	1.2E-05	9.0E-03	1.3E-02	4.3E-07	8.2E-07	1.9E-02	3.0E-02	9.2E-07	1.3E-06
MATES V 2018-2019	1.1E-05	9.1E-06	7.4E-03	9.2E-03	3.8E-07	4.4E-07	1.7E-02	2.1E-02	--	7.4E-07
WB Offsite- Oct 2024	9.0E-06		5.6E-03		2.8E-07		1.2E-02		8.7E-07	
WB Onsite - Oct 2024	8.2E-06		4.9E-03		2.6E-07		1.1E-02		9.7E-07	

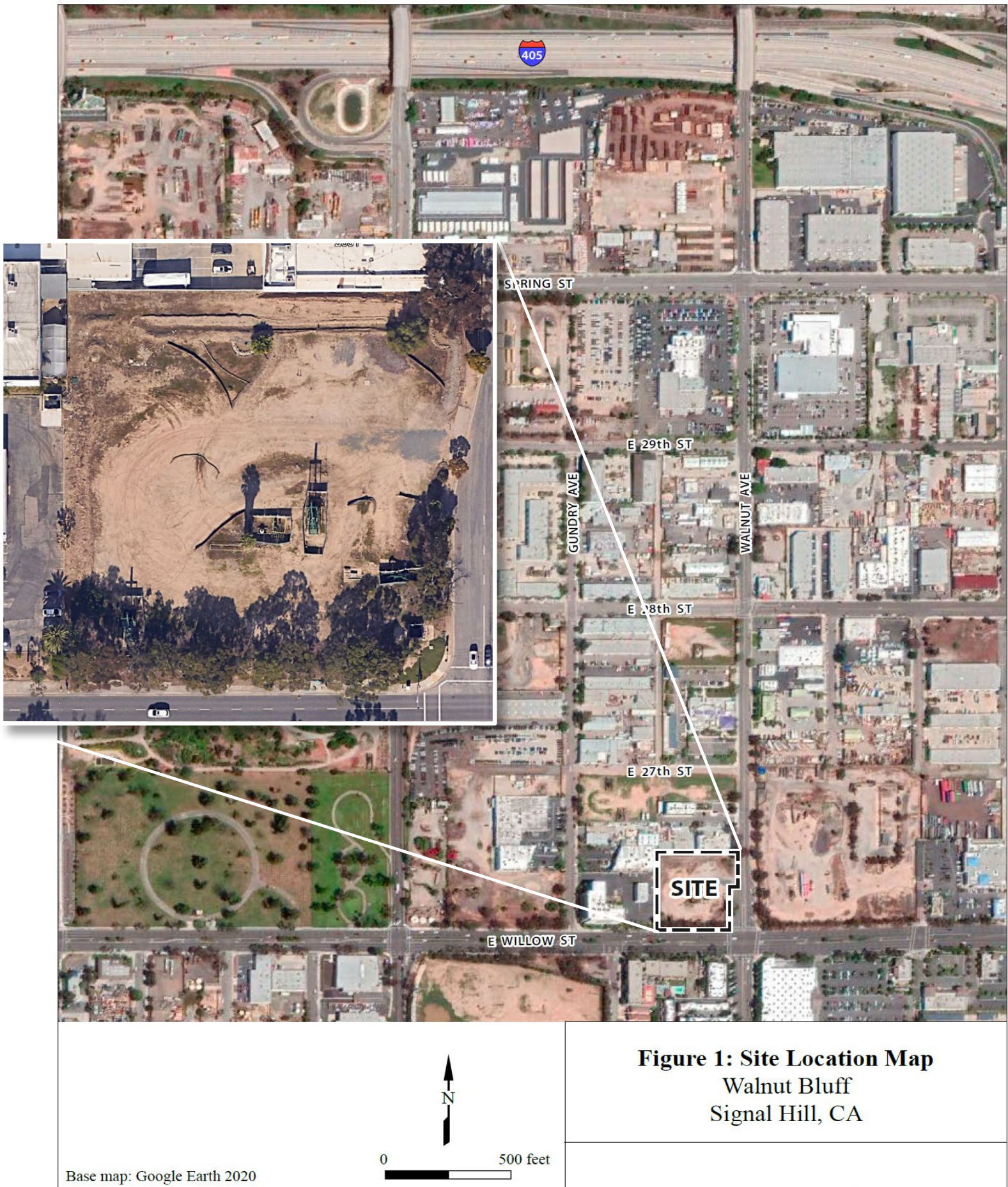
Notes:

1,2,4-Trimethylbenzene and 1,3,5-trimethylbenzene are not shown as they're concentrations were not reported in the MATES regional studies.

Bold values exceed MATES regional air concentrations.

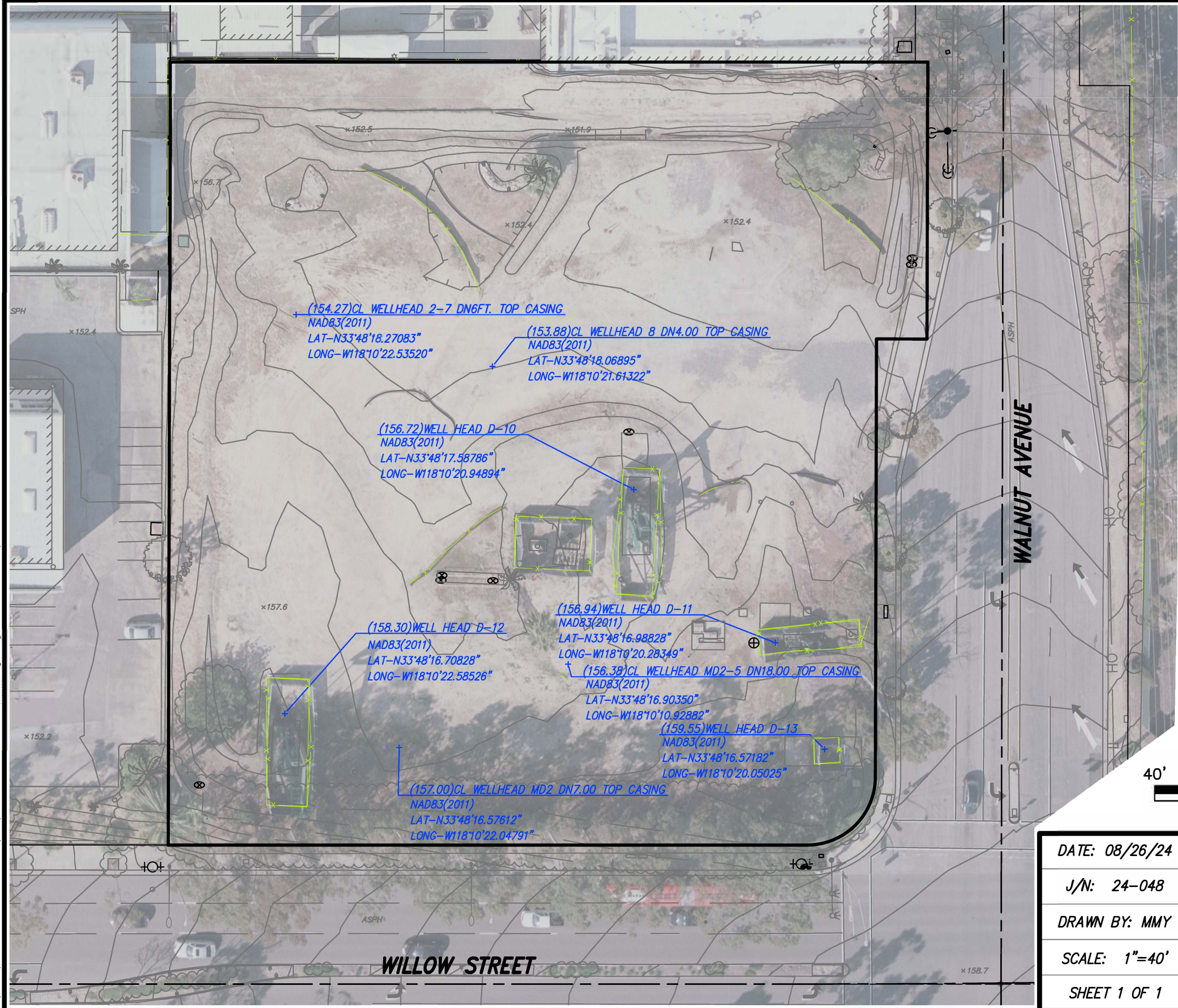
Figures





(Source: Mearns Consulting, LLC 2021)

L:\2024\24-048 SHP Walnut Bluff\Exh\24-048exh101 - SITE WELLS.dwg; Aug 26, 2024 - 3:04pm



BASIS OF BEARINGS

THE BEARINGS SHOWN HEREON ARE BASED ON THE CENTERLINE OF WALNUT AVENUE AS SHOWN ON RECORD OF SURVEY AS PER MAP FILED IN RECORD OF SURVEY BOOK 98, PAGE 89, BEING NORTH 00°08'30" EAST.

BENCHMARK INFORMATION

THE ELEVATIONS SHOWN HEREON ARE BASED ON THE FOLLOWING BENCHMARK:

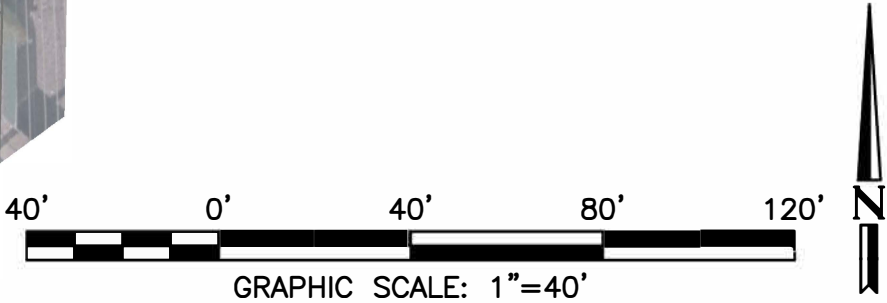
BM No.: 063 ELEV.: 158.588' (1985) (CITY OF SIGNAL HILL)

DATUM: NGVD 1929 (MSL)

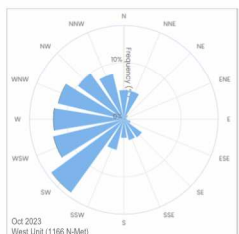
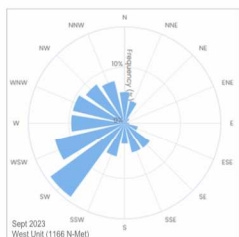
DESCRIPTION: WILLOW STREET & WALNUT AVENUE SW CORNER BRASS SIDE ST IN 1' SQ. CONCRETE 45' S & 80' W/O C.L. INT. (1' W/O BCR & 1' S/O C.F.) C.L.B. NO. 95 (RE 3111 1971)

SURVEYOR NOTE

COORDINATES REPORTED REPRESENT "GLOBAL - WGS 1984" VALUES



DATE: 08/26/24	WALNUT BLUFF	
J/N: 24-048	WELL AS-BUILT SURVEY	Figure 2
DRAWN BY: MMY	SIGNAL HILL, CALIFORNIA	
SCALE: 1"=40'	 DORC Engineering, Inc.	160 S. Old Springs Road Suite 210 Anaheim Hills, CA 92808 (714) 685-6860
SHEET 1 OF 1		



WB17
Off-Site Location
see Figure 4

WB19
Off-Site Location
see Figure 4

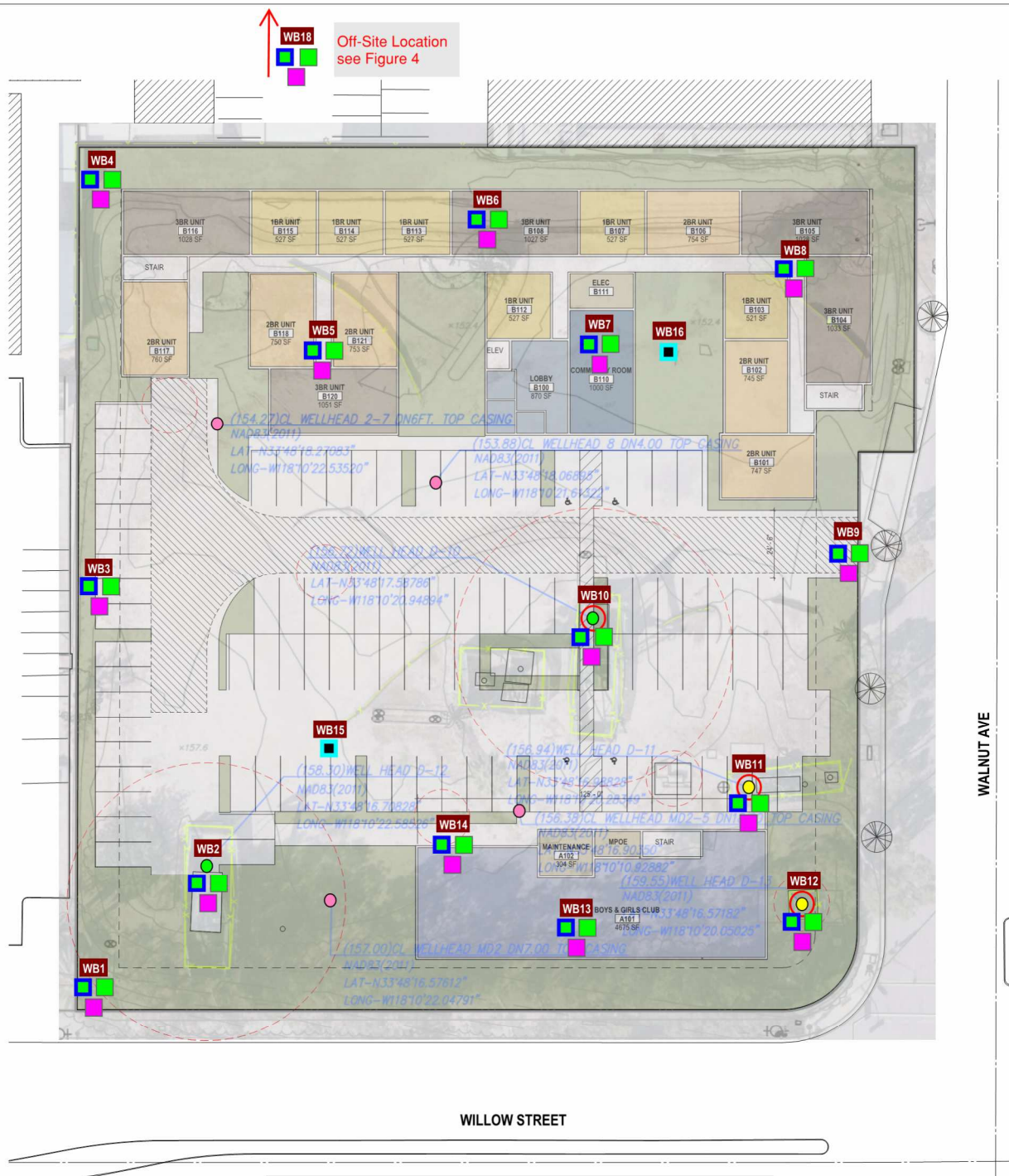


FIGURE 3
ON-SITE SAMPLING LOCATIONS

Legend

- 2 week
PID Continuous Monitoring [P]
Summa Canister by TO15sim [S14]
- 24 hour
Summa Canister by TO15sim
- 1 hour
Summa Canister by TO15sim
- Weather Monitoring Station [W]

WB1 Sample/Monitoring Location ID
Samples to be labeled as follows:
[Location ID][Sample Type]
e.g. WB1S24 = WB1, 24hr Summa

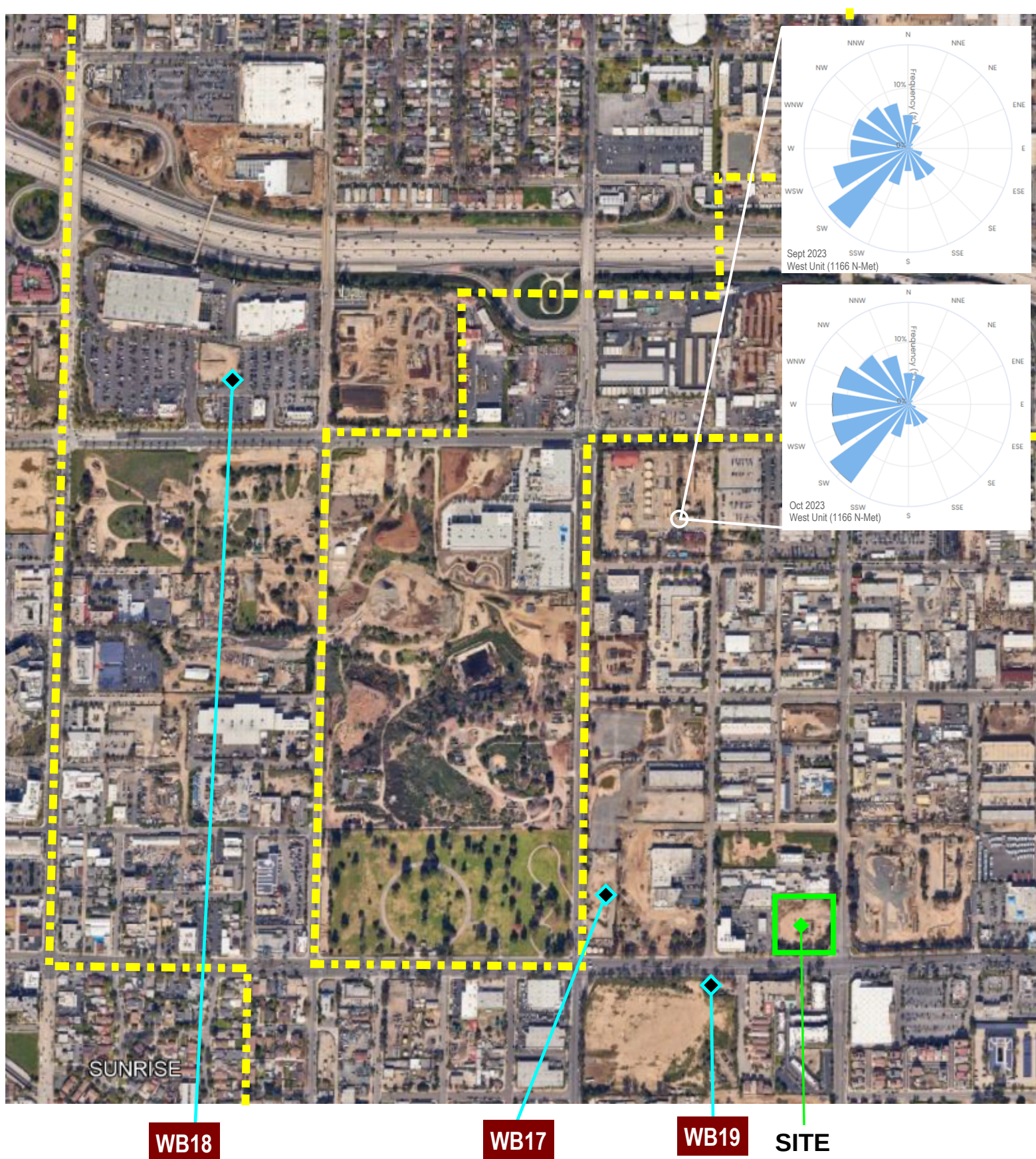
- Active Well
- Idle Well
- Abandoned Well
- To Be Abandoned

Base Map Adapted -
KFA - National Core Walnut Bluff -
Sheet A11 - First Floor Plan
(05.31.2024)

Overlay - topography and oil & gas well locations
DRC Engineering, Well As-Built Survey
Well As-Built Survey
(08.26.24)

1ST FLOOR PLAN - OVERALL
1/16" = 1'-0"



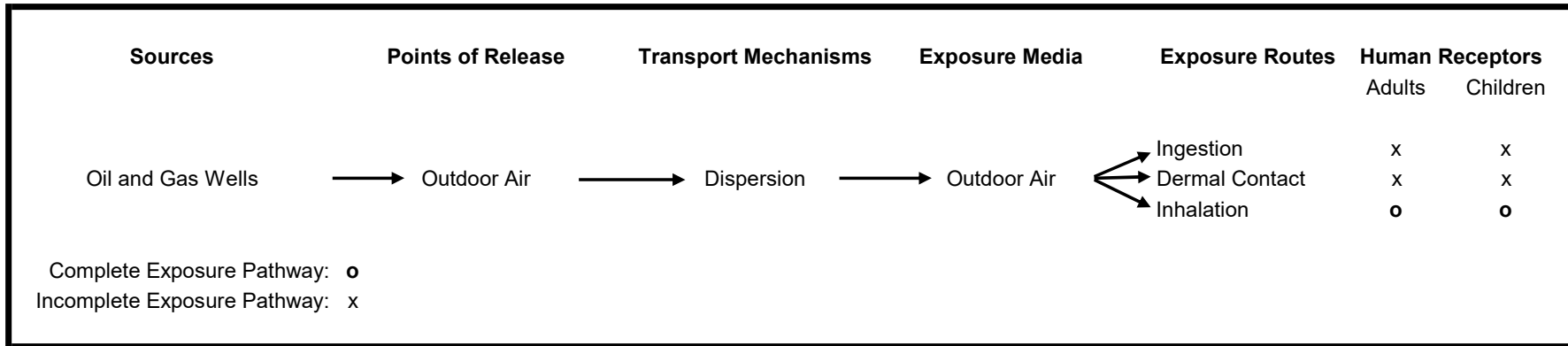


Signal Hill
City Limits

FIGURE 4
OFF-SITE OUTDOOR AIR SAMPLING PLAN

Note:
See Figure 3 for Sampling Legend.

Figure 5
Human Health Risk Assessment Conceptual Site Model
Proposed Walnut Bluff Development



Charts

CHART 1

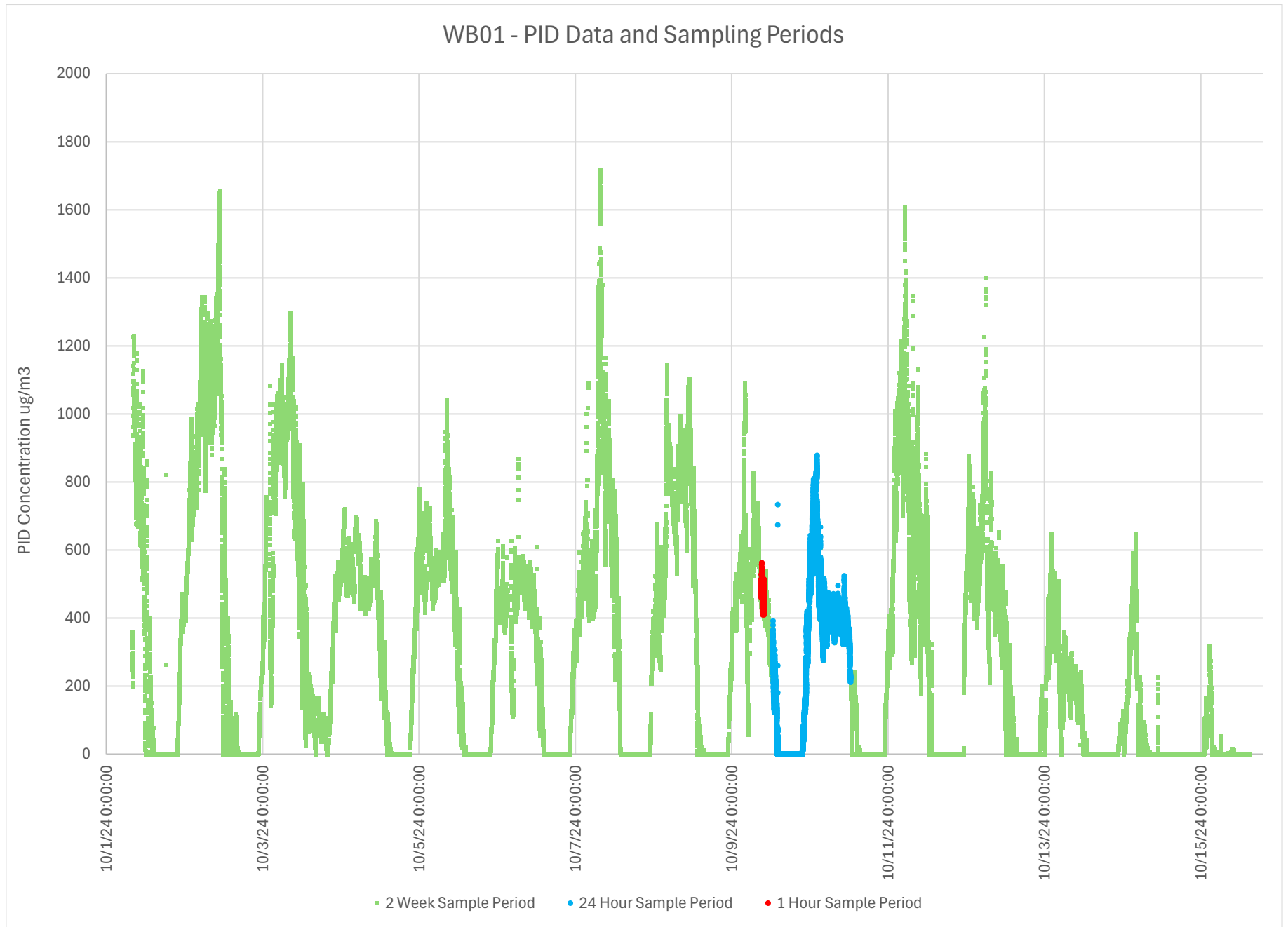


CHART 2

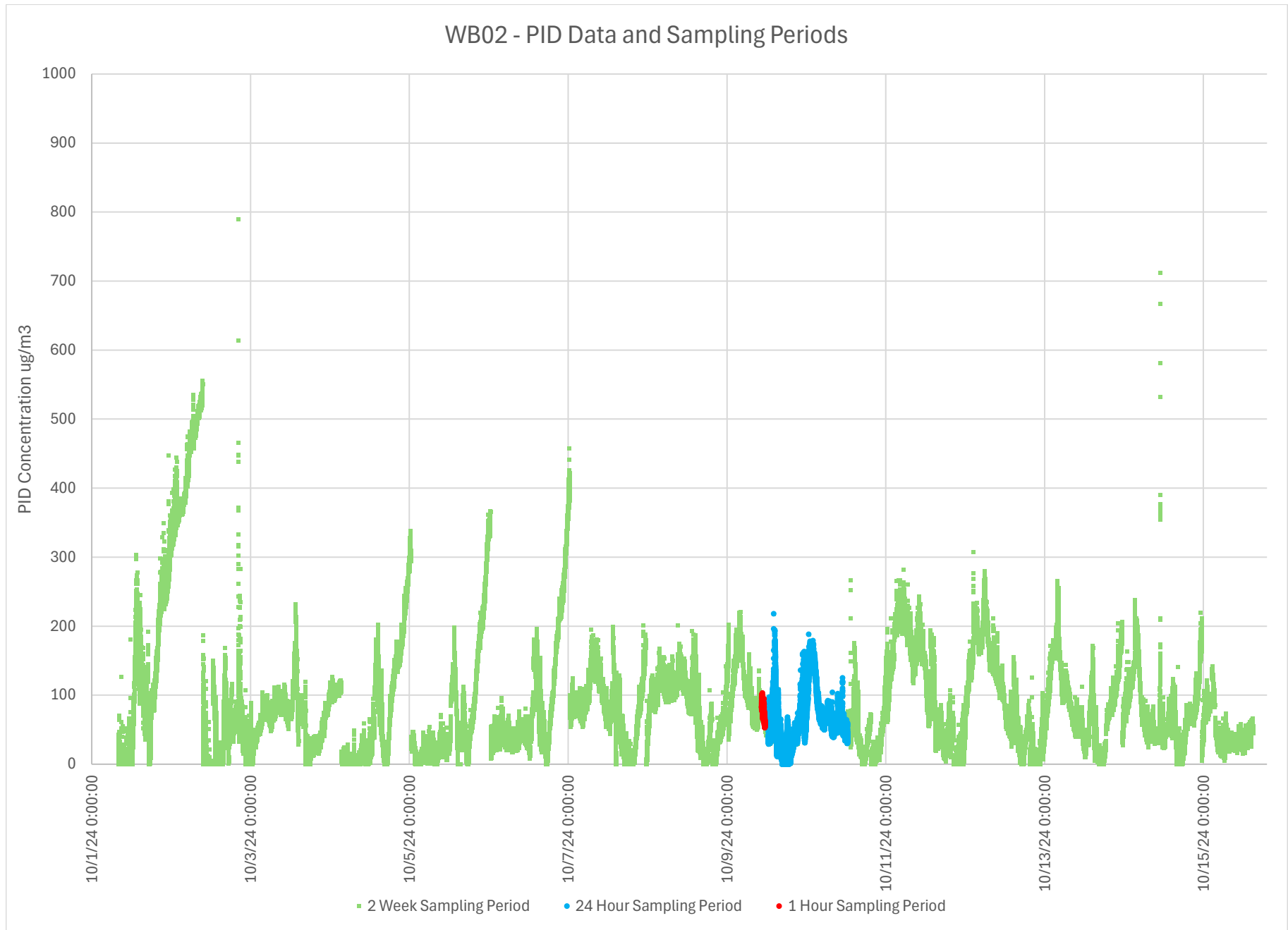


CHART 3

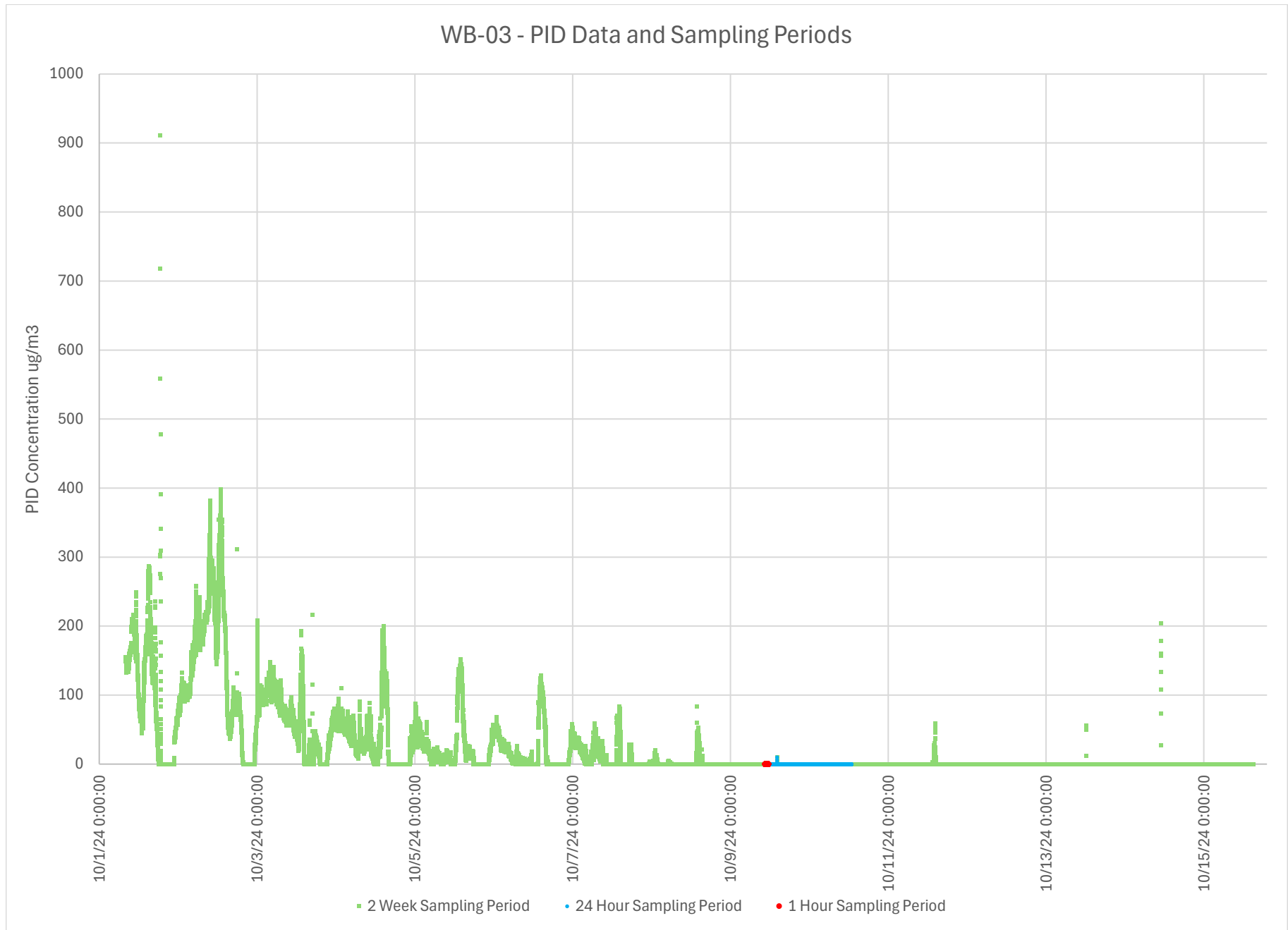


CHART 4

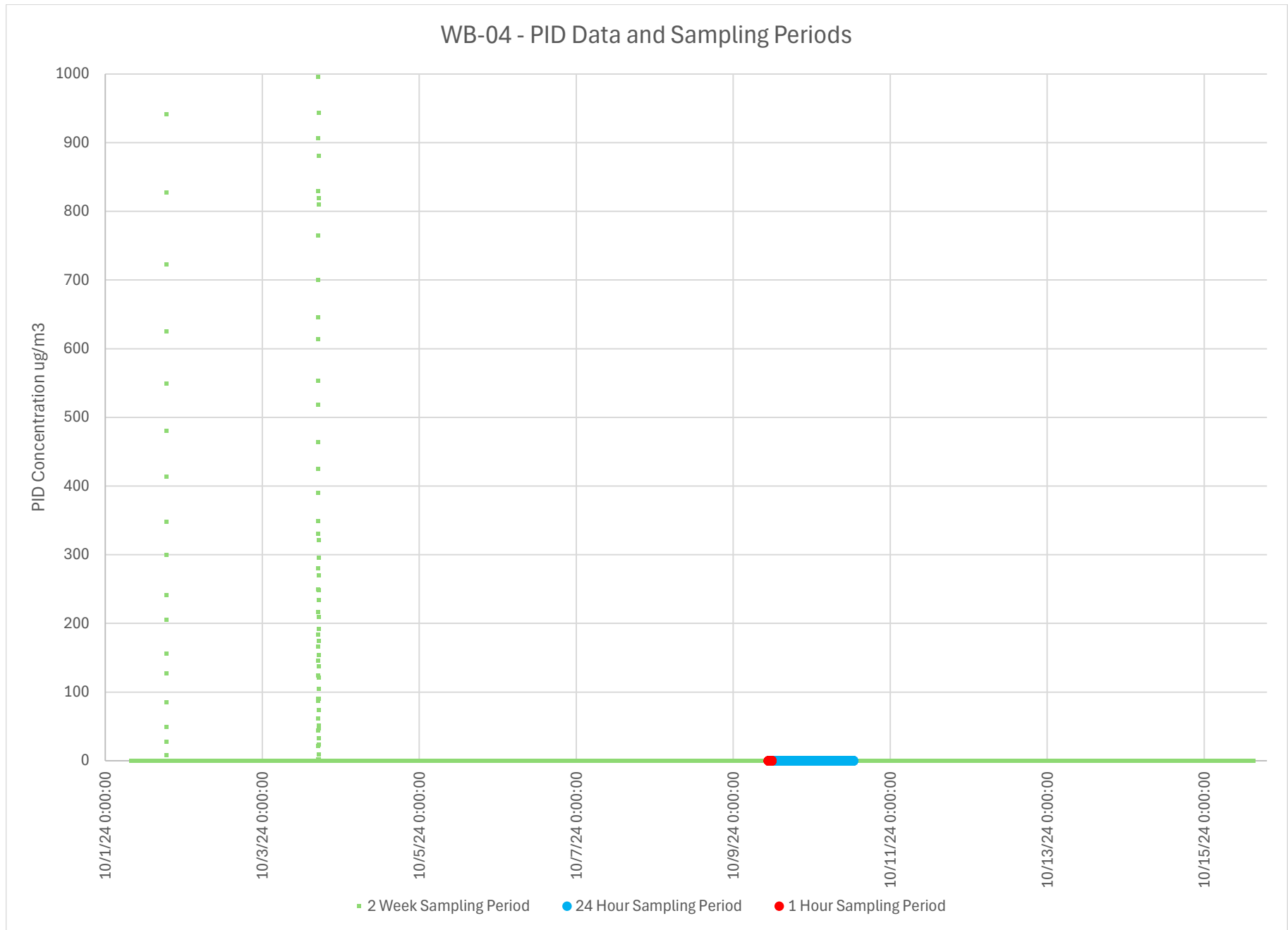


CHART 5

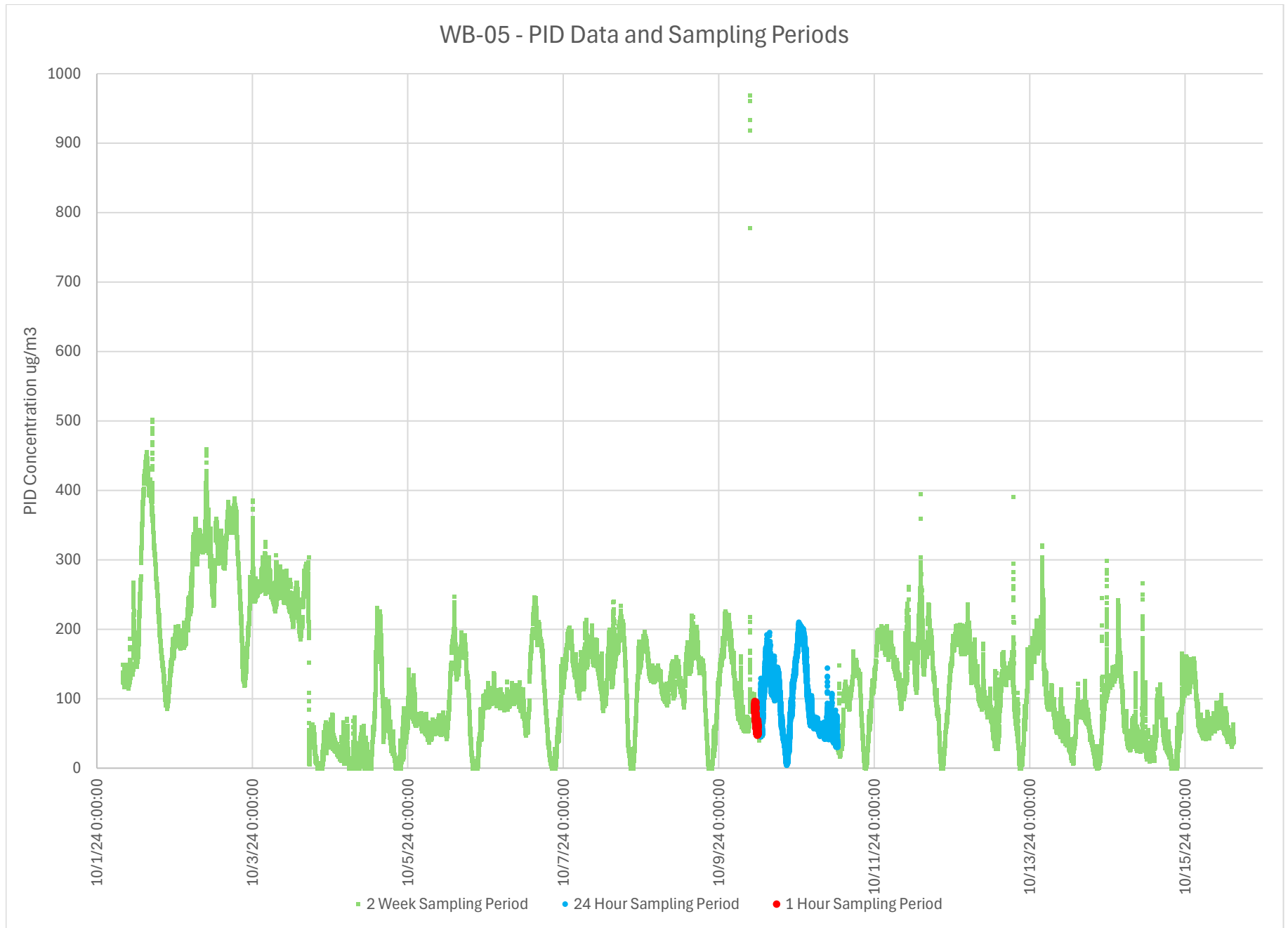


CHART 6

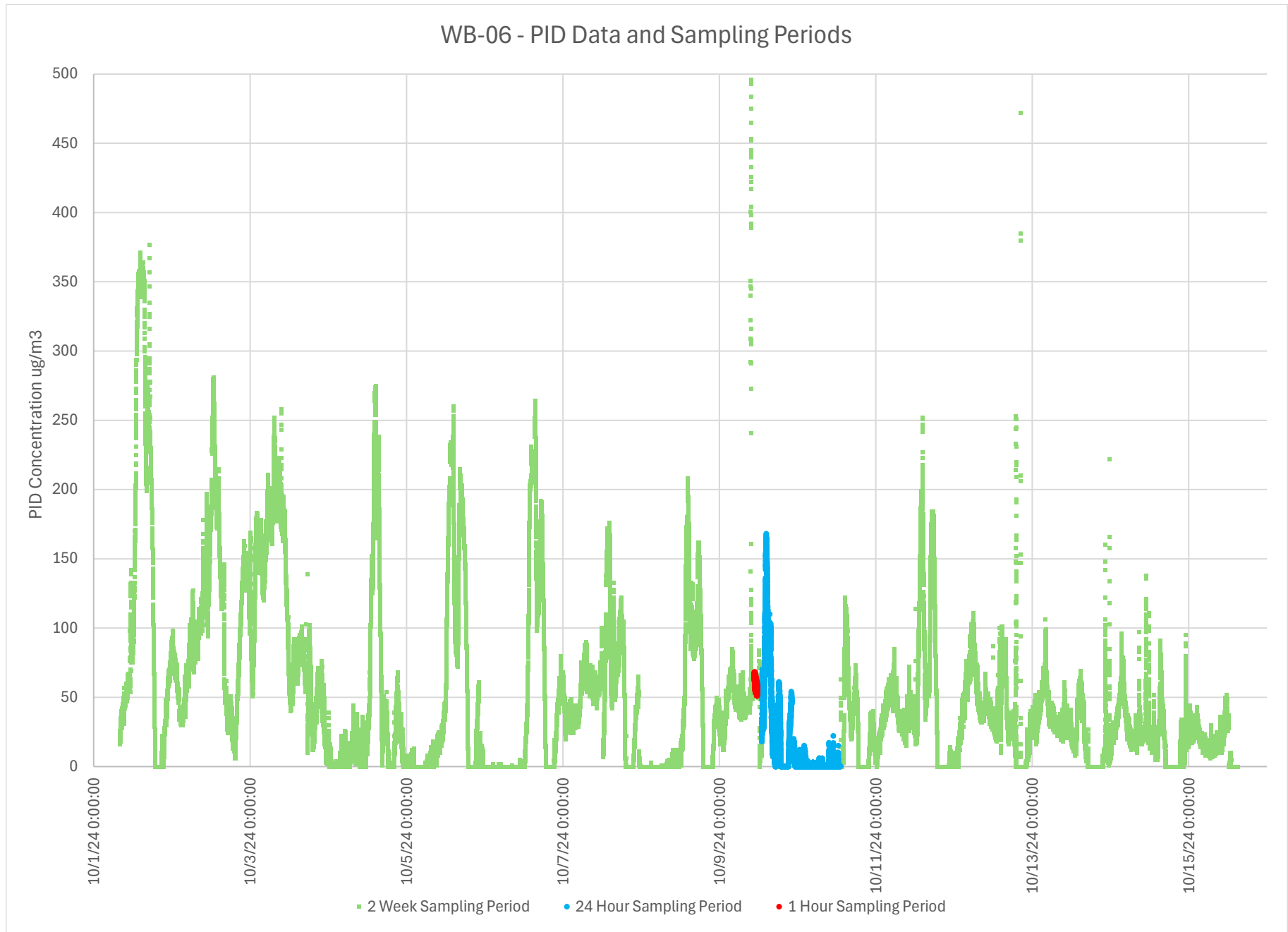


CHART 7

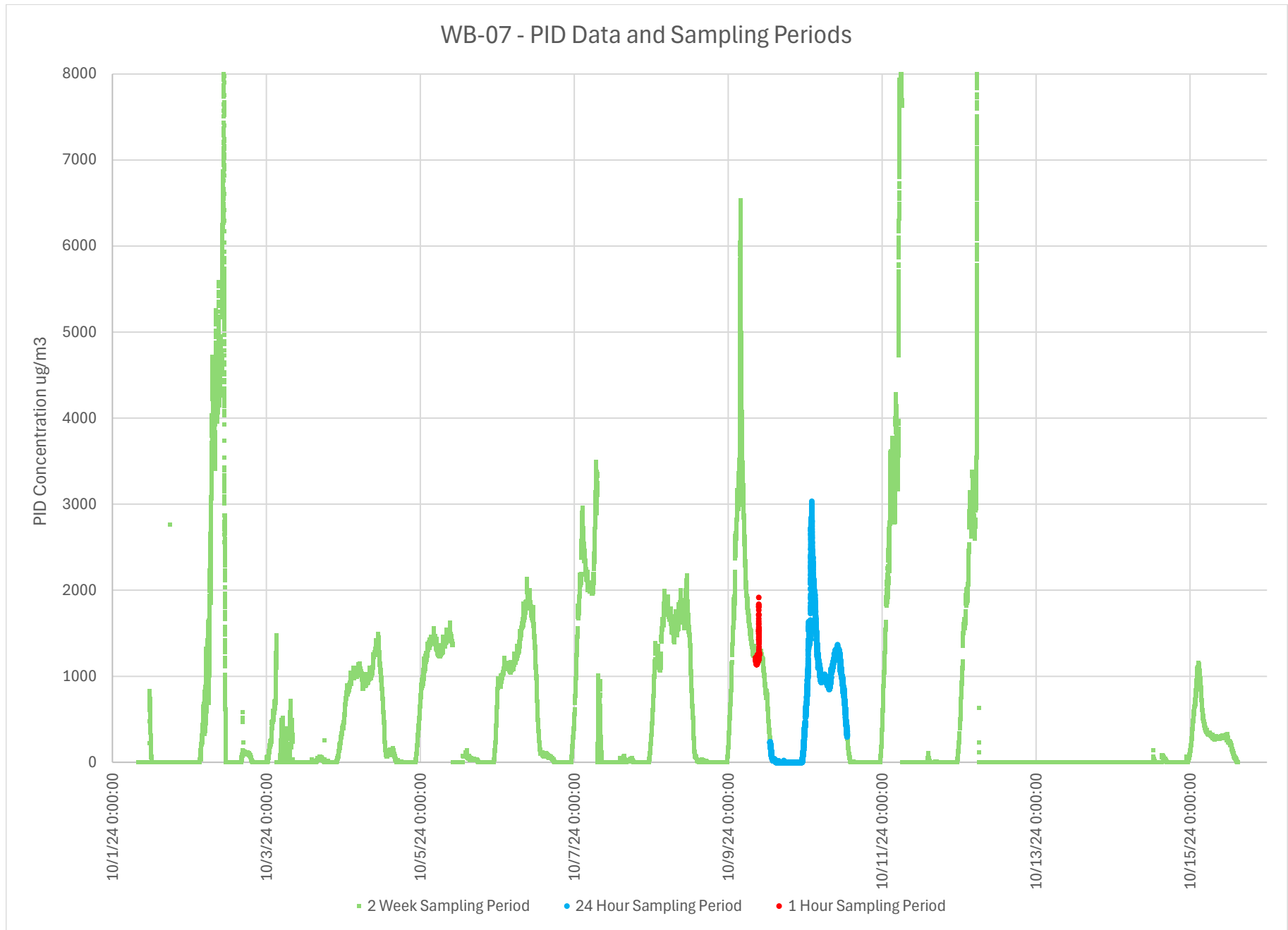


CHART 8

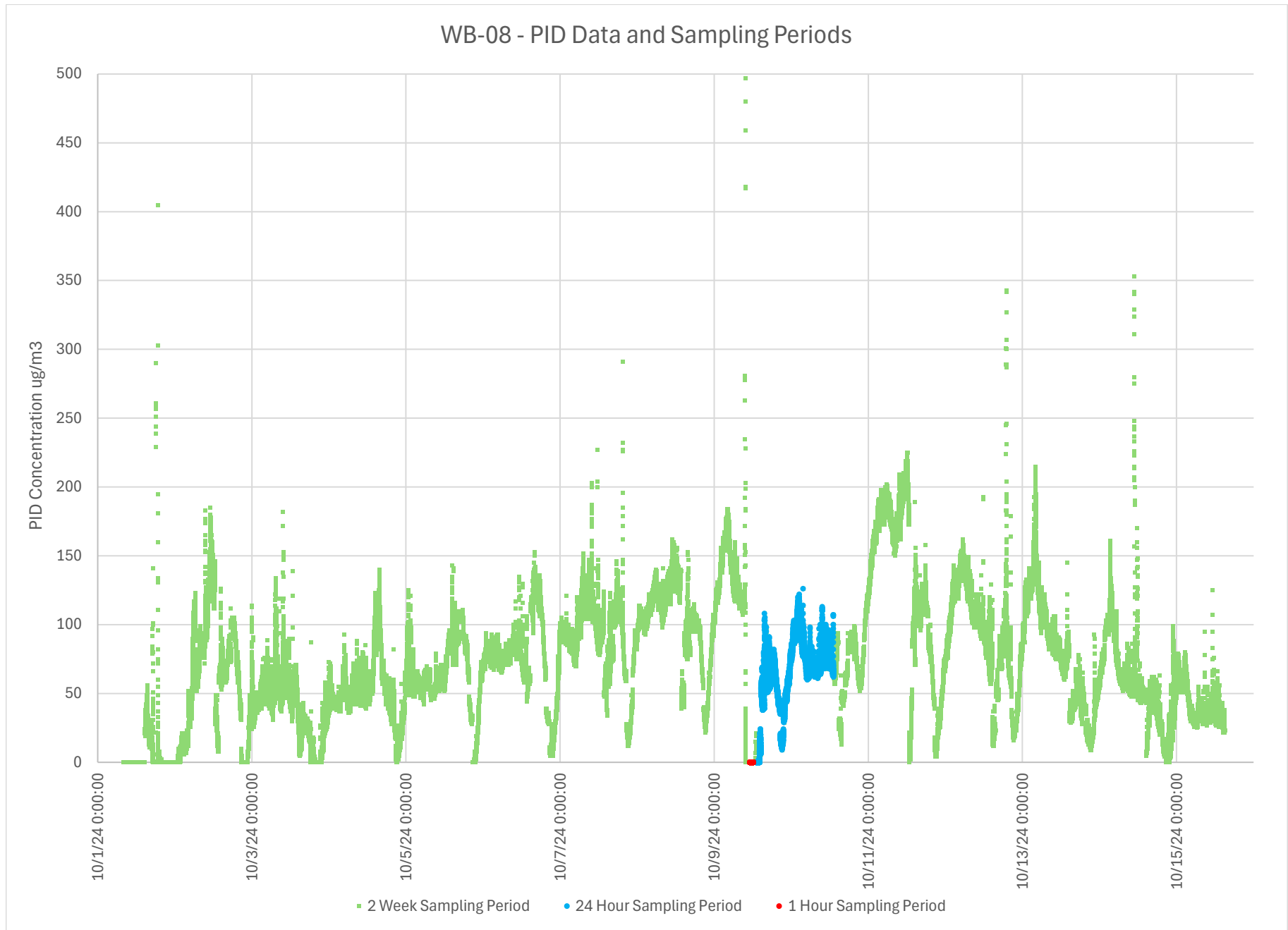


CHART 9

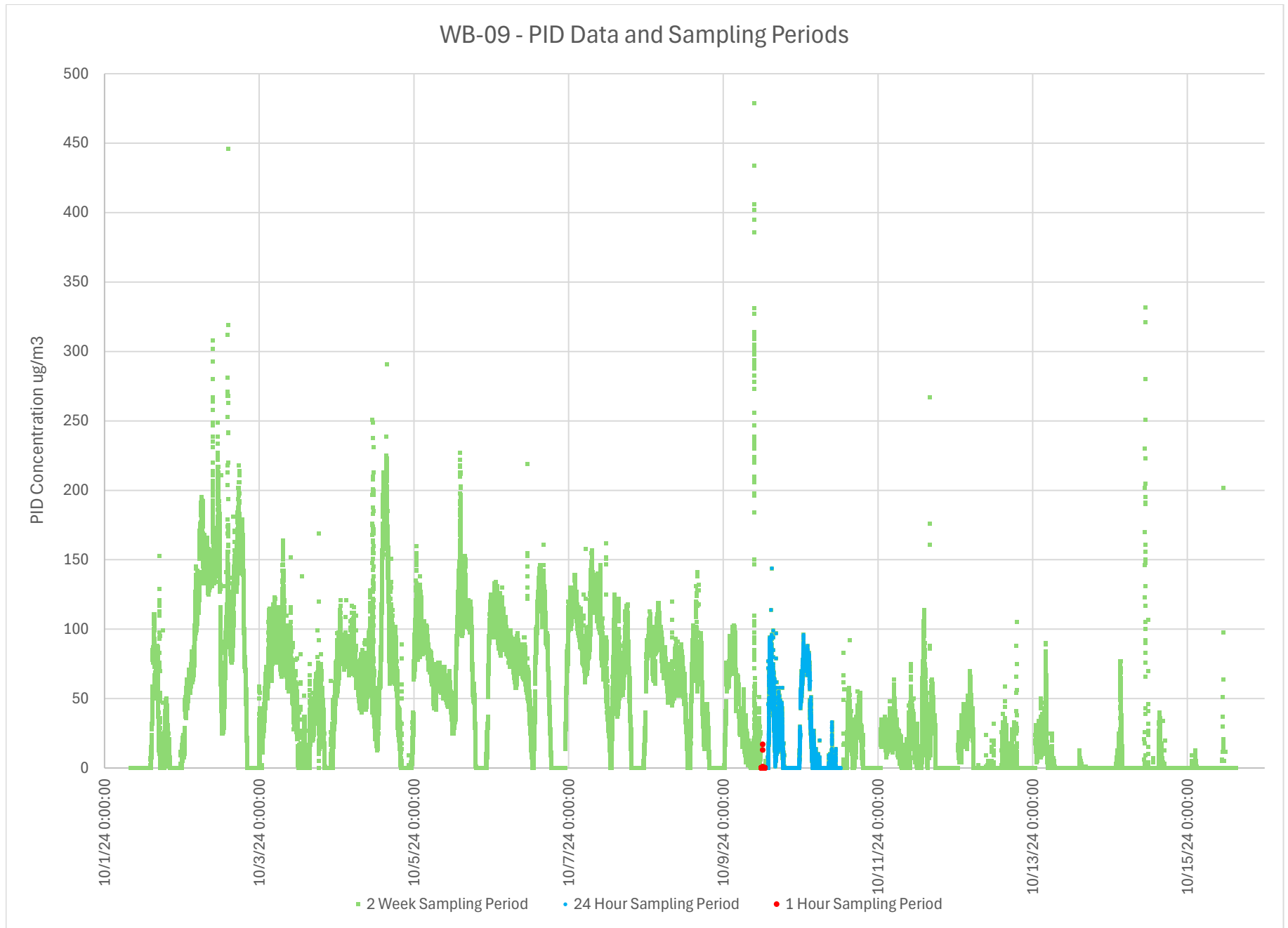


CHART 10

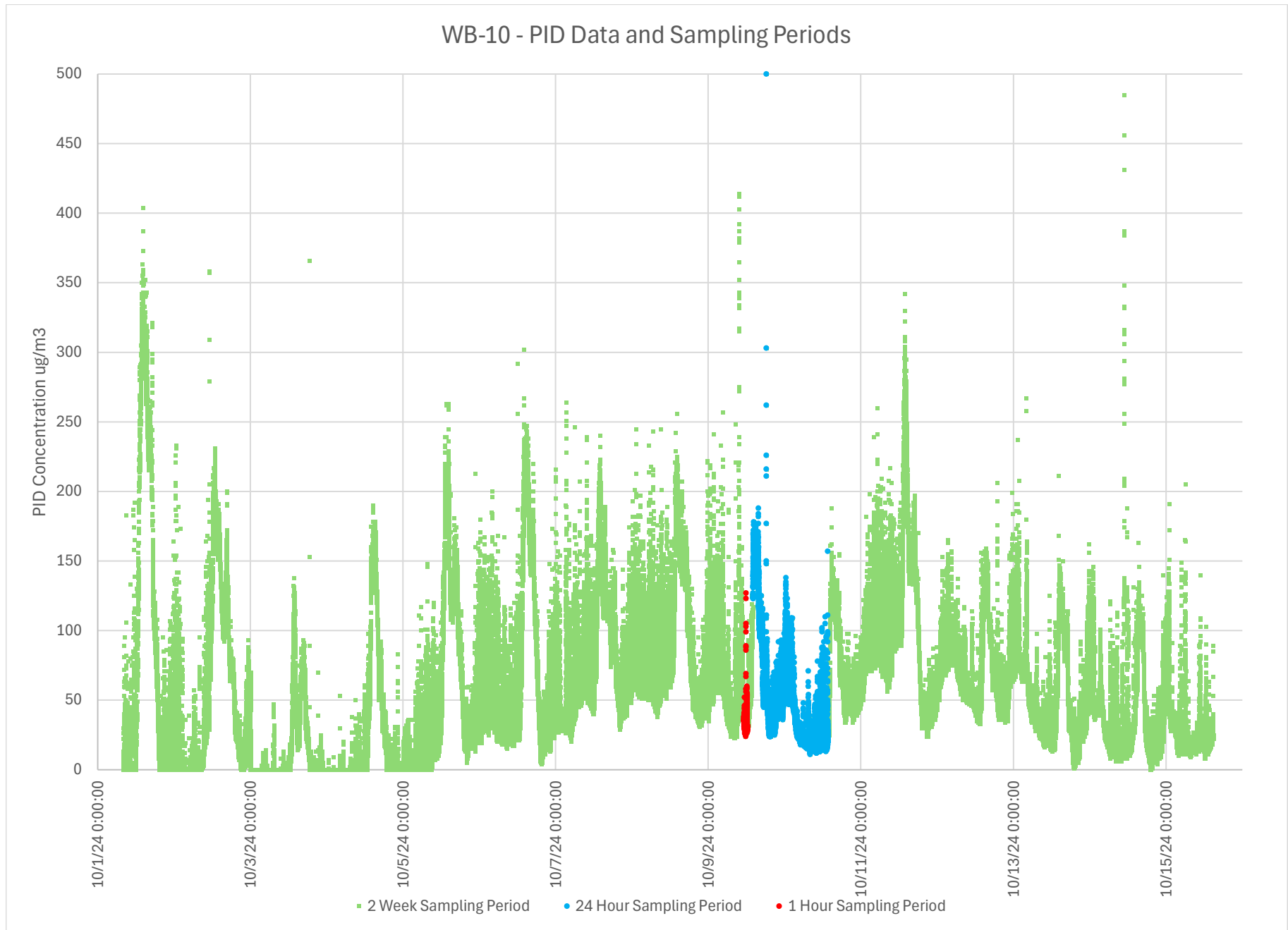


CHART 11

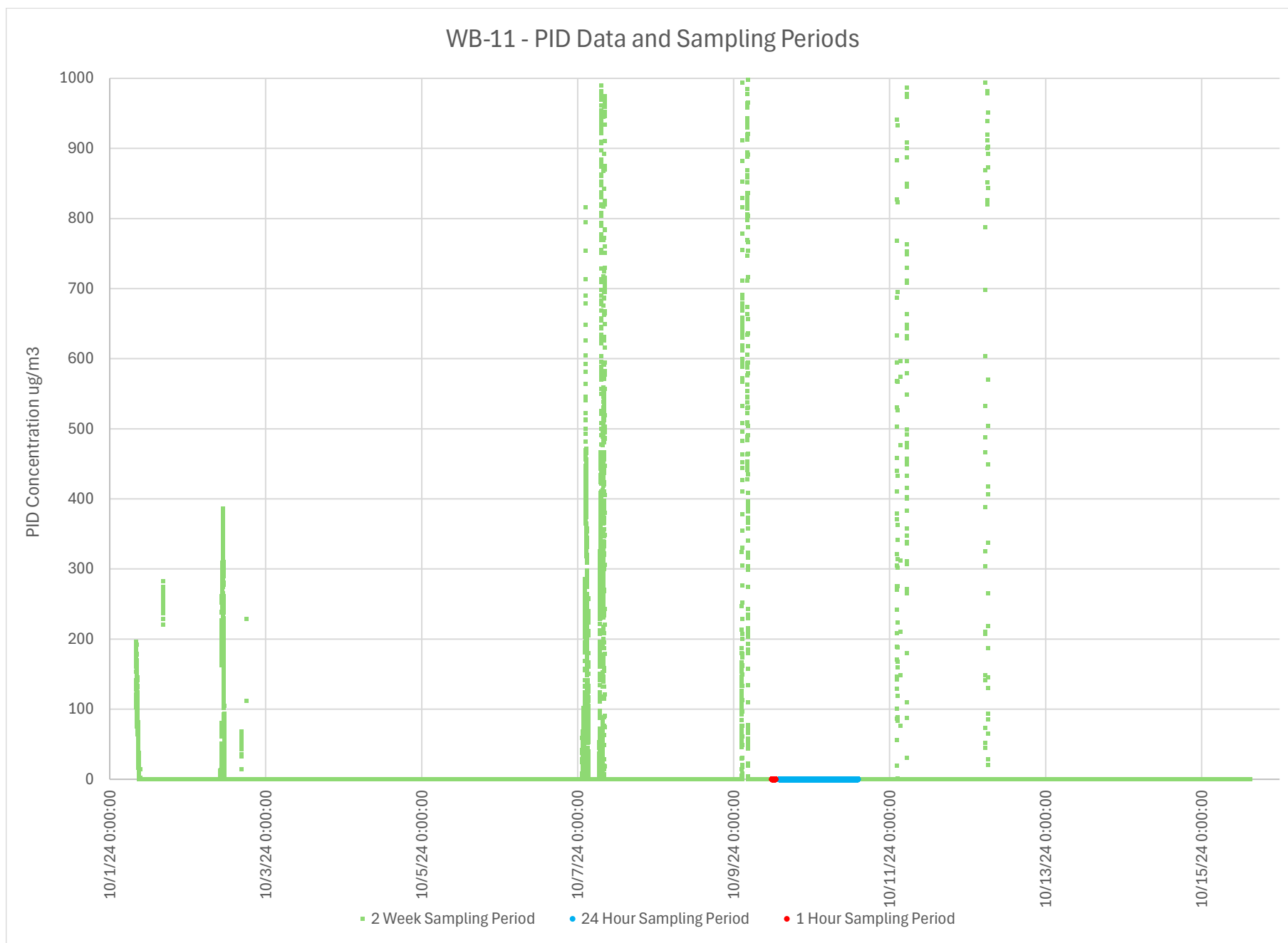


CHART 12

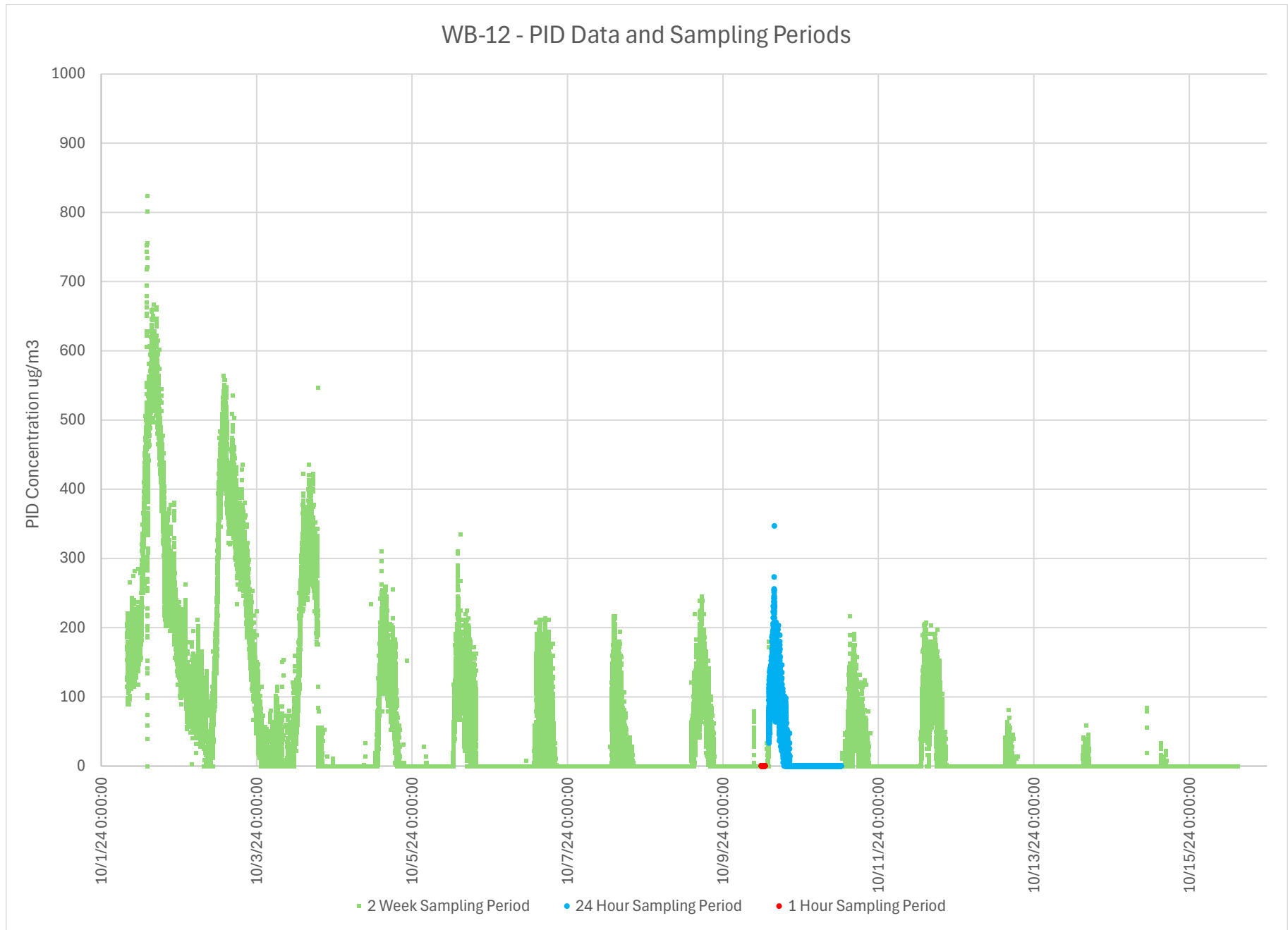


CHART 13

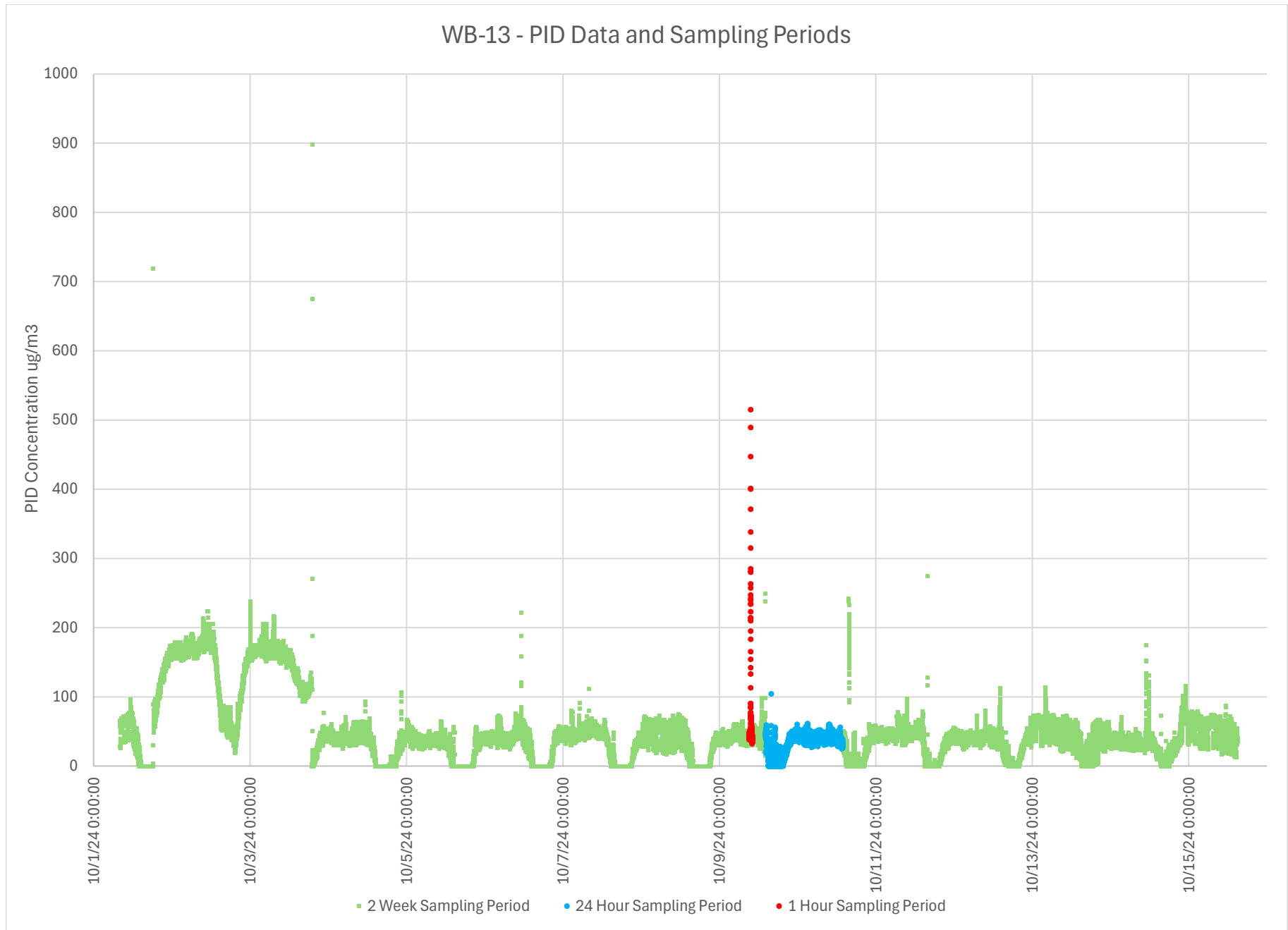


CHART 14

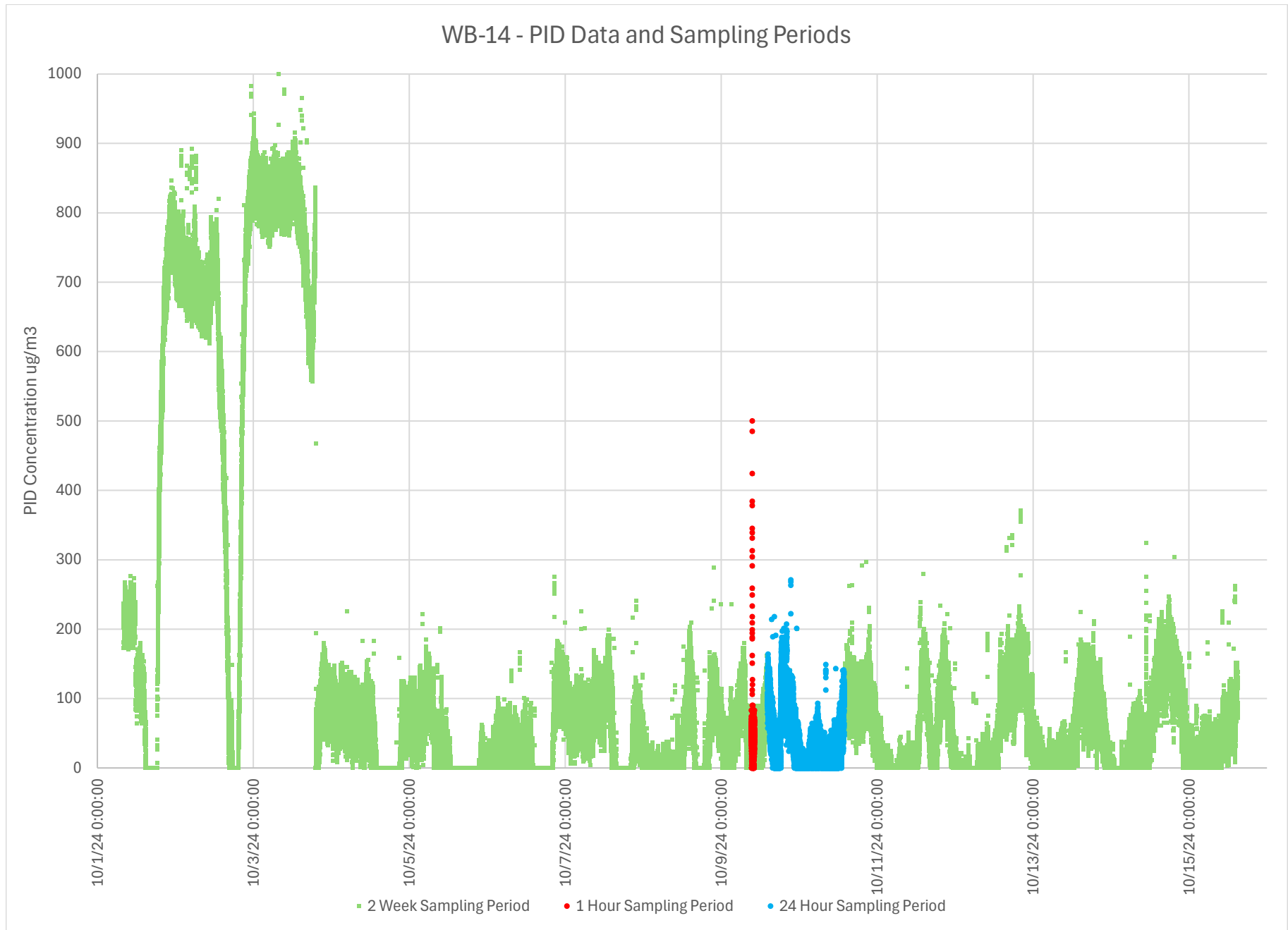


CHART 15

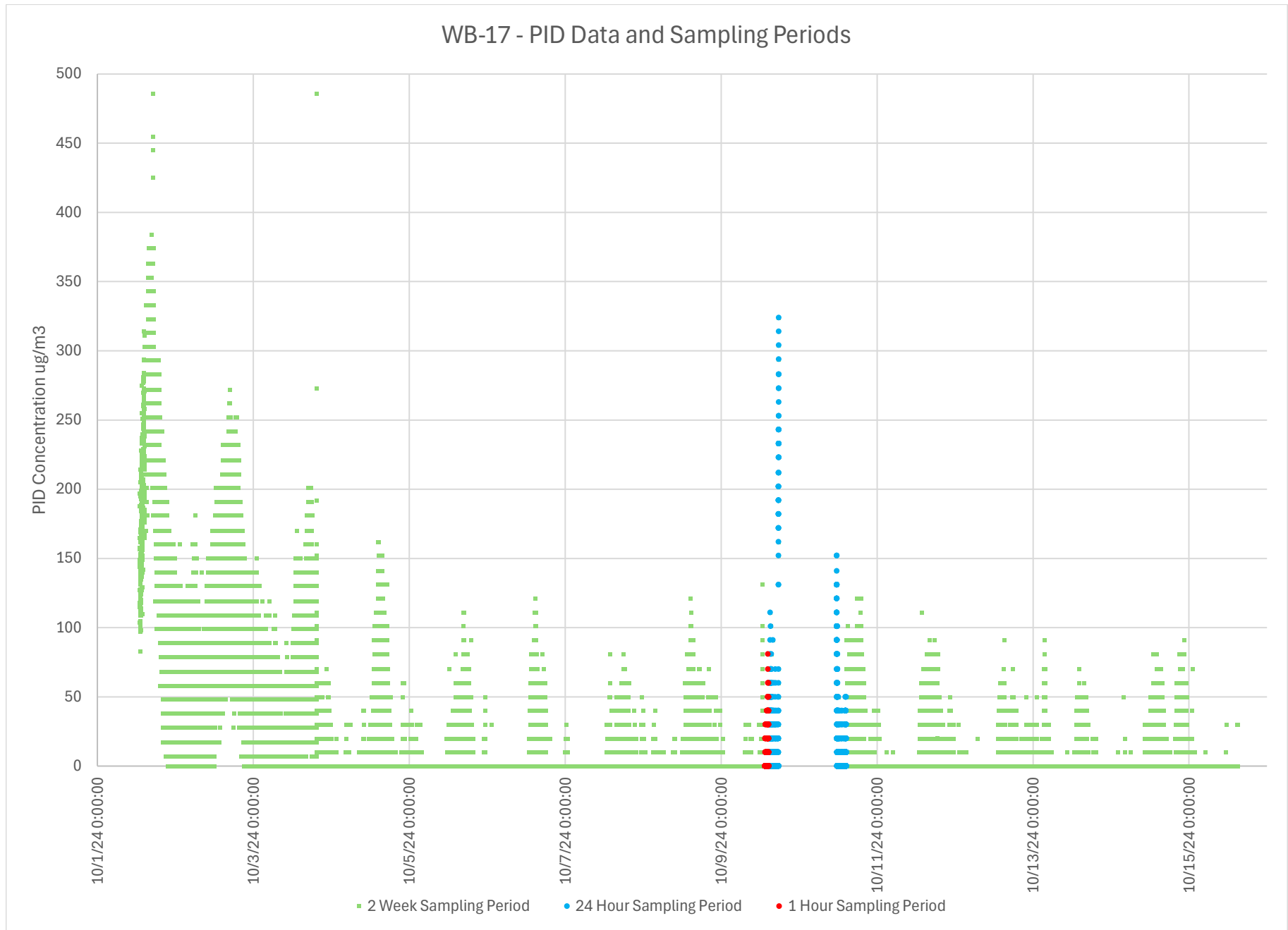


CHART 16

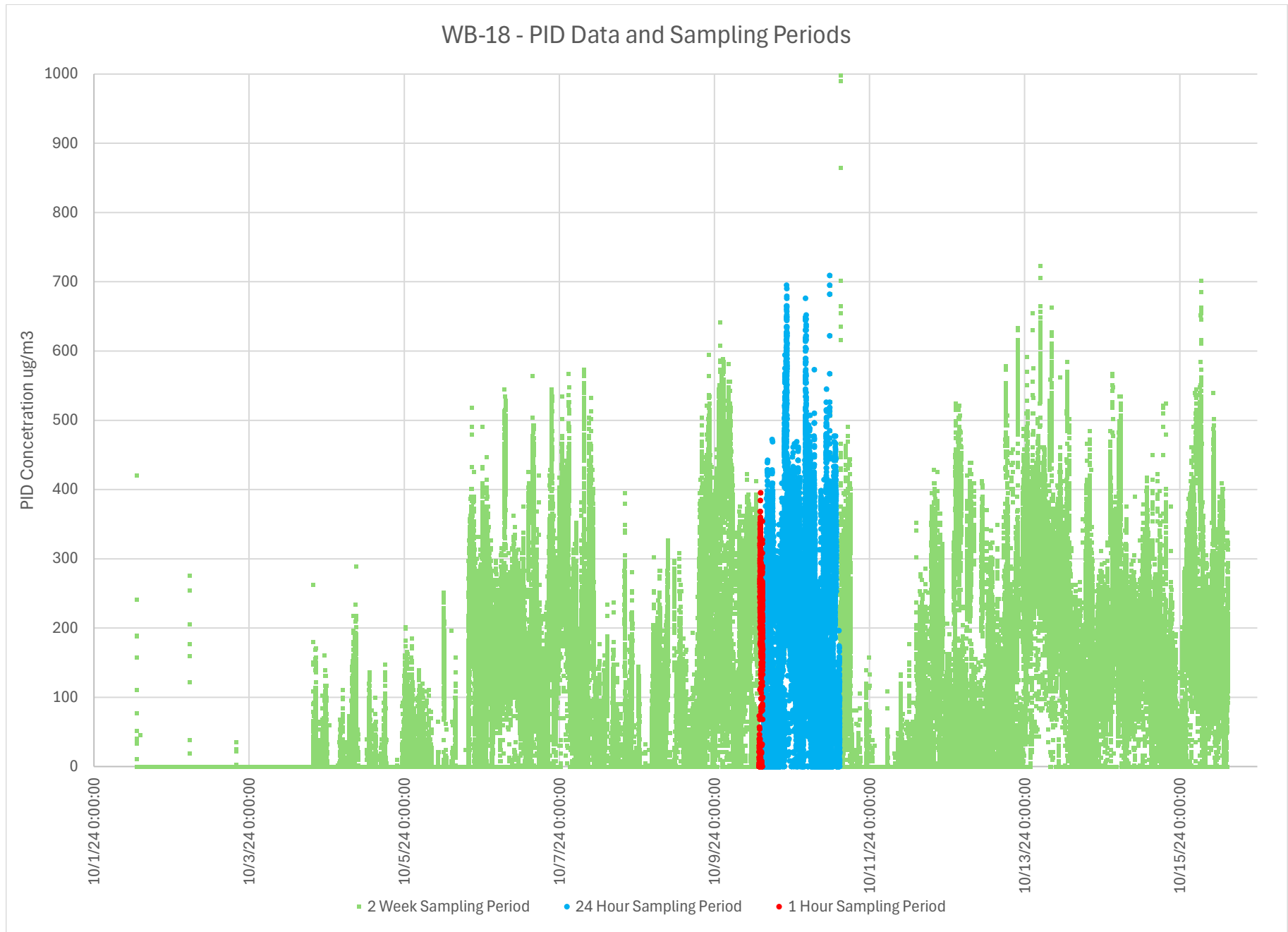


Chart 19 - PID Measurements vs 24 Hour Day - Arranged by Pattern - Oct 1 0800 - Oct 15 1500

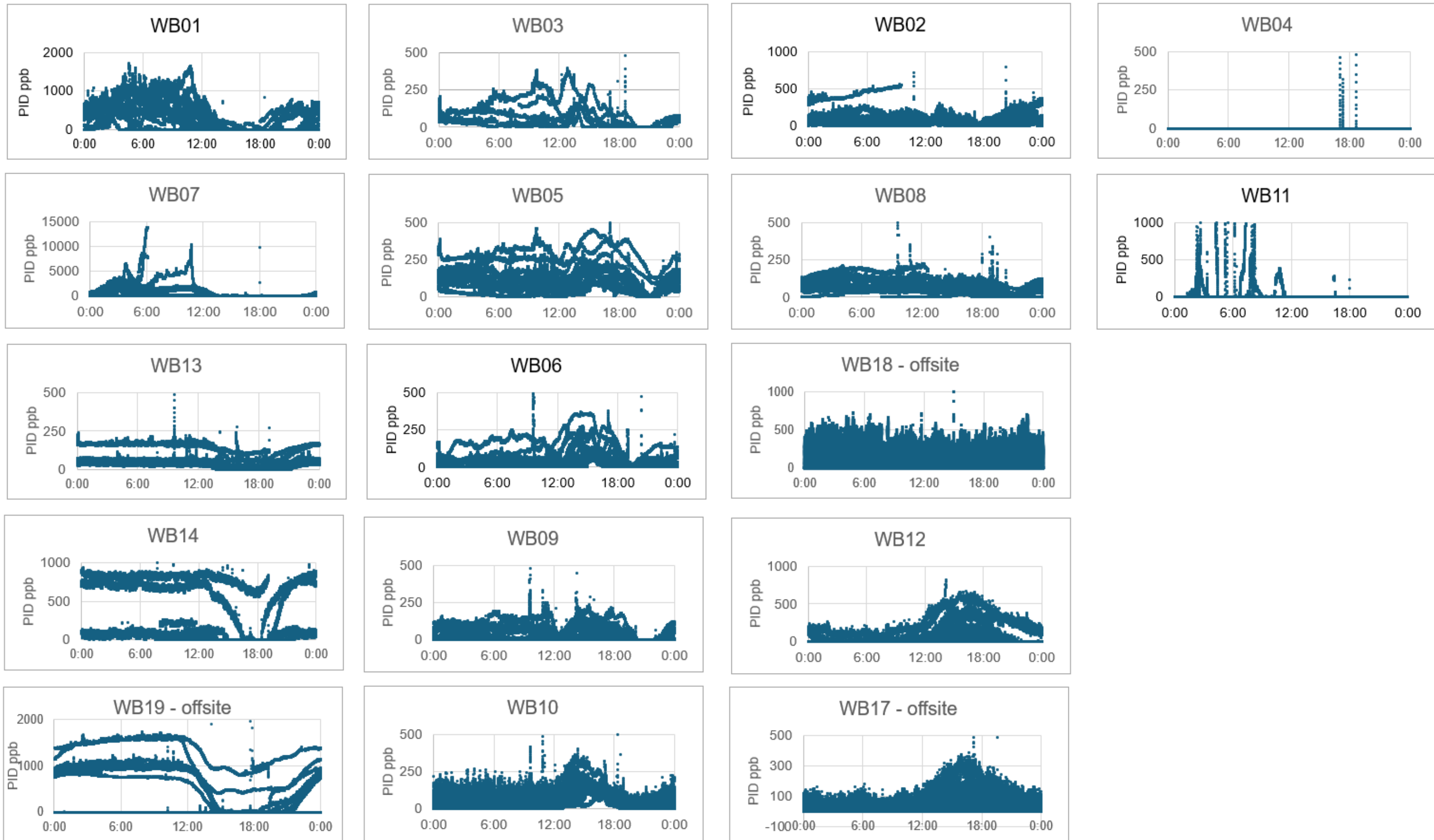


Chart 18 - PID Measurements vs 24 Hour Day - Oct 1 0800 - Oct 15 1500

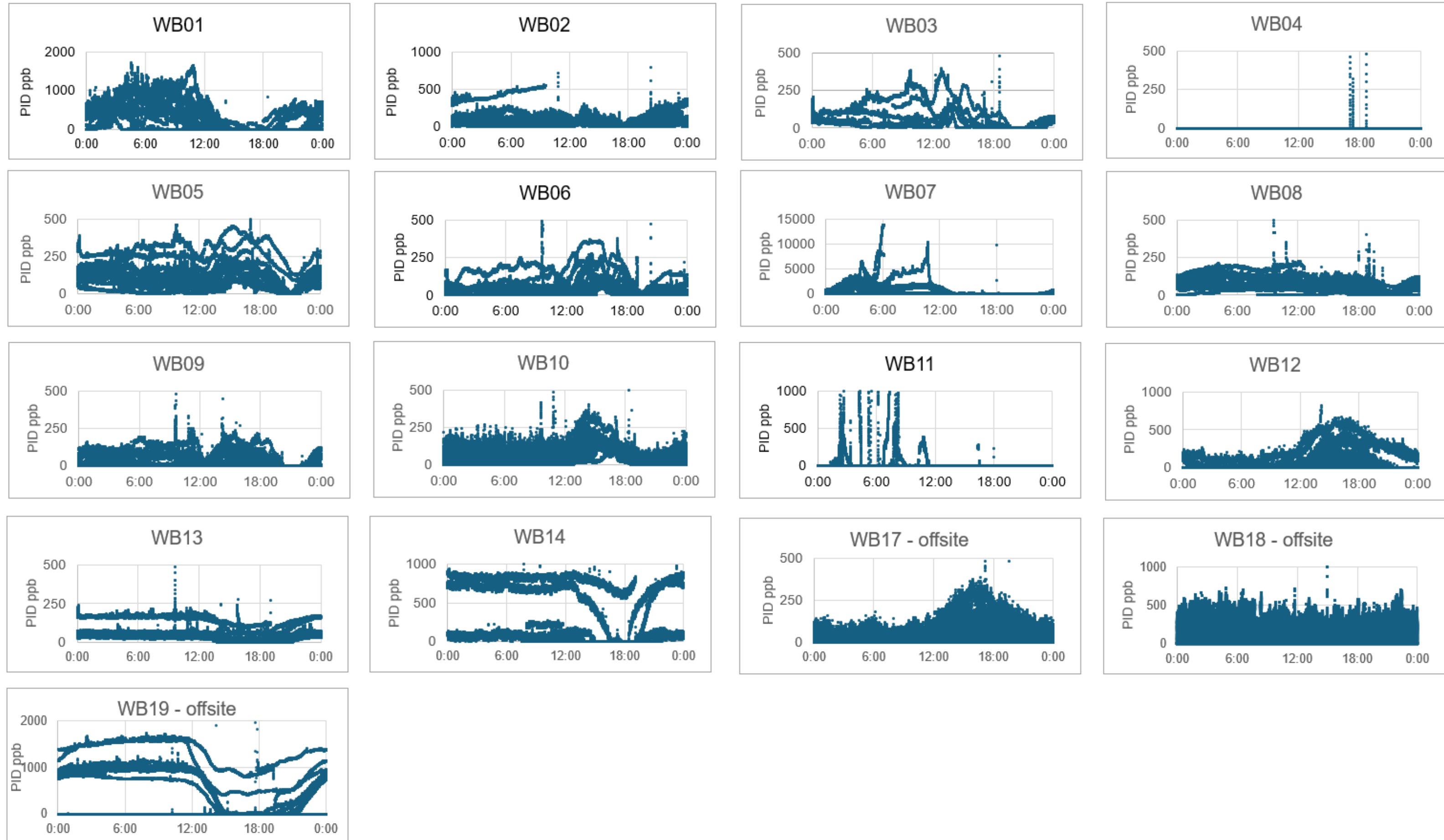


CHART 17

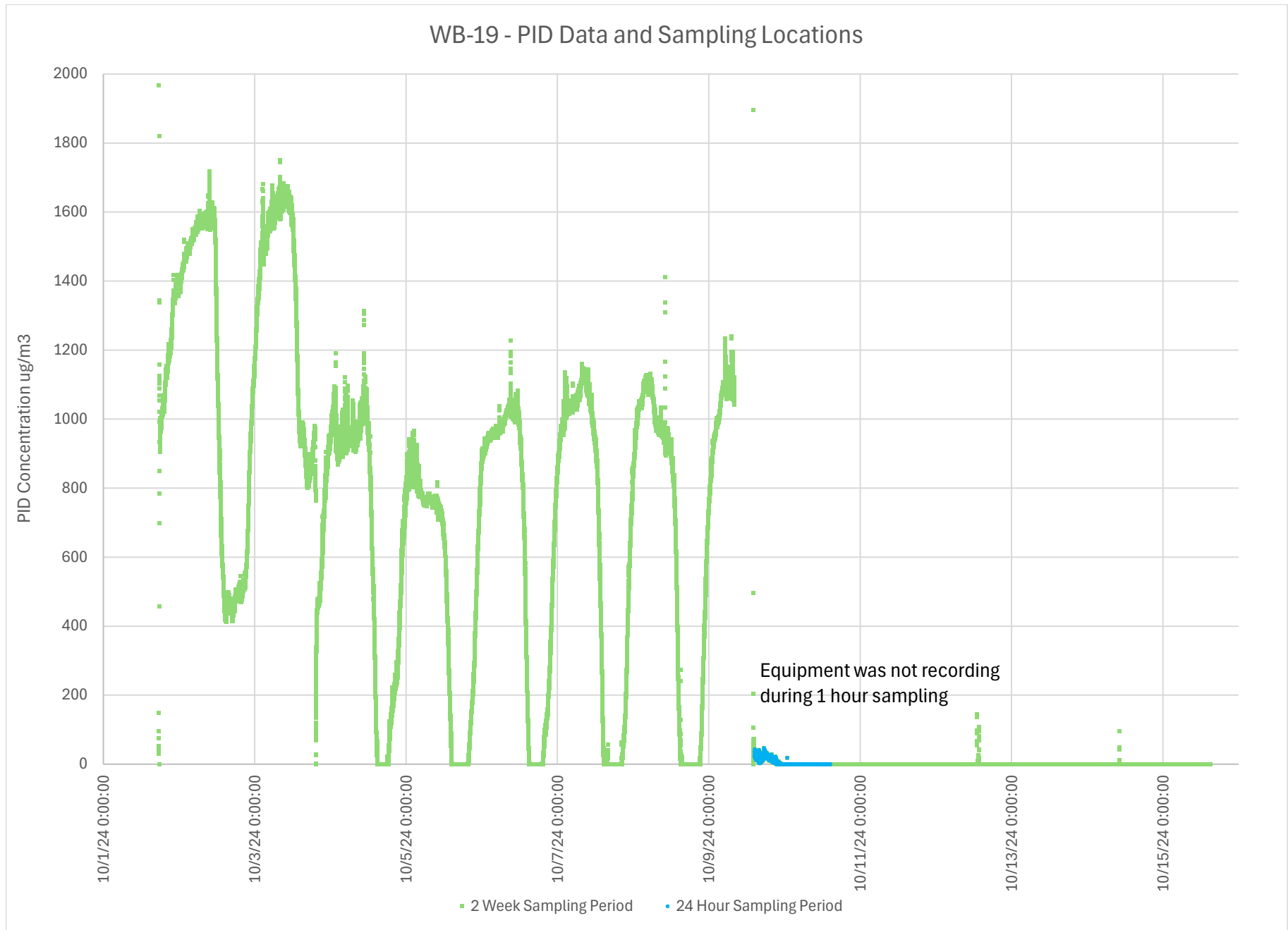


Chart 20 - Benzene Concentrations in 1 Hour, 24 Hours, and 2 Week Samples

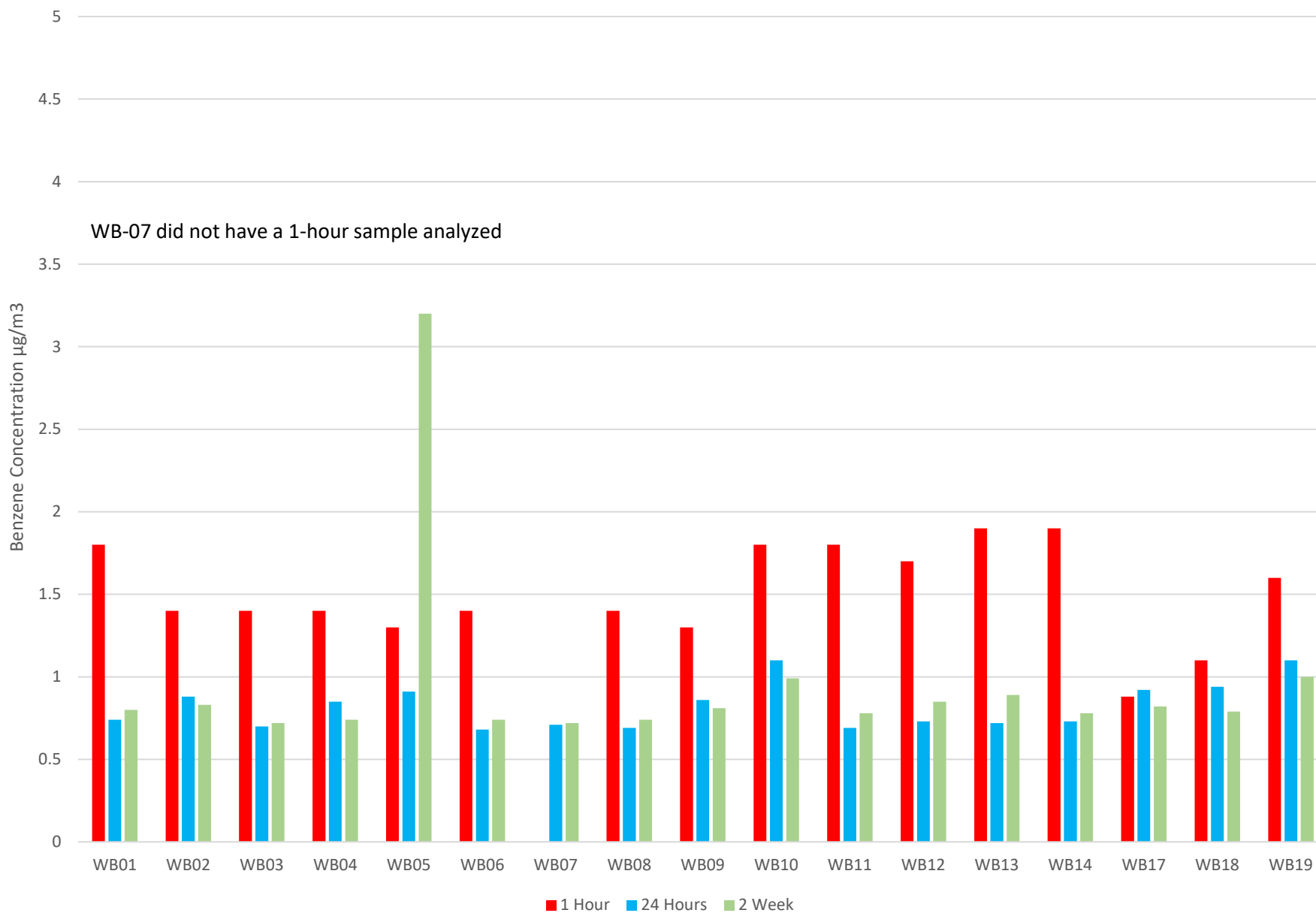


Chart 21 - Toluene Concentrations in 1 Hour, 24 Hours, and 2 Week Samples

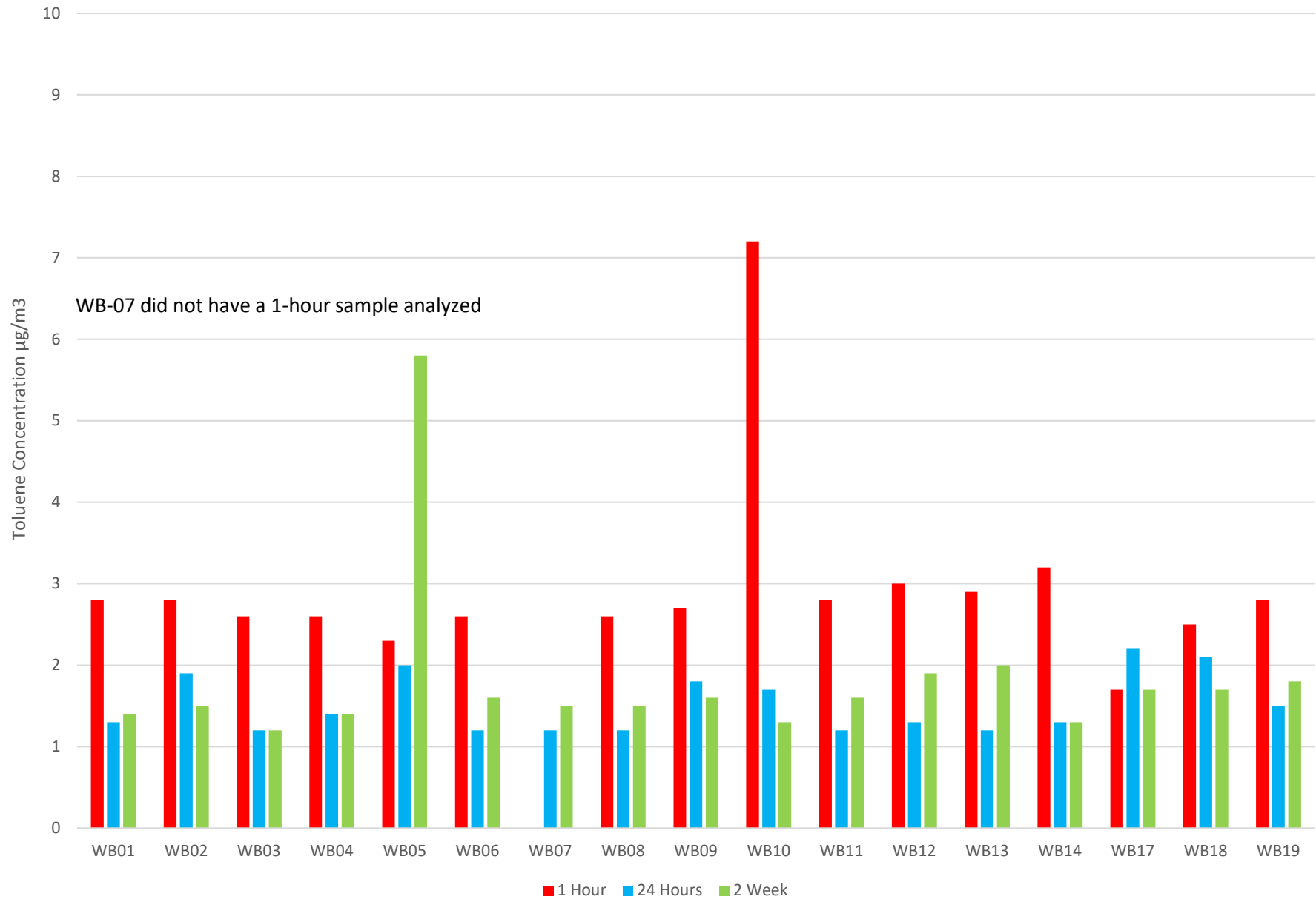


Chart 22- Ethylbenzene Concentrations in 1 Hour, 24 Hours, and 2 Week Samples

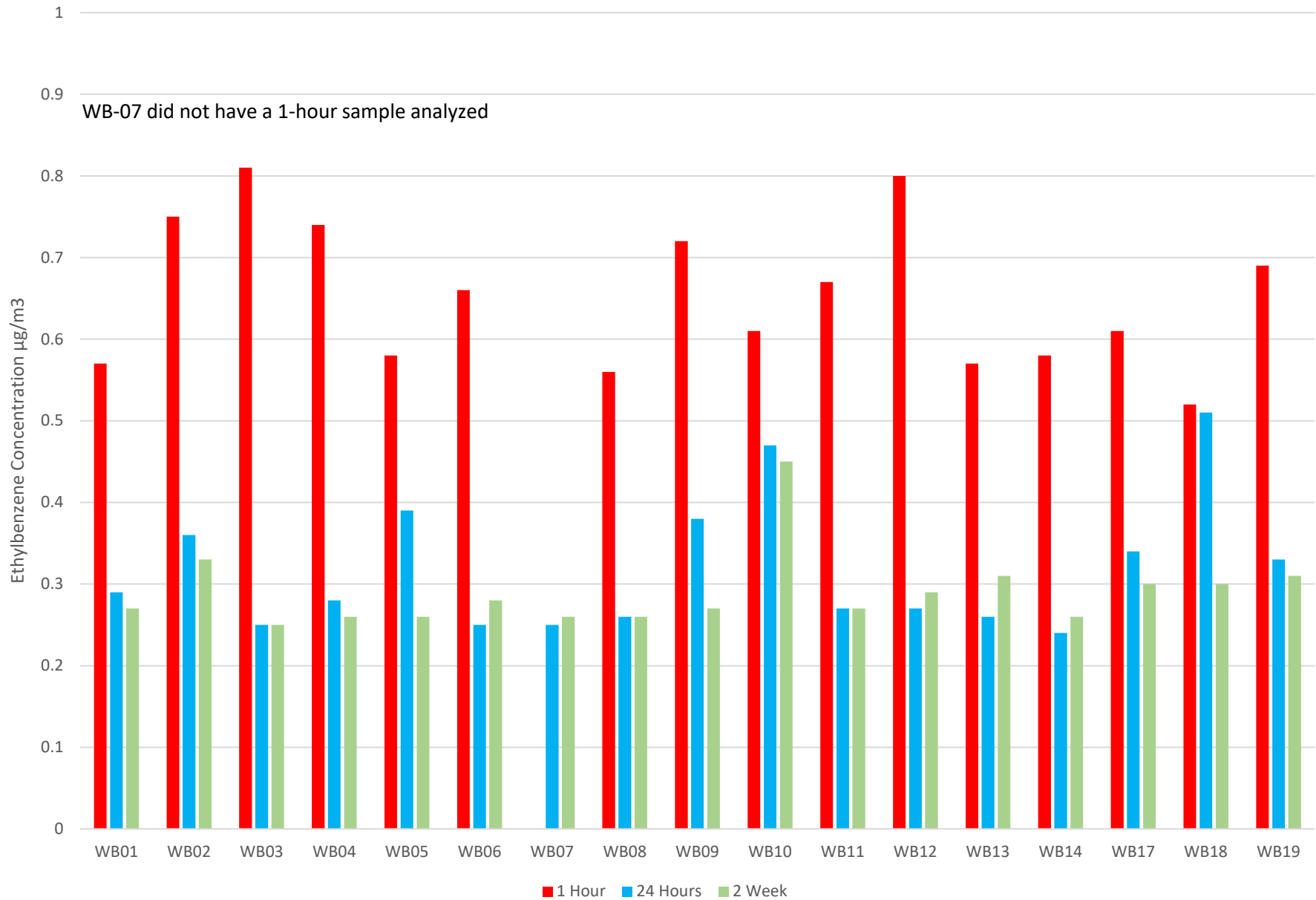


Chart 23 - Total Xylenes Concentrations in 1 Hour, 24 Hours, and 2 Week Samples

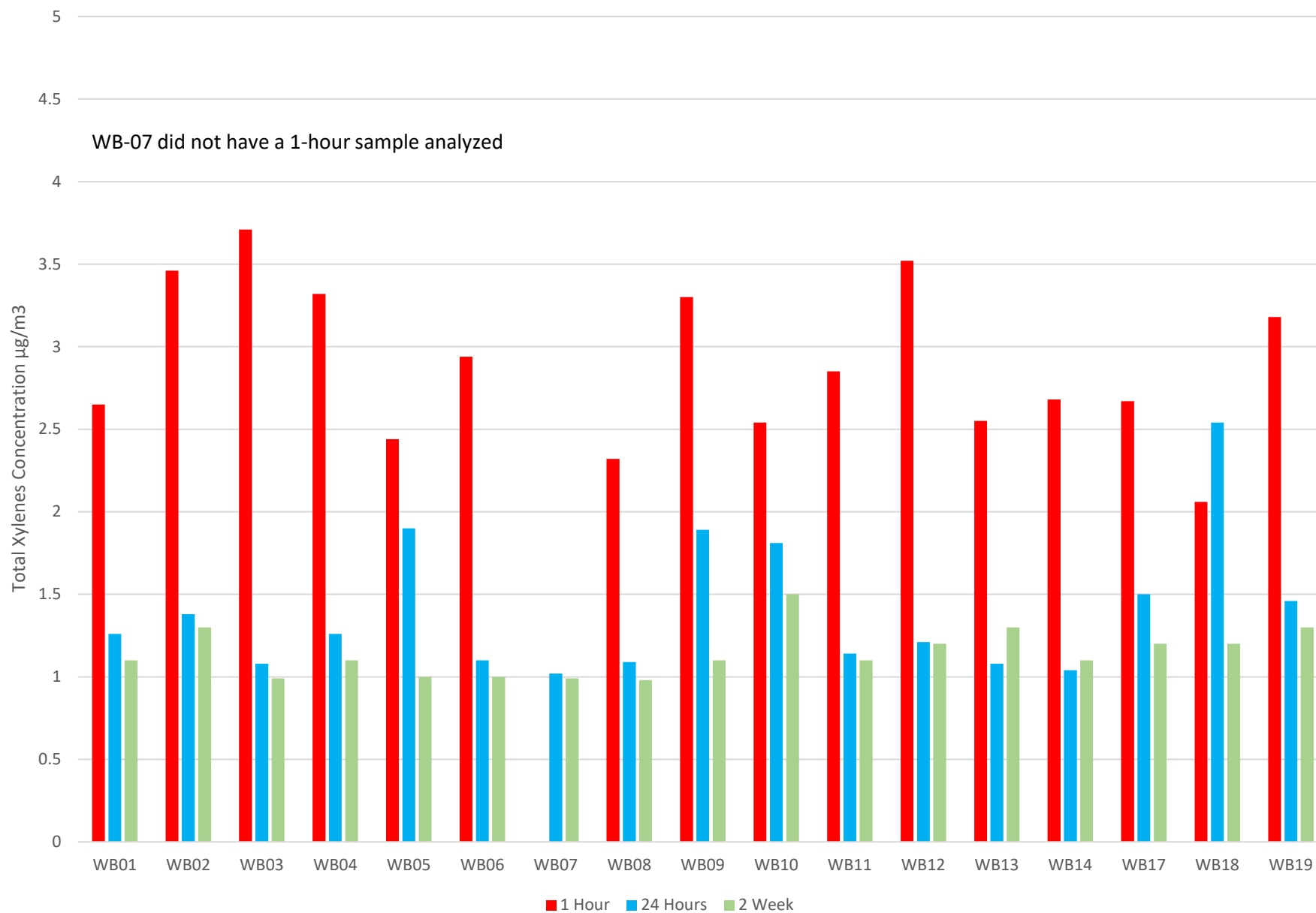


Chart 24 - Naphthalene Concentrations in 1 Hour, 24 Hours, and 2 Week Samples

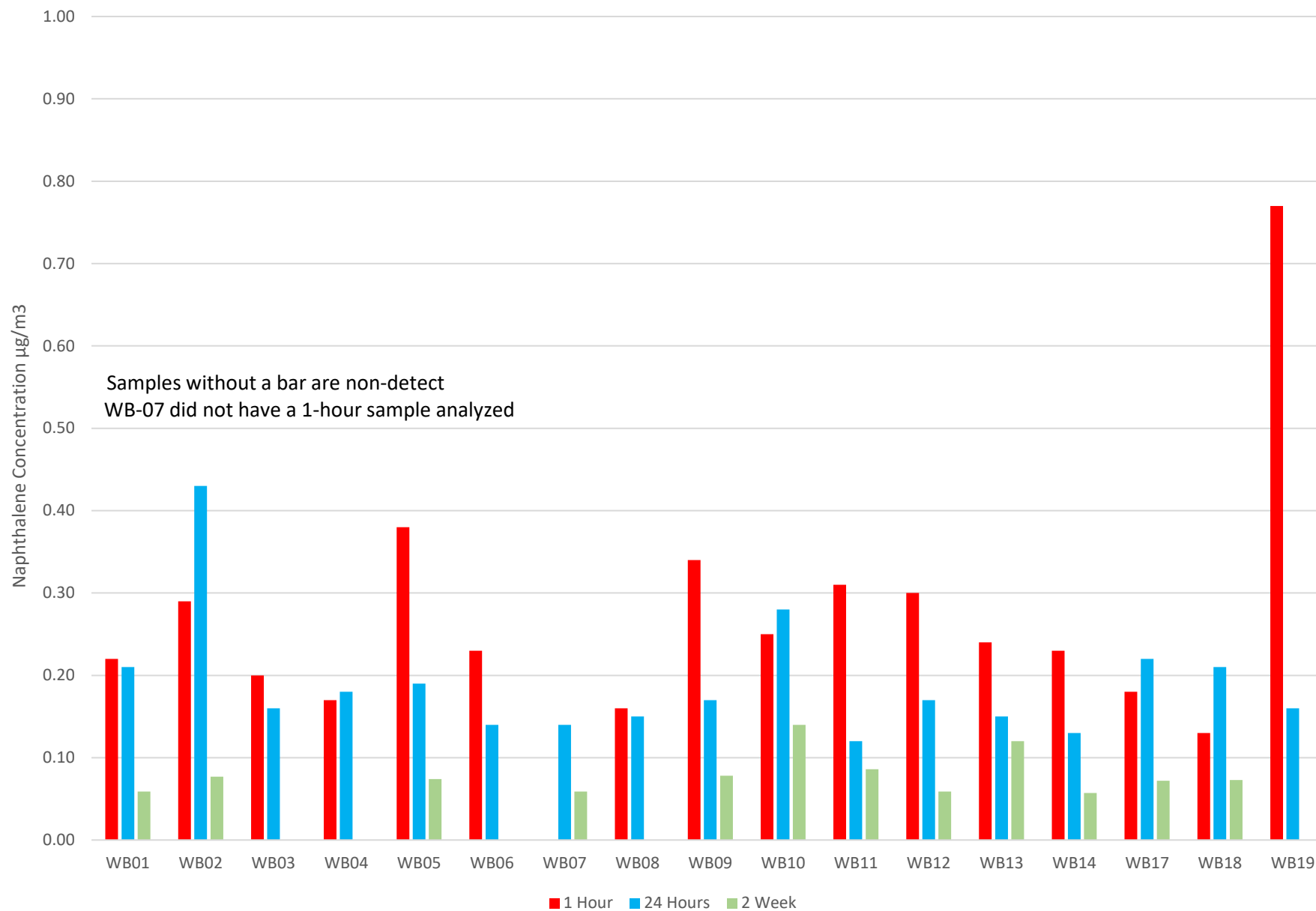


Chart 25 - 1,2,4-TMB and 1,3,5- TMB in 2 Week Samples

1,2,4-TMB and 1,3,5-TMB
were not analyzed
in the 1 hour and 24 hour samples

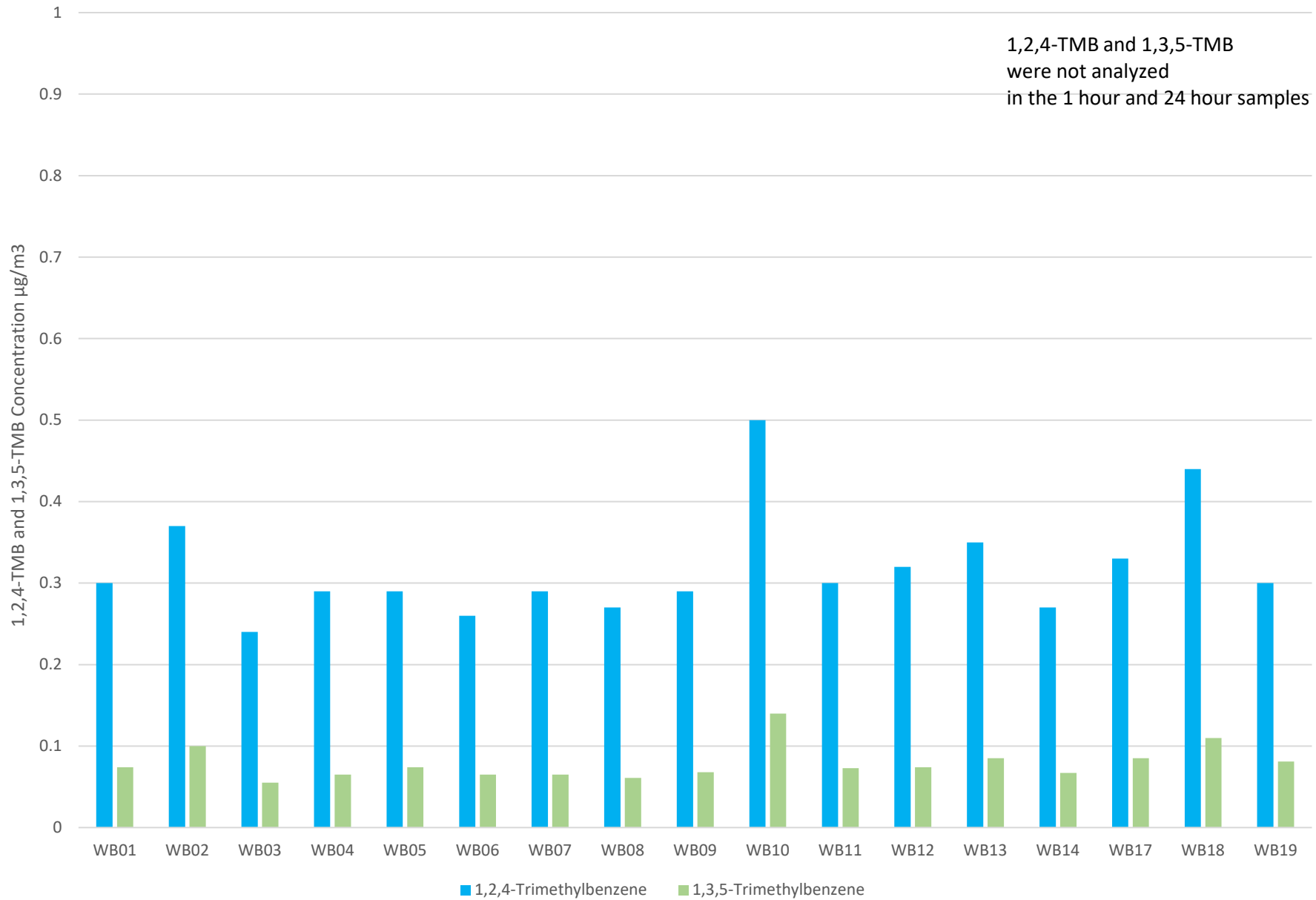


Chart 26 - Petroleum Fingerprints

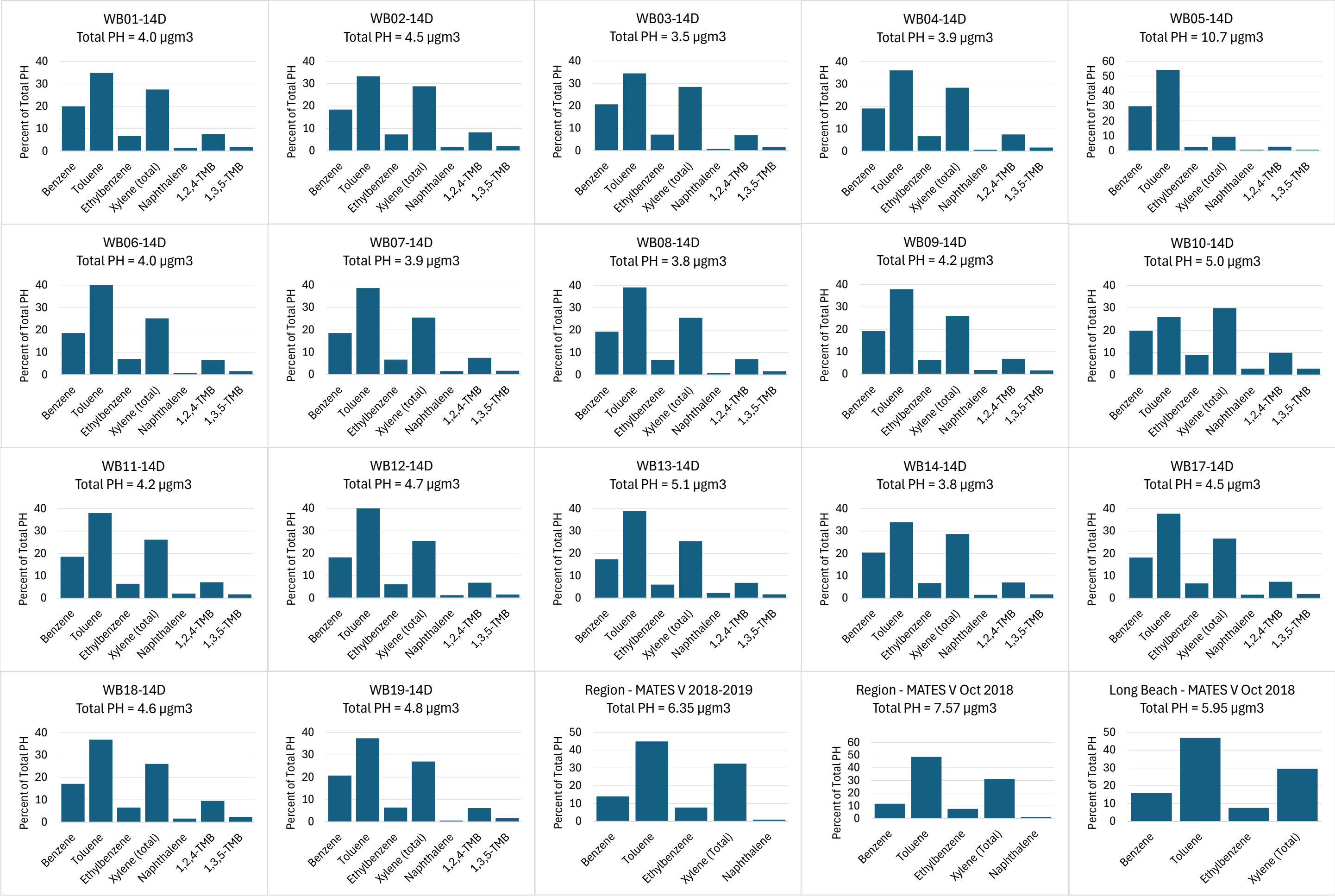


Chart 27 WB15 Windrose Diagram
Signal Hill

WB15/10.1.2024 - 10.15.2024

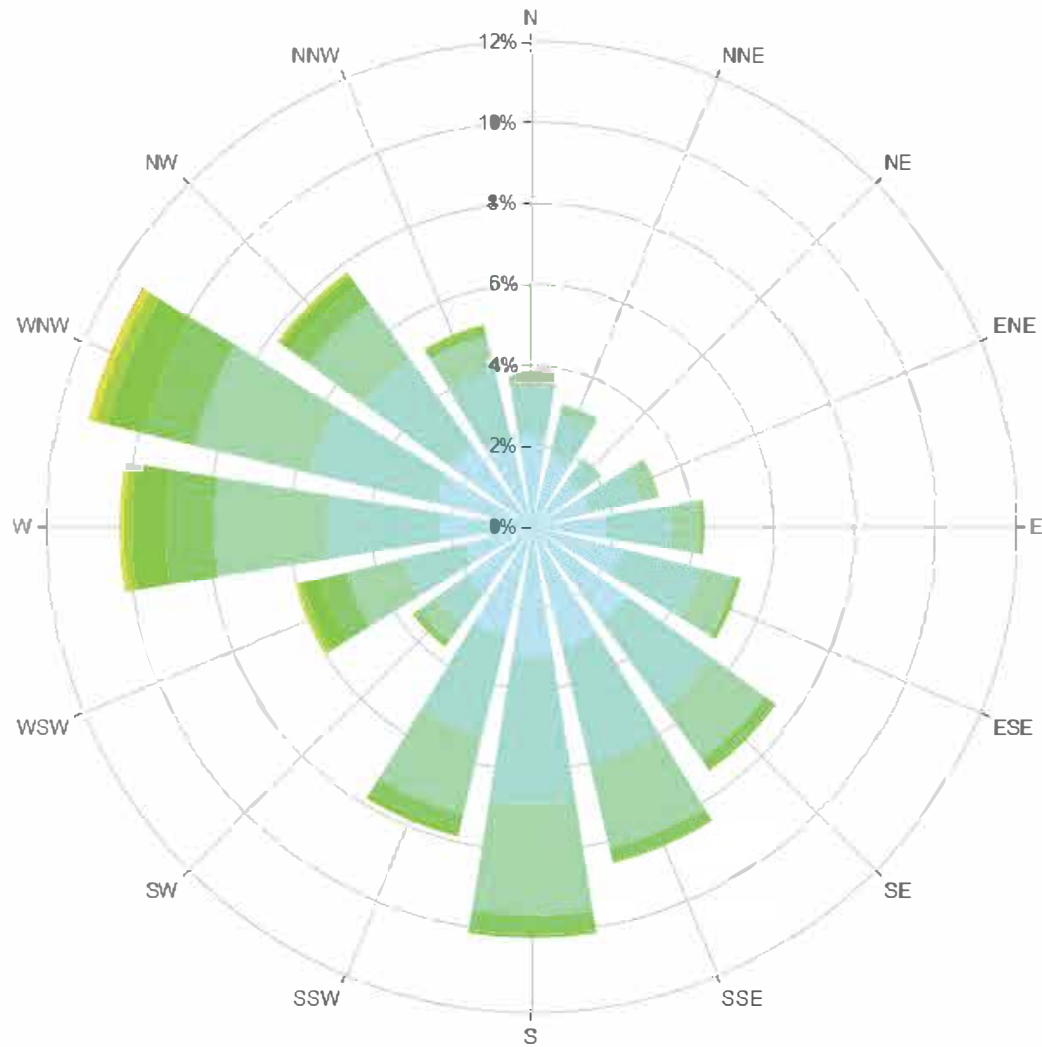


Chart 28 WB16 Windrose Diagram

Signal Hill

WB16 - Weather Station 10 1.2024 - 10 15.2024

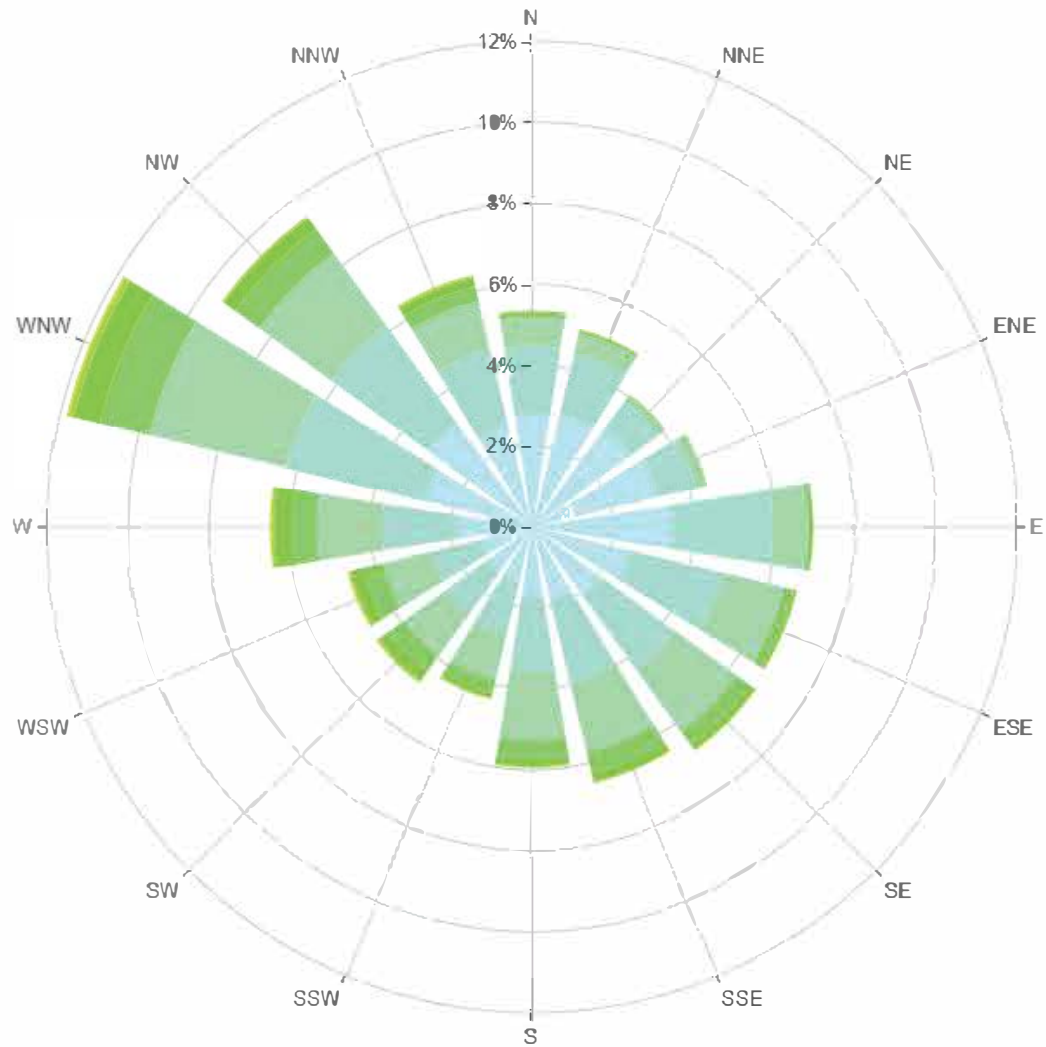
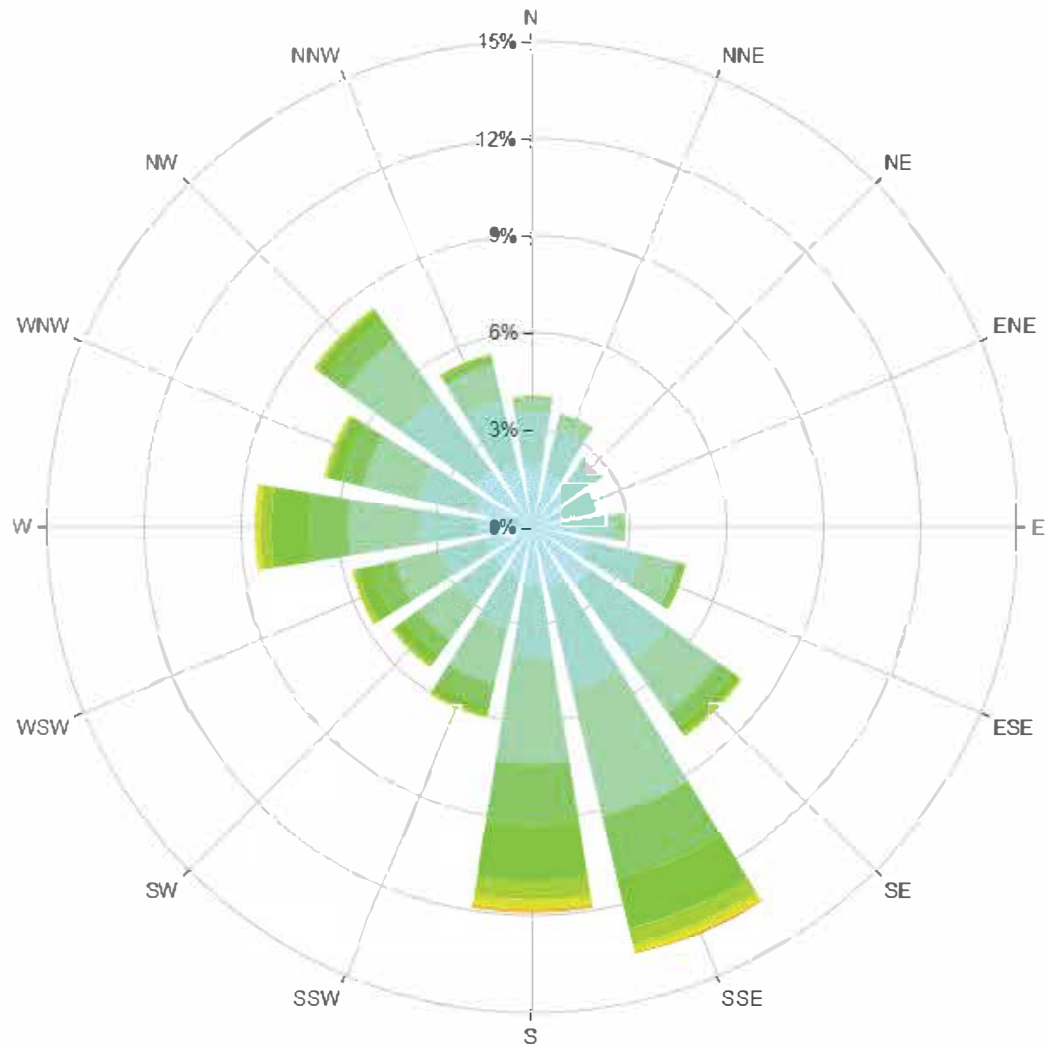


Chart 29 WB17 Windrose Diagram Signal Hill

WB17 - Weather Station 10.1.2024 - 10.15.2024



- > 27.0
- 24.0 - 27.0
- 21.0 - 24.0
- 18.0 - 21.0
- 15.0 - 18.0
- 12.0 - 15.0
- 9.0 - 12.0
- 6.0 - 9.0
- 3.0 - 6.0
- 0.3 - 3.0

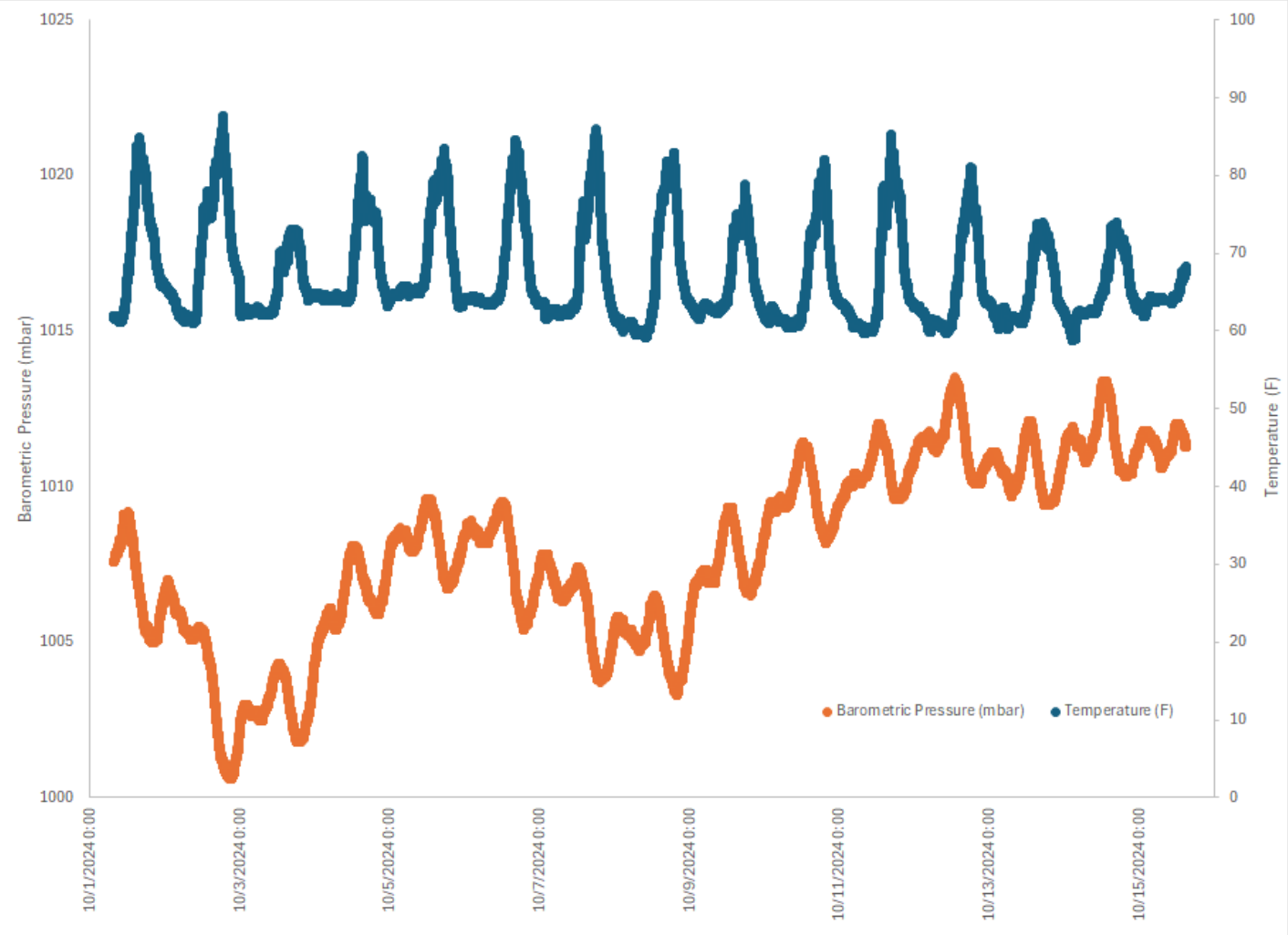
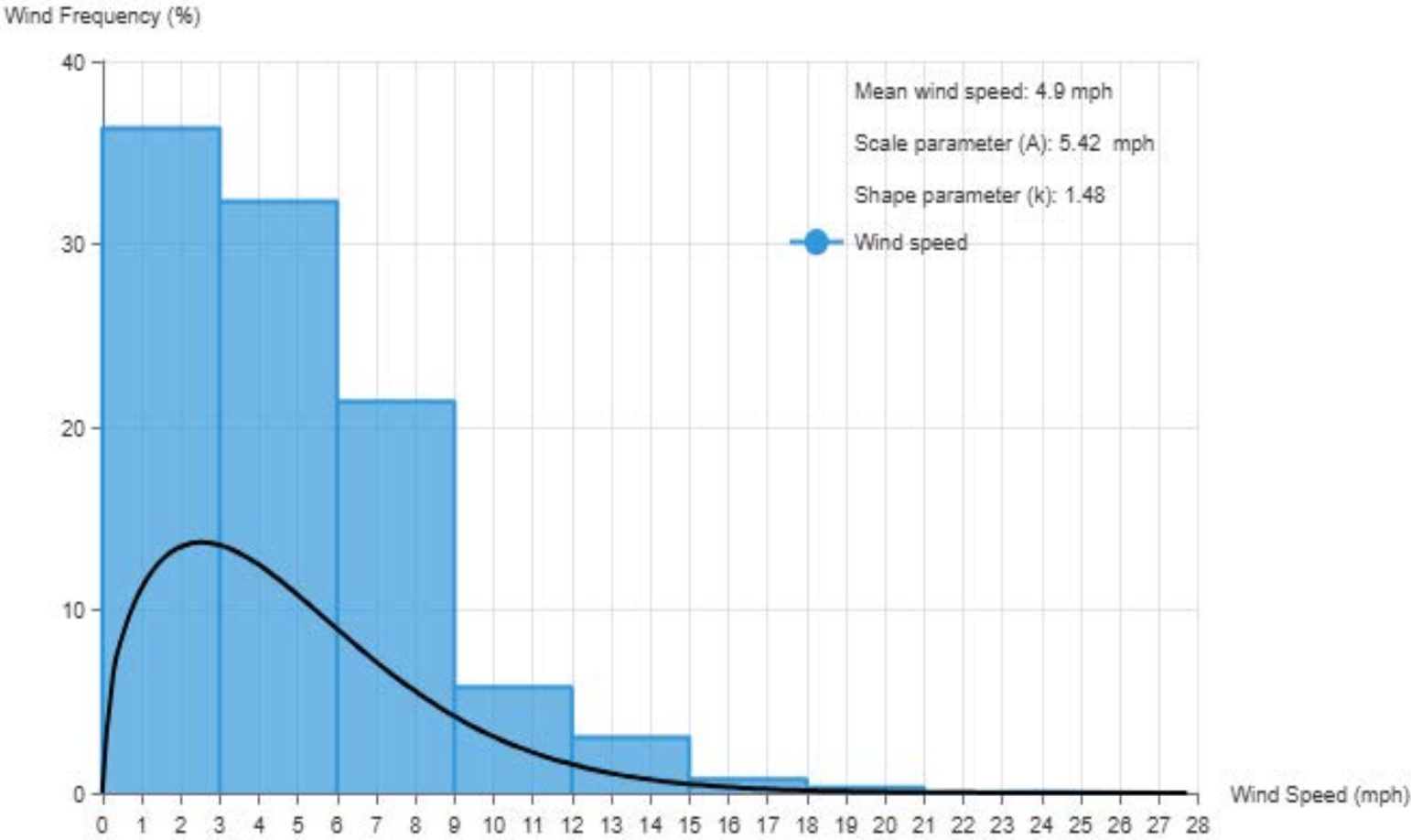


Chart 30 - WB15 Windspeed, Temperature, and Barometric Pressure

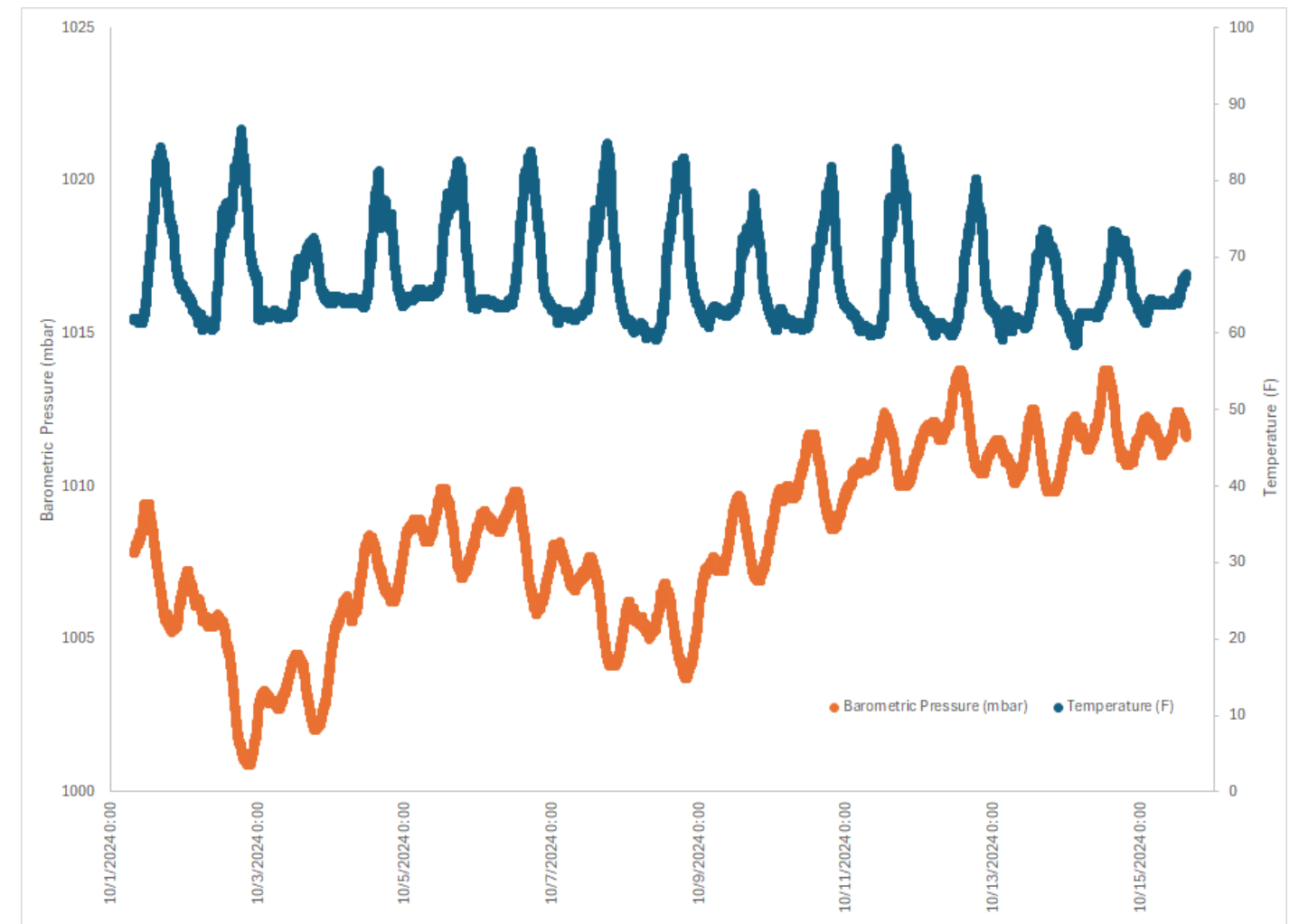
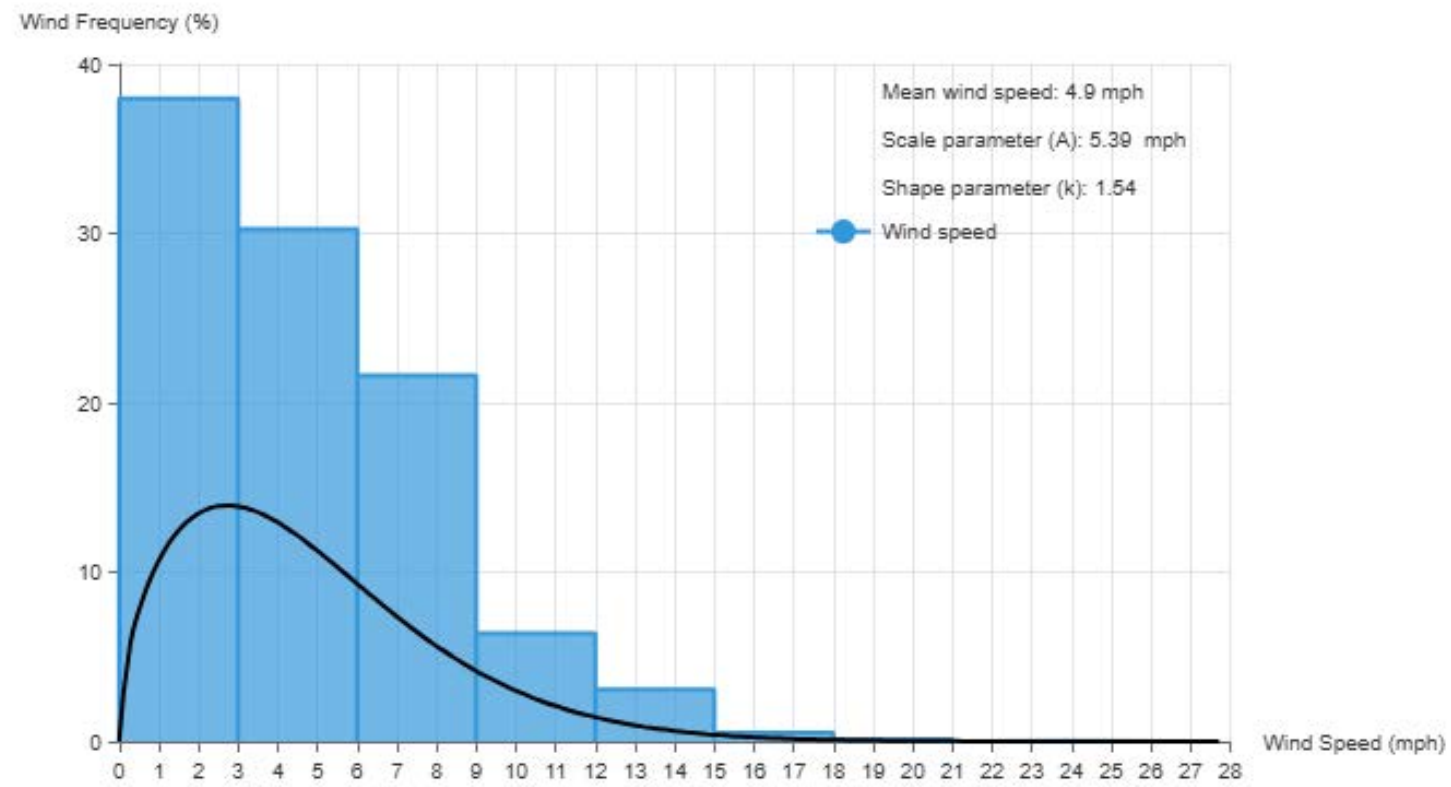


Chart 31 - WB16 Windspeed, Temperature, and Barometric Pressure

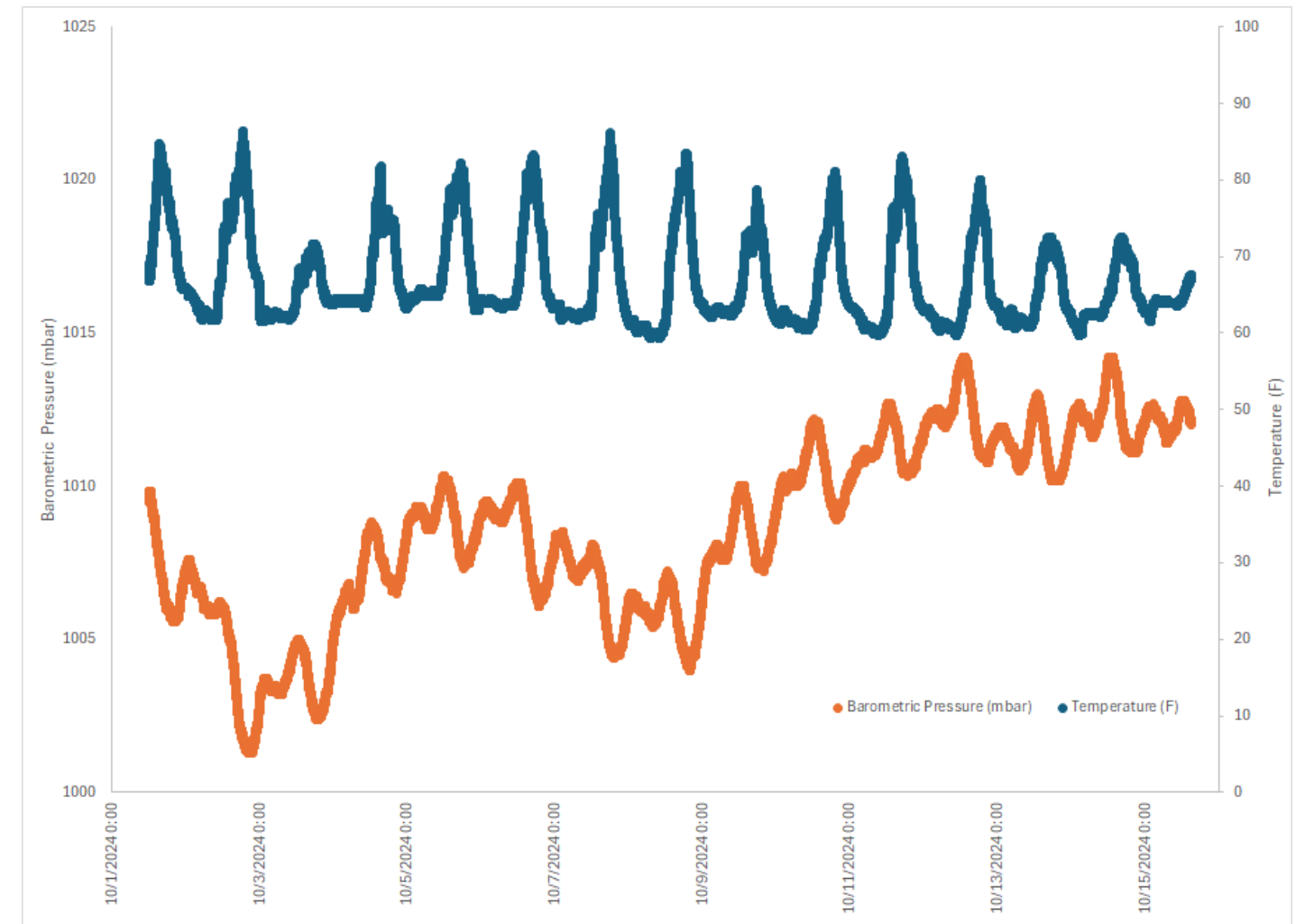
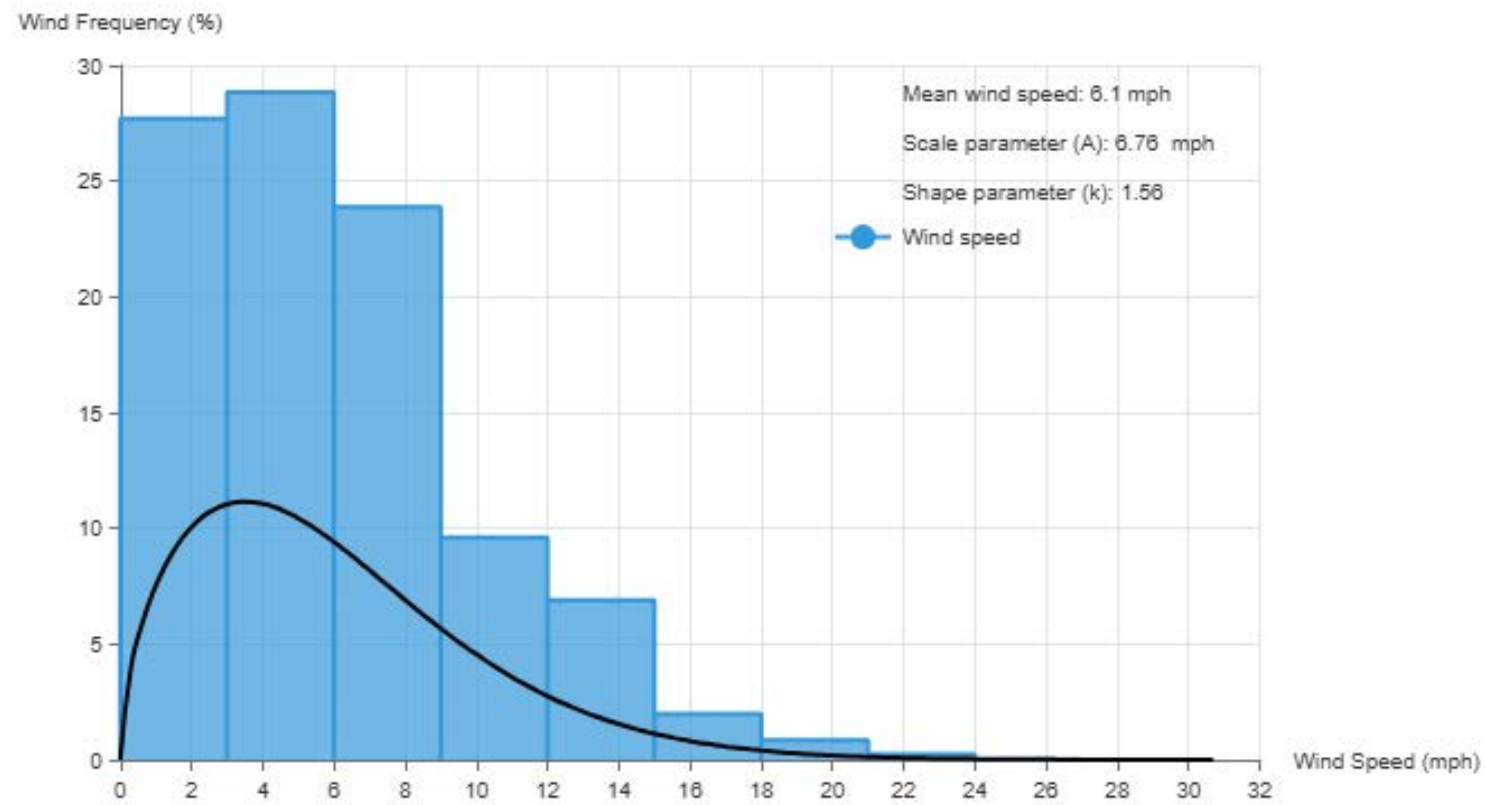


Chart 32 - WB17 Windspeed, Temperature, and Barometric Pressure

Chart 33
Comparison of Regional vs Walnut Bluff Benzene Cancer Risk
Using MATES Risk Assessment Methodology (Average Concentration)
1998 - 2024

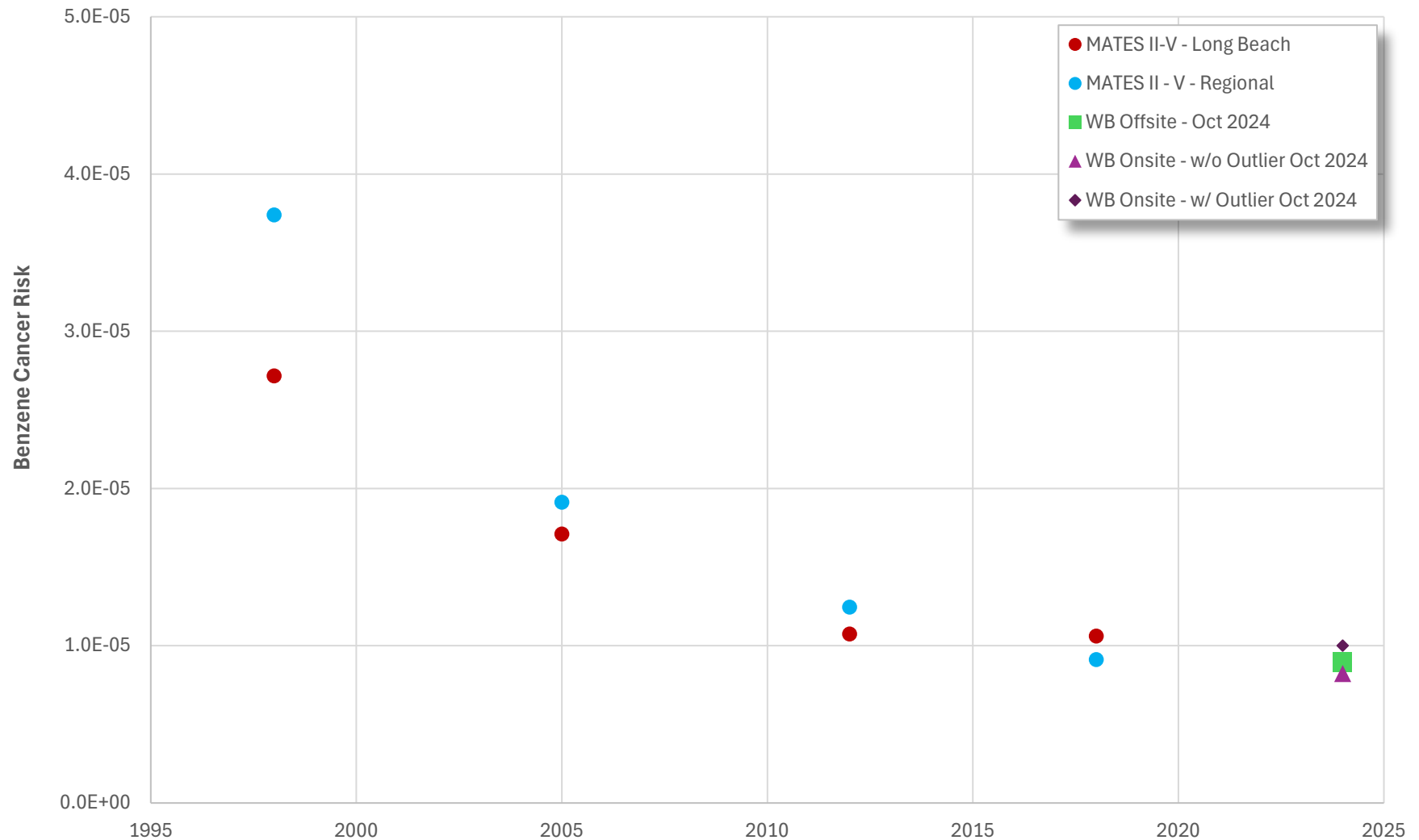


Chart 34
Comparison of Regional vs Walnut Bluff Toluene Noncancer Hazard Index
Using MATES Risk Assessment Methodology (Average Concentration)
1998 - 2024

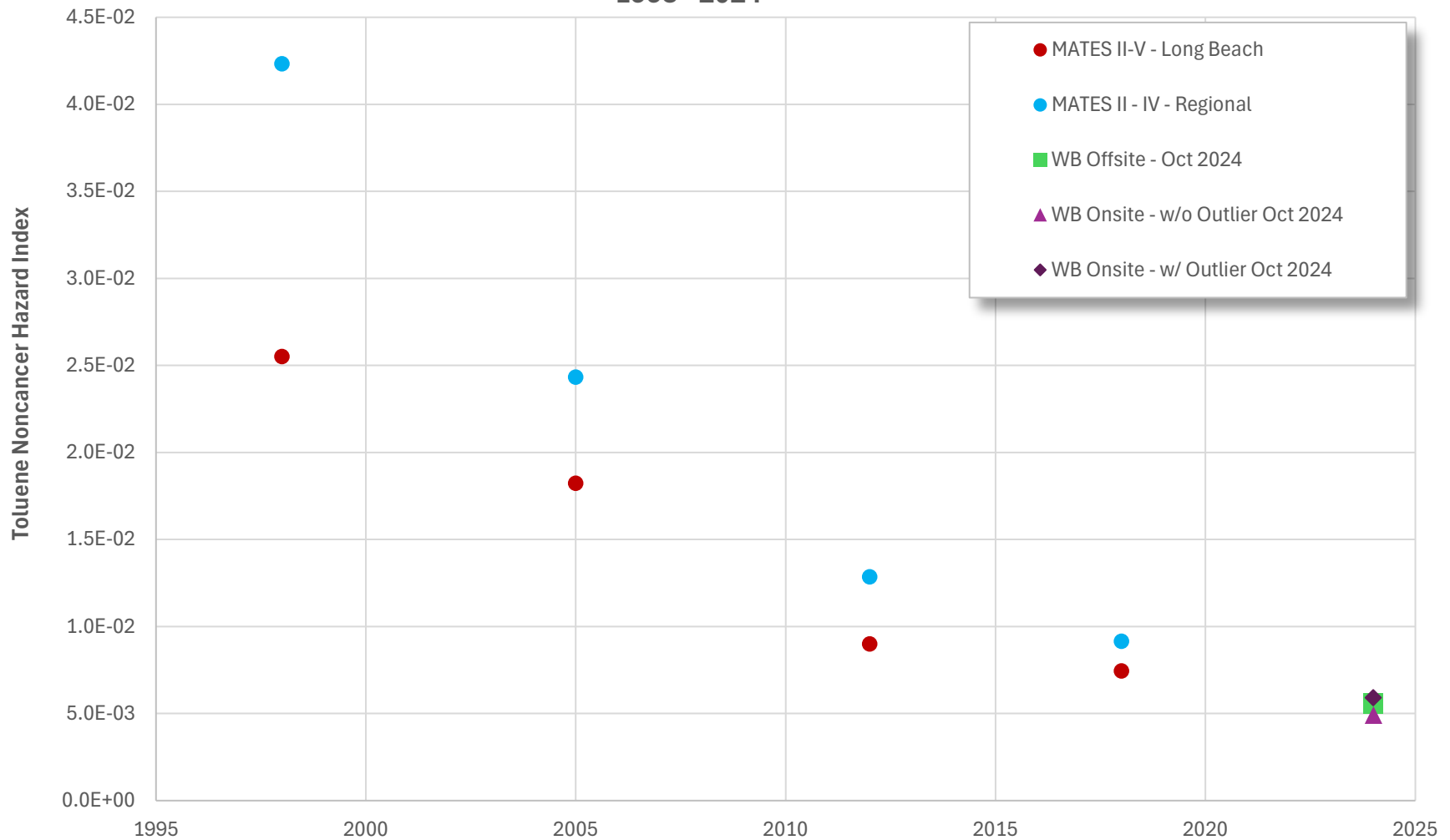


Chart 35
Comparison of Regional vs Walnut Bluff Ethylbenzene Cancer Risk
Using MATES Risk Assessment Methodology (Average Concentration)
1998 - 2024

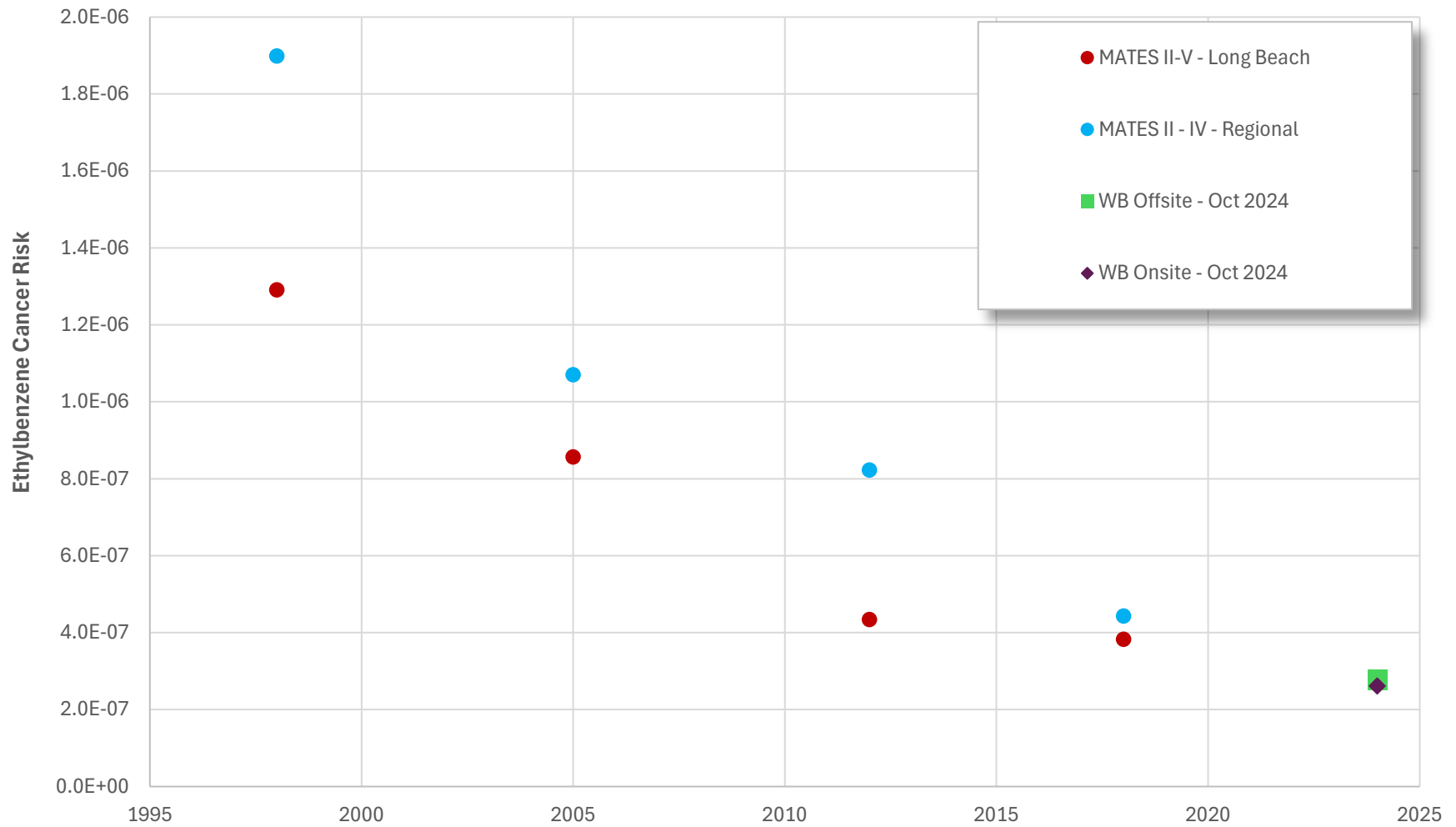


Chart 36
Comparison of Regional vs Walnut Bluff Total Xylenes Noncancer Hazard Index
Using MATES Risk Assessment Methodology (Average Concentration)
1998 - 2024

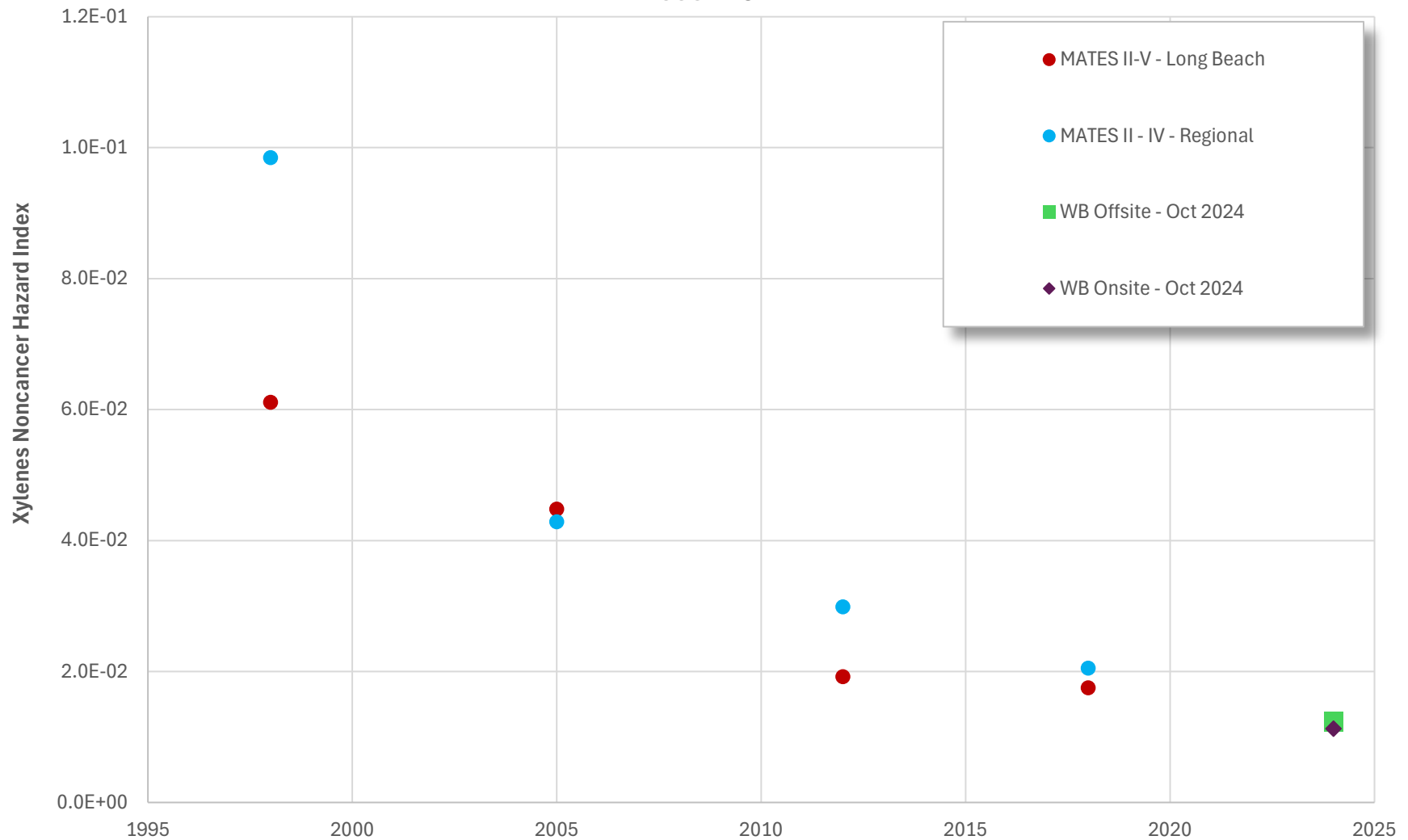


Chart 37
Comparison of Regional vs Walnut Bluff Naphthalene Cancer Risk
Using MATES Risk Assessment Methodology (Average Concentration)
1998 - 2024

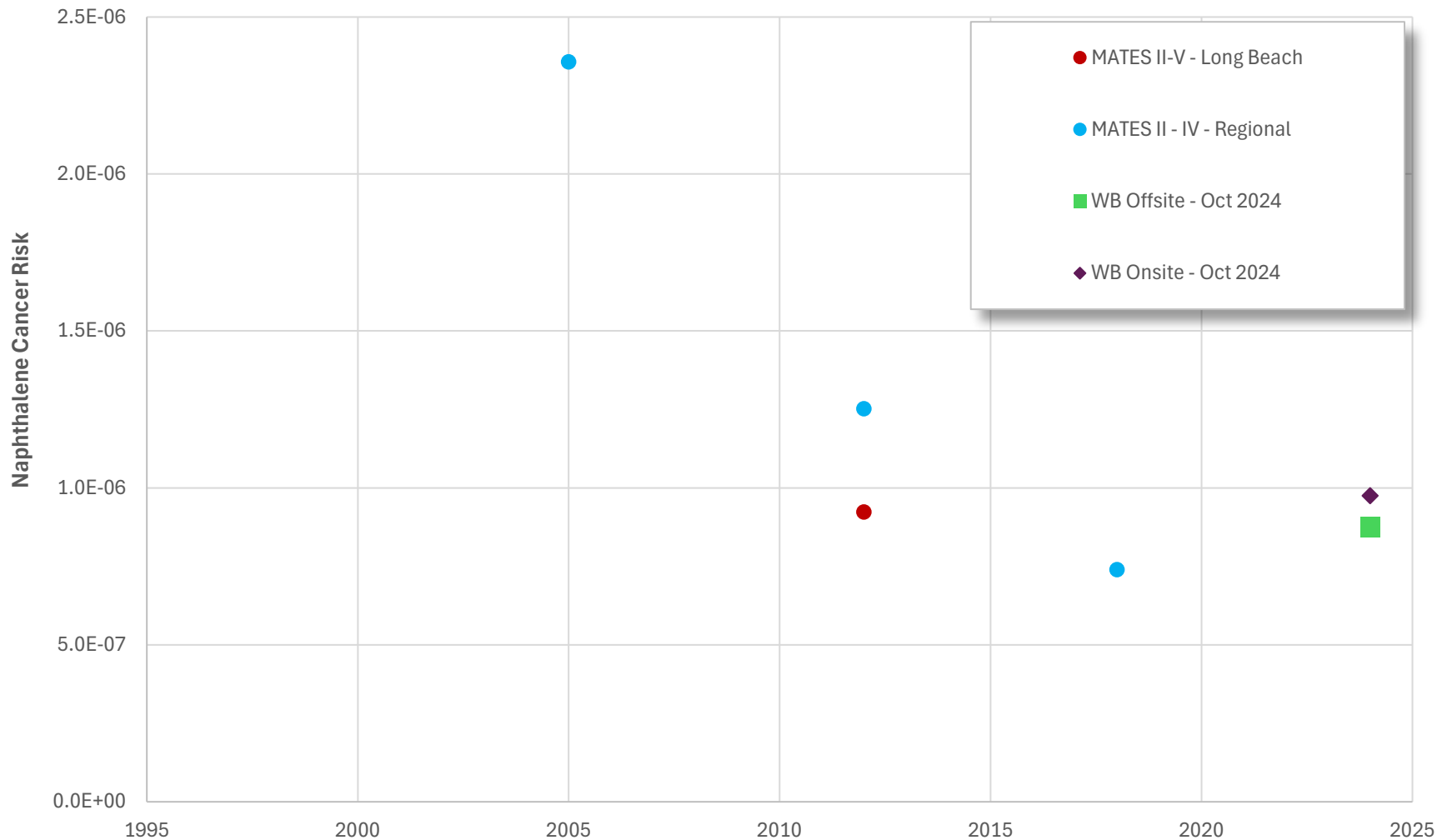


Chart 38 - 14-Day Benzene Concentrations

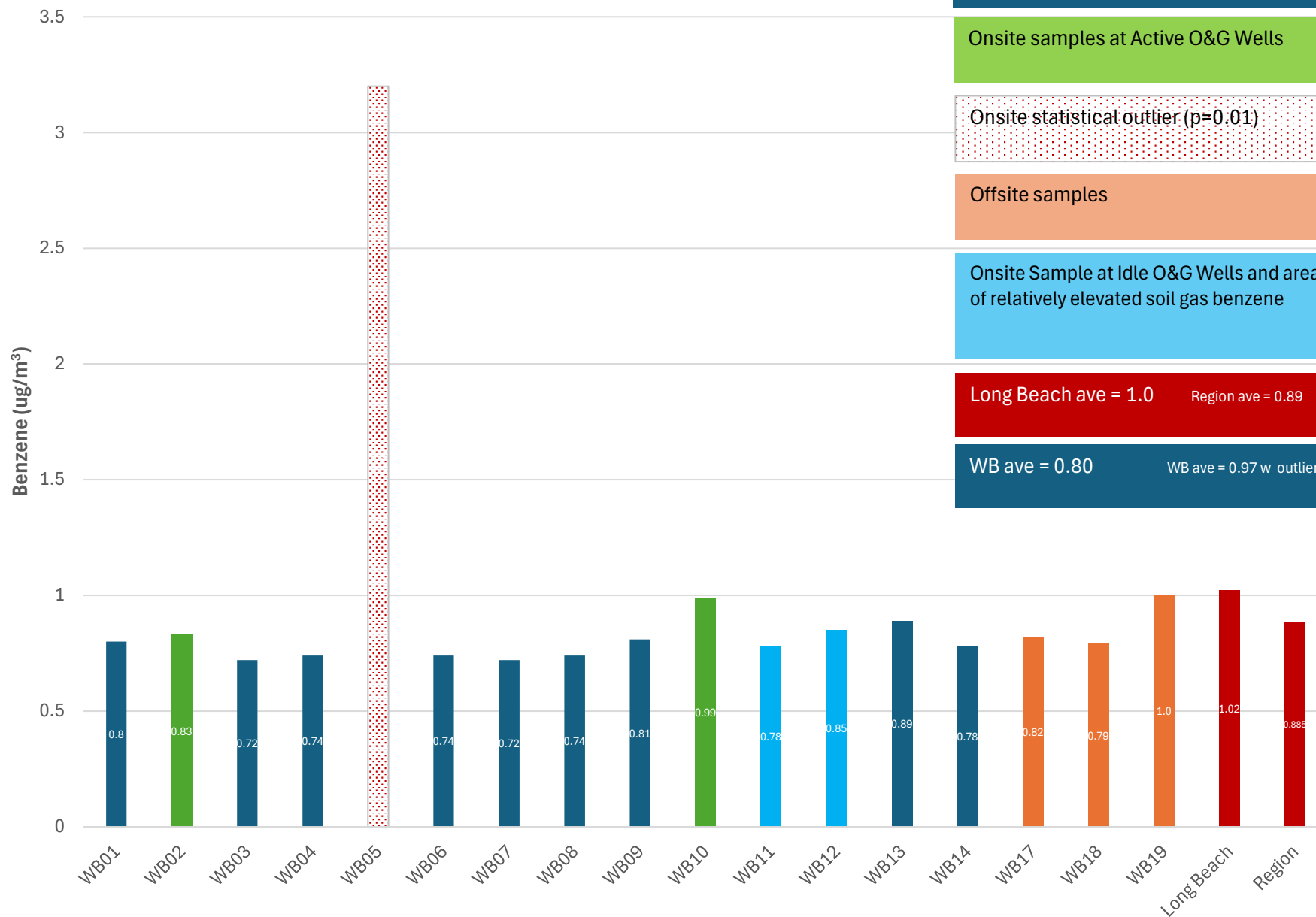


Chart 39 - 14-Day Toluene Concentrations

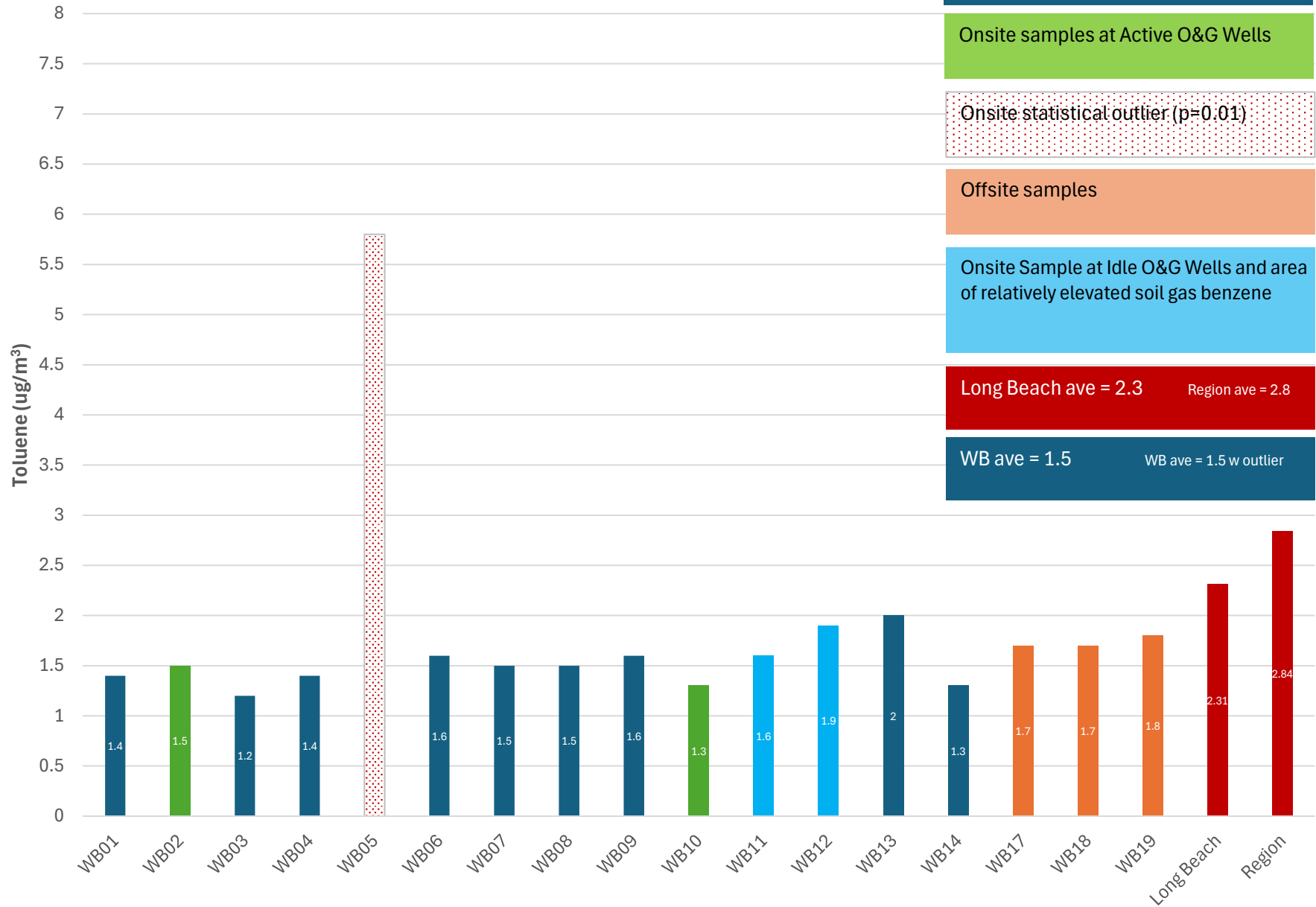


Chart 40 - 14-Day Ethylbenzene Concentrations

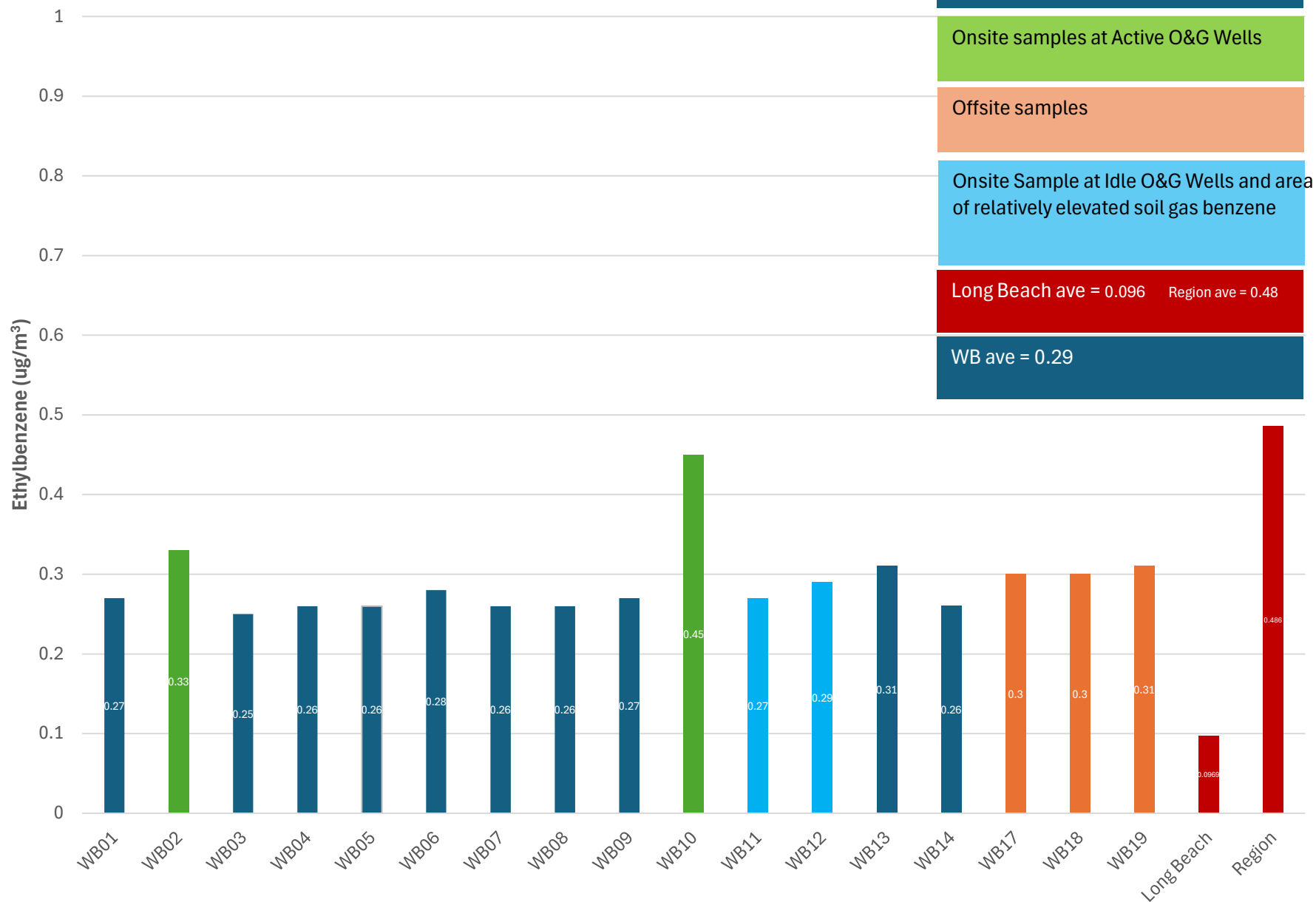


Chart 41 - 14-Day Xylenes Concentrations

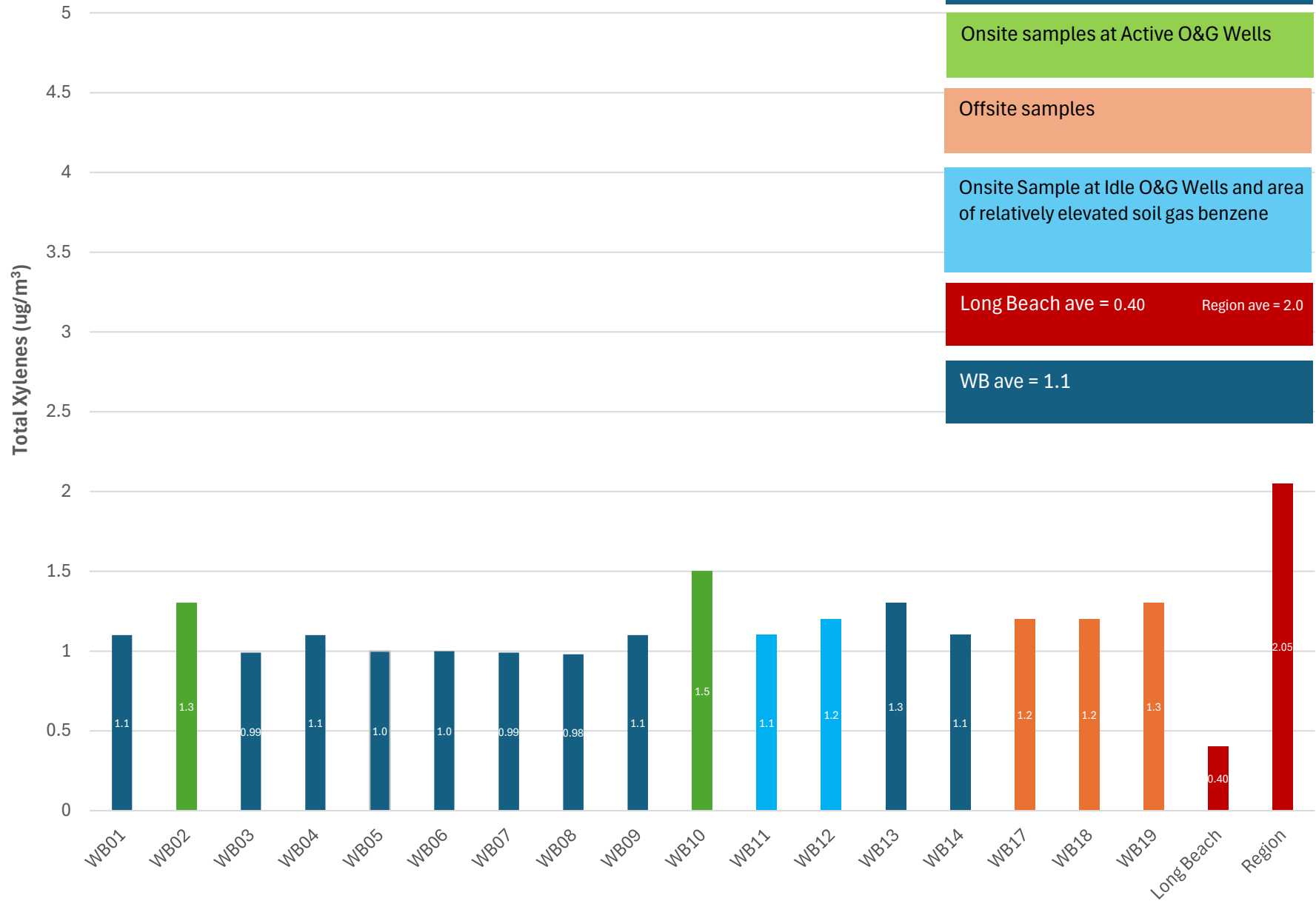


Chart 42 - 14-Day Naphthalene Concentrations

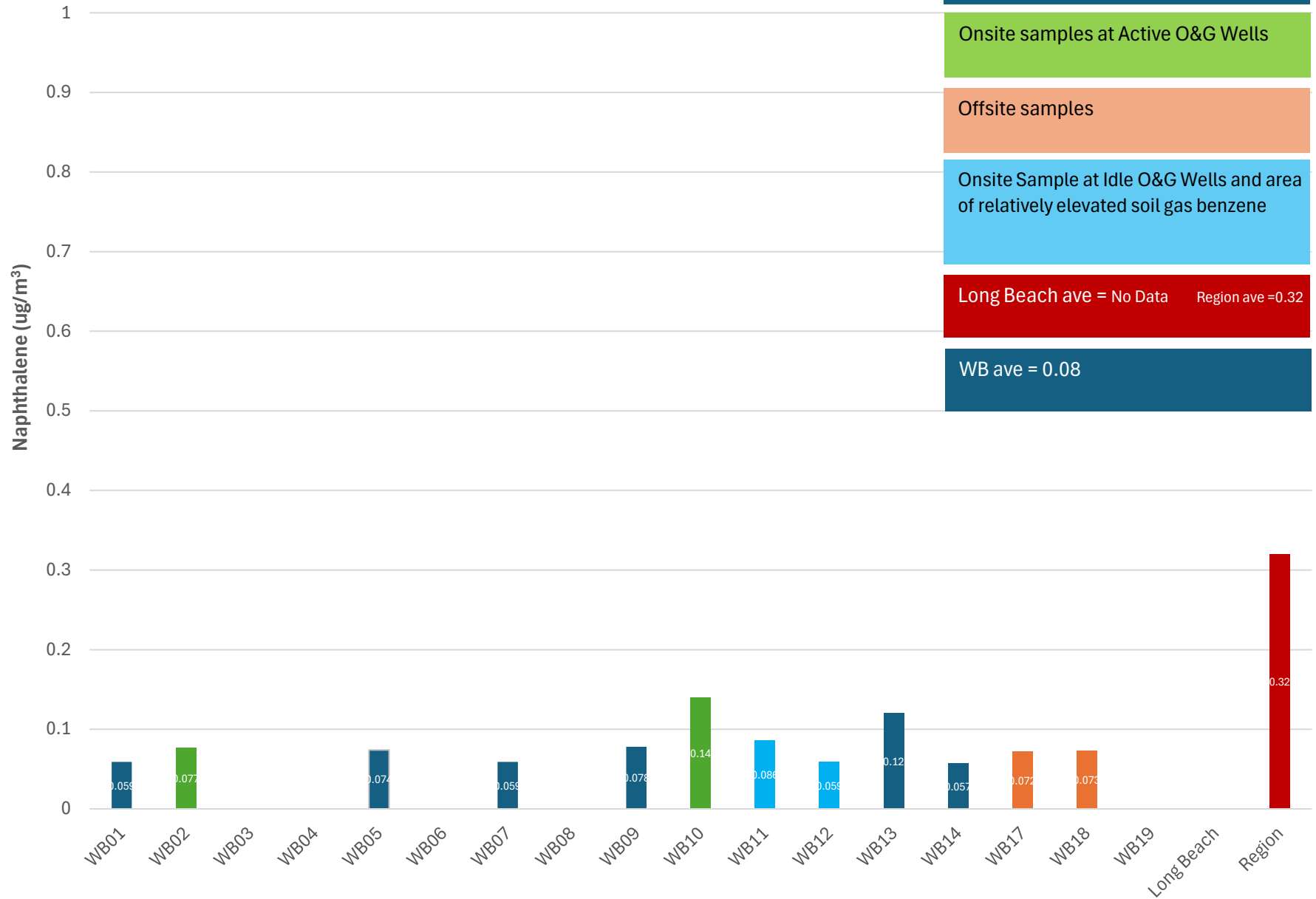


Chart 43 - Benzene Concentrations in 2 Week Samples in October 2024 and December 2024

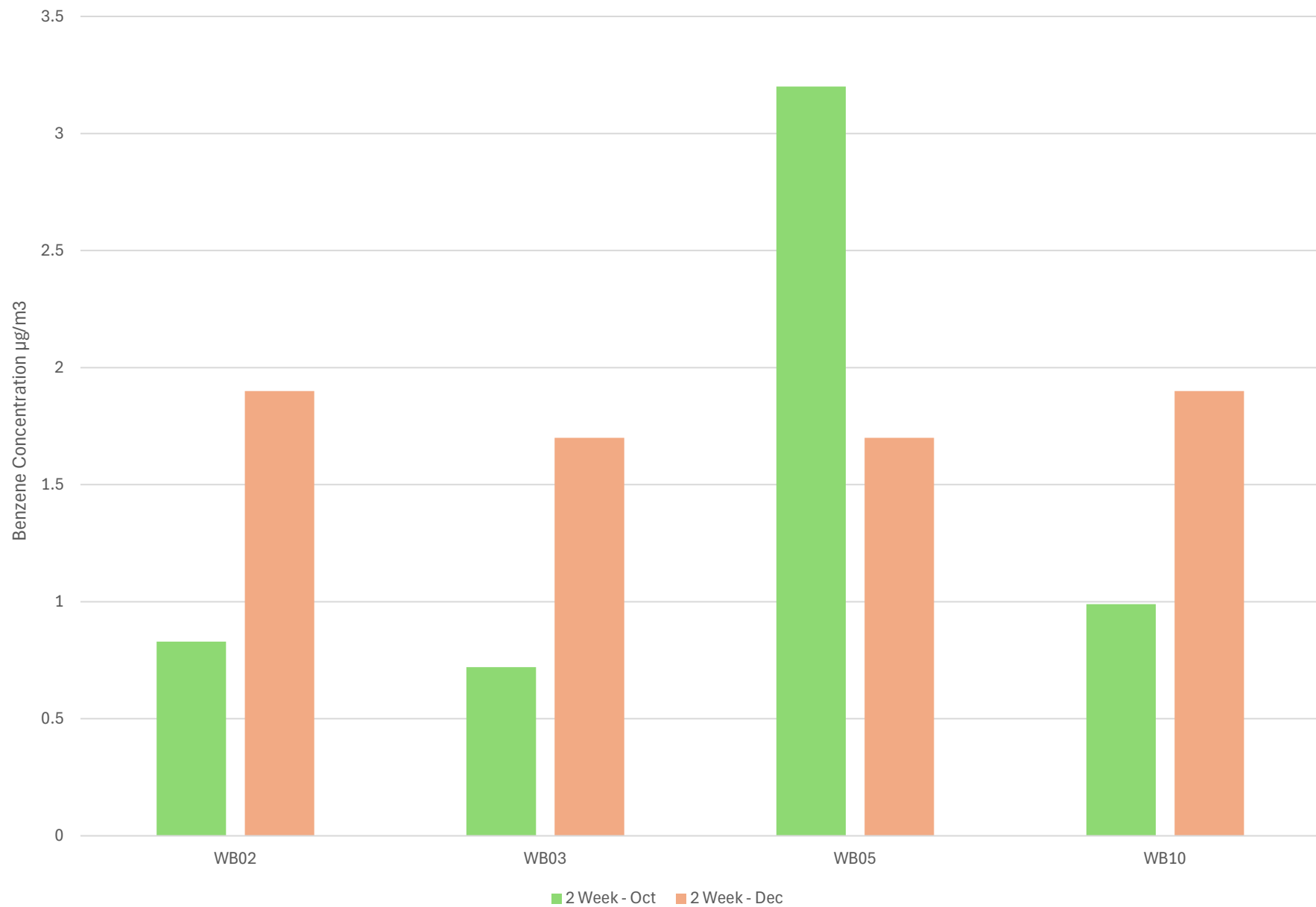


Chart 44 - Toluene Concentrations in 2 Week Samples in October 2024 and December 2024

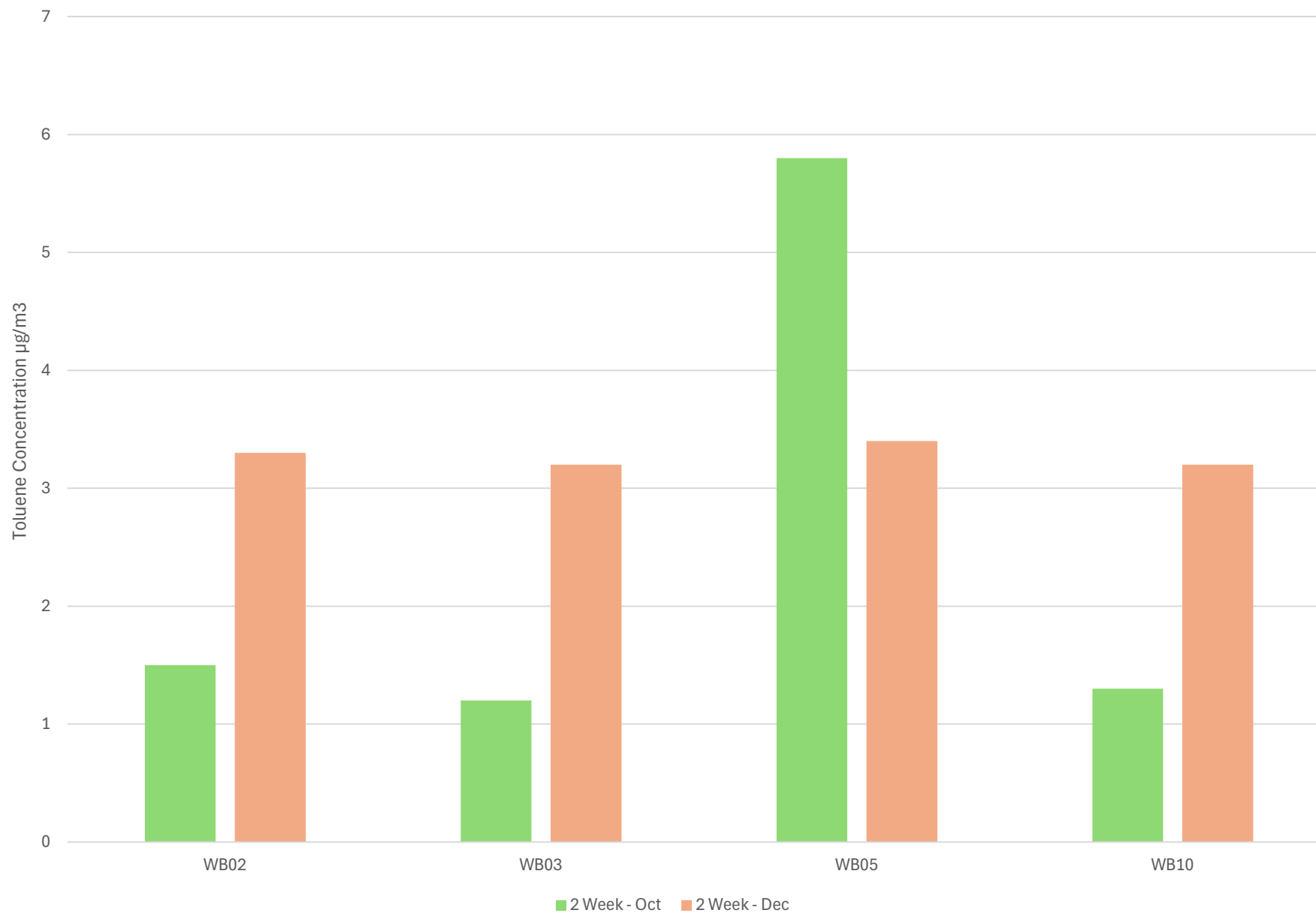


Chart 45 - Ethylbenzene Concentrations in 2 Week Samples in October 2024
and December 2024

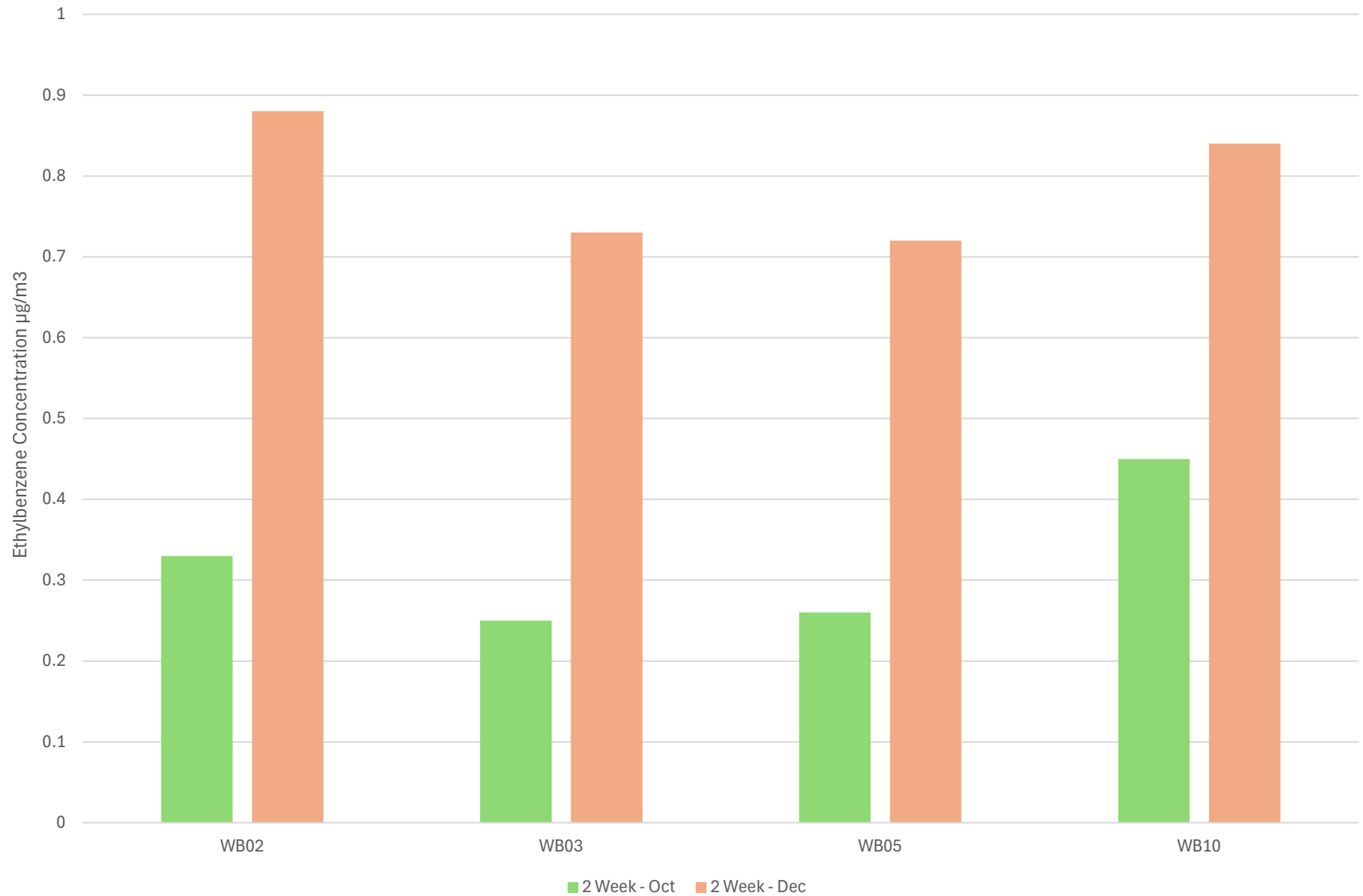


Chart 46 - Total Xylenes Concentrations in 2 Week Samples in October 2024
and December 2024

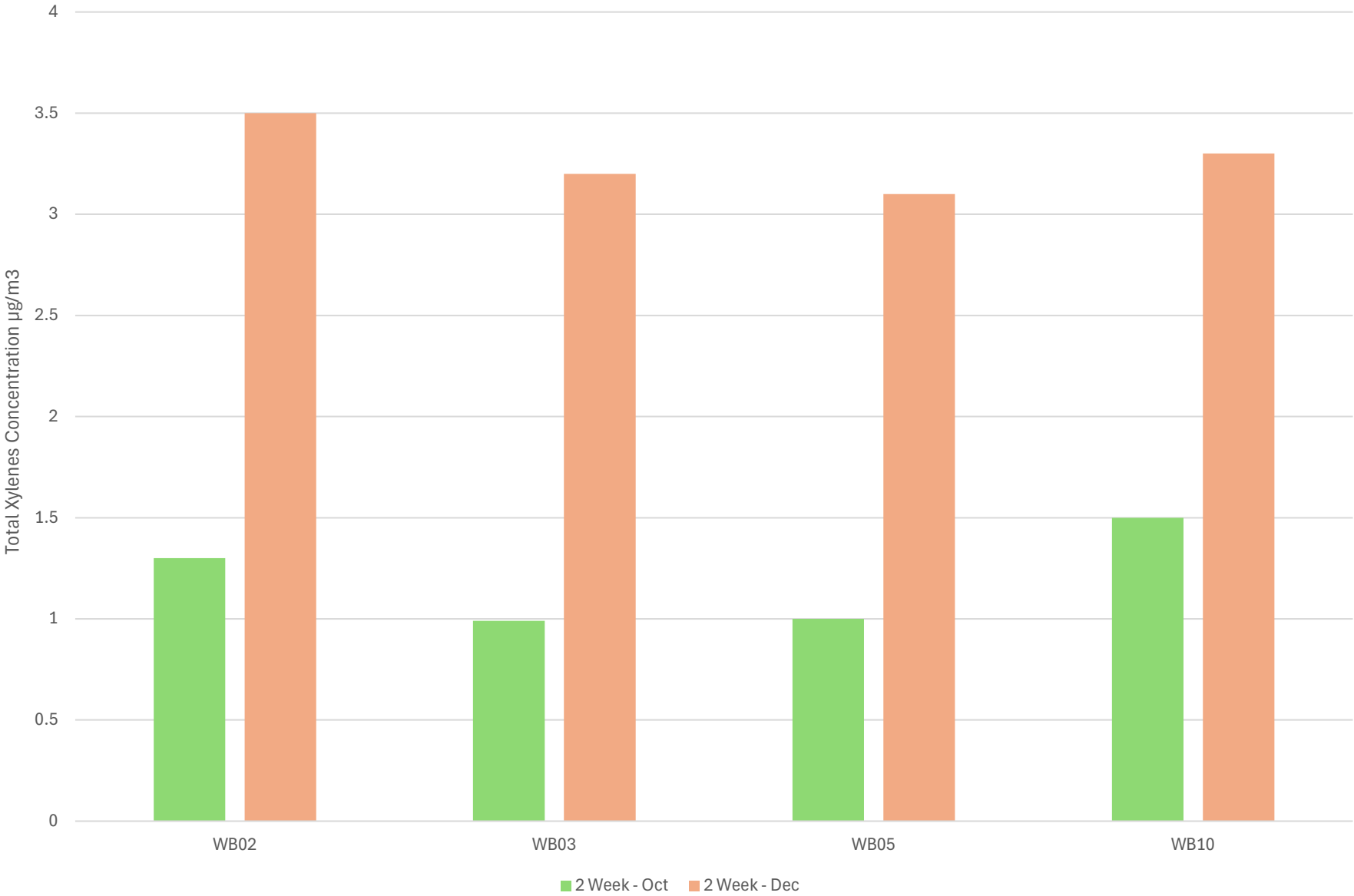


Chart 47 - Naphthalene Concentrations in 2 Week Samples in October 2024
and December 2024

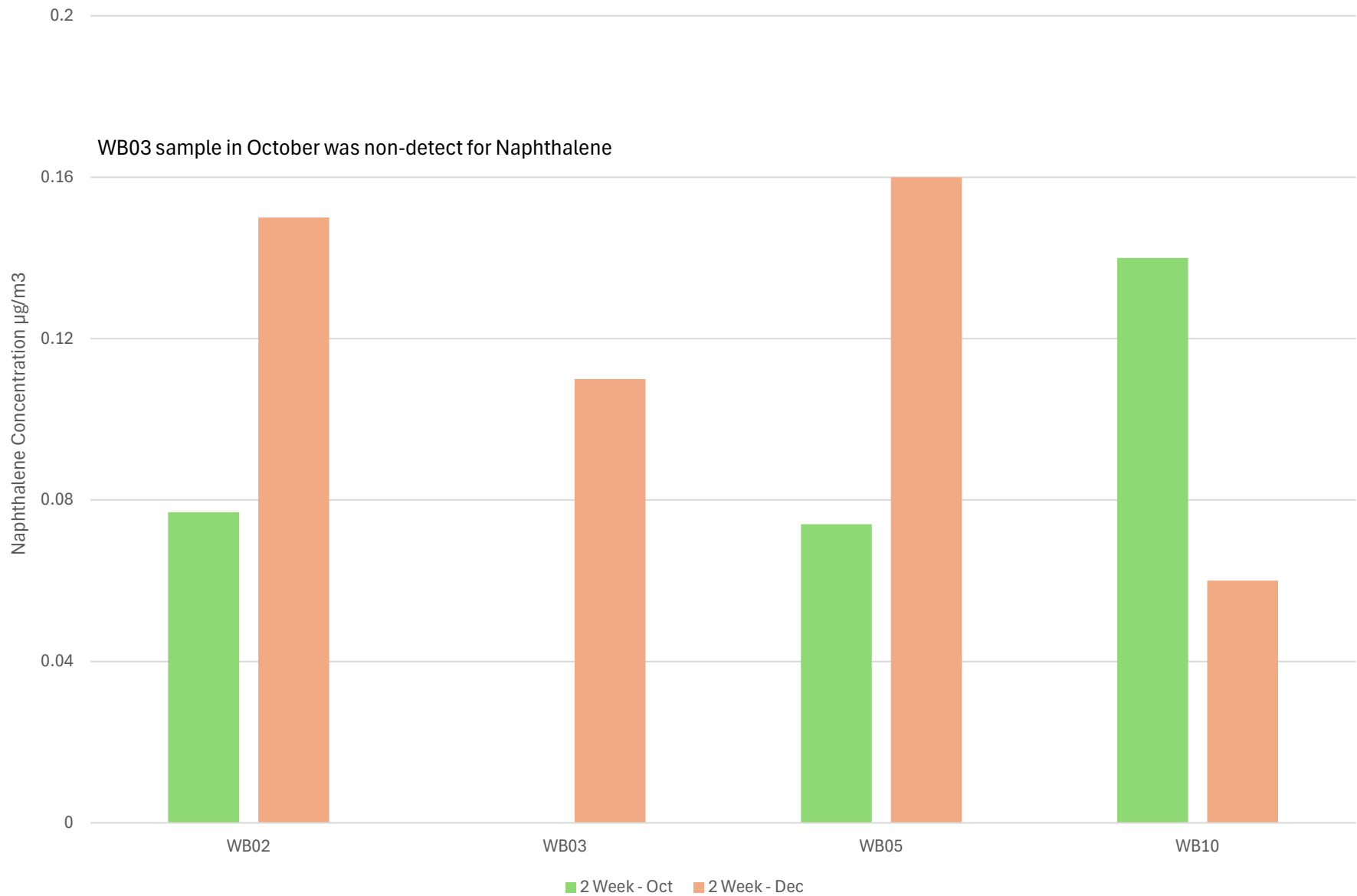
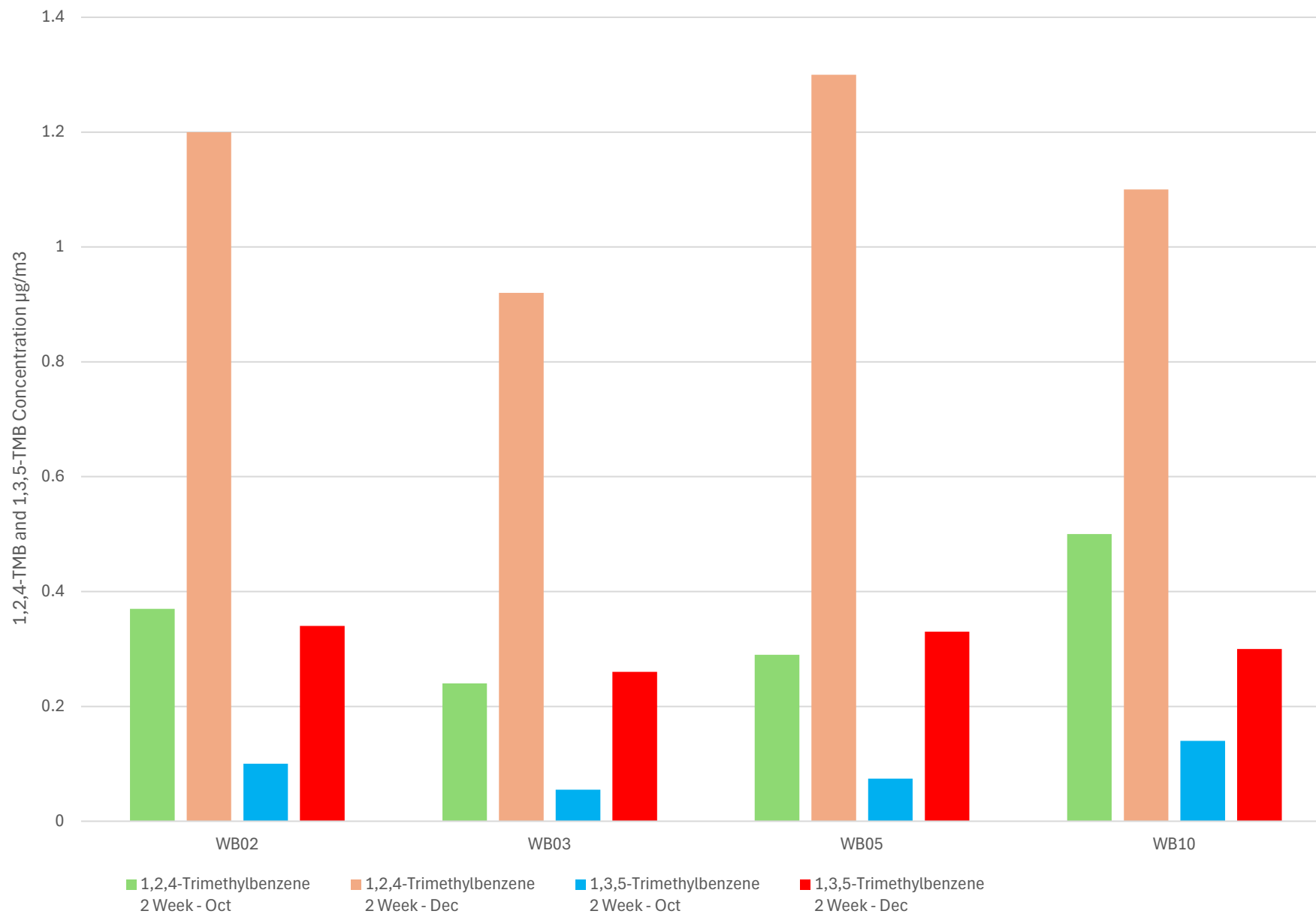


Chart 48 - 1,2,4-TMB and 1,3,5- TMB in 2 Week Samples in October and December 2024



**Chart 49 WB 16 Windrose
Diagram (December
2024)**

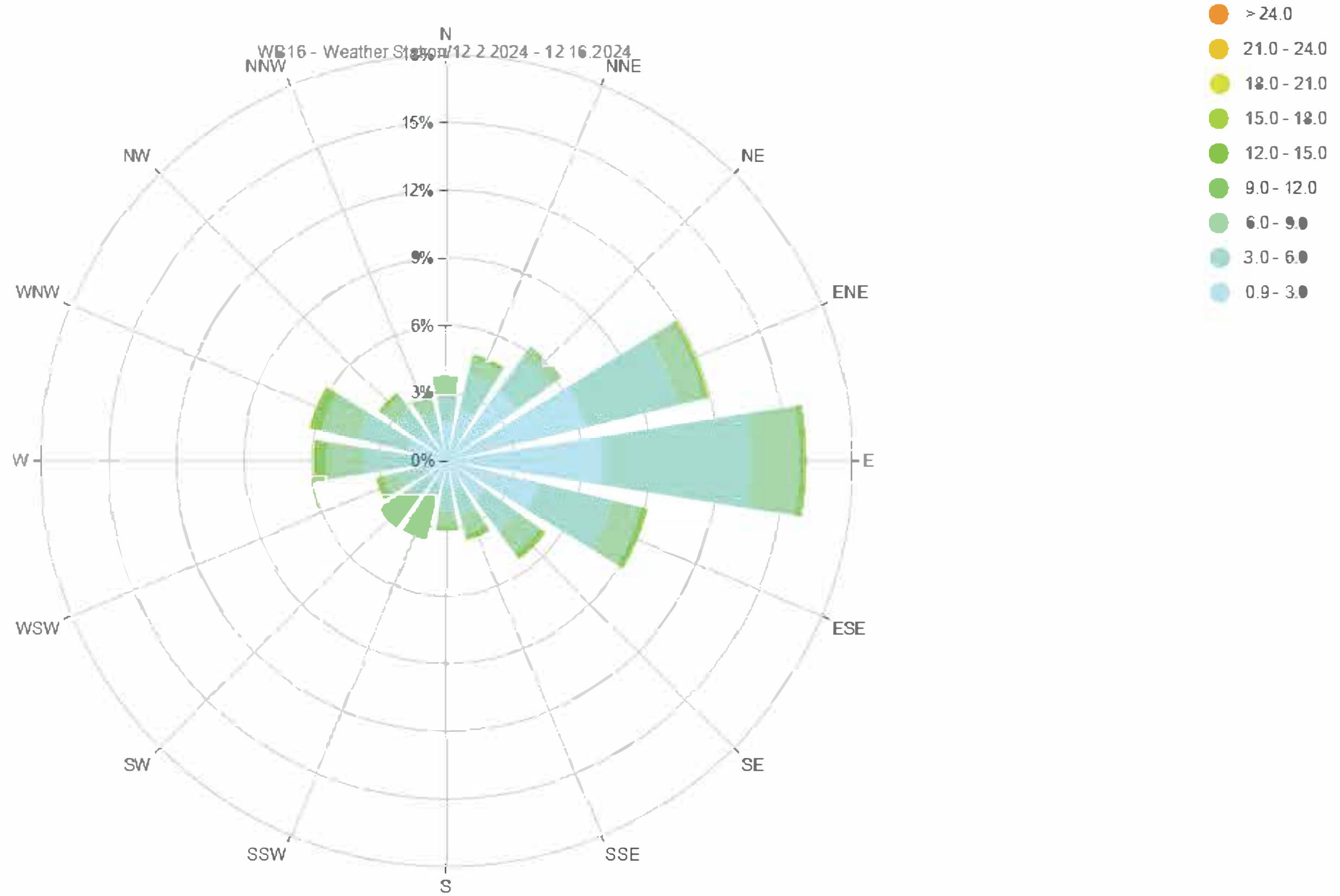


Chart 50 Windspeed (December 2024)

WB16 12.2.2024 to 12.16.2024

Wind Frequency (%)

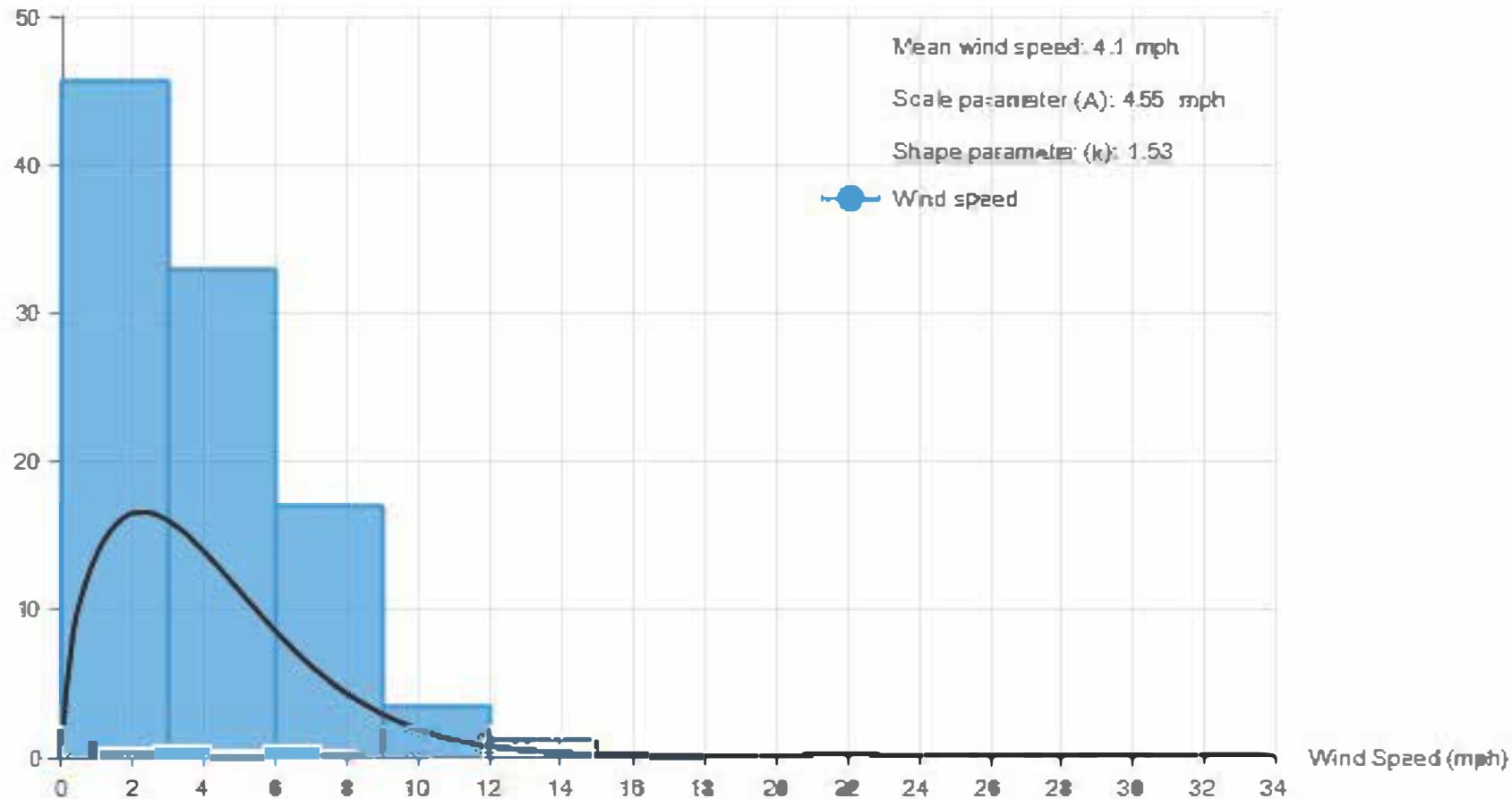


Chart 51: Average Concentration of Benzene Over Time By Sample Station
(MATES V Data 2018-2019)

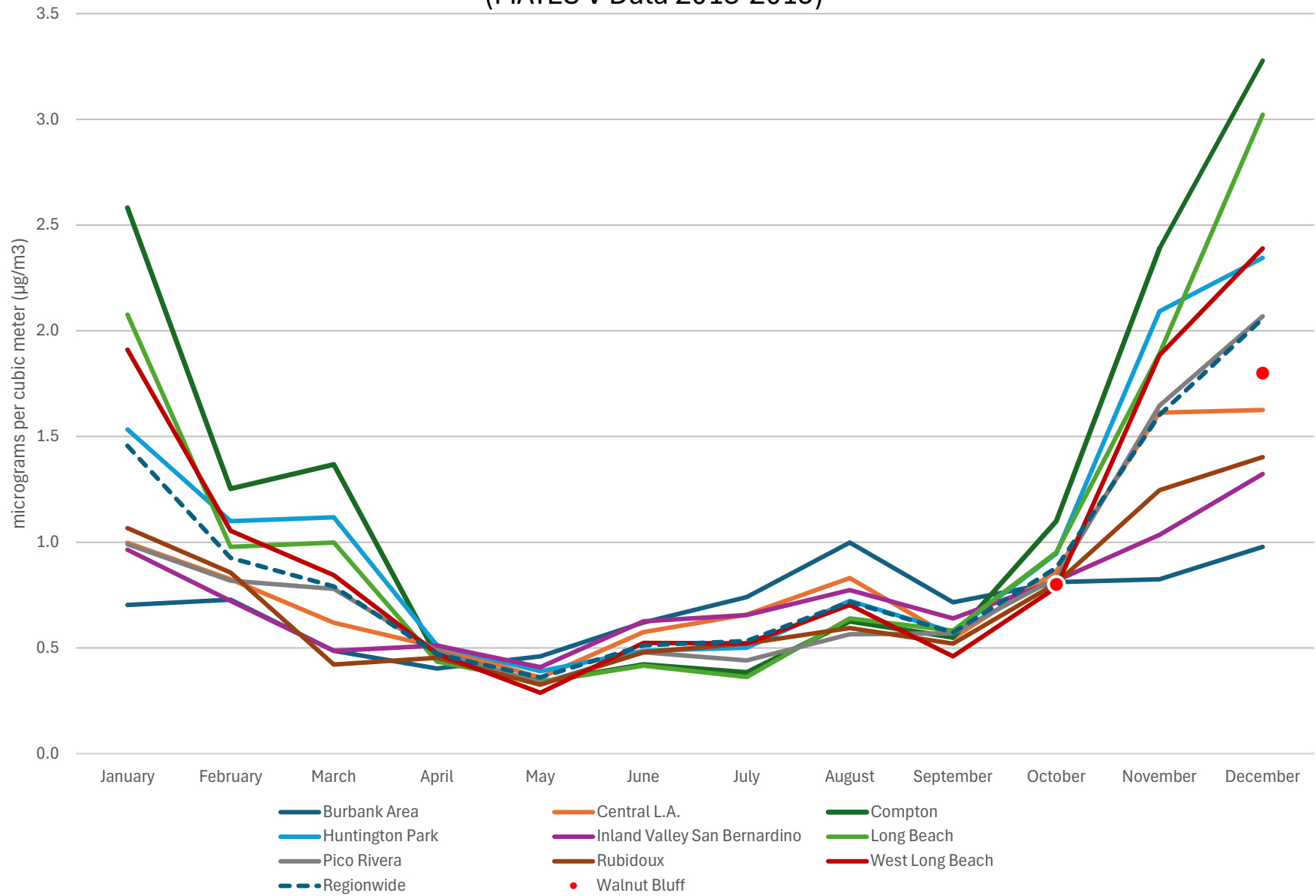
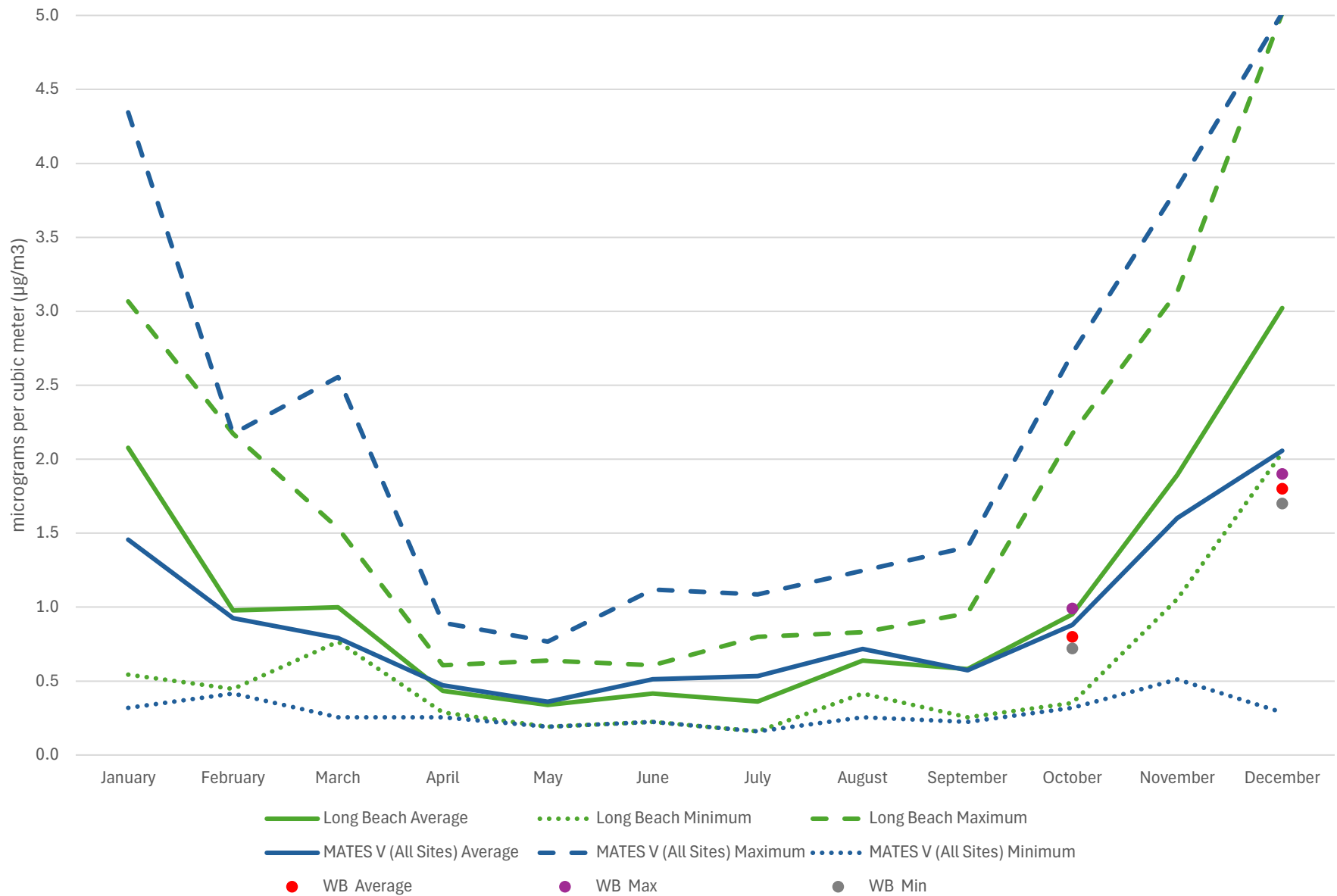


Chart 52: Comparison of Benzene Concentrations Detected at Walnut Bluff and MATES V



Appendix A

Field Data Sheets

1 of 3

2 week Samples
Ambient Air Sampling Form

Project Name: Walnut Bluff Site Location: Signal Hill Date: 10/11/24 start
↓

Sampled by: Elizabeth Kwang Weather/Temp (°F): _____

Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB17-14D	A70230	C70938	30	6	2 Weeks
Time/Date	10/11/24, 08:35	10/10/24, 14:32	10/15/24, 09:40		
Pressure (in HG)	30	15	8		
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB18-14D	A70252	C70812	31	10	2 Weeks
Time/Date	10/11/24, 10:20	10/10/24, 14:46	10/15/24, 10:28		
Pressure (in HG)	31	17	10		
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB19-14D	A70102	C70012	29	6	2 Weeks
Time/Date	10/11/24, 10:44	10/11/24, 11:22	10/10/24, 13:16	10/15/24, 11:05	
Pressure (in HG)	29	16	14	6	
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB10-14D	A70238	C70331	31	6	2 Weeks
Time/Date	10/11/24, 10:49	10/9/24, 11:20	10/10/24, 13:45	10/15/24, 11:12	
Pressure (in HG)	31	16	14	6	
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB11-14D	A70404	C70352	30	5	2 Weeks
Time/Date	10/11/24, 10:55	10/9/24, 12:51	10/10/24, 14:14	10/15/24, 11:16	
Pressure (in HG)	30	16	14	5	
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB12-14D	A70144	C70908	31	8	2 Weeks
Time/Date	10/11/24, 11:03	10/9/24, 11:59	10/10/24, 13:50	10/15/24, 11:20	
Pressure (in HG)	31	17	15.5	8	
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB13-14D	A70531	C70249	30	7	2 Weeks
Time/Date	10/11/24, 11:10	10/11/24, 09:13	10/10/24, 13:52	10/15/24, 11:24	
Pressure (in HG)	30	17.5	15	7	
Comments:					

2 week Samples
Ambient Air Sampling Form

2 of 3

Project Name: Walnut Bluff Site Location: Signal Hill Date: _____

Sampled by: Elizabeth Hwang Weather/Temp (°F): _____

Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB14-14D	A70014	C70309	30	5	2 Weeks
Time/Date	10/1/24 11:16	10/9/24 09:28	10/10/24 13:56	10/15/24 11:28	
Pressure (in HG)	30	14	13	5	
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WBQ2-14D	A70413	C70903	31	6	2 Weeks
Time/Date	10/1/24 11:20	10/9/24 10:33	10/10/24 12:51	10/15/24 11:34	
Pressure (in HG)	31	17	15	6	
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB01-14D	A70124	C70196	30	8	2 Weeks
Time/Date	10/1/24 11:26	10/9/24 09:01	10/10/24 11:49	10/15/24 11:37	
Pressure (in HG)	30	18	16	8	
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB03-14D	A70027	C70059	31	7	2 Weeks
Time/Date	10/1/24 11:33	10/9/24 10:36	10/10/24 12:41	10/15/24 11:46	
Pressure (in HG)	31	17	15	7	
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB05-14D	A70163	C70800	31	10	2 Weeks
Time/Date	10/1/24 11:43	10/9/24 11:06	10/10/24 12:49	10/15/24 12:01	
Pressure (in HG)	31	19	17	10	
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB04-14	A70110	C70932	28	7	2 Weeks
Time/Date	10/1/24 11:47	10/9/24 10:48	10/10/24 12:50	10/15/24 11:50	
Pressure (in HG)	28	16	15	7	
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB06-14D	A70403	C70916	30	3	2 Weeks
Time/Date	10/1/24 11:52	10/9/24 10:43	10/10/24 13:06	10/15/24 11:56	
Pressure (in HG)	30	15	13.5	3	
Comments:					

3 of 3

2 week samples
Ambient Air Sampling Form

Project Name: Walnut Bluff Site Location: Signal Hill Date: _____

Sampled by: Elizabeth Huang Weather/Temp (°F): _____

Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB07-14D	A 70248	C70901	31	7	2 Weeks
Time/Date	10/11/24 11:57	10/9/24 08:45	10/10/24 13:08	10/15/24 1206	
Pressure (in HG)	31	18	16	7	
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB08-14D	A 70079	C70914	30	8	2 Weeks
Time/Date	10/11/24 12:01	10/9/24 11:14	10/10/24 13:12	10/15/24 12:11	
Pressure (in HG)	30	17	15	8	
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB19-14D	A70118	C70081	30	9	2 Weeks
Time/Date	10/11/24 14:51	10/9/24 09:53	10/10/24 14:23	10/15/24 1444	
Pressure (in HG)	30	19	17	9	
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
Time/Date				9/15/24	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
Time/Date					
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
Time/Date					
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
Time/Date					
Pressure (in HG)					
Comments:					

1 of 3

24 Hr samples Ambient Air Sampling Form

Project Name: Walnut Bluff Site Location: Signal Hill Date: 10/9/24

Sampled by: Elizabeth Hwang, Olivia Hogan Weather/Temp (°F): _____

Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB01-24H	6024fc	0626	30	1	24 Hr
Time/Date	10/9/24 12:33	10/10/24 11:48	10/9/24 12:33	10/10/24 11:48	
Pressure (in HG)	30	X			
Comments:					
WB02-24H	20459	813	30	2	24 Hr
Time/Date			10/9/24 12:36	10/10/24 12:38	
Pressure (in HG)					
Comments:					
WB03-24	13897	0794	30	2	24 Hr
Time/Date			10/9/24 12:38	10/10/24 12:42	
Pressure (in HG)					
Comments:					
WB04-24H	6026fc	37493	30	3	24 Hr
Time/Date			10/9/24 12:42	10/10/24 12:44	
Pressure (in HG)					
Comments:					
WB05-24H	18716	C8346	29	3	24 Hr
Time/Date			10/9/24 12:46	10/10/24 12:46	
Pressure (in HG)					
Comments:					
WB06-24H	6027fc	0747	30	3	24 Hr
Time/Date			10/9/24 13:04	10/10/24 13:05	
Pressure (in HG)					
Comments:					
WB07-24H	10001	0616	30	2	24 Hr
Time/Date			10/9/24 13:06	10/10/24 13:08	
Pressure (in HG)					
Comments:					

Ambient Air Sampling Form

Project Name: Walnut Bluff Site Location: Signal Hill

Date: 10/9/24 / 10/10/24

Sampled by: Elizabeth Huang / Olivia Hogan Weather/Temp (°F): _____

Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB08-24H	6030fc	35416	30	2	
Time/Date			10/9/24 13:12	10/10/24 13:11	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB09-24	6022fc	0762	30	2	
Time/Date			10/9/24 13:17	10/10/24 12:20	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB10-24H	18714	0161	30	2	
Time/Date			10/9/24 14:07	10/10/24 13:44	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB11-24H	10012	0684	30	3	
Time/Date			10/9/24 14:10	10/10/24 14:13	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB12-24H	5982	27754	30	2	
Time/Date			10/9/24 14:14	10/10/24 12:30	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB13-24H	6031	0681	30	1	
Time/Date			10/9/24 14:16	10/10/24 13:50	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB14-24H	6025fc	0484	30	2	
Time/Date			10/9/24 14:19	10/10/24 13:55	
Pressure (in HG)					
Comments:					

Ambient Air Sampling Form

Project Name: Walnut Bluff Site Location: Signal Hill Date: 10/9/24Sampled by: Elizabeth Hwang / Olivia Hagan Weather/Temp (°F): _____

Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB19-24H	5980	819	30	2	
Time/Date			10/9/24 14:30	10/10/24 14:21	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB17-24H	20197	0685	31	2	
Time/Date			10/9/24 14:47	10/10/24 14:31	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB18-24H	6029fc	27756	30	1.5	
Time/Date			10/9/24 14:58	10/10/24 14:45	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
Time/Date					
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
Time/Date					
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
Time/Date					
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
Time/Date					
Pressure (in HG)					
Comments:					

10/3

1 Hr Samples
Ambient Air Sampling Form

Project Name: Walnut Bluff Site Location: Signal Hill Date: 10/16/24

Sampled by: Elizabeth Hwang/Olivia Hagan Weather/Temp (°F): _____

Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB07-1H	13685	0790	2.8	4	1 Hr
Time/Date			10/17/24 08:36	10/17/24 09:42	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB01-1H	18718	0787	2.9	5	1 Hr
Time/Date			10/19/24 09:00	10/19/24 09:59	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB13-1H	13676	49967	2.8	4.5	1 Hr
Time/Date			10/19/24 09:10	10/19/24 10:09	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB14-1H	20201	802	2.9	5	1 Hr
Time/Date			10/19/24 09:18	10/19/24 10:19	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB19-1H	6032	0744	3.0	5	1 Hr
Time/Date			10/19/24 09:52	10/19/24 10:54	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB02-1H	6057	0796	2.9	4	1 Hr
Time/Date			10/19/24 10:31	10/19/24 11:31	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB03-1H	5983	0803	2.7	4	1 Hr
Time/Date			10/19/24 10:35	10/19/24 11:33	
Pressure (in HG)					
Comments:					

1 Hr Samples
Ambient Air Sampling Form

2 of 3

Project Name: Walnut Bluff Site Location: Signal Hill Date: 10/9/24
Sampled by: Elizabeth Huang / Olivia Hogan Weather/Temp (°F): _____

Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB06-1H	13686	43531	30	4	1 Hr
Time/Date			10/9/24 10:43	10/9/24 11:42	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB04-1H	6016	23803	29	4	1 Hr
Time/Date			10/9/24 10:47	10/9/24 11:46	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB05-1H	6013	37503	29	4	1 Hr
Time/Date			10/9/24 11:06	10/9/24 12:08	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB08-1H	17517	49958	29	4	1 Hr
Time/Date			10/9/24 11:11	10/9/24 12:11	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB10-1H	17512	0679	28	3	1 Hr
Time/Date			10/9/24 11:17	10/9/24 12:20	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB09-1H	7629	0800	29	4	1 Hr
Time/Date			10/9/24 11:22	10/9/24 12:24	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB11-1H	18715	35427	27	5	1 Hr
Time/Date			10/9/24 11:52	10/9/24 12:51	
Pressure (in HG)					
Comments:					

1 Hr samples
Ambient Air Sampling Form

Project Name: Walnut Bluff Site Location: Signal Hill Date: 10/9/24

Sampled by: Elizabeth Hwang/Diana Mogan Weather/Temp (°F): _____

Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB12-1H	13694	C8345	28	3	1 Hr
Time/Date			10/9/24 11:58	10/9/24 12:58	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB17-1H	13898	37519	29	2	1 Hr
Time/Date			10/9/24 13:30	10/9/24 14:37	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
WB18-1H	13677	0761	29	3	1 Hr
Time/Date			10/9/24 13:52	10/9/24 14:56	
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
Time/Date					
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
Time/Date					
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
Time/Date					
Pressure (in HG)					
Comments:					
Sample ID	Manifold #	Canister #	Start Pressure	End Pressure	Duration (hr or weeks)
Time/Date					
Pressure (in HG)					
Comments:					

Appendix B

Quality Assurance Evaluation of Laboratory Data

Laboratory Data Review Checklist for Air and Soil Vapor Samples

Site Name:

Walnut Bluff

Date:

12-11-2024

Consultant Firm:

Catalyst Environmental Solutions

Completed By (Name):

Yola Bayram

Laboratory Name:

Enthalpy Analytical Laboratory

Laboratory Report Number:

518235

Laboratory Report Date:

10/22/24

Laboratory Report Number:

518235

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

10/22/24

1. Laboratory

- a. Did an ELAP or NELAP-certified laboratory receive and perform all of the submitted sample analyses?

Yes ☒ No ☐ N/A ☐ Comments:

- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ELAP or NELAP-certified?

Yes ☐ No ☐ N/A ☒ Comments:

2. Chain of Custody (CoC)

- a. CoC information completed, signed, and dated (including released/received by)?

Yes ☒ No ☐ N/A ☐ Comments:

- b. Correct analyses requested per approved Work Plan?

Yes ☒ No ☐ N/A ☐ Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample condition documented? (e.g., Samples collected in gas tight, opaque/dark Summa canisters or other appropriate container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?)

Yes ☒ No ☐ N/A ☐ Comments:

- b. If sample condition compromised, is Data quality or usability affected?

Laboratory Report Number:

518235

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

10/22/24

4. Case Narrative

a. Present and understandable?

Yes ☒ No ☐ N/A ☐ Comments:

b. Discrepancies, errors, and Lab QC failures identified by the lab?

Yes ☒ No ☐ N/A ☐ If Yes, describe errors. Comments:

c. Does Lab describe corrective actions implemented?

Yes ☒ No ☐ N/A ☐ If Yes, describe corrective actions. Comments:

d. Described impact to data quality/usability according to the case narrative.

No issues encountered

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes ☒ No ☐ N/A ☐ Comments:

b. All applicable holding times met?

Yes ☒ No ☐ N/A ☐ Comments:

c. Are the reported reporting limits (RLs) less than the data quality objectives or screening level for the project, as defined in the approved work plan?

Yes ☐ No ☒ N/A ☐ Comments:

See attached. none of the analytes are related to petroleum hydrocarbons

Laboratory Report Number:

518235

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

10/22/24

d. Did Lab dilute the samples?

Yes ☒ No ☐ N/A ☐ Comments:

e. Describe impact to data quality or usability.:

no impact

6. Lab QC Samples

a. Lab Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes ☒ No ☐ N/A ☐ Comments:

ii. All method blank results less than RL, Lab QA/QC criteria, and project specified objectives?

Yes ☒ No ☐ N/A ☐ Comments:

iii. Describe impact to data quality from Method Blank results.

None

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis, and 20 samples?

Yes ☒ No ☐ N/A ☐ Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes ☒ No ☐ N/A ☐ Comments:

Laboratory Report Number:

518235

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

10/22/24

iii. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable?

Yes ☒ No ☐ N/A ☐ Comments:

iv. If %R or RPD is outside acceptable limits, what samples are affected?:

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes ☐ No ☐ N/A ☒ Comments:

vii. Describe impact to data quality or usability from LCS/LCSD results?:

c. Lab Surrogates – VOCs only

i. Are surrogate recoveries reported for VOC analyses – field, QC and laboratory samples?

Yes ☒ No ☐ N/A ☐ Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes ☒ No ☐ N/A ☐ Comments:

iii. Describe impacts to data quality or usability from VOC surrogate data?

Laboratory Report Number:

518235

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

10/22/24

7. Field QC Samples

a. Field Duplicate

i. Field duplicate submitted per matrix, analysis, and approved Work Plan?

Yes ☐ No ☐ N/A ☒ Comments:

No field duplicate

ii. Submitted blind to lab?

Yes ☐ No ☐ N/A ☒ Comments:iii. Precision – All relative percent differences (RPD) less than specified project objectives?
(Recommended: 30% air and soil vapor)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration R_2 = Field Duplicate ConcentrationYes ☐ No ☐ N/A ☒ Comments:

iv. Describe impact to data quality or usability from Field Duplicate data.:

b. Field Blank (If not applicable, a comment stating why must be entered below)?

Yes ☐ No ☐ N/A ☒ Comments:

i. Describe impact to data quality or usability from Field Blank results?:

no field blank submitted per work plan

Laboratory Report Number:

518235

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

10/22/24

8. Data Flags/Qualifiers

a. Are the flags clearly defined and appropriate?

Yes ☒

No ☐

N/A ☐

Comments:

b. Do the affected sample(s) have appropriate data flags?

Yes ☒

No ☐

N/A ☐

Comments:

518235																						
Sample ID	Units	dtscC	dtscNC	RSLc	RSLnc	WB01-14D	WB02-14D	WB03-14D	WB04-14D	WB05-14D	WB06-14D	WB07-14D	WB08-14D	WB09-14D	WB10-14D	WB11-14D	WB12-14D	WB13-14D	WB14-14D	WB17-14D	WB18-14D	WB19-14D
Sample Date						10/15/2024	10/15/2024	10/15/2024	10/15/2024	10/15/2024	10/15/2024	10/15/2024	10/15/2024	10/15/2024	10/15/2024	10/15/2024	10/15/2024	10/15/2024	10/15/2024	10/15/2024	10/15/2024	10/15/2024
Lab Sample ID						518235-001	518235-002	518235-003	518235-004	518235-005	518235-006	518235-007	518235-008	518235-009	518235-010	518235-011	518235-012	518235-013	518235-014	518235-015	518235-016	518235-017
1,1,1,2-Tetrachloroethane	ug/m3	0.38	130	0.38	--	0.076	0.069	0.069	0.069	0.082	0.069	0.069	0.076	0.069	0.069	0.069	0.069	0.076	0.069	0.076	0.082	0.076
1,1,1-Trichloroethane	ug/m3	--	1000	--	5200	0.06	0.055	0.055	0.055	0.065	0.055	0.055	0.06	0.055	0.055	0.055	0.055	0.06	0.055	0.06	0.065	0.06
1,1,2,2-Tetrachloroethane	ug/m3	0.048	83	0.048	--	0.076	0.069	0.069	0.069	0.082	0.069	0.069	0.076	0.069	0.069	0.069	0.069	0.076	0.069	0.076	0.082	0.076
1,1,2-Trichloroethane	ug/m3	--	--	0.18	0.21	0.06	0.055	0.055	0.055	0.065	0.055	0.055	0.06	0.055	0.055	0.055	0.055	0.06	0.055	0.06	0.065	0.06
1,1-Dichloroethane	ug/m3	1.8	830	1.8	--	0.045	0.04	0.04	0.04	0.049	0.04	0.04	0.045	0.04	0.04	0.04	0.04	0.045	0.04	0.045	0.049	0.045
1,1-Dichloroethene	ug/m3	--	73	--	4.1	0.044	0.04	0.04	0.04	0.048	0.04	0.04	0.044	0.04	0.04	0.04	0.04	0.044	0.04	0.044	0.048	0.044
1,2,4-Trichlorobenzene	ug/m3	0.38	2.1	--	2.1	0.082	0.074	0.074	0.074	0.089	0.074	0.074	0.082	0.074	0.074	0.074	0.074	0.082	0.074	0.082	0.089	0.082
1,2,4-Trimethylbenzene	ug/m3	--	--	--	63	0.3	0.37	0.24	0.29	0.29	0.26	0.29	0.27	0.29	0.5	0.3	0.32	0.35	0.27	0.33	0.44	0.3
1,2-Dibromoethane	ug/m3	--	0.83	0.0047	9.4	0.085	0.077	0.077	0.077	0.092	0.077	0.077	0.085	0.077	0.077	0.077	0.077	0.085	0.077	0.085	0.092	0.085
1,2-Dichlorobenzene	ug/m3	--	--	--	210	0.066	0.06	0.06	0.06	0.072	0.06	0.06	0.066	0.06	0.06	0.06	0.06	0.066	0.06	0.066	0.072	0.066
1,2-Dichloroethane	ug/m3	--	--	0.11	7.3	0.063	0.066	0.062	0.062	0.061	0.062	0.061	0.062	0.063	0.072	0.061	0.062	0.065	0.063	0.062	0.062	0.067
1,2-Dichloropropane	ug/m3	--	--	0.76	4.2	0.051	0.046	0.046	0.046	0.055	0.046	0.046	0.051	0.046	0.046	0.046	0.046	0.051	0.046	0.051	0.055	0.051
1,3,5-Trimethylbenzene	ug/m3	--	--	--	63	0.074	0.1	0.055	0.065	0.074	0.065	0.065	0.061	0.068	0.14	0.073	0.074	0.085	0.067	0.085	0.11	0.081
1,3-Dichlorobenzene	ug/m3	--	--	--	--	0.066	0.06	0.06	0.06	0.072	0.06	0.06	0.066	0.06	0.06	0.06	0.06	0.066	0.06	0.066	0.072	0.066
1,4-Dichlorobenzene	ug/m3	--	--	0.26	830	0.066	0.06	0.06	0.06	0.072	0.06	0.06	0.066	0.06	0.06	0.06	0.06	0.066	0.06	0.066	0.072	0.066
2-Chlorotoluene	ug/m3	--	83	--	--	0.057	0.052	0.052	0.052	0.062	0.052	0.052	0.057	0.052	0.052	0.052	0.052	0.057	0.052	0.057	0.062	0.057
Benzene	ug/m3	0.097	3.1	0.36	31	0.8	0.83	0.72	0.74	3.2	0.74	0.72	0.74	0.81	0.99	0.78	0.85	0.89	0.78	0.82	0.79	1
Benzyl chloride	ug/m3	--	--	0.057	1	0.057	0.052	0.052	0.052	0.062	0.052	0.052	0.057	0.052	0.052	0.052	0.052	0.057	0.052	0.057	0.062	0.057
Bromodichloromethane	ug/m3	0.076	83	0.076	--	0.074	0.067	0.067	0.067	0.08	0.067	0.067	0.074	0.067	0.067	0.067	0.067	0.074	0.067	0.074	0.08	0.074
Bromoform	ug/m3	2.6	83	2.6	--	0.11	0.1	0.1	0.1	0.12	0.1	0.1	0.11	0.1	0.1	0.1	0.1	0.11	0.1	0.11	0.12	0.11
Bromomethane	ug/m3	--	--	--	5.2	0.08	0.084	0.082	0.075	0.084	0.081	0.085	0.08	0.092	0.083	0.089	0.081	0.083	0.085	0.084	0.11	0.08
Carbon Tetrachloride	ug/m3	0.47	42	0.47	100	0.46	0.45	0.47	0.47	0.46	0.47	0.46	0.47	0.47	0.46	0.47	0.46	0.46	0.46	0.46	0.47	0.45
Chlorobenzene	ug/m3	--	--	--	52	0.051	0.046	0.046	0.046	0.055	0.046	0.046	0.051	0.046	0.046	0.046	0.046	0.051	0.046	0.051	0.055	0.051
Chloroethane	ug/m3	--	--	--	4200	0.029	0.049	0.026	0.026	0.032	0.045	0.088	0.058	0.042	0.026	0.089	0.1	0.029	0.026	0.032	0.035	0.069
Chloroform	ug/m3	--	--	0.12	2	0.14	0.16	0.17	0.16	0.16	0.15	0.14	0.14	0.18	0.15	0.14	0.14	0.17	0.13	0.14	0.14	0.13
Chloromethane	ug/m3	--	--	--	94	0.99	0.99	1	1	1	1	0.99	1	1	0.98	1	1	1	1	1	1.1	1
Dibromochloromethane	ug/m3	0.13	83	--	--	0.094	0.085	0.085	0.085	0.1	0.085	0.085	0.094	0.085	0.085	0.085	0.085	0.094	0.085	0.094	0.1	0.094
Ethylbenzene	ug/m3	--	--	1.1	1000	0.27	0.33	0.25	0.26	0.26	0.28	0.26	0.26	0.27	0.45	0.27	0.29	0.31	0.26	0.3	0.3	0.31
Freon 113	ug/m3	--	--	--	5200	0.46	0.44	0.47	0.47	0.46	0.46	0.46	0.47	0.47	0.46	0.47	0.46	0.46	0.46	0.46	0.47	0.45
Freon 114	ug/m3	--	--	--	--	0.11	0.12	0.12	0.12	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.12	0.11
Freon 12	ug/m3	--	--	--	100	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.3
Hexachlorobutadiene	ug/m3	0.13	4.2	0.13	--	0.12	0.11	0.11	0.11	0.13	0.11	0.11	0.12	0.11	0.11	0.11	0.11	0.12	0.11	0.12	0.13	0.12
Methylene Chloride	ug/m3	1	420	100	630	0.55	0.6	0.59	1.2	0.76	0.62	0.67	0.74	2.8	0.85	0.57	0.57	0.6	0.59	0.53	0.56	0.5
Naphthalene	ug/m3	--	--	0.083	3.1	0.059	0.077	0.052	0.052	0.074	0.052	0.059	0.058	0.078	0.14	0.086	0.059	0.12	0.057	0.072	0.073	0.058
Styrene	ug/m3	--	940	--	1000	0.1	0.12	0.076	0.11	0.13	0.11	0.12	0.099	0.12	0.13	0.13	0.14	0.32	0.086	0.13	0.13	0.18
Tetrachloroethene	ug/m3	0.46	42	11	42	0.075	0.068	0.068	0.068	0.081	0.068	0.068	0.075	0.068	0.068	0.068	0.068	0.08	0.068	0.075	0.081	0.075
Toluene	ug/m3	--	310	--	5200	1.4	1.5	1.2	1.4	5.8	1.6	1.5	1.5	1.6	1.3	1.6	1.9	2	1.3	1.7	1.7	1.8
Trichloroethene	ug/m3	--	--	0.48	2.1	0.059	0.054	0.054	0.054	0.064	0.054	0.054	0.059	0.054	0.054	0.054	0.054	0.059	0.054	0.059	0.064	0.059
Trichlorofluoromethane	ug/m3	--	1300	--	--	1.1	1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Vinyl Chloride	ug/m3	0.0095	100	0.17	53	0.028	0.026	0.026	0.026	0.031	0.026	0.026	0.028	0.026	0.026	0.026	0.026	0.028	0.026	0.028	0.031	0.028
Vinyl bromide	ug/m3	--	--	0.19	3.1	0.048	0.044	0.044	0.044	0.052	0.044	0.044	0.048	0.044	0.044	0.044	0.044	0.048	0.044	0.048	0.052	0.048
Xylene (total)	ug/m3	--	--	--	100	1.1	1.3	0.99	1.1	1	1	0.99	0.98	1.1	1.5	1.1	1.2	1.3	1.1	1.2	1.2	1.3
cis-1,2-Dichloroethene	ug/m3	--	8.3	--	42	0.044	0.04	0.04	0.04	0.048	0.04	0.04	0.044	0.04	0.04	0.04	0.04	0.044	0.04	0.044	0.048	0.044
cis-1,3-Dichloropropene	ug/m3	--	--	--	--	0.05	0.045	0.045	0.045	0.054	0.045	0.045	0.05	0.045	0.045	0.045	0.045	0.05	0.045	0.05	0.054	0.05
m,p-Xylenes	ug/m3	--	--	--	100	0.79	0.9	0.71	0.76	0.73	0.74	0.71	0.7	0.79	1.2	0.78	0.83	0.94	0.75	0.89	0.88	0.95
o-Xylene	ug/m3	--	--	--	100	0.32	0.35	0.28	0.3	0.29	0.29	0.28	0.28	0.31	0.37	0.31	0.33	0.37	0.3	0.35	0.35	0.37
trans-1,2-Dichloroethene	ug/m3	--	83	--	42	0.044	0.04	0.04	0.04	0.048	0.04	0.04	0.044	0.04	0.04	0.04	0.04	0.044	0.04	0.044	0.048	0.044
trans-1,3-Dichloropropene	ug/m3	--	--	--	--	0.05	0.045	0.045	0.045	0.054	0.045	0.045	0.05	0.045	0.045	0.045	0.045	0.05	0.045	0.05	0.054	0.05
BOLD IS DETECTED																						

Laboratory Data Review Checklist for Air and Soil Vapor Samples

Site Name:

Walnut Bluff

Date:

2/14/2025

Consultant Firm:

Catalyst Environmental Solutions

Completed By (Name):

Yola Bayram

Laboratory Name:

Enthalpy Analytical Laboratory

Laboratory Report Number:

522442

Laboratory Report Date:

12/23/24

Laboratory Report Number:

522442

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

12/23/24

1. Laboratory

- a. Did an ELAP or NELAP-certified laboratory receive and perform all of the submitted sample analyses?

Yes ☒ No ☐ N/A ☐ Comments:

- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ELAP or NELAP-certified?

Yes ☐ No ☐ N/A ☒ Comments:

2. Chain of Custody (CoC)

- a. CoC information completed, signed, and dated (including released/received by)?

Yes ☒ No ☐ N/A ☐ Comments:

- b. Correct analyses requested per approved Work Plan?

Yes ☒ No ☐ N/A ☐ Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample condition documented? (e.g., Samples collected in gas tight, opaque/dark Summa canisters or other appropriate container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?)

Yes ☒ No ☐ N/A ☐ Comments:

- b. If sample condition compromised, is Data quality or usability affected?

Laboratory Report Number:

522442

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

12/23/24

4. Case Narrative

a. Present and understandable?

Yes ☒ No ☐ N/A ☐ Comments:

b. Discrepancies, errors, and Lab QC failures identified by the lab?

Yes ☒ No ☐ N/A ☐ If Yes, describe errors. Comments:

c. Does Lab describe corrective actions implemented?

Yes ☒ No ☐ N/A ☐ If Yes, describe corrective actions. Comments:

d. Described impact to data quality/usability according to the case narrative.

No issues encountered

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes ☒ No ☐ N/A ☐ Comments:

b. All applicable holding times met?

Yes ☒ No ☐ N/A ☐ Comments:

c. Are the reported reporting limits (RLs) less than the data quality objectives or screening level for the project, as defined in the approved work plan?

Yes ☐ No ☒ N/A ☐ Comments:

None of the analytes are related to petroleum hydrocarbons

Laboratory Report Number:

522442

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

12/23/24

d. Did Lab dilute the samples?

Yes ☒ No ☐ N/A ☐ Comments:

e. Describe impact to data quality or usability.:

no impact

6. Lab QC Samples

a. Lab Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes ☒ No ☐ N/A ☐ Comments:

ii. All method blank results less than RL, Lab QA/QC criteria, and project specified objectives?

Yes ☒ No ☐ N/A ☐ Comments:

iii. Describe impact to data quality from Method Blank results.

None

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis, and 20 samples?

Yes ☒ No ☐ N/A ☐ Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes ☒ No ☐ N/A ☐ Comments:

Laboratory Report Number:

522442

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

12/23/24

iii. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable?

Yes ☒ No ☐ N/A ☐ Comments:

iv. If %R or RPD is outside acceptable limits, what samples are affected?:

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes ☐ No ☐ N/A ☒ Comments:

vii. Describe impact to data quality or usability from LCS/LCSD results?:

c. Lab Surrogates – VOCs only

i. Are surrogate recoveries reported for VOC analyses – field, QC and laboratory samples?

Yes ☒ No ☐ N/A ☐ Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes ☒ No ☐ N/A ☐ Comments:

iii. Describe impacts to data quality or usability from VOC surrogate data?

Laboratory Report Number:

522442

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

12/23/24

7. Field QC Samples

a. Field Duplicate

i. Field duplicate submitted per matrix, analysis, and approved Work Plan?

Yes ☐ No ☐ N/A ☒

Comments:

No field duplicate

ii. Submitted blind to lab?

Yes ☐ No ☐ N/A ☒

Comments:

iii. Precision – All relative percent differences (RPD) less than specified project objectives?
(Recommended: 30% air and soil vapor)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration R_2 = Field Duplicate ConcentrationYes ☐ No ☐ N/A ☒

Comments:

iv. Describe impact to data quality or usability from Field Duplicate data.:

b. Field Blank (If not applicable, a comment stating why must be entered below)?

Yes ☐ No ☐ N/A ☒

Comments:

i. Describe impact to data quality or usability from Field Blank results?:

no field blank submitted per work plan

Laboratory Report Number:

522442

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

12/23/24

8. Data Flags/Qualifiers

a. Are the flags clearly defined and appropriate?

Yes ☒

No ☐

N/A ☐

Comments:

b. Do the affected sample(s) have appropriate data flags?

Yes ☒

No ☐

N/A ☐

Comments:

Laboratory Data Review Checklist for Air and Soil Vapor Samples

Site Name:

Walnut Bluff

Date:

12-11-2024

Consultant Firm:

Catalyst Environmental Solutions

Completed By (Name):

Yola Bayram

Laboratory Name:

Enthalpy Analytical Laboratory

Laboratory Report Number:

2416404

Laboratory Report Date:

11/11/2024

Laboratory Report Number:

2416404

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

11/11/2024

1. Laboratory

- a. Did an ELAP or NELAP-certified laboratory receive and perform all of the submitted sample analyses?

Yes ☒ No ☐ N/A ☐ Comments:

- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ELAP or NELAP-certified?

Yes ☐ No ☐ N/A ☒ Comments:

2. Chain of Custody (CoC)

- a. CoC information completed, signed, and dated (including released/received by)?

Yes ☒ No ☐ N/A ☐ Comments:

- b. Correct analyses requested per approved Work Plan?

Yes ☒ No ☐ N/A ☐ Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample condition documented? (e.g., Samples collected in gas tight, opaque/dark Summa canisters or other appropriate container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?)

Yes ☒ No ☐ N/A ☐ Comments:

- b. If sample condition compromised, is Data quality or usability affected?

WB07-1H was received fully evacuated and could not be analyzed.

Laboratory Report Number:

2416404

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

11/11/2024

4. Case Narrative

a. Present and understandable?

Yes ☒ No ☐ N/A ☐ Comments:

b. Discrepancies, errors, and Lab QC failures identified by the lab?

Yes ☒ No ☐ N/A ☐ If Yes, describe errors. Comments:

c. Does Lab describe corrective actions implemented?

Yes ☒ No ☐ N/A ☐ If Yes, describe corrective actions. Comments:

d. Described impact to data quality/usability according to the case narrative.

WB07-1H was received fully evacuated and could not be analyzed

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes ☒ No ☐ N/A ☐ Comments:

b. All applicable holding times met?

Yes ☒ No ☐ N/A ☐ Comments:

c. Are the reported reporting limits (RLs) less than the data quality objectives or screening level for the project, as defined in the approved work plan?

Yes ☐ No ☒ N/A ☐ Comments:

See attached. benzene and naphtalene had detections and are not affected. all others are non-petroleum hydrocarbons

Laboratory Report Number:

2416404

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

11/11/2024

d. Did Lab dilute the samples?

Yes ☒ No ☐ N/A ☐ Comments:

e. Describe impact to data quality or usability.:

no impact

6. Lab QC Samples

a. Lab Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes ☒ No ☐ N/A ☐ Comments:

ii. All method blank results less than RL, Lab QA/QC criteria, and project specified objectives?

Yes ☒ No ☐ N/A ☐ Comments:

iii. Describe impact to data quality from Method Blank results.

None

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis, and 20 samples?

Yes ☒ No ☐ N/A ☐ Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes ☒ No ☐ N/A ☐ Comments:

Laboratory Report Number:

2416404

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

11/11/2024

iii. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable?

Yes ☒ No ☐ N/A ☐ Comments:

iv. If %R or RPD is outside acceptable limits, what samples are affected?:

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes ☐ No ☐ N/A ☒ Comments:

vii. Describe impact to data quality or usability from LCS/LCSD results?:

c. Lab Surrogates – VOCs only

i. Are surrogate recoveries reported for VOC analyses – field, QC and laboratory samples?

Yes ☒ No ☐ N/A ☐ Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes ☒ No ☐ N/A ☐ Comments:

iii. Describe impacts to data quality or usability from VOC surrogate data?

Laboratory Report Number:

2416404

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

11/11/2024

7. Field QC Samples

a. Field Duplicate

i. Field duplicate submitted per matrix, analysis, and approved Work Plan?

Yes ☐ No ☐ N/A ☒ Comments:

No field duplicate

ii. Submitted blind to lab?

Yes ☐ No ☐ N/A ☒ Comments:iii. Precision – All relative percent differences (RPD) less than specified project objectives?
(Recommended: 30% air and soil vapor)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration R_2 = Field Duplicate ConcentrationYes ☐ No ☐ N/A ☒ Comments:

iv. Describe impact to data quality or usability from Field Duplicate data.:

b. Field Blank (If not applicable, a comment stating why must be entered below)?

Yes ☐ No ☐ N/A ☒ Comments:

i. Describe impact to data quality or usability from Field Blank results?:

no field blank submitted per work plan

Laboratory Report Number:

2416404

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

11/11/2024

8. Data Flags/Qualifiers

a. Are the flags clearly defined and appropriate?

Yes ☒ No ☐ N/A ☐ Comments:

b. Do the affected sample(s) have appropriate data flags?

Yes ☒ No ☐ N/A ☐ Comments:

ANALYTE	dtscC	dtscNC	RSLc	RSLnc	UNITS	WB01	WB02	WB03	WB04	WB05	WB06	WB07	WB08	WB09	WB10	WB11	WB12	WB13	WB14	WB17	WB18
1,1,1-Trichloroethane	--	1000	--	5200	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,1,2-Trichloro-1,2,2-trifluoroethane	--	--	--	5200	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,1,2-Trichloroethane	--	--	0.18	0.21	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,1-Dichloroethane	1.8	830	1.8	--	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
1,1-Dichloroethene	--	73	--	4.1	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
1,1-Difluoroethane	--	--	--	--	ug/m3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1,2-Dibromoethane	--	0.83	0.0047	9.4	ug/m3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
1,2-Dichlorobenzene	--	--	--	210	ug/m3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
1,2-Dichloroethane	--	--	0.11	7.3	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,3-Dichlorobenzene	--	--	--	--	ug/m3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
1,4-Dichlorobenzene	--	--	0.26	830	ug/m3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Benzene	0.097	3.1	0.36	31	ug/m3	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Benzyl chloride	--	--	0.057	1	ug/m3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Carbon tetrachloride	0.47	42	0.47	100	ug/m3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Chlorobenzene	--	--	--	52	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Chloroform	--	--	0.12	2	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
cis-1,2-Dichloroethene	--	8.3	--	42	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Dichlorodifluoromethane	--	--	--	100	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Ethylbenzene	--	--	1.1	1000	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Naphthalene	--	--	0.083	3.1	ug/m3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
o-Xylene	--	--	--	100	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
p- & m-Xylenes	--	--	--	100	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Tetrachloroethene	0.46	42	11	42	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Toluene	--	310	--	5200	ug/m3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total Xylenes	--	--	--	100	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
trans-1,2-Dichloroethene	--	83	--	42	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
trans-1,3-Dichloropropene	--	--	--	--	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Trichloroethene	--	--	0.48	2.1	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Trichlorofluoromethane	--	1300	--	--	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Vinyl chloride	0.0095	100	0.17	53	ug/m3	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02

Laboratory Data Review Checklist for Air and Soil Vapor Samples

Site Name:

Walnut Bluff

Date:

12-11-2024

Consultant Firm:

Catalyst Environmental Solutions

Completed By (Name):

Yola Bayram

Laboratory Name:

Enthalpy Analytical Laboratory

Laboratory Report Number:

2416470

Laboratory Report Date:

11/11/2024

Laboratory Report Number:

2416470

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

11/11/2024

1. Laboratory

- a. Did an ELAP or NELAP-certified laboratory receive and perform all of the submitted sample analyses?

Yes ☒ No ☐ N/A ☐ Comments:

- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ELAP or NELAP-certified?

Yes ☐ No ☐ N/A ☒ Comments:

2. Chain of Custody (CoC)

- a. CoC information completed, signed, and dated (including released/received by)?

Yes ☒ No ☐ N/A ☐ Comments:

- b. Correct analyses requested per approved Work Plan?

Yes ☒ No ☐ N/A ☐ Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample condition documented? (e.g., Samples collected in gas tight, opaque/dark Summa canisters or other appropriate container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?)

Yes ☒ No ☐ N/A ☐ Comments:

- b. If sample condition compromised, is Data quality or usability affected?

Laboratory Report Number:

2416470

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

11/11/2024

4. Case Narrative

a. Present and understandable?

Yes ☒ No ☐ N/A ☐ Comments:

b. Discrepancies, errors, and Lab QC failures identified by the lab?

Yes ☒ No ☐ N/A ☐ If Yes, describe errors. Comments:

c. Does Lab describe corrective actions implemented?

Yes ☒ No ☐ N/A ☐ If Yes, describe corrective actions. Comments:

d. Described impact to data quality/usability according to the case narrative.

No issues noted

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes ☒ No ☐ N/A ☐ Comments:

b. All applicable holding times met?

Yes ☒ No ☐ N/A ☐ Comments:

c. Are the reported reporting limits (RLs) less than the data quality objectives or screening level for the project, as defined in the approved work plan?

Yes ☐ No ☒ N/A ☐ Comments:

See attached. benzene and naphtalene had detections and are not affected. all others are non-petroleum hydrocarbons

Laboratory Report Number:

2416470

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

11/11/2024

d. Did Lab dilute the samples?

Yes ☒ No ☐ N/A ☐ Comments:

e. Describe impact to data quality or usability.:

no impact

6. Lab QC Samples

a. Lab Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes ☒ No ☐ N/A ☐ Comments:

ii. All method blank results less than RL, Lab QA/QC criteria, and project specified objectives?

Yes ☒ No ☐ N/A ☐ Comments:

iii. Describe impact to data quality from Method Blank results.

None

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis, and 20 samples?

Yes ☒ No ☐ N/A ☐ Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes ☒ No ☐ N/A ☐ Comments:

Laboratory Report Number:

2416470

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

11/11/2024

iii. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable?

Yes ☒ No ☐ N/A ☐ Comments:

iv. If %R or RPD is outside acceptable limits, what samples are affected?:

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes ☐ No ☐ N/A ☒ Comments:

vii. Describe impact to data quality or usability from LCS/LCSD results?:

c. Lab Surrogates – VOCs only

i. Are surrogate recoveries reported for VOC analyses – field, QC and laboratory samples?

Yes ☒ No ☐ N/A ☐ Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes ☒ No ☐ N/A ☐ Comments:

iii. Describe impacts to data quality or usability from VOC surrogate data?

Laboratory Report Number:

2416470

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

11/11/2024

7. Field QC Samples

a. Field Duplicate

i. Field duplicate submitted per matrix, analysis, and approved Work Plan?

Yes ☐ No ☐ N/A ☒

Comments:

No field duplicate

ii. Submitted blind to lab?

Yes ☐ No ☐ N/A ☒

Comments:

iii. Precision – All relative percent differences (RPD) less than specified project objectives?
(Recommended: 30% air and soil vapor)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration R_2 = Field Duplicate ConcentrationYes ☐ No ☐ N/A ☒

Comments:

iv. Describe impact to data quality or usability from Field Duplicate data.:

b. Field Blank (If not applicable, a comment stating why must be entered below)?

Yes ☐ No ☐ N/A ☒

Comments:

i. Describe impact to data quality or usability from Field Blank results?:

no field blank submitted per work plan

Laboratory Report Number:

2416470

**Provide an explanation in comment box
for any N/A or No box checked.**

Laboratory Report Date:

11/11/2024

8. Data Flags/Qualifiers

a. Are the flags clearly defined and appropriate?

Yes ☒

No ☐

N/A ☐

Comments:

b. Do the affected sample(s) have appropriate data flags?

Yes ☒

No ☐

N/A ☐

Comments:

ANALYTE	dtscC	dtscNC	RSLc	RSLnc	UNITS	WB01	WB02	WB03	WB04	WB05	WB06	WB07	WB08	WB09	WB10	WB11	WB12	WB13	WB14	WB17	WB18
1,1,1-Trichloroethane	--	1000	--	5200	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,1,2-Trichloro-1,2,2-trifluoroethane	--	--	--	5200	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,1,2-Trichloroethane	--	--	0.18	0.21	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,1-Dichloroethane	1.8	830	1.8	--	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
1,1-Dichloroethene	--	73	--	4.1	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
1,1-Difluoroethane	--	--	--	--	ug/m3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1,2-Dibromoethane	--	0.83	0.0047	9.4	ug/m3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
1,2-Dichlorobenzene	--	--	--	210	ug/m3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
1,2-Dichloroethane	--	--	0.11	7.3	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,3-Dichlorobenzene	--	--	--	--	ug/m3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
1,4-Dichlorobenzene	--	--	0.26	830	ug/m3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Benzene	0.097	3.1	0.36	31	ug/m3	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Benzyl chloride	--	--	0.057	1	ug/m3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Carbon tetrachloride	0.47	42	0.47	100	ug/m3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Chlorobenzene	--	--	--	52	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Chloroform	--	--	0.12	2	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
cis-1,2-Dichloroethene	--	8.3	--	42	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Dichlorodifluoromethane	--	--	--	100	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Ethylbenzene	--	--	1.1	1000	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Naphthalene	--	--	0.083	3.1	ug/m3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
o-Xylene	--	--	--	100	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
p- & m-Xylenes	--	--	--	100	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Tetrachloroethene	0.46	42	11	42	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Toluene	--	310	--	5200	ug/m3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total Xylenes	--	--	--	100	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
trans-1,2-Dichloroethene	--	83	--	42	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
trans-1,3-Dichloropropene	--	--	--	--	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Trichloroethene	--	--	0.48	2.1	ug/m3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Trichlorofluoromethane	--	1300	--	--	ug/m3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Vinyl chloride	0.0095	100	0.17	53	ug/m3	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02

Appendix C

Dixon's Outlier Test for Benzene

ProUCL Dixon's Outlier Test Bezene Proposed Walnut Bluff Development

Outlier Tests for Selected Uncensored Variables

User Selected Options

Date/Time of Computation

ProUCL 5.2 12/8/2024 7:01:51 AM

From File

WorkSheet.xls

Full Precision

OFF

Dixon's Outlier Test for C0

Number of Observations = 14

10% critical value: 0.492

5% critical value: 0.546

1% critical value: 0.641

1. Observation Value 3.2 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.939

For 10% significance level, 3.2 is an outlier.

For 5% significance level, 3.2 is an outlier.

For 1% significance level, 3.2 is an outlier.

ProUCL Dixon's Outlier Test Toluene Proposed Walnut Bluff Development

Outlier Tests for Selected Uncensored Variables

User Selected Options

Date/Time of Computation

ProUCL 5.2 12/8/2024 7:01:51 AM

From File

WorkSheet.xls

Full Precision

OFF

Dixon's Outlier Test for C0

Number of Observations = 14

10% critical value: 0.492

5% critical value: 0.546

1% critical value: 0.641

1. Observation Value 5.8 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.867

For 10% significance level, 5.8 is an outlier.

For 5% significance level, 5.8 is an outlier.

For 1% significance level, 5.8 is an outlier.

Appendix D

Assessment Of Potential Human Health Risks ProUCL Outputs

Appendix D **ProUCL Output for 95% UCLs** **Proposed Walnut Bluff Development**

UCL Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.2 10/23/2024 12:00:19 PM
From File	14D-ProUCLinput.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operation	2000

1,2,4-Trimethylbenzene

General Statistics

Total Number of Observations	14	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.24	Mean	0.31
Maximum	0.5	Median	0.29
SD	0.0643	Std. Error of Mean	0.0172
Coefficient of Variation	0.208	Skewness	2.194

Normal GOF Test

Shapiro Wilk Test Statistic	0.771	Shapiro Wilk GOF Test
1% Shapiro Wilk Critical Value	0.825	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.276	Lilliefors GOF Test
1% Lilliefors Critical Value	0.263	Data Not Normal at 1% Significance Level

Data Not Normal at 1% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.34	95% Adjusted-CLT UCL (Chen-1995)	0.349
		95% Modified-t UCL (Johnson-1978)	0.342

Gamma GOF Test		
A-D Test Statistic	0.923	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.734	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.262	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.228	Data Not Gamma Distributed at 5% Significance Level
Data Not Gamma Distributed at 5% Significance Level		
Gamma Statistics		
k hat (MLE)	30.29	k star (bias corrected MLE) 23.84
Theta hat (MLE)	0.0102	Theta star (bias corrected MLE) 0.013
nu hat (MLE)	848	nu star (bias corrected) 667.6
MLE Mean (bias corrected)	0.31	MLE Sd (bias corrected) 0.0635
		Approximate Chi Square Value (0.05) 608.7
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value 601.2
Assuming Gamma Distribution		
95% Approximate Gamma UCL	0.34	95% Adjusted Gamma UCL 0.344
Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.855	Shapiro Wilk Lognormal GOF Test
10% Shapiro Wilk Critical Value	0.895	Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.25	Lilliefors Lognormal GOF Test
10% Lilliefors Critical Value	0.208	Data Not Lognormal at 10% Significance Level
Data Not Lognormal at 10% Significance Level		
Lognormal Statistics		
Minimum of Logged Data	-1.427	Mean of logged Data -1.188
Maximum of Logged Data	-0.693	SD of logged Data 0.181
Assuming Lognormal Distribution		
95% H-UCL	0.339	90% Chebyshev (MVUE) UCL 0.355
95% Chebyshev (MVUE) UCL	0.375	97.5% Chebyshev (MVUE) UCL 0.404
99% Chebyshev (MVUE) UCL	0.459	
Nonparametric Distribution Free UCL Statistics		
Data do not follow a Discernible Distribution		

Nonparametric Distribution Free UCLs

95% CLT UCL	0.338	95% BCA Bootstrap UCL	0.349
95% Standard Bootstrap UCL	0.338	95% Bootstrap-t UCL	0.365
95% Hall's Bootstrap UCL	0.472	95% Percentile Bootstrap UCL	0.34
90% Chebyshev(Mean, Sd) UCL	0.362	95% Chebyshev(Mean, Sd) UCL	0.385
97.5% Chebyshev(Mean, Sd) UCL	0.417	99% Chebyshev(Mean, Sd) UCL	0.481

Suggested UCL to Use

95% Student's-t UCL	0.34
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

1,2-Dichloroethane

General Statistics

Total Number of Observations	14	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.061	Mean	0.0632
Maximum	0.072	Median	0.062
SD	0.00291	Std. Error of Mean	7.79E-04
Coefficient of Variation	0.0461	Skewness	2.409

Normal GOF Test

Shapiro Wilk Test Statistic	0.701	Shapiro Wilk GOF Test
1% Shapiro Wilk Critical Value	0.825	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.315	Lilliefors GOF Test
1% Lilliefors Critical Value	0.263	Data Not Normal at 1% Significance Level
Data Not Normal at 1% Significance Level		

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.0646	95% Adjusted-CLT UCL (Chen-1995)	0.065

	95% Modified-t UCL (Johnson-1978)	0.0647
Gamma GOF Test		
A-D Test Statistic	1.49 Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.733 Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.311 Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.228 Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level		
Gamma Statistics		
k hat (MLE)	537.9 k star (bias corrected MLE)	422.7
Theta hat (MLE)	1.18E-04 Theta star (bias corrected MLE)	1.50E-04
nu hat (MLE)	15060 nu star (bias corrected)	11834
MLE Mean (bias corrected)	0.0632 MLE Sd (bias corrected)	0.00307
	Approximate Chi Square Value (0.05)	11582
Adjusted Level of Significance	0.0312 Adjusted Chi Square Value	11549
Assuming Gamma Distribution		
95% Approximate Gamma UCL	0.0646 95% Adjusted Gamma UCL	0.0648
Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.719 Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.895 Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.308 Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.208 Data Not Lognormal at 10% Significance Level	
Data Not Lognormal at 10% Significance Level		
Lognormal Statistics		
Minimum of Logged Data	-2.797 Mean of logged Data	-2.762
Maximum of Logged Data	-2.631 SD of logged Data	0.0441
Assuming Lognormal Distribution		
95% H-UCL	N/A 90% Chebyshev (MVUE) UCL	0.0654
95% Chebyshev (MVUE) UCL	0.0665 97.5% Chebyshev (MVUE) UCL	0.0679
99% Chebyshev (MVUE) UCL	0.0706	

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	0.0645	95% BCA Bootstrap UCL	0.0649
95% Standard Bootstrap UCL	0.0645	95% Bootstrap-t UCL	0.0662
95% Hall's Bootstrap UCL	0.0698	95% Percentile Bootstrap UCL	0.0646
90% Chebyshev(Mean, Sd) UCL	0.0656	95% Chebyshev(Mean, Sd) UCL	0.0666
97.5% Chebyshev(Mean, Sd) UCL	0.0681	99% Chebyshev(Mean, Sd) UCL	0.071

Suggested UCL to Use

95% Student's-t UCL	0.0646
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

1,3,5-Trimethylbenzene

General Statistics

Total Number of Observations	14	Number of Distinct Observations	10
		Number of Missing Observations	0
Minimum	0.055	Mean	0.0761
Maximum	0.14	Median	0.0705
SD	0.0214	Std. Error of Mean	0.00572
Coefficient of Variation	0.281	Skewness	2.35

Normal GOF Test

Shapiro Wilk Test Statistic	0.729	Shapiro Wilk GOF Test
1% Shapiro Wilk Critical Value	0.825	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.326	Lilliefors GOF Test
1% Lilliefors Critical Value	0.263	Data Not Normal at 1% Significance Level
Data Not Normal at 1% Significance Level		

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.0863	95% Adjusted-CLT UCL (Chen-1995)	0.0894
		95% Modified-t UCL (Johnson-1978)	0.0869
Gamma GOF Test			
A-D Test Statistic	1.104	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.734	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.302	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.228	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	17.71	k star (bias corrected MLE)	13.97
Theta hat (MLE)	0.0043	Theta star (bias corrected MLE)	0.00545
nu hat (MLE)	496	nu star (bias corrected)	391.1
MLE Mean (bias corrected)	0.0761	MLE Sd (bias corrected)	0.0204
		Approximate Chi Square Value (0.05)	346.2
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	340.6
Assuming Gamma Distribution			
95% Approximate Gamma UCL	0.086	95% Adjusted Gamma UCL	0.0874
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.834	Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.895	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.286	Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.208	Data Not Lognormal at 10% Significance Level	
Data Not Lognormal at 10% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	-2.9	Mean of logged Data	-2.604
Maximum of Logged Data	-1.966	SD of logged Data	0.234
Assuming Lognormal Distribution			
95% H-UCL	0.0857	90% Chebyshev (MVUE) UCL	0.0902
95% Chebyshev (MVUE) UCL	0.0967	97.5% Chebyshev (MVUE) UCL	0.106

99% Chebyshev (MVUE) UCL	0.123
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Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	0.0855	95% BCA Bootstrap UCL	0.0896
95% Standard Bootstrap UCL	0.0853	95% Bootstrap-t UCL	0.0993
95% Hall's Bootstrap UCL	0.132	95% Percentile Bootstrap UCL	0.0861
90% Chebyshev(Mean, Sd) UCL	0.0933	95% Chebyshev(Mean, Sd) UCL	0.101
97.5% Chebyshev(Mean, Sd) UCL	0.112	99% Chebyshev(Mean, Sd) UCL	0.133

Suggested UCL to Use

95% Student's-t UCL	0.0863
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness using results from simulation studies. However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzene

General Statistics

Total Number of Observations	13	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.72	Mean	0.799
Maximum	0.99	Median	0.78
SD	0.0775	Std. Error of Mean	0.0215
Coefficient of Variation	0.097	Skewness	1.315

Normal GOF Test

Shapiro Wilk Test Statistic	0.88	Shapiro Wilk GOF Test
1% Shapiro Wilk Critical Value	0.814	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.162	Lilliefors GOF Test
1% Lilliefors Critical Value	0.271	Data appear Normal at 1% Significance Level
Data appear Normal at 1% Significance Level		

Assuming Normal Distribution

95% Normal UCL	95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.838 95% Adjusted-CLT UCL (Chen-1995)	0.843
	95% Modified-t UCL (Johnson-1978)	0.839

Gamma GOF Test

A-D Test Statistic	0.477 Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.732 Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.176 Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.236 Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level		

Gamma Statistics

k hat (MLE)	122.4 k star (bias corrected MLE)	94.22
Theta hat (MLE)	0.00653 Theta star (bias corrected MLE)	0.00848
nu hat (MLE)	3183 nu star (bias corrected)	2450
MLE Mean (bias corrected)	0.799 MLE Sd (bias corrected)	0.0823
	Approximate Chi Square Value (0.05)	2336
Adjusted Level of Significance	0.0301 Adjusted Chi Square Value	2320

Assuming Gamma Distribution

95% Approximate Gamma UCL	0.838 95% Adjusted Gamma UCL	0.844
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Lognormal GOF Test

Shapiro Wilk Test Statistic	0.903 Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.889 Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.169 Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.215 Data appear Lognormal at 10% Significance Level	
Data appear Lognormal at 10% Significance Level		

Lognormal Statistics

Minimum of Logged Data	-0.329 Mean of logged Data	-0.228
Maximum of Logged Data	-0.0101 SD of logged Data	0.0928

Assuming Lognormal Distribution

95% H-UCL	N/A	90% Chebyshev (MVUE) UCL	0.861
95% Chebyshev (MVUE) UCL	0.889	97.5% Chebyshev (MVUE) UCL	0.928
99% Chebyshev (MVUE) UCL	1.004		

Nonparametric Distribution Free UCL Statistics
Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	0.835	95% BCA Bootstrap UCL	0.843
95% Standard Bootstrap UCL	0.833	95% Bootstrap-t UCL	0.852
95% Hall's Bootstrap UCL	0.863	95% Percentile Bootstrap UCL	0.835
90% Chebyshev(Mean, Sd) UCL	0.864	95% Chebyshev(Mean, Sd) UCL	0.893
97.5% Chebyshev(Mean, Sd) UCL	0.933	99% Chebyshev(Mean, Sd) UCL	1.013

Suggested UCL to Use

95% Student's-t UCL	0.838
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness using results from simulation studies. However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Bromomethane

General Statistics

Total Number of Observations	14	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.075	Mean	0.0831
Maximum	0.092	Median	0.083
SD	0.00409	Std. Error of Mean	0.00109
Coefficient of Variation	0.0492	Skewness	0.375

Normal GOF Test

Shapiro Wilk Test Statistic	0.95	Shapiro Wilk GOF Test
1% Shapiro Wilk Critical Value	0.825	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.182	Lilliefors GOF Test

1% Lilliefors Critical Value	0.263 Data appear Normal at 1% Significance Level		
Data appear Normal at 1% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.0851	95% Adjusted-CLT UCL (Chen-1995)	0.0851
		95% Modified-t UCL (Johnson-1978)	0.0851
Gamma GOF Test			
A-D Test Statistic	0.375	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.733	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.171	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.228	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	447.7	k star (bias corrected MLE)	351.8
Theta hat (MLE)	1.86E-04	Theta star (bias corrected MLE)	2.36E-04
nu hat (MLE)	12534	nu star (bias corrected)	9850
MLE Mean (bias corrected)	0.0831	MLE Sd (bias corrected)	0.00443
		Approximate Chi Square Value (0.05)	9620
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	9590
Assuming Gamma Distribution			
95% Approximate Gamma UCL	0.0851	95% Adjusted Gamma UCL	0.0854
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.954	Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.895	Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.175	Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.208	Data appear Lognormal at 10% Significance Level	
Data appear Lognormal at 10% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	-2.59	Mean of logged Data	-2.488
Maximum of Logged Data	-2.386	SD of logged Data	0.049

Assuming Lognormal Distribution

95% H-UCL	N/A	90% Chebyshev (MVUE) UCL	0.0864
95% Chebyshev (MVUE) UCL	0.0879	97.5% Chebyshev (MVUE) UCL	0.0899
99% Chebyshev (MVUE) UCL	0.094		

Nonparametric Distribution Free UCL Statistics Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	0.0849	95% BCA Bootstrap UCL	0.085
95% Standard Bootstrap UCL	0.0849	95% Bootstrap-t UCL	0.0853
95% Hall's Bootstrap UCL	0.0857	95% Percentile Bootstrap UCL	0.0849
90% Chebyshev(Mean, Sd) UCL	0.0864	95% Chebyshev(Mean, Sd) UCL	0.0879
97.5% Chebyshev(Mean, Sd) UCL	0.09	99% Chebyshev(Mean, Sd) UCL	0.094

Suggested UCL to Use

95% Student's-t UCL	0.0851
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness using results from simulation studies. However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Carbon Tetrachloride

General Statistics

Total Number of Observations	14	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.45	Mean	0.464
Maximum	0.47	Median	0.46
SD	0.00633	Std. Error of Mean	0.00169
Coefficient of Variation	0.0137	Skewness	-0.433

Normal GOF Test

Shapiro Wilk Test Statistic	0.771	Shapiro Wilk GOF Test
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1% Shapiro Wilk Critical Value	0.825	Data Not Normal at 1% Significance Level	
Lilliefors Test Statistic	0.285	Lilliefors GOF Test	
1% Lilliefors Critical Value	0.263	Data Not Normal at 1% Significance Level	
Data Not Normal at 1% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.467	95% Adjusted-CLT UCL (Chen-1995)	0.466
		95% Modified-t UCL (Johnson-1978)	0.467
Gamma GOF Test			
A-D Test Statistic	1.727	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.733	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.319	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.228	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	5749	k star (bias corrected MLE)	4517
Theta hat (MLE)	8.06E-05	Theta star (bias corrected MLE)	1.03E-04
nu hat (MLE)	160985	nu star (bias corrected)	126489
MLE Mean (bias corrected)	0.464	MLE Sd (bias corrected)	0.0069
		Approximate Chi Square Value (0.05)	125663
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	125554
Assuming Gamma Distribution			
95% Approximate Gamma UCL	0.467	95% Adjusted Gamma UCL	0.467
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.771	Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.895	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.283	Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.208	Data Not Lognormal at 10% Significance Level	
Data Not Lognormal at 10% Significance Level			
Lognormal Statistics			

Minimum of Logged Data	-0.799	Mean of logged Data	-0.769
Maximum of Logged Data	-0.755	SD of logged Data	0.0137

Assuming Lognormal Distribution

95% H-UCL	N/A	90% Chebyshev (MVUE) UCL	0.469
95% Chebyshev (MVUE) UCL	0.471	97.5% Chebyshev (MVUE) UCL	0.474
99% Chebyshev (MVUE) UCL	0.48		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	0.466	95% BCA Bootstrap UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
90% Chebyshev(Mean, Sd) UCL	0.469	95% Chebyshev(Mean, Sd) UCL	0.471
97.5% Chebyshev(Mean, Sd) UCL	0.474	99% Chebyshev(Mean, Sd) UCL	0.48

Suggested UCL to Use

95% Student's-t UCL	0.467
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets.

Chloroethane

General Statistics

Total Number of Observations	14	Number of Distinct Observations	10
Number of Detects	7	Number of Non-Detects	7
Number of Distinct Detects	7	Number of Distinct Non-Detects	3
Minimum Detect	0.042	Minimum Non-Detect	0.026
Maximum Detect	0.1	Maximum Non-Detect	0.032

Variance Detects	5.88E-04	Percent Non-Detects	50%
Mean Detects	0.0673	SD Detects	0.0242
Median Detects	0.058	CV Detects	0.36
Skewness Detects	0.327	Kurtosis Detects	-2.259
Mean of Logged Detects	-2.755	SD of Logged Detects	0.363
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.856	Shapiro Wilk GOF Test	
1% Shapiro Wilk Critical Value	0.73	Detected Data appear Normal at 1% Significance Level	
Lilliefors Test Statistic	0.232	Lilliefors GOF Test	
1% Lilliefors Critical Value	0.35	Detected Data appear Normal at 1% Significance Level	
Detected Data appear Normal at 1% Significance Level			
Note GOF tests may be unreliable for small sample sizes			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
KM Mean	0.0466	KM Standard Error of Mean	0.00752
90KM SD	0.026	95% KM (BCA) UCL	0.0585
95% KM (t) UCL	0.06	95% KM (Percentile Bootstrap) UCL	0.0579
95% KM (z) UCL	0.059	95% KM Bootstrap t UCL	0.0606
90% KM Chebyshev UCL	0.0692	95% KM Chebyshev UCL	0.0794
97.5% KM Chebyshev UCL	0.0936	99% KM Chebyshev UCL	0.121
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	0.543	Anderson-Darling GOF Test	
5% A-D Critical Value	0.709	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.258	Kolmogorov-Smirnov GOF	
5% K-S Critical Value	0.312	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Note GOF tests may be unreliable for small sample sizes			
Gamma Statistics on Detected Data Only			
k hat (MLE)	9.027	k star (bias corrected MLE)	5.253
Theta hat (MLE)	0.00745	Theta star (bias corrected MLE)	0.0128
nu hat (MLE)	126.4	nu star (bias corrected)	73.55
Mean (detects)	0.0673		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01 Mean	0.0406
Maximum	0.1 Median	0.0332
SD	0.0325 CV	0.801
k hat (MLE)	1.603 k star (bias corrected MLE)	1.307
Theta hat (MLE)	0.0253 Theta star (bias corrected MLE)	0.031
nu hat (MLE)	44.88 nu star (bias corrected)	36.59
Adjusted Level of Significance (β)	0.0312	
Approximate Chi Square Value (36.59, α)	23.75 Adjusted Chi Square Value (36.59, β)	22.38
95% Gamma Approximate UCL	0.0625 95% Gamma Adjusted UCL	0.0663

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0466 SD (KM)	0.026
Variance (KM)	6.78E-04 SE of Mean (KM)	0.00752
k hat (KM)	3.208 k star (KM)	2.568
nu hat (KM)	89.83 nu star (KM)	71.92
theta hat (KM)	0.0145 theta star (KM)	0.0182
80% gamma percentile (KM)	0.0678 90% gamma percentile (KM)	0.0856
95% gamma percentile (KM)	0.102 99% gamma percentile (KM)	0.139

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (71.92, α)	53.39 Adjusted Chi Square Value (71.92, β)	51.28
95% KM Approximate Gamma UCL	0.0628 95% KM Adjusted Gamma UCL	0.0654

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.869 Shapiro Wilk GOF Test
10% Shapiro Wilk Critical Value	0.838 Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.243 Lilliefors GOF Test
10% Lilliefors Critical Value	0.28 Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0452	Mean in Log Scale	-3.275
SD in Original Scale	0.0285	SD in Log Scale	0.617
95% t UCL (assumes normality of ROS data)	0.0587	95% Percentile Bootstrap UCL	0.0573
95% BCA Bootstrap UCL	0.0583	95% Bootstrap t UCL	0.0631
95% H-UCL (Log ROS)	0.067		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-3.202	KM Geo Mean	0.0407
KM SD (logged)	0.507	95% Critical H Value (KM-Log)	2.016
KM Standard Error of Mean (logged)	0.146	95% H-UCL (KM -Log)	0.0614
KM SD (logged)	0.507	95% Critical H Value (KM-Log)	2.016
KM Standard Error of Mean (logged)	0.146		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0406	Mean in Log Scale	-3.519
SD in Original Scale	0.0323	SD in Log Scale	0.832
95% t UCL (Assumes normality)	0.0558	95% H-Stat UCL	0.075

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 1% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.06
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Chloroform

General Statistics

Total Number of Observations	14	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.13	Mean	0.152
Maximum	0.18	Median	0.15
SD	0.0148	Std. Error of Mean	0.00395
Coefficient of Variation	0.0971	Skewness	0.408
Normal GOF Test			
Shapiro Wilk Test Statistic	0.922	Shapiro Wilk GOF Test	
1% Shapiro Wilk Critical Value	0.825	Data appear Normal at 1% Significance Level	
Lilliefors Test Statistic	0.223	Lilliefors GOF Test	
1% Lilliefors Critical Value	0.263	Data appear Normal at 1% Significance Level	
Data appear Normal at 1% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.159	95% Adjusted-CLT UCL (Chen-1995)	0.159
		95% Modified-t UCL (Johnson-1978)	0.159
Gamma GOF Test			
A-D Test Statistic	0.58	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.733	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.232	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.228	Data Not Gamma Distributed at 5% Significance Level	
Detected data follow Appr. Gamma Distribution at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	116.1	k star (bias corrected MLE)	91.26
Theta hat (MLE)	0.00131	Theta star (bias corrected MLE)	0.00167
nu hat (MLE)	3250	nu star (bias corrected)	2555
MLE Mean (bias corrected)	0.152	MLE Sd (bias corrected)	0.0159
		Approximate Chi Square Value (0.05)	2439
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	2424
Assuming Gamma Distribution			
95% Approximate Gamma UCL	0.159	95% Adjusted Gamma UCL	0.16

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.926	Shapiro Wilk Lognormal GOF Test
10% Shapiro Wilk Critical Value	0.895	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.223	Lilliefors Lognormal GOF Test
10% Lilliefors Critical Value	0.208	Data Not Lognormal at 10% Significance Level
Data appear Approximate Lognormal at 10% Significance Level		

Lognormal Statistics

Minimum of Logged Data	-2.04	Mean of logged Data	-1.887
Maximum of Logged Data	-1.715	SD of logged Data	0.0961

Assuming Lognormal Distribution

95% H-UCL	N/A	90% Chebyshev (MVUE) UCL	0.164
95% Chebyshev (MVUE) UCL	0.169	97.5% Chebyshev (MVUE) UCL	0.177
99% Chebyshev (MVUE) UCL	0.191		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	0.159	95% BCA Bootstrap UCL	0.158
95% Standard Bootstrap UCL	0.158	95% Bootstrap-t UCL	0.159
95% Hall's Bootstrap UCL	0.159	95% Percentile Bootstrap UCL	0.159
90% Chebyshev(Mean, Sd) UCL	0.164	95% Chebyshev(Mean, Sd) UCL	0.169
97.5% Chebyshev(Mean, Sd) UCL	0.177	99% Chebyshev(Mean, Sd) UCL	0.191

Suggested UCL to Use

95% Student's-t UCL	0.159
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Chloromethane

General Statistics

Total Number of Observations	14	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.98	Mean	0.996
Maximum	1	Median	1
SD	0.00633	Std. Error of Mean	0.00169
Coefficient of Variation	0.00636	Skewness	-1.687

Normal GOF Test

Shapiro Wilk Test Statistic	0.627	Shapiro Wilk GOF Test	
1% Shapiro Wilk Critical Value	0.825	Data Not Normal at 1% Significance Level	
Lilliefors Test Statistic	0.428	Lilliefors GOF Test	
1% Lilliefors Critical Value	0.263	Data Not Normal at 1% Significance Level	
Data Not Normal at 1% Significance Level			

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.999	95% Adjusted-CLT UCL (Chen-1995)	0.998
		95% Modified-t UCL (Johnson-1978)	0.999

Gamma GOF Test

A-D Test Statistic	2.73	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.733	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.435	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.228	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			

Gamma Statistics

k hat (MLE)	26494	k star (bias corrected MLE)	20816
Theta hat (MLE)	3.76E-05	Theta star (bias corrected MLE)	4.79E-05
nu hat (MLE)	741822	nu star (bias corrected)	582861
MLE Mean (bias corrected)	0.996	MLE Sd (bias corrected)	0.00691
		Approximate Chi Square Value (0.05)	581087
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	580851

Assuming Gamma Distribution			
95% Approximate Gamma UCL	0.999	95% Adjusted Gamma UCL	1
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.627	Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.895	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.428	Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.208	Data Not Lognormal at 10% Significance Level	
Data Not Lognormal at 10% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	-0.0202	Mean of logged Data	-0.0036
Maximum of Logged Data		0 SD of logged Data	0.00639
Assuming Lognormal Distribution			
95% H-UCL	N/A	90% Chebyshev (MVUE) UCL	1.002
95% Chebyshev (MVUE) UCL	1.004	97.5% Chebyshev (MVUE) UCL	1.007
99% Chebyshev (MVUE) UCL	1.013		
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution			
Nonparametric Distribution Free UCLs			
95% CLT UCL	0.999	95% BCA Bootstrap UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
90% Chebyshev(Mean, Sd) UCL	1.002	95% Chebyshev(Mean, Sd) UCL	1.004
97.5% Chebyshev(Mean, Sd) UCL	1.007	99% Chebyshev(Mean, Sd) UCL	1.013
Suggested UCL to Use			
95% Student's-t UCL	0.999		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness using results from simulation studies. However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets.

Ethylbenzene

General Statistics

Total Number of Observations	14	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.25	Mean	0.287
Maximum	0.45	Median	0.27
SD	0.0518	Std. Error of Mean	0.0138
Coefficient of Variation	0.18	Skewness	2.739

Normal GOF Test

Shapiro Wilk Test Statistic	0.638	Shapiro Wilk GOF Test
1% Shapiro Wilk Critical Value	0.825	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.273	Lilliefors GOF Test
1% Lilliefors Critical Value	0.263	Data Not Normal at 1% Significance Level
Data Not Normal at 1% Significance Level		

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.312	95% Adjusted-CLT UCL (Chen-1995)	0.321
		95% Modified-t UCL (Johnson-1978)	0.313

Gamma GOF Test

A-D Test Statistic	1.694	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.733	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.276	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.228	Data Not Gamma Distributed at 5% Significance Level
Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics

k hat (MLE)	41.34	k star (bias corrected MLE)	32.53
Theta hat (MLE)	0.00695	Theta star (bias corrected MLE)	0.00883

nu hat (MLE)	1158	nu star (bias corrected)	910.9
MLE Mean (bias corrected)	0.287	MLE Sd (bias corrected)	0.0503
		Approximate Chi Square Value (0.05)	841.8
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	833
Assuming Gamma Distribution			
95% Approximate Gamma UCL	0.311	95% Adjusted Gamma UCL	0.314
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.7	Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.895	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.269	Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.208	Data Not Lognormal at 10% Significance Level	
Data Not Lognormal at 10% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	-1.386	Mean of logged Data	-1.26
Maximum of Logged Data	-0.799	SD of logged Data	0.153
Assuming Lognormal Distribution			
95% H-UCL	0.31	90% Chebyshev (MVUE) UCL	0.322
95% Chebyshev (MVUE) UCL	0.338	97.5% Chebyshev (MVUE) UCL	0.36
99% Chebyshev (MVUE) UCL	0.404		
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution			
Nonparametric Distribution Free UCLs			
95% CLT UCL	0.31	95% BCA Bootstrap UCL	0.321
95% Standard Bootstrap UCL	0.309	95% Bootstrap-t UCL	0.35
95% Hall's Bootstrap UCL	0.396	95% Percentile Bootstrap UCL	0.311
90% Chebyshev(Mean, Sd) UCL	0.329	95% Chebyshev(Mean, Sd) UCL	0.347
97.5% Chebyshev(Mean, Sd) UCL	0.374	99% Chebyshev(Mean, Sd) UCL	0.425
Suggested UCL to Use			
95% Student's-t UCL	0.312		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness using results from simulation studies. However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Freon 113

General Statistics

Total Number of Observations	14	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.44	Mean	0.462
Maximum	0.47	Median	0.46
SD	0.00802	Std. Error of Mean	0.00214
Coefficient of Variation	0.0173	Skewness	-1.482

Normal GOF Test

Shapiro Wilk Test Statistic	0.723	Shapiro Wilk GOF Test
1% Shapiro Wilk Critical Value	0.825	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.323	Lilliefors GOF Test
1% Lilliefors Critical Value	0.263	Data Not Normal at 1% Significance Level
Data Not Normal at 1% Significance Level		

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.466	95% Adjusted-CLT UCL (Chen-1995)	0.465
		95% Modified-t UCL (Johnson-1978)	0.466

Gamma GOF Test

A-D Test Statistic	1.592	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.733	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.297	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.228	Data Not Gamma Distributed at 5% Significance Level
Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics

k hat (MLE)	3524	k star (bias corrected MLE)	2769
Theta hat (MLE)	1.31E-04	Theta star (bias corrected MLE)	1.67E-04
nu hat (MLE)	98661	nu star (bias corrected)	77521
MLE Mean (bias corrected)	0.462	MLE Sd (bias corrected)	0.00878
		Approximate Chi Square Value (0.05)	76874
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	76789
Assuming Gamma Distribution			
95% Approximate Gamma UCL	0.466	95% Adjusted Gamma UCL	0.467
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.718	Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.895	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.327	Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.208	Data Not Lognormal at 10% Significance Level	
Data Not Lognormal at 10% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	-0.821	Mean of logged Data	-0.772
Maximum of Logged Data	-0.755	SD of logged Data	0.0176
Assuming Lognormal Distribution			
95% H-UCL	N/A	90% Chebyshev (MVUE) UCL	0.469
95% Chebyshev (MVUE) UCL	0.472	97.5% Chebyshev (MVUE) UCL	0.476
99% Chebyshev (MVUE) UCL	0.484		
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution			
Nonparametric Distribution Free UCLs			
95% CLT UCL	0.466	95% BCA Bootstrap UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
90% Chebyshev(Mean, Sd) UCL	0.469	95% Chebyshev(Mean, Sd) UCL	0.471
97.5% Chebyshev(Mean, Sd) UCL	0.476	99% Chebyshev(Mean, Sd) UCL	0.483

Suggested UCL to Use

95% Student's-t UCL 0.466

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness using results from simulation studies. However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets.

Freon 114

General Statistics

Total Number of Observations	14	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	0.11	Mean	0.117
Maximum	0.12	Median	0.12
SD	0.00469	Std. Error of Mean	0.00125
Coefficient of Variation	0.04	Skewness	-1.067

Normal GOF Test

Shapiro Wilk Test Statistic	0.576	Shapiro Wilk GOF Test
1% Shapiro Wilk Critical Value	0.825	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.443	Lilliefors GOF Test
1% Lilliefors Critical Value	0.263	Data Not Normal at 1% Significance Level
Data Not Normal at 1% Significance Level		

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.119	95% Adjusted-CLT UCL (Chen-1995)	0.119
		95% Modified-t UCL (Johnson-1978)	0.119

Gamma GOF Test

A-D Test Statistic	3.136	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.733	Data Not Gamma Distributed at 5% Significance Level

K-S Test Statistic	0.451	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.228	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	655.6	k star (bias corrected MLE)	515.2
Theta hat (MLE)	1.79E-04	Theta star (bias corrected MLE)	2.27E-04
nu hat (MLE)	18357	nu star (bias corrected)	14425
MLE Mean (bias corrected)	0.117	MLE Sd (bias corrected)	0.00516
		Approximate Chi Square Value (0.05)	14147
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	14110
Assuming Gamma Distribution			
95% Approximate Gamma UCL	0.119	95% Adjusted Gamma UCL	0.12
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.576	Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.895	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.443	Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.208	Data Not Lognormal at 10% Significance Level	
Data Not Lognormal at 10% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	-2.207	Mean of logged Data	-2.145
Maximum of Logged Data	-2.12	SD of logged Data	0.0408
Assuming Lognormal Distribution			
95% H-UCL	N/A	90% Chebyshev (MVUE) UCL	0.121
95% Chebyshev (MVUE) UCL	0.123	97.5% Chebyshev (MVUE) UCL	0.125
99% Chebyshev (MVUE) UCL	0.13		
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution			
Nonparametric Distribution Free UCLs			
95% CLT UCL	0.119	95% BCA Bootstrap UCL	N/A

95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
90% Chebyshev(Mean, Sd) UCL	0.121	95% Chebyshev(Mean, Sd) UCL	0.123
97.5% Chebyshev(Mean, Sd) UCL	0.125	99% Chebyshev(Mean, Sd) UCL	0.13
Suggested UCL to Use			
95% Student's-t UCL	0.119		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness using results from simulation studies. However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets.

Freon 12

General Statistics

Total Number of Observations	14	Number of Distinct Observations	1
		Number of Missing Observations	0
Minimum	2.3	Mean	2.3
Maximum	2.3	Median	2.3

Warning: There is only one distinct observation value in this data set - resulting in '0' variance!

ProUCL (or any other software) should not be used on such a data set!

The data set for variable Freon 12 was not processed!

If possible, compute and collect Data Quality Objectives (DQOs) based sample size and analytical results.

The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

m,p-Xylenes

General Statistics

Total Number of Observations	14	Number of Distinct Observations	12
		Number of Missing Observations	0
Minimum	0.7	Mean	0.809
Maximum	1.2	Median	0.77
SD	0.133	Std. Error of Mean	0.0354
Coefficient of Variation	0.164	Skewness	2.237
Normal GOF Test			
Shapiro Wilk Test Statistic	0.747	Shapiro Wilk GOF Test	
1% Shapiro Wilk Critical Value	0.825	Data Not Normal at 1% Significance Level	
Lilliefors Test Statistic	0.272	Lilliefors GOF Test	
1% Lilliefors Critical Value	0.263	Data Not Normal at 1% Significance Level	
Data Not Normal at 1% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.872	95% Adjusted-CLT UCL (Chen-1995)	0.89
		95% Modified-t UCL (Johnson-1978)	0.876
Gamma GOF Test			
A-D Test Statistic	1.041	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.733	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.261	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.228	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	47.37	k star (bias corrected MLE)	37.27
Theta hat (MLE)	0.0171	Theta star (bias corrected MLE)	0.0217
nu hat (MLE)	1326	nu star (bias corrected)	1043
MLE Mean (bias corrected)	0.809	MLE Sd (bias corrected)	0.133
		Approximate Chi Square Value (0.05)	969.5
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	960
Assuming Gamma Distribution			
95% Approximate Gamma UCL	0.871	95% Adjusted Gamma UCL	0.88

Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.806	Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.895	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.251	Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.208	Data Not Lognormal at 10% Significance Level	
Data Not Lognormal at 10% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	-0.357	Mean of logged Data	-0.222
Maximum of Logged Data	0.182	SD of logged Data	0.145
Assuming Lognormal Distribution			
95% H-UCL	0.869	90% Chebyshev (MVUE) UCL	0.903
95% Chebyshev (MVUE) UCL	0.946	97.5% Chebyshev (MVUE) UCL	1.005
99% Chebyshev (MVUE) UCL	1.122		
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution			
Nonparametric Distribution Free UCLs			
95% CLT UCL	0.868	95% BCA Bootstrap UCL	0.89
95% Standard Bootstrap UCL	0.866	95% Bootstrap-t UCL	0.926
95% Hall's Bootstrap UCL	1.111	95% Percentile Bootstrap UCL	0.871
90% Chebyshev(Mean, Sd) UCL	0.916	95% Chebyshev(Mean, Sd) UCL	0.964
97.5% Chebyshev(Mean, Sd) UCL	1.031	99% Chebyshev(Mean, Sd) UCL	1.162
Suggested UCL to Use			
95% Student's-t UCL	0.872		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness using results from simulation studies. However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Methylene Chloride

General Statistics

Total Number of Observations	14	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	0.55	Mean	0.836
Maximum	2.8	Median	0.61
SD	0.591	Std. Error of Mean	0.158
Coefficient of Variation	0.706	Skewness	3.26

Normal GOF Test

Shapiro Wilk Test Statistic	0.506	Shapiro Wilk GOF Test	
1% Shapiro Wilk Critical Value	0.825	Data Not Normal at 1% Significance Level	
Lilliefors Test Statistic	0.348	Lilliefors GOF Test	
1% Lilliefors Critical Value	0.263	Data Not Normal at 1% Significance Level	
Data Not Normal at 1% Significance Level			

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.116	95% Adjusted-CLT UCL (Chen-1995)	1.243
		95% Modified-t UCL (Johnson-1978)	1.139

Gamma GOF Test

A-D Test Statistic	2.169	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.74	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.298	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.23	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			

Gamma Statistics

k hat (MLE)	4.27	k star (bias corrected MLE)	3.403
Theta hat (MLE)	0.196	Theta star (bias corrected MLE)	0.246
nu hat (MLE)	119.6	nu star (bias corrected)	95.27
MLE Mean (bias corrected)	0.836	MLE Sd (bias corrected)	0.453
		Approximate Chi Square Value (0.05)	73.76
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	71.25

Assuming Gamma Distribution		
95% Approximate Gamma UCL	1.08 95% Adjusted Gamma UCL	1.118
Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.663 Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.895 Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.262 Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.208 Data Not Lognormal at 10% Significance Level	
Data Not Lognormal at 10% Significance Level		
Lognormal Statistics		
Minimum of Logged Data	-0.598 Mean of logged Data	-0.3
Maximum of Logged Data	1.03 SD of logged Data	0.437
Assuming Lognormal Distribution		
95% H-UCL	1.038 90% Chebyshev (MVUE) UCL	1.098
95% Chebyshev (MVUE) UCL	1.229 97.5% Chebyshev (MVUE) UCL	1.411
99% Chebyshev (MVUE) UCL	1.769	
Nonparametric Distribution Free UCL Statistics		
Data do not follow a Discernible Distribution		
Nonparametric Distribution Free UCLs		
95% CLT UCL	1.096 95% BCA Bootstrap UCL	1.283
95% Standard Bootstrap UCL	1.082 95% Bootstrap-t UCL	2.143
95% Hall's Bootstrap UCL	2.094 95% Percentile Bootstrap UCL	1.116
90% Chebyshev(Mean, Sd) UCL	1.31 95% Chebyshev(Mean, Sd) UCL	1.524
97.5% Chebyshev(Mean, Sd) UCL	1.822 99% Chebyshev(Mean, Sd) UCL	2.407
Suggested UCL to Use		
95% Student's-t UCL	1.116	

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness using results from simulation studies. However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Naphthalene

General Statistics

Total Number of Observations	14	Number of Distinct Observations	10
Number of Detects	10	Number of Non-Detects	4
Number of Distinct Detects	8	Number of Distinct Non-Detects	2
Minimum Detect	0.057	Minimum Non-Detect	0.052
Maximum Detect	0.14	Maximum Non-Detect	0.058
Variance Detects	7.92E-04	Percent Non-Detects	28.57%
Mean Detects	0.0809	SD Detects	0.0281
Median Detects	0.0755	CV Detects	0.348
Skewness Detects	1.375	Kurtosis Detects	1.072
Mean of Logged Detects	-2.561	SD of Logged Detects	0.311

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.809	Shapiro Wilk GOF Test
1% Shapiro Wilk Critical Value	0.781	Detected Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.241	Lilliefors GOF Test
1% Lilliefors Critical Value	0.304	Detected Data appear Normal at 1% Significance Level
Detected Data appear Normal at 1% Significance Level		

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0727	KM Standard Error of Mean	0.00733
90KM SD	0.026	95% KM (BCA) UCL	0.0863
95% KM (t) UCL	0.0857	95% KM (Percentile Bootstrap) UCL	0.0849
95% KM (z) UCL	0.0848	95% KM Bootstrap t UCL	0.0965
90% KM Chebyshev UCL	0.0947	95% KM Chebyshev UCL	0.105
97.5% KM Chebyshev UCL	0.119	99% KM Chebyshev UCL	0.146

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.693	Anderson-Darling GOF Test
5% A-D Critical Value	0.725	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.211	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.267	Detected data appear Gamma Distributed at 5% Significance Level
Detected data appear Gamma Distributed at 5% Significance Level		

Gamma Statistics on Detected Data Only

k hat (MLE)	10.84 k star (bias corrected MLE)	7.653
Theta hat (MLE)	0.00746 Theta star (bias corrected MLE)	0.0106
nu hat (MLE)	216.8 nu star (bias corrected)	153.1
Mean (detects)	0.0809	

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0128 Mean	0.0649
Maximum	0.14 Median	0.059
SD	0.0355 CV	0.547
k hat (MLE)	3.138 k star (bias corrected MLE)	2.513
Theta hat (MLE)	0.0207 Theta star (bias corrected MLE)	0.0258
nu hat (MLE)	87.86 nu star (bias corrected)	70.36
Adjusted Level of Significance (β)	0.0312	
Approximate Chi Square Value (70.36, α)	52.05 Adjusted Chi Square Value (70.36, β)	49.97
95% Gamma Approximate UCL	0.0877 95% Gamma Adjusted UCL	0.0913

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0727 SD (KM)	0.026
Variance (KM)	6.76E-04 SE of Mean (KM)	0.00733
k hat (KM)	7.821 k star (KM)	6.192
nu hat (KM)	219 nu star (KM)	173.4
theta hat (KM)	0.0093 theta star (KM)	0.0117
80% gamma percentile (KM)	0.0955 90% gamma percentile (KM)	0.112
95% gamma percentile (KM)	0.127 99% gamma percentile (KM)	0.157

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (173.39, α)	143.9 Adjusted Chi Square Value (173.39, β)	140.4
95% KM Approximate Gamma UCL	0.0876 95% KM Adjusted Gamma UCL	0.0898

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.86	Shapiro Wilk GOF Test	
10% Shapiro Wilk Critical Value	0.869	Detected Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.206	Lilliefors GOF Test	
10% Lilliefors Critical Value	0.241	Detected Data appear Lognormal at 10% Significance Level	
Detected Data appear Approximate Lognormal at 10% Significance Level			

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0685	Mean in Log Scale	-2.77
SD in Original Scale	0.0311	SD in Log Scale	0.434
95% t UCL (assumes normality of ROS data)	0.0832	95% Percentile Bootstrap UCL	0.0823
95% BCA Bootstrap UCL	0.0836	95% Bootstrap t UCL	0.0899
95% H-UCL (Log ROS)	0.0876		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-2.673	KM Geo Mean	0.0691
KM SD (logged)	0.305	95% Critical H Value (KM-Log)	1.899
KM Standard Error of Mean (logged)	0.0861	95% H-UCL (KM -Log)	0.085
KM SD (logged)	0.305	95% Critical H Value (KM-Log)	1.899
KM Standard Error of Mean (logged)	0.0861		

DL/2 Statistics

DL/2 Normal	DL/2 Log-Transformed	
Mean in Original Scale	0.0654	Mean in Log Scale -2.865
SD in Original Scale	0.0345	SD in Log Scale 0.561
95% t UCL (Assumes normality)	0.0818	95% H-Stat UCL 0.0927

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 1% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0857
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

o-Xylene

General Statistics

Total Number of Observations	14	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.28	Mean	0.313
Maximum	0.37	Median	0.305
SD	0.0315	Std. Error of Mean	0.00841
Coefficient of Variation	0.101	Skewness	0.849

Normal GOF Test

Shapiro Wilk Test Statistic	0.876	Shapiro Wilk GOF Test	
1% Shapiro Wilk Critical Value	0.825	Data appear Normal at 1% Significance Level	
Lilliefors Test Statistic	0.179	Lilliefors GOF Test	
1% Lilliefors Critical Value	0.263	Data appear Normal at 1% Significance Level	
Data appear Normal at 1% Significance Level			

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.328	95% Adjusted-CLT UCL (Chen-1995)	0.329
		95% Modified-t UCL (Johnson-1978)	0.328

Gamma GOF Test

A-D Test Statistic	0.588	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.733	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.169	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.228	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			

Gamma Statistics

k hat (MLE)	110.8	k star (bias corrected MLE)	87.12
Theta hat (MLE)	0.00282	Theta star (bias corrected MLE)	0.00359
nu hat (MLE)	3103	nu star (bias corrected)	2439
MLE Mean (bias corrected)	0.313	MLE Sd (bias corrected)	0.0335

	Approximate Chi Square Value (0.05)	2326
Adjusted Level of Significance	0.0312 Adjusted Chi Square Value	2311
Assuming Gamma Distribution		
95% Approximate Gamma UCL	0.328 95% Adjusted Gamma UCL	0.33
Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.89 Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.895 Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.162 Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.208 Data appear Lognormal at 10% Significance Level	
Data appear Approximate Lognormal at 10% Significance Level		
Lognormal Statistics		
Minimum of Logged Data	-1.273 Mean of logged Data	-1.167
Maximum of Logged Data	-0.994 SD of logged Data	0.0977
Assuming Lognormal Distribution		
95% H-UCL	N/A 90% Chebyshev (MVUE) UCL	0.337
95% Chebyshev (MVUE) UCL	0.348 97.5% Chebyshev (MVUE) UCL	0.364
99% Chebyshev (MVUE) UCL	0.394	
Nonparametric Distribution Free UCL Statistics		
Data appear to follow a Discernible Distribution		
Nonparametric Distribution Free UCLs		
95% CLT UCL	0.327 95% BCA Bootstrap UCL	0.328
95% Standard Bootstrap UCL	0.326 95% Bootstrap-t UCL	0.331
95% Hall's Bootstrap UCL	0.328 95% Percentile Bootstrap UCL	0.326
90% Chebyshev(Mean, Sd) UCL	0.338 95% Chebyshev(Mean, Sd) UCL	0.35
97.5% Chebyshev(Mean, Sd) UCL	0.365 99% Chebyshev(Mean, Sd) UCL	0.397
Suggested UCL to Use		
95% Student's-t UCL	0.328	

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Styrene

General Statistics

Total Number of Observations	14	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.076	Mean	0.128
Maximum	0.32	Median	0.12
SD	0.0581	Std. Error of Mean	0.0155
Coefficient of Variation	0.455	Skewness	3.111

Normal GOF Test

Shapiro Wilk Test Statistic	0.599	Shapiro Wilk GOF Test
1% Shapiro Wilk Critical Value	0.825	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.346	Lilliefors GOF Test
1% Lilliefors Critical Value	0.263	Data Not Normal at 1% Significance Level
Data Not Normal at 1% Significance Level		

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.155	95% Adjusted-CLT UCL (Chen-1995)	0.167
		95% Modified-t UCL (Johnson-1978)	0.158

Gamma GOF Test

A-D Test Statistic	1.356	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.736	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.293	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.229	Data Not Gamma Distributed at 5% Significance Level
Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics

k hat (MLE)	8.31	k star (bias corrected MLE)	6.577
Theta hat (MLE)	0.0154	Theta star (bias corrected MLE)	0.0195

nu hat (MLE)	232.7	nu star (bias corrected)	184.2
MLE Mean (bias corrected)	0.128	MLE Sd (bias corrected)	0.0499
		Approximate Chi Square Value (0.05)	153.8
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	150.1
Assuming Gamma Distribution			
95% Approximate Gamma UCL	0.153	95% Adjusted Gamma UCL	0.157
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.794	Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.895	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.264	Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.208	Data Not Lognormal at 10% Significance Level	
Data Not Lognormal at 10% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	-2.577	Mean of logged Data	-2.118
Maximum of Logged Data	-1.139	SD of logged Data	0.329
Assuming Lognormal Distribution			
95% H-UCL	0.151	90% Chebyshev (MVUE) UCL	0.16
95% Chebyshev (MVUE) UCL	0.176	97.5% Chebyshev (MVUE) UCL	0.197
99% Chebyshev (MVUE) UCL	0.239		
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution			
Nonparametric Distribution Free UCLs			
95% CLT UCL	0.153	95% BCA Bootstrap UCL	0.168
95% Standard Bootstrap UCL	0.153	95% Bootstrap-t UCL	0.192
95% Hall's Bootstrap UCL	0.264	95% Percentile Bootstrap UCL	0.157
90% Chebyshev(Mean, Sd) UCL	0.175	95% Chebyshev(Mean, Sd) UCL	0.196
97.5% Chebyshev(Mean, Sd) UCL	0.225	99% Chebyshev(Mean, Sd) UCL	0.283
Suggested UCL to Use			
95% Student's-t UCL	0.155		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness using results from simulation studies. However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Tetrachloroethene

General Statistics

Total Number of Observations	14	Number of Distinct Observations	4
Number of Detects	1	Number of Non-Detects	13
Number of Distinct Detects	1	Number of Distinct Non-Detects	3

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTv).

The data set for variable Tetrachloroethene was not processed!

Toluene

General Statistics

Total Number of Observations	13	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.2	Mean	1.523
Maximum	2	Median	1.5
SD	0.228	Std. Error of Mean	0.0632
Coefficient of Variation	0.15	Skewness	0.863

Normal GOF Test

Shapiro Wilk Test Statistic	0.919	Shapiro Wilk GOF Test
1% Shapiro Wilk Critical Value	0.814	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.214	Lilliefors GOF Test
1% Lilliefors Critical Value	0.271	Data appear Normal at 1% Significance Level
Data appear Normal at 1% Significance Level		

Assuming Normal Distribution

95% Normal UCL	95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.636 95% Adjusted-CLT UCL (Chen-1995)	1.643
	95% Modified-t UCL (Johnson-1978)	1.638

Gamma GOF Test

A-D Test Statistic	0.397 Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.733 Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.19 Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.236 Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level		

Gamma Statistics

k hat (MLE)	50.9 k star (bias corrected MLE)	39.2
Theta hat (MLE)	0.0299 Theta star (bias corrected MLE)	0.0388
nu hat (MLE)	1323 nu star (bias corrected)	1019
MLE Mean (bias corrected)	1.523 MLE Sd (bias corrected)	0.243
	Approximate Chi Square Value (0.05)	946.2
Adjusted Level of Significance	0.0301 Adjusted Chi Square Value	936.2

Assuming Gamma Distribution

95% Approximate Gamma UCL	1.641 95% Adjusted Gamma UCL	1.658
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Lognormal GOF Test

Shapiro Wilk Test Statistic	0.947 Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.889 Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.187 Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.215 Data appear Lognormal at 10% Significance Level	
Data appear Lognormal at 10% Significance Level		

Lognormal Statistics

Minimum of Logged Data	0.182 Mean of logged Data	0.411
Maximum of Logged Data	0.693 SD of logged Data	0.145

Assuming Lognormal Distribution

95% H-UCL	1.642 90% Chebyshev (MVUE) UCL	1.706
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95% Chebyshev (MVUE) UCL	1.79	97.5% Chebyshev (MVUE) UCL	1.905
99% Chebyshev (MVUE) UCL	2.132		

Nonparametric Distribution Free UCL Statistics
Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	1.627	95% BCA Bootstrap UCL	1.631
95% Standard Bootstrap UCL	1.625	95% Bootstrap-t UCL	1.669
95% Hall's Bootstrap UCL	1.723	95% Percentile Bootstrap UCL	1.631
90% Chebyshev(Mean, Sd) UCL	1.713	95% Chebyshev(Mean, Sd) UCL	1.799
97.5% Chebyshev(Mean, Sd) UCL	1.918	99% Chebyshev(Mean, Sd) UCL	2.152

Suggested UCL to Use

95% Student's-t UCL	1.636
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness using results from simulation studies. However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Trichlorofluoromethane

General Statistics

Total Number of Observations	14	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	1	Mean	1.093
Maximum	1.1	Median	1.1
SD	0.0267	Std. Error of Mean	0.00714
Coefficient of Variation	0.0245	Skewness	-3.742

Normal GOF Test

Shapiro Wilk Test Statistic	0.297	Shapiro Wilk GOF Test
1% Shapiro Wilk Critical Value	0.825	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.534	Lilliefors GOF Test
1% Lilliefors Critical Value	0.263	Data Not Normal at 1% Significance Level

Data Not Normal at 1% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.106	95% Adjusted-CLT UCL (Chen-1995)	1.097
		95% Modified-t UCL (Johnson-1978)	1.104

Gamma GOF Test

A-D Test Statistic	4.872	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.733	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.538	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.228	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			

Gamma Statistics

k hat (MLE)	1706	k star (bias corrected MLE)	1340
Theta hat (MLE)	6.41E-04	Theta star (bias corrected MLE)	8.15E-04
nu hat (MLE)	47755	nu star (bias corrected)	37523
MLE Mean (bias corrected)	1.093	MLE Sd (bias corrected)	0.0299
		Approximate Chi Square Value (0.05)	37074
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	37015

Assuming Gamma Distribution

95% Approximate Gamma UCL	1.106	95% Adjusted Gamma UCL	1.108
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Lognormal GOF Test

Shapiro Wilk Test Statistic	0.297	Shapiro Wilk Lognormal GOF Test	
10% Shapiro Wilk Critical Value	0.895	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.534	Lilliefors Lognormal GOF Test	
10% Lilliefors Critical Value	0.208	Data Not Lognormal at 10% Significance Level	
Data Not Lognormal at 10% Significance Level			

Lognormal Statistics

Minimum of Logged Data	0	Mean of logged Data	0.0885
Maximum of Logged Data	0.0953	SD of logged Data	0.0255

Assuming Lognormal Distribution

95% H-UCL	N/A	90% Chebyshev (MVUE) UCL	1.115
95% Chebyshev (MVUE) UCL	1.125	97.5% Chebyshev (MVUE) UCL	1.139
99% Chebyshev (MVUE) UCL	1.167		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	1.105	95% BCA Bootstrap UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
90% Chebyshev(Mean, Sd) UCL	1.114	95% Chebyshev(Mean, Sd) UCL	1.124
97.5% Chebyshev(Mean, Sd) UCL	1.137	99% Chebyshev(Mean, Sd) UCL	1.164

Suggested UCL to Use

95% Student's-t UCL 1.106

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets.

Appendix E

Laboratory Analytical Reports – 14-day Samples



Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number : 518235
Report Level : II
Report Date : 10/22/2024

Analytical Report *prepared for:*

Yola Bayram
Catalyst Environmental Solutions
315 Montana Avenue
Suite 311
Santa Monica, CA 90403

Location: Walnut Bluff Workplan

Authorized for release by:

Miguel Gamboa, Project Manager
miguel.gamboa@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

Sample Summary

Yola Bayram
Catalyst Environmental
Solutions
315 Montana Avenue
Suite 311
Santa Monica, CA 90403

Lab Job #: 518235
Location: Walnut Bluff Workplan
Date Received: 10/15/24

Sample ID	Lab ID	Collected	Matrix
WB01-14D	518235-001	10/15/24 11:37	Air
WB02-14D	518235-002	10/15/24 11:34	Air
WB03-14D	518235-003	10/15/24 11:46	Air
WB04-14D	518235-004	10/15/24 11:50	Air
WB05-14D	518235-005	10/15/24 12:01	Air
WB06-14D	518235-006	10/15/24 11:56	Air
WB07-14D	518235-007	10/15/24 12:06	Air
WB08-14D	518235-008	10/15/24 12:11	Air
WB09-14D	518235-009	10/15/24 11:05	Air
WB10-14D	518235-010	10/15/24 11:12	Air
WB11-14D	518235-011	10/15/24 11:16	Air
WB12-14D	518235-012	10/15/24 11:20	Air
WB13-14D	518235-013	10/15/24 11:24	Air
WB14-14D	518235-014	10/15/24 11:28	Air
WB17-14D	518235-015	10/15/24 09:40	Air
WB18-14D	518235-016	10/15/24 10:28	Air
WB19-14D	518235-017	10/15/24 14:44	Air

Case Narrative

Catalyst Environmental Solutions
315 Montana Avenue
Suite 311
Santa Monica, CA 90403
Yola Bayram

Lab Job Number: 518235
Location: Walnut Bluff Workplan
Date Received: 10/15/24

This data package contains sample and QC results for seventeen air samples, requested for the above referenced project on 10/15/24. The samples were received intact.

Volatile Organics in Air by MS (EPA TO-15 SIM):

No analytical problems were encountered.

Detection Summary

Yola Bayram
Catalyst Environmental Solutions
315 Montana Avenue
Suite 311
Santa Monica, CA 90403

Lab Job #: 518235
Location: Walnut Bluff Workplan
Date Received: 10/15/24

Sample ID: WB01-14D

Lab ID: 518235-001

Collected: 10/15/24 11:37

Matrix: Air

518235-001 Analyte	Result	Qual	Units	RL
Method: EPA TO-15 SIM				
Prep Method: METHOD				
Freon 12	460		pptv	11
Freon 12	2.3		ug/m3	0.054
Chloromethane	480		pptv	110
Chloromethane	0.99		ug/m3	0.23
Freon 114	16		pptv	11
Freon 114	0.11		ug/m3	0.077
Bromomethane	21		pptv	11
Bromomethane	0.080		ug/m3	0.043
Trichlorofluoromethane	190		pptv	11
Trichlorofluoromethane	1.1		ug/m3	0.062
Methylene Chloride	160		pptv	22
Methylene Chloride	0.55		ug/m3	0.076
Freon 113	60		pptv	11
Freon 113	0.46		ug/m3	0.084
Chloroform	28		pptv	11
Chloroform	0.14		ug/m3	0.054
1,2-Dichloroethane	16		pptv	11
1,2-Dichloroethane	0.063		ug/m3	0.045
Benzene	250		pptv	11
Benzene	0.80		ug/m3	0.035
Carbon Tetrachloride	73		pptv	11
Carbon Tetrachloride	0.46		ug/m3	0.069
Toluene	360		pptv	11
Toluene	1.4		ug/m3	0.041
Ethylbenzene	63		pptv	11
Ethylbenzene	0.27		ug/m3	0.048
m,p-Xylenes	180		pptv	11
m,p-Xylenes	0.79		ug/m3	0.048
Styrene	24		pptv	11
Styrene	0.10		ug/m3	0.047
o-Xylene	73		pptv	11
o-Xylene	0.32		ug/m3	0.048
1,3,5-Trimethylbenzene	15		pptv	11
1,3,5-Trimethylbenzene	0.074		ug/m3	0.054
1,2,4-Trimethylbenzene	61		pptv	11
1,2,4-Trimethylbenzene	0.30		ug/m3	0.054
Naphthalene	11		pptv	11
Naphthalene	0.059		ug/m3	0.058
Xylene (total)	250		pptv	11
Xylene (total)	1.1		ug/m3	0.048

Detection Summary

Detection Summary

Sample ID: WB02-14D
Lab ID: 518235-002
Collected: 10/15/24 11:34
Matrix: Air
518235-002 Analyte

Method: EPA TO-15 SIM

Prep Method: METHOD

	Result	Qual	Units	RL
Freon 12	470		pptv	10
Freon 12	2.3		ug/m3	0.049
Chloromethane	480		pptv	100
Chloromethane	0.99		ug/m3	0.21
Freon 114	16		pptv	10
Freon 114	0.12		ug/m3	0.070
Bromomethane	22		pptv	10
Bromomethane	0.084		ug/m3	0.039
Chloroethane	19		pptv	10
Chloroethane	0.049		ug/m3	0.026
Trichlorofluoromethane	180		pptv	10
Trichlorofluoromethane	1.0		ug/m3	0.056
Methylene Chloride	170		pptv	20
Methylene Chloride	0.60		ug/m3	0.069
Freon 113	58		pptv	10
Freon 113	0.44		ug/m3	0.077
Chloroform	32		pptv	10
Chloroform	0.16		ug/m3	0.049
1,2-Dichloroethane	16		pptv	10
1,2-Dichloroethane	0.066		ug/m3	0.040
Benzene	260		pptv	10
Benzene	0.83		ug/m3	0.032
Carbon Tetrachloride	71		pptv	10
Carbon Tetrachloride	0.45		ug/m3	0.063
Toluene	410		pptv	10
Toluene	1.5		ug/m3	0.038
Ethylbenzene	75		pptv	10
Ethylbenzene	0.33		ug/m3	0.043
m,p-Xylenes	210		pptv	10
m,p-Xylenes	0.90		ug/m3	0.043
Styrene	28		pptv	10
Styrene	0.12		ug/m3	0.043
o-Xylene	82		pptv	10
o-Xylene	0.35		ug/m3	0.043
1,3,5-Trimethylbenzene	20		pptv	10
1,3,5-Trimethylbenzene	0.10		ug/m3	0.049
1,2,4-Trimethylbenzene	74		pptv	10
1,2,4-Trimethylbenzene	0.37		ug/m3	0.049
Naphthalene	15		pptv	10
Naphthalene	0.077		ug/m3	0.052
Xylene (total)	290		pptv	10
Xylene (total)	1.3		ug/m3	0.043

Detection Summary

Sample ID: WB03-14D
Lab ID: 518235-003
Collected: 10/15/24 11:46
Matrix: Air
518235-003 Analyte

Method: EPA TO-15 SIM

Prep Method: METHOD

	Result	Qual	Units	RL
Freon 12	470		pptv	10
Freon 12	2.3		ug/m3	0.049
Chloromethane	490		pptv	100
Chloromethane	1.0		ug/m3	0.21
Freon 114	17		pptv	10
Freon 114	0.12		ug/m3	0.070
Bromomethane	21		pptv	10
Bromomethane	0.082		ug/m3	0.039
Trichlorofluoromethane	200		pptv	10
Trichlorofluoromethane	1.1		ug/m3	0.056
Methylene Chloride	170		pptv	20
Methylene Chloride	0.59		ug/m3	0.069
Freon 113	61		pptv	10
Freon 113	0.47		ug/m3	0.077
Chloroform	34		pptv	10
Chloroform	0.17		ug/m3	0.049
1,2-Dichloroethane	15		pptv	10
1,2-Dichloroethane	0.062		ug/m3	0.040
Benzene	230		pptv	10
Benzene	0.72		ug/m3	0.032
Carbon Tetrachloride	75		pptv	10
Carbon Tetrachloride	0.47		ug/m3	0.063
Toluene	330		pptv	10
Toluene	1.2		ug/m3	0.038
Ethylbenzene	57		pptv	10
Ethylbenzene	0.25		ug/m3	0.043
m,p-Xylenes	160		pptv	10
m,p-Xylenes	0.71		ug/m3	0.043
Styrene	18		pptv	10
Styrene	0.076		ug/m3	0.043
o-Xylene	65		pptv	10
o-Xylene	0.28		ug/m3	0.043
1,3,5-Trimethylbenzene	11		pptv	10
1,3,5-Trimethylbenzene	0.055		ug/m3	0.049
1,2,4-Trimethylbenzene	48		pptv	10
1,2,4-Trimethylbenzene	0.24		ug/m3	0.049
Xylene (total)	230		pptv	10
Xylene (total)	0.99		ug/m3	0.043

Detection Summary

Sample ID: WB04-14D
Lab ID: 518235-004
Collected: 10/15/24 11:50
Matrix: Air
518235-004 Analyte

Method: EPA TO-15 SIM

Prep Method: METHOD

	Result	Qual	Units	RL
Freon 12	470		pptv	10
Freon 12	2.3		ug/m3	0.049
Chloromethane	490		pptv	100
Chloromethane	1.0		ug/m3	0.21
Freon 114	16		pptv	10
Freon 114	0.12		ug/m3	0.070
Bromomethane	19		pptv	10
Bromomethane	0.075		ug/m3	0.039
Trichlorofluoromethane	200		pptv	10
Trichlorofluoromethane	1.1		ug/m3	0.056
Methylene Chloride	340		pptv	20
Methylene Chloride	1.2		ug/m3	0.069
Freon 113	61		pptv	10
Freon 113	0.47		ug/m3	0.077
Chloroform	33		pptv	10
Chloroform	0.16		ug/m3	0.049
1,2-Dichloroethane	15		pptv	10
1,2-Dichloroethane	0.062		ug/m3	0.040
Benzene	230		pptv	10
Benzene	0.74		ug/m3	0.032
Carbon Tetrachloride	75		pptv	10
Carbon Tetrachloride	0.47		ug/m3	0.063
Toluene	380		pptv	10
Toluene	1.4		ug/m3	0.038
Ethylbenzene	60		pptv	10
Ethylbenzene	0.26		ug/m3	0.043
m,p-Xylenes	180		pptv	10
m,p-Xylenes	0.76		ug/m3	0.043
Styrene	25		pptv	10
Styrene	0.11		ug/m3	0.043
o-Xylene	69		pptv	10
o-Xylene	0.30		ug/m3	0.043
1,3,5-Trimethylbenzene	13		pptv	10
1,3,5-Trimethylbenzene	0.065		ug/m3	0.049
1,2,4-Trimethylbenzene	59		pptv	10
1,2,4-Trimethylbenzene	0.29		ug/m3	0.049
Xylene (total)	240		pptv	10
Xylene (total)	1.1		ug/m3	0.043

Detection Summary

Sample ID: WB05-14D
Lab ID: 518235-005
Collected: 10/15/24 12:01
Matrix: Air
518235-005 Analyte

Method: EPA TO-15 SIM

Prep Method: METHOD

	Result	Qual	Units	RL
Freon 12	460		pptv	12
Freon 12	2.3		ug/m3	0.059
Chloromethane	480		pptv	120
Chloromethane	1.0		ug/m3	0.25
Freon 114	16		pptv	12
Freon 114	0.11		ug/m3	0.084
Bromomethane	22		pptv	12
Bromomethane	0.084		ug/m3	0.047
Trichlorofluoromethane	190		pptv	12
Trichlorofluoromethane	1.1		ug/m3	0.067
Methylene Chloride	220		pptv	24
Methylene Chloride	0.76		ug/m3	0.083
Freon 113	61		pptv	12
Freon 113	0.46		ug/m3	0.092
Chloroform	32		pptv	12
Chloroform	0.16		ug/m3	0.059
1,2-Dichloroethane	15		pptv	12
1,2-Dichloroethane	0.061		ug/m3	0.049
Benzene	1,000		pptv	12
Benzene	3.2		ug/m3	0.038
Carbon Tetrachloride	73		pptv	12
Carbon Tetrachloride	0.46		ug/m3	0.075
Toluene	1,500		pptv	12
Toluene	5.8		ug/m3	0.045
Ethylbenzene	59		pptv	12
Ethylbenzene	0.26		ug/m3	0.052
m,p-Xylenes	170		pptv	12
m,p-Xylenes	0.73		ug/m3	0.052
Styrene	30		pptv	12
Styrene	0.13		ug/m3	0.051
o-Xylene	66		pptv	12
o-Xylene	0.29		ug/m3	0.052
1,3,5-Trimethylbenzene	15		pptv	12
1,3,5-Trimethylbenzene	0.074		ug/m3	0.059
1,2,4-Trimethylbenzene	59		pptv	12
1,2,4-Trimethylbenzene	0.29		ug/m3	0.059
Naphthalene	14		pptv	12
Naphthalene	0.074		ug/m3	0.063
Xylene (total)	230		pptv	12
Xylene (total)	1.0		ug/m3	0.052

Detection Summary

Sample ID: WB06-14D
Lab ID: 518235-006
Collected: 10/15/24 11:56
Matrix: Air

518235-006 Analyte	Result	Qual	Units	RL
Method: EPA TO-15 SIM				
Prep Method: METHOD				
Freon 12	470		pptv	10
Freon 12	2.3		ug/m3	0.049
Chloromethane	480		pptv	100
Chloromethane	1.0		ug/m3	0.21
Freon 114	17		pptv	10
Freon 114	0.12		ug/m3	0.070
Bromomethane	21		pptv	10
Bromomethane	0.081		ug/m3	0.039
Chloroethane	17		pptv	10
Chloroethane	0.045		ug/m3	0.026
Trichlorofluoromethane	190		pptv	10
Trichlorofluoromethane	1.1		ug/m3	0.056
Methylene Chloride	180		pptv	20
Methylene Chloride	0.62		ug/m3	0.069
Freon 113	61		pptv	10
Freon 113	0.46		ug/m3	0.077
Chloroform	31		pptv	10
Chloroform	0.15		ug/m3	0.049
1,2-Dichloroethane	15		pptv	10
1,2-Dichloroethane	0.062		ug/m3	0.040
Benzene	230		pptv	10
Benzene	0.74		ug/m3	0.032
Carbon Tetrachloride	74		pptv	10
Carbon Tetrachloride	0.47		ug/m3	0.063
Toluene	420		pptv	10
Toluene	1.6		ug/m3	0.038
Ethylbenzene	64		pptv	10
Ethylbenzene	0.28		ug/m3	0.043
m,p-Xylenes	170		pptv	10
m,p-Xylenes	0.74		ug/m3	0.043
Styrene	26		pptv	10
Styrene	0.11		ug/m3	0.043
o-Xylene	66		pptv	10
o-Xylene	0.29		ug/m3	0.043
1,3,5-Trimethylbenzene	13		pptv	10
1,3,5-Trimethylbenzene	0.065		ug/m3	0.049
1,2,4-Trimethylbenzene	54		pptv	10
1,2,4-Trimethylbenzene	0.26		ug/m3	0.049
Xylene (total)	240		pptv	10
Xylene (total)	1.0		ug/m3	0.043

Detection Summary

Sample ID: WB07-14D
Lab ID: 518235-007
Collected: 10/15/24 12:06
Matrix: Air
518235-007 Analyte

Method: EPA TO-15 SIM

Prep Method: METHOD

	Result	Qual	Units	RL
Freon 12	460		pptv	10
Freon 12	2.3		ug/m3	0.049
Chloromethane	480		pptv	100
Chloromethane	0.99		ug/m3	0.21
Freon 114	17		pptv	10
Freon 114	0.12		ug/m3	0.070
Bromomethane	22		pptv	10
Bromomethane	0.085		ug/m3	0.039
Chloroethane	33		pptv	10
Chloroethane	0.088		ug/m3	0.026
Trichlorofluoromethane	190		pptv	10
Trichlorofluoromethane	1.1		ug/m3	0.056
Methylene Chloride	190		pptv	20
Methylene Chloride	0.67		ug/m3	0.069
Freon 113	60		pptv	10
Freon 113	0.46		ug/m3	0.077
Chloroform	29		pptv	10
Chloroform	0.14		ug/m3	0.049
1,2-Dichloroethane	15		pptv	10
1,2-Dichloroethane	0.061		ug/m3	0.040
Benzene	220		pptv	10
Benzene	0.72		ug/m3	0.032
Carbon Tetrachloride	73		pptv	10
Carbon Tetrachloride	0.46		ug/m3	0.063
Toluene	390		pptv	10
Toluene	1.5		ug/m3	0.038
Ethylbenzene	60		pptv	10
Ethylbenzene	0.26		ug/m3	0.043
m,p-Xylenes	160		pptv	10
m,p-Xylenes	0.71		ug/m3	0.043
Styrene	29		pptv	10
Styrene	0.12		ug/m3	0.043
o-Xylene	65		pptv	10
o-Xylene	0.28		ug/m3	0.043
1,3,5-Trimethylbenzene	13		pptv	10
1,3,5-Trimethylbenzene	0.065		ug/m3	0.049
1,2,4-Trimethylbenzene	58		pptv	10
1,2,4-Trimethylbenzene	0.29		ug/m3	0.049
Naphthalene	11		pptv	10
Naphthalene	0.059		ug/m3	0.052
Xylene (total)	230		pptv	10
Xylene (total)	0.99		ug/m3	0.043

Detection Summary

Sample ID: WB08-14D
Lab ID: 518235-008
Collected: 10/15/24 12:11
Matrix: Air
518235-008 Analyte

Method: EPA TO-15 SIM

Prep Method: METHOD

	Result	Qual	Units	RL
Freon 12	470		pptv	11
Freon 12	2.3		ug/m3	0.054
Chloromethane	490		pptv	110
Chloromethane	1.0		ug/m3	0.23
Freon 114	17		pptv	11
Freon 114	0.12		ug/m3	0.077
Bromomethane	21		pptv	11
Bromomethane	0.080		ug/m3	0.043
Chloroethane	22		pptv	11
Chloroethane	0.058		ug/m3	0.029
Trichlorofluoromethane	200		pptv	11
Trichlorofluoromethane	1.1		ug/m3	0.062
Methylene Chloride	210		pptv	22
Methylene Chloride	0.74		ug/m3	0.076
Freon 113	61		pptv	11
Freon 113	0.47		ug/m3	0.084
Chloroform	28		pptv	11
Chloroform	0.14		ug/m3	0.054
1,2-Dichloroethane	15		pptv	11
1,2-Dichloroethane	0.062		ug/m3	0.045
Benzene	230		pptv	11
Benzene	0.74		ug/m3	0.035
Carbon Tetrachloride	74		pptv	11
Carbon Tetrachloride	0.47		ug/m3	0.069
Toluene	400		pptv	11
Toluene	1.5		ug/m3	0.041
Ethylbenzene	59		pptv	11
Ethylbenzene	0.26		ug/m3	0.048
m,p-Xylenes	160		pptv	11
m,p-Xylenes	0.70		ug/m3	0.048
Styrene	23		pptv	11
Styrene	0.099		ug/m3	0.047
o-Xylene	65		pptv	11
o-Xylene	0.28		ug/m3	0.048
1,3,5-Trimethylbenzene	12		pptv	11
1,3,5-Trimethylbenzene	0.061		ug/m3	0.054
1,2,4-Trimethylbenzene	54		pptv	11
1,2,4-Trimethylbenzene	0.27		ug/m3	0.054
Xylene (total)	230		pptv	11
Xylene (total)	0.98		ug/m3	0.048

Detection Summary

Sample ID: WB09-14D
Lab ID: 518235-009
Collected: 10/15/24 11:05
Matrix: Air

518235-009 Analyte	Result	Qual	Units	RL
Method: EPA TO-15 SIM				
Prep Method: METHOD				
Freon 12	470		pptv	10
Freon 12	2.3		ug/m3	0.049
Chloromethane	490		pptv	100
Chloromethane	1.0		ug/m3	0.21
Freon 114	17		pptv	10
Freon 114	0.12		ug/m3	0.070
Bromomethane	24		pptv	10
Bromomethane	0.092		ug/m3	0.039
Chloroethane	16		pptv	10
Chloroethane	0.042		ug/m3	0.026
Trichlorofluoromethane	200		pptv	10
Trichlorofluoromethane	1.1		ug/m3	0.056
Methylene Chloride	820		pptv	20
Methylene Chloride	2.8		ug/m3	0.069
Freon 113	61		pptv	10
Freon 113	0.47		ug/m3	0.077
Chloroform	37		pptv	10
Chloroform	0.18		ug/m3	0.049
1,2-Dichloroethane	16		pptv	10
1,2-Dichloroethane	0.063		ug/m3	0.040
Benzene	250		pptv	10
Benzene	0.81		ug/m3	0.032
Carbon Tetrachloride	74		pptv	10
Carbon Tetrachloride	0.47		ug/m3	0.063
Toluene	420		pptv	10
Toluene	1.6		ug/m3	0.038
Ethylbenzene	62		pptv	10
Ethylbenzene	0.27		ug/m3	0.043
m,p-Xylenes	180		pptv	10
m,p-Xylenes	0.79		ug/m3	0.043
Styrene	29		pptv	10
Styrene	0.12		ug/m3	0.043
o-Xylene	72		pptv	10
o-Xylene	0.31		ug/m3	0.043
1,3,5-Trimethylbenzene	14		pptv	10
1,3,5-Trimethylbenzene	0.068		ug/m3	0.049
1,2,4-Trimethylbenzene	59		pptv	10
1,2,4-Trimethylbenzene	0.29		ug/m3	0.049
Naphthalene	15		pptv	10
Naphthalene	0.078		ug/m3	0.052
Xylene (total)	250		pptv	10
Xylene (total)	1.1		ug/m3	0.043

Detection Summary

Sample ID: WB10-14D
Lab ID: 518235-010
Collected: 10/15/24 11:12
Matrix: Air
518235-010 Analyte

Method: EPA TO-15 SIM

Prep Method: METHOD

	Result	Qual	Units	RL
Freon 12	460		pptv	10
Freon 12	2.3		ug/m3	0.049
Chloromethane	480		pptv	100
Chloromethane	0.98		ug/m3	0.21
Freon 114	17		pptv	10
Freon 114	0.12		ug/m3	0.070
Bromomethane	21		pptv	10
Bromomethane	0.083		ug/m3	0.039
Trichlorofluoromethane	190		pptv	10
Trichlorofluoromethane	1.1		ug/m3	0.056
Methylene Chloride	250		pptv	20
Methylene Chloride	0.85		ug/m3	0.069
Freon 113	60		pptv	10
Freon 113	0.46		ug/m3	0.077
Chloroform	31		pptv	10
Chloroform	0.15		ug/m3	0.049
1,2-Dichloroethane	18		pptv	10
1,2-Dichloroethane	0.072		ug/m3	0.040
Benzene	310		pptv	10
Benzene	0.99		ug/m3	0.032
Carbon Tetrachloride	73		pptv	10
Carbon Tetrachloride	0.46		ug/m3	0.063
Toluene	350		pptv	10
Toluene	1.3		ug/m3	0.038
Ethylbenzene	100		pptv	10
Ethylbenzene	0.45		ug/m3	0.043
m,p-Xylenes	270		pptv	10
m,p-Xylenes	1.2		ug/m3	0.043
Styrene	32		pptv	10
Styrene	0.13		ug/m3	0.043
o-Xylene	84		pptv	10
o-Xylene	0.37		ug/m3	0.043
1,3,5-Trimethylbenzene	28		pptv	10
1,3,5-Trimethylbenzene	0.14		ug/m3	0.049
1,2,4-Trimethylbenzene	100		pptv	10
1,2,4-Trimethylbenzene	0.50		ug/m3	0.049
Naphthalene	26		pptv	10
Naphthalene	0.14		ug/m3	0.052
Xylene (total)	350		pptv	10
Xylene (total)	1.5		ug/m3	0.043

Detection Summary

Sample ID: WB11-14D
Lab ID: 518235-011
Collected: 10/15/24 11:16
Matrix: Air

518235-011 Analyte	Result	Qual	Units	RL
Method: EPA TO-15 SIM				
Prep Method: METHOD				
Freon 12	470		pptv	10
Freon 12	2.3		ug/m3	0.049
Chloromethane	490		pptv	100
Chloromethane	1.0		ug/m3	0.21
Freon 114	17		pptv	10
Freon 114	0.12		ug/m3	0.070
Bromomethane	23		pptv	10
Bromomethane	0.089		ug/m3	0.039
Chloroethane	34		pptv	10
Chloroethane	0.089		ug/m3	0.026
Trichlorofluoromethane	190		pptv	10
Trichlorofluoromethane	1.1		ug/m3	0.056
Methylene Chloride	160		pptv	20
Methylene Chloride	0.57		ug/m3	0.069
Freon 113	61		pptv	10
Freon 113	0.47		ug/m3	0.077
Chloroform	29		pptv	10
Chloroform	0.14		ug/m3	0.049
1,2-Dichloroethane	15		pptv	10
1,2-Dichloroethane	0.061		ug/m3	0.040
Benzene	240		pptv	10
Benzene	0.78		ug/m3	0.032
Carbon Tetrachloride	74		pptv	10
Carbon Tetrachloride	0.47		ug/m3	0.063
Toluene	440		pptv	10
Toluene	1.6		ug/m3	0.038
Ethylbenzene	61		pptv	10
Ethylbenzene	0.27		ug/m3	0.043
m,p-Xylenes	180		pptv	10
m,p-Xylenes	0.78		ug/m3	0.043
Styrene	31		pptv	10
Styrene	0.13		ug/m3	0.043
o-Xylene	70		pptv	10
o-Xylene	0.31		ug/m3	0.043
1,3,5-Trimethylbenzene	15		pptv	10
1,3,5-Trimethylbenzene	0.073		ug/m3	0.049
1,2,4-Trimethylbenzene	60		pptv	10
1,2,4-Trimethylbenzene	0.30		ug/m3	0.049
Naphthalene	16		pptv	10
Naphthalene	0.086		ug/m3	0.052
Xylene (total)	250		pptv	10
Xylene (total)	1.1		ug/m3	0.043

Detection Summary

Sample ID: WB12-14D
Lab ID: 518235-012
Collected: 10/15/24 11:20
Matrix: Air
518235-012 Analyte

Method: EPA TO-15 SIM

Prep Method: METHOD

	Result	Qual	Units	RL
Freon 12	460		pptv	10
Freon 12	2.3		ug/m3	0.049
Chloromethane	490		pptv	100
Chloromethane	1.0		ug/m3	0.21
Freon 114	17		pptv	10
Freon 114	0.12		ug/m3	0.070
Bromomethane	21		pptv	10
Bromomethane	0.081		ug/m3	0.039
Chloroethane	39		pptv	10
Chloroethane	0.10		ug/m3	0.026
Trichlorofluoromethane	190		pptv	10
Trichlorofluoromethane	1.1		ug/m3	0.056
Methylene Chloride	160		pptv	20
Methylene Chloride	0.57		ug/m3	0.069
Freon 113	61		pptv	10
Freon 113	0.46		ug/m3	0.077
Chloroform	29		pptv	10
Chloroform	0.14		ug/m3	0.049
1,2-Dichloroethane	15		pptv	10
1,2-Dichloroethane	0.062		ug/m3	0.040
Benzene	270		pptv	10
Benzene	0.85		ug/m3	0.032
Carbon Tetrachloride	73		pptv	10
Carbon Tetrachloride	0.46		ug/m3	0.063
Toluene	490		pptv	10
Toluene	1.9		ug/m3	0.038
Ethylbenzene	68		pptv	10
Ethylbenzene	0.29		ug/m3	0.043
m,p-Xylenes	190		pptv	10
m,p-Xylenes	0.83		ug/m3	0.043
Styrene	32		pptv	10
Styrene	0.14		ug/m3	0.043
o-Xylene	75		pptv	10
o-Xylene	0.33		ug/m3	0.043
1,3,5-Trimethylbenzene	15		pptv	10
1,3,5-Trimethylbenzene	0.074		ug/m3	0.049
1,2,4-Trimethylbenzene	64		pptv	10
1,2,4-Trimethylbenzene	0.32		ug/m3	0.049
Naphthalene	11		pptv	10
Naphthalene	0.059		ug/m3	0.052
Xylene (total)	270		pptv	10
Xylene (total)	1.2		ug/m3	0.043

Detection Summary

Sample ID: WB13-14D
Lab ID: 518235-013
Collected: 10/15/24 11:24
Matrix: Air

518235-013 Analyte	Result	Qual	Units	RL
Method: EPA TO-15 SIM				
Prep Method: METHOD				
Freon 12	460		pptv	11
Freon 12	2.3		ug/m3	0.054
Chloromethane	490		pptv	110
Chloromethane	1.0		ug/m3	0.23
Freon 114	16		pptv	11
Freon 114	0.11		ug/m3	0.077
Bromomethane	21		pptv	11
Bromomethane	0.083		ug/m3	0.043
Trichlorofluoromethane	190		pptv	11
Trichlorofluoromethane	1.1		ug/m3	0.062
Methylene Chloride	170		pptv	22
Methylene Chloride	0.60		ug/m3	0.076
Freon 113	59		pptv	11
Freon 113	0.46		ug/m3	0.084
Chloroform	35		pptv	11
Chloroform	0.17		ug/m3	0.054
1,2-Dichloroethane	16		pptv	11
1,2-Dichloroethane	0.065		ug/m3	0.045
Benzene	280		pptv	11
Benzene	0.89		ug/m3	0.035
Carbon Tetrachloride	72		pptv	11
Carbon Tetrachloride	0.46		ug/m3	0.069
Toluene	530		pptv	11
Toluene	2.0		ug/m3	0.041
Tetrachloroethene	12		pptv	11
Tetrachloroethene	0.080		ug/m3	0.075
Ethylbenzene	72		pptv	11
Ethylbenzene	0.31		ug/m3	0.048
m,p-Xylenes	220		pptv	11
m,p-Xylenes	0.94		ug/m3	0.048
Styrene	76		pptv	11
Styrene	0.32		ug/m3	0.047
o-Xylene	86		pptv	11
o-Xylene	0.37		ug/m3	0.048
1,3,5-Trimethylbenzene	17		pptv	11
1,3,5-Trimethylbenzene	0.085		ug/m3	0.054
1,2,4-Trimethylbenzene	72		pptv	11
1,2,4-Trimethylbenzene	0.35		ug/m3	0.054
Naphthalene	23		pptv	11
Naphthalene	0.12		ug/m3	0.058
Xylene (total)	300		pptv	11
Xylene (total)	1.3		ug/m3	0.048

Detection Summary

Sample ID: WB14-14D
Lab ID: 518235-014
Collected: 10/15/24 11:28
Matrix: Air

518235-014 Analyte	Result	Qual	Units	RL
Method: EPA TO-15 SIM				
Prep Method: METHOD				
Freon 12	460		pptv	10
Freon 12	2.3		ug/m3	0.049
Chloromethane	490		pptv	100
Chloromethane	1.0		ug/m3	0.21
Freon 114	16		pptv	10
Freon 114	0.11		ug/m3	0.070
Bromomethane	22		pptv	10
Bromomethane	0.085		ug/m3	0.039
Trichlorofluoromethane	190		pptv	10
Trichlorofluoromethane	1.1		ug/m3	0.056
Methylene Chloride	170		pptv	20
Methylene Chloride	0.59		ug/m3	0.069
Freon 113	60		pptv	10
Freon 113	0.46		ug/m3	0.077
Chloroform	27		pptv	10
Chloroform	0.13		ug/m3	0.049
1,2-Dichloroethane	16		pptv	10
1,2-Dichloroethane	0.063		ug/m3	0.040
Benzene	240		pptv	10
Benzene	0.78		ug/m3	0.032
Carbon Tetrachloride	73		pptv	10
Carbon Tetrachloride	0.46		ug/m3	0.063
Toluene	350		pptv	10
Toluene	1.3		ug/m3	0.038
Ethylbenzene	60		pptv	10
Ethylbenzene	0.26		ug/m3	0.043
m,p-Xylenes	170		pptv	10
m,p-Xylenes	0.75		ug/m3	0.043
Styrene	20		pptv	10
Styrene	0.086		ug/m3	0.043
o-Xylene	68		pptv	10
o-Xylene	0.30		ug/m3	0.043
1,3,5-Trimethylbenzene	14		pptv	10
1,3,5-Trimethylbenzene	0.067		ug/m3	0.049
1,2,4-Trimethylbenzene	55		pptv	10
1,2,4-Trimethylbenzene	0.27		ug/m3	0.049
Naphthalene	11		pptv	10
Naphthalene	0.057		ug/m3	0.052
Xylene (total)	240		pptv	10
Xylene (total)	1.1		ug/m3	0.043

Detection Summary

Sample ID: WB17-14D
Lab ID: 518235-015
Collected: 10/15/24 09:40
Matrix: Air
518235-015 Analyte

Method: EPA TO-15 SIM

Prep Method: METHOD

	Result	Qual	Units	RL
Freon 12	460		pptv	11
Freon 12	2.3		ug/m3	0.054
Chloromethane	480		pptv	110
Chloromethane	1.0		ug/m3	0.23
Freon 114	16		pptv	11
Freon 114	0.11		ug/m3	0.077
Bromomethane	22		pptv	11
Bromomethane	0.084		ug/m3	0.043
Chloroethane	12		pptv	11
Chloroethane	0.032		ug/m3	0.029
Trichlorofluoromethane	190		pptv	11
Trichlorofluoromethane	1.1		ug/m3	0.062
Methylene Chloride	150		pptv	22
Methylene Chloride	0.53		ug/m3	0.076
Freon 113	60		pptv	11
Freon 113	0.46		ug/m3	0.084
Chloroform	29		pptv	11
Chloroform	0.14		ug/m3	0.054
1,2-Dichloroethane	15		pptv	11
1,2-Dichloroethane	0.062		ug/m3	0.045
Benzene	260		pptv	11
Benzene	0.82		ug/m3	0.035
Carbon Tetrachloride	72		pptv	11
Carbon Tetrachloride	0.46		ug/m3	0.069
Toluene	450		pptv	11
Toluene	1.7		ug/m3	0.041
Ethylbenzene	69		pptv	11
Ethylbenzene	0.30		ug/m3	0.048
m,p-Xylenes	200		pptv	11
m,p-Xylenes	0.89		ug/m3	0.048
Styrene	30		pptv	11
Styrene	0.13		ug/m3	0.047
o-Xylene	81		pptv	11
o-Xylene	0.35		ug/m3	0.048
1,3,5-Trimethylbenzene	17		pptv	11
1,3,5-Trimethylbenzene	0.085		ug/m3	0.054
1,2,4-Trimethylbenzene	67		pptv	11
1,2,4-Trimethylbenzene	0.33		ug/m3	0.054
Naphthalene	14		pptv	11
Naphthalene	0.072		ug/m3	0.058
Xylene (total)	290		pptv	11
Xylene (total)	1.2		ug/m3	0.048

Detection Summary

Sample ID: WB18-14D
Lab ID: 518235-016
Collected: 10/15/24 10:28
Matrix: Air
518235-016 Analyte

Method: EPA TO-15 SIM

Prep Method: METHOD

	Result	Qual	Units	RL
Freon 12	480		pptv	12
Freon 12	2.4		ug/m3	0.059
Chloromethane	510		pptv	120
Chloromethane	1.1		ug/m3	0.25
Freon 114	17		pptv	12
Freon 114	0.12		ug/m3	0.084
Bromomethane	28		pptv	12
Bromomethane	0.11		ug/m3	0.047
Chloroethane	13		pptv	12
Chloroethane	0.035		ug/m3	0.032
Trichlorofluoromethane	200		pptv	12
Trichlorofluoromethane	1.1		ug/m3	0.067
Methylene Chloride	160		pptv	24
Methylene Chloride	0.56		ug/m3	0.083
Freon 113	62		pptv	12
Freon 113	0.47		ug/m3	0.092
Chloroform	29		pptv	12
Chloroform	0.14		ug/m3	0.059
1,2-Dichloroethane	15		pptv	12
1,2-Dichloroethane	0.062		ug/m3	0.049
Benzene	250		pptv	12
Benzene	0.79		ug/m3	0.038
Carbon Tetrachloride	75		pptv	12
Carbon Tetrachloride	0.47		ug/m3	0.075
Toluene	440		pptv	12
Toluene	1.7		ug/m3	0.045
Ethylbenzene	68		pptv	12
Ethylbenzene	0.30		ug/m3	0.052
m,p-Xylenes	200		pptv	12
m,p-Xylenes	0.88		ug/m3	0.052
Styrene	31		pptv	12
Styrene	0.13		ug/m3	0.051
o-Xylene	81		pptv	12
o-Xylene	0.35		ug/m3	0.052
1,3,5-Trimethylbenzene	22		pptv	12
1,3,5-Trimethylbenzene	0.11		ug/m3	0.059
1,2,4-Trimethylbenzene	89		pptv	12
1,2,4-Trimethylbenzene	0.44		ug/m3	0.059
Naphthalene	14		pptv	12
Naphthalene	0.073		ug/m3	0.063
Xylene (total)	280		pptv	12
Xylene (total)	1.2		ug/m3	0.052

Detection Summary

Sample ID: WB19-14D
Lab ID: 518235-017
Collected: 10/15/24 14:44
Matrix: Air
518235-017 Analyte

Method: EPA TO-15 SIM

Prep Method: METHOD

	Result	Qual	Units	RL
Freon 12	460		pptv	11
Freon 12	2.3		ug/m3	0.054
Chloromethane	500		pptv	110
Chloromethane	1.0		ug/m3	0.23
Freon 114	16		pptv	11
Freon 114	0.11		ug/m3	0.077
Bromomethane	21		pptv	11
Bromomethane	0.080		ug/m3	0.043
Chloroethane	26		pptv	11
Chloroethane	0.069		ug/m3	0.029
Trichlorofluoromethane	190		pptv	11
Trichlorofluoromethane	1.1		ug/m3	0.062
Methylene Chloride	140		pptv	22
Methylene Chloride	0.50		ug/m3	0.076
Freon 113	59		pptv	11
Freon 113	0.45		ug/m3	0.084
Chloroform	27		pptv	11
Chloroform	0.13		ug/m3	0.054
1,2-Dichloroethane	17		pptv	11
1,2-Dichloroethane	0.067		ug/m3	0.045
Benzene	320		pptv	11
Benzene	1.0		ug/m3	0.035
Carbon Tetrachloride	71		pptv	11
Carbon Tetrachloride	0.45		ug/m3	0.069
Toluene	480		pptv	11
Toluene	1.8		ug/m3	0.041
Ethylbenzene	72		pptv	11
Ethylbenzene	0.31		ug/m3	0.048
m,p-Xylenes	220		pptv	11
m,p-Xylenes	0.95		ug/m3	0.048
Styrene	42		pptv	11
Styrene	0.18		ug/m3	0.047
o-Xylene	86		pptv	11
o-Xylene	0.37		ug/m3	0.048
1,3,5-Trimethylbenzene	17		pptv	11
1,3,5-Trimethylbenzene	0.081		ug/m3	0.054
1,2,4-Trimethylbenzene	62		pptv	11
1,2,4-Trimethylbenzene	0.30		ug/m3	0.054
Xylene (total)	300		pptv	11
Xylene (total)	1.3		ug/m3	0.048



CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Catalyst Environmental Solutions	Name:	Walnut Bluff Work Plan
Report To:	Vela Bayram	Number:	
Email:	ybayram@ce-solutions.com	Address:	
Address:	315 Montana Ave, Suite 311		
	Santa Monica, CA, 90403	Global ID:	
Phone:	(313) 204-5477	Sampled By:	Elizabeth Huang
Fax:			
Special Instructions:			

Sample ID	Air Type (I) Indoor (A) Ambient (SV) Soil Vapor	Equipment Information		Start Sampling Information		Stop Sampling Information		Analysis Request	Required Turnaround Time
		Canister ID	Canister Size (6L or 1L)	Flow Controller ID	Date	Time	Canister Pressure (in. Hg)		
1 WB01-14D	A	C70196	6	A70124	10/1/24	1126	30	10/15/24 1137	8
2 WB02-14D	A	C70903	6	A70413	10/1/24	1120	31	10/19/24 1134	6
3 WB03-14D	A	C70059	6	A70027	10/1/24	1133	31	10/15/24 1146	7
4 WB04-14D	A	C70932	6	A70110	10/1/24	1147	28	10/15/24 1150	7
5 WB05-14D	A	C70800	6	A7063	10/1/24	1143	31	10/15/24 1201	10
6 WB06-14D	A	C70916	6	A70403	10/1/24	1152	30	10/15/24 1156	3
7 WB07-14D	A	C70901	6	A70248	10/1/24	1157	31	10/15/24 1206	7
8 WB08-14D	A	C70914	6	A70079	10/1/24	1201	30	10/15/24 1211	8
9 WB09-14D	A	C70012	6	A70102	10/1/24	1044	29	10/19/24 1105	6
10 WB10-14D	A	C70331	6	A70238	10/1/24	1049	31	10/15/24 1112	6

RELINQUISHED BY:	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE / TIME
RECEIVED BY:		Elizabeth Huang	CE-S - Env Sci	10/15/24 17:18
RELINQUISHED BY:		T. Kelly	Field Asst	10/15/24 1718
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				



Air Chain of Custody Record

Lab Job No. 518235

Page 2 of 2

CUSTOMER INFORMATION				PROJECT INFORMATION			
Company:	Catalyst Environmental Solutions			Name:	Walnut Bluff Work Plan		
Report To:	Yola Bayram			Number:			
Email:	ybayram@ce.solutions			Address:			
Address:	315 Montana Ave, Suite 311			Global ID:			
	Santa Monica, CA, 90403			Sampled By:	Elizabeth Hwang		
Phone:	(313) 204-8477			Fax:			
Special Instructions:							

Sample ID	Air Type (I) Indoor (A) Ambient (SV) Soil Vapor	Equipment Information		Start Sampling Information		Stop Sampling Information		Canister Pressure (in. Hg)	Analysis Request	Required Turnaround Time
		Canister ID	Canister Size (6L or 1L)	Flow Controller ID	Date	Time	Date	Time		
1 WB11-14D	A	C70352	6	A70404	10/1/24	1055	10/15/24	11:16	5	TO - 15.8 m
2 WB12-14D	A	C70908	6	A70144	10/1/24	1103	10/15/24	11:20	8	
3 WB13-14D	A	C70249	6	A70531	10/1/24	1110	10/15/24	11:24	7	
4 WB14-14D	A	C70309	6	A70014	10/1/24	1116	10/15/24	11:28	5	
5 WB17-14D	A	C70938	6	A70230	10/1/24	0935	10/15/24	0940	8	
6 WB18-14D	A	C70812	6	A70252	10/1/24	1020	10/15/24	1028	10	
7 WB19-14D	A	C70081	6	A70118	10/1/24	1451	10/15	1444	9	
8										
9										
10										

SIGNATURE		PRINT NAME	COMPANY/TITLE	DATE / TIME
RELINQUISHED BY:		Elizabeth Hwang	CES - Env. Sci.	10/15/24 17:18
RECEIVED BY:		Tris Kall	Enanal	10/15/24 17:18
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				

SAMPLE RECEIPT CHECKLIST



Section 1: General Info

Date Received: 10/15/24 WO# 518235 Client: Catalyst Environmental Solutions

Section 2: Shipping / Custody

Are custody seals present? ☐ Yes ☒ No

Custody seals intact on arrival? ☒ N/A ☐ Yes ☐ No ☐ On cooler / box ☐ On samples

Shipping Info: _____

Section 3a: Condition / Packaging

☐ Outside 0.0 - 6.0°C (0.0 - 10.0°C for microbiology) (PM notified)

Date Opened 10/15/24 By (initials) TLK Type of ice used: ☐ Wet ☐ Blue/Gel ☐ None

☐ Samples received on ice directly from the field; cooling process had begun. (if checked, skip temperatures)

☒ Sample matrix doesn't require cooling (e.g. air, bulk PCB). (if checked, skip temperatures)

If no cooler: Observed/Adjusted Temp (°C): _____ / _____ Thermometer/IR Gun: _____ CF: _____

Cooler Temp (°C) #1: _____ / _____ #2: _____ / _____ #3: _____ / _____ #4: _____ / _____ #5: _____ / _____ #6: _____ / _____

Section 3b: Microbiology Samples

☒ No microbiology samples submitted (skip 3b)

☐ Within temp range 0.0 - 10.0°C or received on ice directly from field.

☐ Adequate headspace for microbiology analysis.

Section 3c: Air Samples

☐ No air samples submitted (skip 3c)

☐ 1.4L Canisters ☒ 6L Canisters ☐ Tedlar Bags ☐ MCE Cassettes ☐ Sorbent Tubes ☐ Other _____

Section 4: Containers / Labels / Samples

	YES	NO	N/A
1) Were custody papers present, filled properly, and legible?	x		
2) Is the sampler's name present on the CoC?	x		
3) Were containers received in good condition (unbroken / unopened / uncompromised)?	x		
4) Were the samples bagged? (required for microbiology samples; recommended for soil samples)			x
5) Were all of, and only, the correct samples received?	x		
6) Are sample labels present, legible, and in agreement with the CoC?		x	
7) Does the container count match the CoC?	x		
8) Was sufficient sample volume / mass received for the analyses requested?	x		
9) Were samples received in proper containers for the analyses requested?	x		
10) Were samples received with > 1/2 holding time remaining?	x		
11) Are samples properly preserved as indicated by CoC / labels?	x		
12) Unpreserved VOAs received - If necessary, was the hold time changed in LIMS?			x
13) Are VOA vials free from headspace/bubbles > 6mm?			x

Section 5: Explanations / Comments

☒ PM notified

Sample 17 did not have a corresponding label on any container. Sample determined via canister ID

Date Logged 10/15/24 By (print) Tris Kelly

(sign) Tris Kelly

Date Labeled 10/15/24 By (print) Tris Kelly

(sign) Tris Kelly

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB01-14D	Batch#: 352933	Prep: METHOD
Lab ID: 518235-001	Sampled: 10/15/24 11:37	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 10/15/24	Analyst: OHD
Diln Fac: 1.100	Analyzed: 10/16/24 10:34	

518235-001 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	460	11	pptv	2.3	0.054	ug/m3
Chloromethane	480	110	pptv	0.99	0.23	ug/m3
Freon 114	16	11	pptv	0.11	0.077	ug/m3
Vinyl Chloride	ND	11	pptv	ND	0.028	ug/m3
Bromomethane	21	11	pptv	0.080	0.043	ug/m3
Chloroethane	ND	11	pptv	ND	0.029	ug/m3
Vinyl bromide	ND	11	pptv	ND	0.048	ug/m3
Trichlorofluoromethane	190	11	pptv	1.1	0.062	ug/m3
1,1-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
Methylene Chloride	160	22	pptv	0.55	0.076	ug/m3
Freon 113	60	11	pptv	0.46	0.084	ug/m3
trans-1,2-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
1,1-Dichloroethane	ND	11	pptv	ND	0.045	ug/m3
cis-1,2-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
Chloroform	28	11	pptv	0.14	0.054	ug/m3
1,2-Dichloroethane	16	11	pptv	0.063	0.045	ug/m3
1,1,1-Trichloroethane	ND	11	pptv	ND	0.060	ug/m3
Benzene	250	11	pptv	0.80	0.035	ug/m3
Carbon Tetrachloride	73	11	pptv	0.46	0.069	ug/m3
1,2-Dichloropropane	ND	11	pptv	ND	0.051	ug/m3
Bromodichloromethane	ND	11	pptv	ND	0.074	ug/m3
Trichloroethene	ND	11	pptv	ND	0.059	ug/m3
cis-1,3-Dichloropropene	ND	11	pptv	ND	0.050	ug/m3
trans-1,3-Dichloropropene	ND	11	pptv	ND	0.050	ug/m3
1,1,2-Trichloroethane	ND	11	pptv	ND	0.060	ug/m3
Toluene	360	11	pptv	1.4	0.041	ug/m3
Dibromochloromethane	ND	11	pptv	ND	0.094	ug/m3
1,2-Dibromoethane	ND	11	pptv	ND	0.085	ug/m3
Tetrachloroethene	ND	11	pptv	ND	0.075	ug/m3
Chlorobenzene	ND	11	pptv	ND	0.051	ug/m3
Ethylbenzene	63	11	pptv	0.27	0.048	ug/m3
m,p-Xylenes	180	11	pptv	0.79	0.048	ug/m3
Bromoform	ND	11	pptv	ND	0.11	ug/m3
Styrene	24	11	pptv	0.10	0.047	ug/m3
o-Xylene	73	11	pptv	0.32	0.048	ug/m3
2-Chlorotoluene	ND	11	pptv	ND	0.057	ug/m3
1,3,5-Trimethylbenzene	15	11	pptv	0.074	0.054	ug/m3
1,2,4-Trimethylbenzene	61	11	pptv	0.30	0.054	ug/m3
Benzyl chloride	ND	11	pptv	ND	0.057	ug/m3
1,3-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,4-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,2-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,2,4-Trichlorobenzene	ND	11	pptv	ND	0.082	ug/m3
1,1,2,2-Tetrachloroethane	ND	11	pptv	ND	0.076	ug/m3
1,1,1,2-Tetrachloroethane	ND	11	pptv	ND	0.076	ug/m3
Naphthalene	11	11	pptv	0.059	0.058	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-001 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	11	pptv	ND	0.12	ug/m3
Xylene (total)	250	11	pptv	1.1	0.048	ug/m3
518235-001 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	94		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB02-14D	Batch#: 352933	Prep: METHOD
Lab ID: 518235-002	Sampled: 10/15/24 11:34	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 10/15/24	Analyst: OHD
Diln Fac: 1.000	Analyzed: 10/16/24 11:41	

518235-002 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	470	10	pptv	2.3	0.049	ug/m3
Chloromethane	480	100	pptv	0.99	0.21	ug/m3
Freon 114	16	10	pptv	0.12	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	22	10	pptv	0.084	0.039	ug/m3
Chloroethane	19	10	pptv	0.049	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	180	10	pptv	1.0	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	170	20	pptv	0.60	0.069	ug/m3
Freon 113	58	10	pptv	0.44	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	32	10	pptv	0.16	0.049	ug/m3
1,2-Dichloroethane	16	10	pptv	0.066	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	260	10	pptv	0.83	0.032	ug/m3
Carbon Tetrachloride	71	10	pptv	0.45	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	410	10	pptv	1.5	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	ND	10	pptv	ND	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	75	10	pptv	0.33	0.043	ug/m3
m,p-Xylenes	210	10	pptv	0.90	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	28	10	pptv	0.12	0.043	ug/m3
o-Xylene	82	10	pptv	0.35	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	20	10	pptv	0.10	0.049	ug/m3
1,2,4-Trimethylbenzene	74	10	pptv	0.37	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	15	10	pptv	0.077	0.052	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-002 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	290	10	pptv	1.3	0.043	ug/m3
518235-002 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	95		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB03-14D	Batch#: 352933	Prep: METHOD
Lab ID: 518235-003	Sampled: 10/15/24 11:46	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 10/15/24	Analyst: OHD
Diln Fac: 1.000	Analyzed: 10/16/24 13:06	

518235-003 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	470	10	pptv	2.3	0.049	ug/m3
Chloromethane	490	100	pptv	1.0	0.21	ug/m3
Freon 114	17	10	pptv	0.12	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	21	10	pptv	0.082	0.039	ug/m3
Chloroethane	ND	10	pptv	ND	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	200	10	pptv	1.1	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	170	20	pptv	0.59	0.069	ug/m3
Freon 113	61	10	pptv	0.47	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	34	10	pptv	0.17	0.049	ug/m3
1,2-Dichloroethane	15	10	pptv	0.062	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	230	10	pptv	0.72	0.032	ug/m3
Carbon Tetrachloride	75	10	pptv	0.47	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	330	10	pptv	1.2	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	ND	10	pptv	ND	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	57	10	pptv	0.25	0.043	ug/m3
m,p-Xylenes	160	10	pptv	0.71	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	18	10	pptv	0.076	0.043	ug/m3
o-Xylene	65	10	pptv	0.28	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	11	10	pptv	0.055	0.049	ug/m3
1,2,4-Trimethylbenzene	48	10	pptv	0.24	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	ND	10	pptv	ND	0.052	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-003 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	230	10	pptv	0.99	0.043	ug/m3
518235-003 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	96		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB04-14D	Batch#: 352933	Prep: METHOD
Lab ID: 518235-004	Sampled: 10/15/24 11:50	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 10/15/24	Analyst: OHD
Diln Fac: 1.000	Analyzed: 10/16/24 13:55	

518235-004 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	470	10	pptv	2.3	0.049	ug/m3
Chloromethane	490	100	pptv	1.0	0.21	ug/m3
Freon 114	16	10	pptv	0.12	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	19	10	pptv	0.075	0.039	ug/m3
Chloroethane	ND	10	pptv	ND	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	200	10	pptv	1.1	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	340	20	pptv	1.2	0.069	ug/m3
Freon 113	61	10	pptv	0.47	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	33	10	pptv	0.16	0.049	ug/m3
1,2-Dichloroethane	15	10	pptv	0.062	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	230	10	pptv	0.74	0.032	ug/m3
Carbon Tetrachloride	75	10	pptv	0.47	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	380	10	pptv	1.4	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	ND	10	pptv	ND	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	60	10	pptv	0.26	0.043	ug/m3
m,p-Xylenes	180	10	pptv	0.76	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	25	10	pptv	0.11	0.043	ug/m3
o-Xylene	69	10	pptv	0.30	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	13	10	pptv	0.065	0.049	ug/m3
1,2,4-Trimethylbenzene	59	10	pptv	0.29	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	ND	10	pptv	ND	0.052	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-004 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	240	10	pptv	1.1	0.043	ug/m3
518235-004 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	94		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB05-14D	Batch#: 352933	Prep: METHOD
Lab ID: 518235-005	Sampled: 10/15/24 12:01	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 10/15/24	Analyst: OHD
Diln Fac: 1.200	Analyzed: 10/16/24 14:44	

518235-005 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	460	12	pptv	2.3	0.059	ug/m3
Chloromethane	480	120	pptv	1.0	0.25	ug/m3
Freon 114	16	12	pptv	0.11	0.084	ug/m3
Vinyl Chloride	ND	12	pptv	ND	0.031	ug/m3
Bromomethane	22	12	pptv	0.084	0.047	ug/m3
Chloroethane	ND	12	pptv	ND	0.032	ug/m3
Vinyl bromide	ND	12	pptv	ND	0.052	ug/m3
Trichlorofluoromethane	190	12	pptv	1.1	0.067	ug/m3
1,1-Dichloroethene	ND	12	pptv	ND	0.048	ug/m3
Methylene Chloride	220	24	pptv	0.76	0.083	ug/m3
Freon 113	61	12	pptv	0.46	0.092	ug/m3
trans-1,2-Dichloroethene	ND	12	pptv	ND	0.048	ug/m3
1,1-Dichloroethane	ND	12	pptv	ND	0.049	ug/m3
cis-1,2-Dichloroethene	ND	12	pptv	ND	0.048	ug/m3
Chloroform	32	12	pptv	0.16	0.059	ug/m3
1,2-Dichloroethane	15	12	pptv	0.061	0.049	ug/m3
1,1,1-Trichloroethane	ND	12	pptv	ND	0.065	ug/m3
Benzene	1,000	12	pptv	3.2	0.038	ug/m3
Carbon Tetrachloride	73	12	pptv	0.46	0.075	ug/m3
1,2-Dichloropropane	ND	12	pptv	ND	0.055	ug/m3
Bromodichloromethane	ND	12	pptv	ND	0.080	ug/m3
Trichloroethene	ND	12	pptv	ND	0.064	ug/m3
cis-1,3-Dichloropropene	ND	12	pptv	ND	0.054	ug/m3
trans-1,3-Dichloropropene	ND	12	pptv	ND	0.054	ug/m3
1,1,2-Trichloroethane	ND	12	pptv	ND	0.065	ug/m3
Toluene	1,500	12	pptv	5.8	0.045	ug/m3
Dibromochloromethane	ND	12	pptv	ND	0.10	ug/m3
1,2-Dibromoethane	ND	12	pptv	ND	0.092	ug/m3
Tetrachloroethene	ND	12	pptv	ND	0.081	ug/m3
Chlorobenzene	ND	12	pptv	ND	0.055	ug/m3
Ethylbenzene	59	12	pptv	0.26	0.052	ug/m3
m,p-Xylenes	170	12	pptv	0.73	0.052	ug/m3
Bromoform	ND	12	pptv	ND	0.12	ug/m3
Styrene	30	12	pptv	0.13	0.051	ug/m3
o-Xylene	66	12	pptv	0.29	0.052	ug/m3
2-Chlorotoluene	ND	12	pptv	ND	0.062	ug/m3
1,3,5-Trimethylbenzene	15	12	pptv	0.074	0.059	ug/m3
1,2,4-Trimethylbenzene	59	12	pptv	0.29	0.059	ug/m3
Benzyl chloride	ND	12	pptv	ND	0.062	ug/m3
1,3-Dichlorobenzene	ND	12	pptv	ND	0.072	ug/m3
1,4-Dichlorobenzene	ND	12	pptv	ND	0.072	ug/m3
1,2-Dichlorobenzene	ND	12	pptv	ND	0.072	ug/m3
1,2,4-Trichlorobenzene	ND	12	pptv	ND	0.089	ug/m3
1,1,2,2-Tetrachloroethane	ND	12	pptv	ND	0.082	ug/m3
1,1,1,2-Tetrachloroethane	ND	12	pptv	ND	0.082	ug/m3
Naphthalene	14	12	pptv	0.074	0.063	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-005 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	12	pptv	ND	0.13	ug/m3
Xylene (total)	230	12	pptv	1.0	0.052	ug/m3
518235-005 Surrogate	%REC			Limits	Units (M)	
Bromofluorobenzene	95			60-140	ug/m3	

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB06-14D	Batch#: 352933	Prep: METHOD
Lab ID: 518235-006	Sampled: 10/15/24 11:56	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 10/15/24	Analyst: OHD
Diln Fac: 1.000	Analyzed: 10/16/24 15:33	

518235-006 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	470	10	pptv	2.3	0.049	ug/m3
Chloromethane	480	100	pptv	1.0	0.21	ug/m3
Freon 114	17	10	pptv	0.12	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	21	10	pptv	0.081	0.039	ug/m3
Chloroethane	17	10	pptv	0.045	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	190	10	pptv	1.1	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	180	20	pptv	0.62	0.069	ug/m3
Freon 113	61	10	pptv	0.46	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	31	10	pptv	0.15	0.049	ug/m3
1,2-Dichloroethane	15	10	pptv	0.062	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	230	10	pptv	0.74	0.032	ug/m3
Carbon Tetrachloride	74	10	pptv	0.47	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	420	10	pptv	1.6	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	ND	10	pptv	ND	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	64	10	pptv	0.28	0.043	ug/m3
m,p-Xylenes	170	10	pptv	0.74	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	26	10	pptv	0.11	0.043	ug/m3
o-Xylene	66	10	pptv	0.29	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	13	10	pptv	0.065	0.049	ug/m3
1,2,4-Trimethylbenzene	54	10	pptv	0.26	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	ND	10	pptv	ND	0.052	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-006 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	240	10	pptv	1.0	0.043	ug/m3
518235-006 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	96		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB07-14D	Batch#: 352933	Prep: METHOD
Lab ID: 518235-007	Sampled: 10/15/24 12:06	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 10/15/24	Analyst: OHD
Diln Fac: 1.000	Analyzed: 10/16/24 16:22	

518235-007 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	460	10	pptv	2.3	0.049	ug/m3
Chloromethane	480	100	pptv	0.99	0.21	ug/m3
Freon 114	17	10	pptv	0.12	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	22	10	pptv	0.085	0.039	ug/m3
Chloroethane	33	10	pptv	0.088	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	190	10	pptv	1.1	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	190	20	pptv	0.67	0.069	ug/m3
Freon 113	60	10	pptv	0.46	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	29	10	pptv	0.14	0.049	ug/m3
1,2-Dichloroethane	15	10	pptv	0.061	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	220	10	pptv	0.72	0.032	ug/m3
Carbon Tetrachloride	73	10	pptv	0.46	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	390	10	pptv	1.5	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	ND	10	pptv	ND	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	60	10	pptv	0.26	0.043	ug/m3
m,p-Xylenes	160	10	pptv	0.71	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	29	10	pptv	0.12	0.043	ug/m3
o-Xylene	65	10	pptv	0.28	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	13	10	pptv	0.065	0.049	ug/m3
1,2,4-Trimethylbenzene	58	10	pptv	0.29	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	11	10	pptv	0.059	0.052	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-007 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	230	10	pptv	0.99	0.043	ug/m3
518235-007 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	95		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB08-14D	Batch#: 352933	Prep: METHOD
Lab ID: 518235-008	Sampled: 10/15/24 12:11	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 10/15/24	Analyst: OHD
Diln Fac: 1.100	Analyzed: 10/16/24 17:10	

518235-008 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	470	11	pptv	2.3	0.054	ug/m3
Chloromethane	490	110	pptv	1.0	0.23	ug/m3
Freon 114	17	11	pptv	0.12	0.077	ug/m3
Vinyl Chloride	ND	11	pptv	ND	0.028	ug/m3
Bromomethane	21	11	pptv	0.080	0.043	ug/m3
Chloroethane	22	11	pptv	0.058	0.029	ug/m3
Vinyl bromide	ND	11	pptv	ND	0.048	ug/m3
Trichlorofluoromethane	200	11	pptv	1.1	0.062	ug/m3
1,1-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
Methylene Chloride	210	22	pptv	0.74	0.076	ug/m3
Freon 113	61	11	pptv	0.47	0.084	ug/m3
trans-1,2-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
1,1-Dichloroethane	ND	11	pptv	ND	0.045	ug/m3
cis-1,2-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
Chloroform	28	11	pptv	0.14	0.054	ug/m3
1,2-Dichloroethane	15	11	pptv	0.062	0.045	ug/m3
1,1,1-Trichloroethane	ND	11	pptv	ND	0.060	ug/m3
Benzene	230	11	pptv	0.74	0.035	ug/m3
Carbon Tetrachloride	74	11	pptv	0.47	0.069	ug/m3
1,2-Dichloropropane	ND	11	pptv	ND	0.051	ug/m3
Bromodichloromethane	ND	11	pptv	ND	0.074	ug/m3
Trichloroethene	ND	11	pptv	ND	0.059	ug/m3
cis-1,3-Dichloropropene	ND	11	pptv	ND	0.050	ug/m3
trans-1,3-Dichloropropene	ND	11	pptv	ND	0.050	ug/m3
1,1,2-Trichloroethane	ND	11	pptv	ND	0.060	ug/m3
Toluene	400	11	pptv	1.5	0.041	ug/m3
Dibromochloromethane	ND	11	pptv	ND	0.094	ug/m3
1,2-Dibromoethane	ND	11	pptv	ND	0.085	ug/m3
Tetrachloroethene	ND	11	pptv	ND	0.075	ug/m3
Chlorobenzene	ND	11	pptv	ND	0.051	ug/m3
Ethylbenzene	59	11	pptv	0.26	0.048	ug/m3
m,p-Xylenes	160	11	pptv	0.70	0.048	ug/m3
Bromoform	ND	11	pptv	ND	0.11	ug/m3
Styrene	23	11	pptv	0.099	0.047	ug/m3
o-Xylene	65	11	pptv	0.28	0.048	ug/m3
2-Chlorotoluene	ND	11	pptv	ND	0.057	ug/m3
1,3,5-Trimethylbenzene	12	11	pptv	0.061	0.054	ug/m3
1,2,4-Trimethylbenzene	54	11	pptv	0.27	0.054	ug/m3
Benzyl chloride	ND	11	pptv	ND	0.057	ug/m3
1,3-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,4-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,2-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,2,4-Trichlorobenzene	ND	11	pptv	ND	0.082	ug/m3
1,1,2,2-Tetrachloroethane	ND	11	pptv	ND	0.076	ug/m3
1,1,1,2-Tetrachloroethane	ND	11	pptv	ND	0.076	ug/m3
Naphthalene	ND	11	pptv	ND	0.058	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-008 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	11	pptv	ND	0.12	ug/m3
Xylene (total)	230	11	pptv	0.98	0.048	ug/m3
518235-008 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	96		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB09-14D	Batch#: 352933	Prep: METHOD
Lab ID: 518235-009	Sampled: 10/15/24 11:05	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 10/15/24	Analyst: OHD
Diln Fac: 1.000	Analyzed: 10/16/24 17:59	

518235-009 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	470	10	pptv	2.3	0.049	ug/m3
Chloromethane	490	100	pptv	1.0	0.21	ug/m3
Freon 114	17	10	pptv	0.12	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	24	10	pptv	0.092	0.039	ug/m3
Chloroethane	16	10	pptv	0.042	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	200	10	pptv	1.1	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	820	20	pptv	2.8	0.069	ug/m3
Freon 113	61	10	pptv	0.47	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	37	10	pptv	0.18	0.049	ug/m3
1,2-Dichloroethane	16	10	pptv	0.063	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	250	10	pptv	0.81	0.032	ug/m3
Carbon Tetrachloride	74	10	pptv	0.47	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	420	10	pptv	1.6	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	ND	10	pptv	ND	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	62	10	pptv	0.27	0.043	ug/m3
m,p-Xylenes	180	10	pptv	0.79	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	29	10	pptv	0.12	0.043	ug/m3
o-Xylene	72	10	pptv	0.31	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	14	10	pptv	0.068	0.049	ug/m3
1,2,4-Trimethylbenzene	59	10	pptv	0.29	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	15	10	pptv	0.078	0.052	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-009 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	250	10	pptv	1.1	0.043	ug/m3
518235-009 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	96		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD	
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan	
Field ID: WB10-14D	Batch#: 352933	Prep: METHOD	
Lab ID: 518235-010	Sampled: 10/15/24 11:12	Analysis: EPA TO-15 SIM	
Matrix: Air	Received: 10/15/24	Analyst: OHD	
Diln Fac: 1.000	Analyzed: 10/16/24 18:48		

518235-010 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	460	10	pptv	2.3	0.049	ug/m3
Chloromethane	480	100	pptv	0.98	0.21	ug/m3
Freon 114	17	10	pptv	0.12	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	21	10	pptv	0.083	0.039	ug/m3
Chloroethane	ND	10	pptv	ND	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	190	10	pptv	1.1	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	250	20	pptv	0.85	0.069	ug/m3
Freon 113	60	10	pptv	0.46	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	31	10	pptv	0.15	0.049	ug/m3
1,2-Dichloroethane	18	10	pptv	0.072	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	310	10	pptv	0.99	0.032	ug/m3
Carbon Tetrachloride	73	10	pptv	0.46	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	350	10	pptv	1.3	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	ND	10	pptv	ND	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	100	10	pptv	0.45	0.043	ug/m3
m,p-Xylenes	270	10	pptv	1.2	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	32	10	pptv	0.13	0.043	ug/m3
o-Xylene	84	10	pptv	0.37	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	28	10	pptv	0.14	0.049	ug/m3
1,2,4-Trimethylbenzene	100	10	pptv	0.50	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	26	10	pptv	0.14	0.052	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-010 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	350	10	pptv	1.5	0.043	ug/m3
518235-010 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	94		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD	
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan	
Field ID: WB11-14D	Batch#: 352933	Prep: METHOD	
Lab ID: 518235-011	Sampled: 10/15/24 11:16	Analysis: EPA TO-15 SIM	
Matrix: Air	Received: 10/15/24	Analyst: OHD	
Diln Fac: 1.000	Analyzed: 10/16/24 19:37		

518235-011 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	470	10	pptv	2.3	0.049	ug/m3
Chloromethane	490	100	pptv	1.0	0.21	ug/m3
Freon 114	17	10	pptv	0.12	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	23	10	pptv	0.089	0.039	ug/m3
Chloroethane	34	10	pptv	0.089	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	190	10	pptv	1.1	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	160	20	pptv	0.57	0.069	ug/m3
Freon 113	61	10	pptv	0.47	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	29	10	pptv	0.14	0.049	ug/m3
1,2-Dichloroethane	15	10	pptv	0.061	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	240	10	pptv	0.78	0.032	ug/m3
Carbon Tetrachloride	74	10	pptv	0.47	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	440	10	pptv	1.6	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	ND	10	pptv	ND	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	61	10	pptv	0.27	0.043	ug/m3
m,p-Xylenes	180	10	pptv	0.78	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	31	10	pptv	0.13	0.043	ug/m3
o-Xylene	70	10	pptv	0.31	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	15	10	pptv	0.073	0.049	ug/m3
1,2,4-Trimethylbenzene	60	10	pptv	0.30	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	16	10	pptv	0.086	0.052	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-011 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	250	10	pptv	1.1	0.043	ug/m3
518235-011 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	97		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB12-14D	Batch#: 352933	Prep: METHOD
Lab ID: 518235-012	Sampled: 10/15/24 11:20	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 10/15/24	Analyst: OHD
Diln Fac: 1.000	Analyzed: 10/16/24 20:25	

518235-012 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	460	10	pptv	2.3	0.049	ug/m3
Chloromethane	490	100	pptv	1.0	0.21	ug/m3
Freon 114	17	10	pptv	0.12	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	21	10	pptv	0.081	0.039	ug/m3
Chloroethane	39	10	pptv	0.10	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	190	10	pptv	1.1	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	160	20	pptv	0.57	0.069	ug/m3
Freon 113	61	10	pptv	0.46	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	29	10	pptv	0.14	0.049	ug/m3
1,2-Dichloroethane	15	10	pptv	0.062	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	270	10	pptv	0.85	0.032	ug/m3
Carbon Tetrachloride	73	10	pptv	0.46	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	490	10	pptv	1.9	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	ND	10	pptv	ND	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	68	10	pptv	0.29	0.043	ug/m3
m,p-Xylenes	190	10	pptv	0.83	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	32	10	pptv	0.14	0.043	ug/m3
o-Xylene	75	10	pptv	0.33	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	15	10	pptv	0.074	0.049	ug/m3
1,2,4-Trimethylbenzene	64	10	pptv	0.32	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	11	10	pptv	0.059	0.052	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-012 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	270	10	pptv	1.2	0.043	ug/m3
518235-012 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	97		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB13-14D	Batch#: 352933	Prep: METHOD
Lab ID: 518235-013	Sampled: 10/15/24 11:24	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 10/15/24	Analyst: OHD
Diln Fac: 1.100	Analyzed: 10/16/24 21:14	

518235-013 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	460	11	pptv	2.3	0.054	ug/m3
Chloromethane	490	110	pptv	1.0	0.23	ug/m3
Freon 114	16	11	pptv	0.11	0.077	ug/m3
Vinyl Chloride	ND	11	pptv	ND	0.028	ug/m3
Bromomethane	21	11	pptv	0.083	0.043	ug/m3
Chloroethane	ND	11	pptv	ND	0.029	ug/m3
Vinyl bromide	ND	11	pptv	ND	0.048	ug/m3
Trichlorofluoromethane	190	11	pptv	1.1	0.062	ug/m3
1,1-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
Methylene Chloride	170	22	pptv	0.60	0.076	ug/m3
Freon 113	59	11	pptv	0.46	0.084	ug/m3
trans-1,2-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
1,1-Dichloroethane	ND	11	pptv	ND	0.045	ug/m3
cis-1,2-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
Chloroform	35	11	pptv	0.17	0.054	ug/m3
1,2-Dichloroethane	16	11	pptv	0.065	0.045	ug/m3
1,1,1-Trichloroethane	ND	11	pptv	ND	0.060	ug/m3
Benzene	280	11	pptv	0.89	0.035	ug/m3
Carbon Tetrachloride	72	11	pptv	0.46	0.069	ug/m3
1,2-Dichloropropane	ND	11	pptv	ND	0.051	ug/m3
Bromodichloromethane	ND	11	pptv	ND	0.074	ug/m3
Trichloroethene	ND	11	pptv	ND	0.059	ug/m3
cis-1,3-Dichloropropene	ND	11	pptv	ND	0.050	ug/m3
trans-1,3-Dichloropropene	ND	11	pptv	ND	0.050	ug/m3
1,1,2-Trichloroethane	ND	11	pptv	ND	0.060	ug/m3
Toluene	530	11	pptv	2.0	0.041	ug/m3
Dibromochloromethane	ND	11	pptv	ND	0.094	ug/m3
1,2-Dibromoethane	ND	11	pptv	ND	0.085	ug/m3
Tetrachloroethene	12	11	pptv	0.080	0.075	ug/m3
Chlorobenzene	ND	11	pptv	ND	0.051	ug/m3
Ethylbenzene	72	11	pptv	0.31	0.048	ug/m3
m,p-Xylenes	220	11	pptv	0.94	0.048	ug/m3
Bromoform	ND	11	pptv	ND	0.11	ug/m3
Styrene	76	11	pptv	0.32	0.047	ug/m3
o-Xylene	86	11	pptv	0.37	0.048	ug/m3
2-Chlorotoluene	ND	11	pptv	ND	0.057	ug/m3
1,3,5-Trimethylbenzene	17	11	pptv	0.085	0.054	ug/m3
1,2,4-Trimethylbenzene	72	11	pptv	0.35	0.054	ug/m3
Benzyl chloride	ND	11	pptv	ND	0.057	ug/m3
1,3-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,4-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,2-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,2,4-Trichlorobenzene	ND	11	pptv	ND	0.082	ug/m3
1,1,2,2-Tetrachloroethane	ND	11	pptv	ND	0.076	ug/m3
1,1,1,2-Tetrachloroethane	ND	11	pptv	ND	0.076	ug/m3
Naphthalene	23	11	pptv	0.12	0.058	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-013 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	11	pptv	ND	0.12	ug/m3
Xylene (total)	300	11	pptv	1.3	0.048	ug/m3
518235-013 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	97		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD	
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan	
Field ID: WB14-14D	Batch#: 352933	Prep: METHOD	
Lab ID: 518235-014	Sampled: 10/15/24 11:28	Analysis: EPA TO-15 SIM	
Matrix: Air	Received: 10/15/24	Analyst: OHD	
Diln Fac: 1.000	Analyzed: 10/16/24 22:03		

518235-014 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	460	10	pptv	2.3	0.049	ug/m3
Chloromethane	490	100	pptv	1.0	0.21	ug/m3
Freon 114	16	10	pptv	0.11	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	22	10	pptv	0.085	0.039	ug/m3
Chloroethane	ND	10	pptv	ND	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	190	10	pptv	1.1	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	170	20	pptv	0.59	0.069	ug/m3
Freon 113	60	10	pptv	0.46	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	27	10	pptv	0.13	0.049	ug/m3
1,2-Dichloroethane	16	10	pptv	0.063	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	240	10	pptv	0.78	0.032	ug/m3
Carbon Tetrachloride	73	10	pptv	0.46	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	350	10	pptv	1.3	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	ND	10	pptv	ND	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	60	10	pptv	0.26	0.043	ug/m3
m,p-Xylenes	170	10	pptv	0.75	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	20	10	pptv	0.086	0.043	ug/m3
o-Xylene	68	10	pptv	0.30	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	14	10	pptv	0.067	0.049	ug/m3
1,2,4-Trimethylbenzene	55	10	pptv	0.27	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	11	10	pptv	0.057	0.052	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-014 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	240	10	pptv	1.1	0.043	ug/m3
518235-014 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	97		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB17-14D	Batch#: 352933	Prep: METHOD
Lab ID: 518235-015	Sampled: 10/15/24 09:40	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 10/15/24	Analyst: OHD
Diln Fac: 1.100	Analyzed: 10/16/24 22:52	

518235-015 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	460	11	pptv	2.3	0.054	ug/m3
Chloromethane	480	110	pptv	1.0	0.23	ug/m3
Freon 114	16	11	pptv	0.11	0.077	ug/m3
Vinyl Chloride	ND	11	pptv	ND	0.028	ug/m3
Bromomethane	22	11	pptv	0.084	0.043	ug/m3
Chloroethane	12	11	pptv	0.032	0.029	ug/m3
Vinyl bromide	ND	11	pptv	ND	0.048	ug/m3
Trichlorofluoromethane	190	11	pptv	1.1	0.062	ug/m3
1,1-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
Methylene Chloride	150	22	pptv	0.53	0.076	ug/m3
Freon 113	60	11	pptv	0.46	0.084	ug/m3
trans-1,2-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
1,1-Dichloroethane	ND	11	pptv	ND	0.045	ug/m3
cis-1,2-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
Chloroform	29	11	pptv	0.14	0.054	ug/m3
1,2-Dichloroethane	15	11	pptv	0.062	0.045	ug/m3
1,1,1-Trichloroethane	ND	11	pptv	ND	0.060	ug/m3
Benzene	260	11	pptv	0.82	0.035	ug/m3
Carbon Tetrachloride	72	11	pptv	0.46	0.069	ug/m3
1,2-Dichloropropane	ND	11	pptv	ND	0.051	ug/m3
Bromodichloromethane	ND	11	pptv	ND	0.074	ug/m3
Trichloroethene	ND	11	pptv	ND	0.059	ug/m3
cis-1,3-Dichloropropene	ND	11	pptv	ND	0.050	ug/m3
trans-1,3-Dichloropropene	ND	11	pptv	ND	0.050	ug/m3
1,1,2-Trichloroethane	ND	11	pptv	ND	0.060	ug/m3
Toluene	450	11	pptv	1.7	0.041	ug/m3
Dibromochloromethane	ND	11	pptv	ND	0.094	ug/m3
1,2-Dibromoethane	ND	11	pptv	ND	0.085	ug/m3
Tetrachloroethene	ND	11	pptv	ND	0.075	ug/m3
Chlorobenzene	ND	11	pptv	ND	0.051	ug/m3
Ethylbenzene	69	11	pptv	0.30	0.048	ug/m3
m,p-Xylenes	200	11	pptv	0.89	0.048	ug/m3
Bromoform	ND	11	pptv	ND	0.11	ug/m3
Styrene	30	11	pptv	0.13	0.047	ug/m3
o-Xylene	81	11	pptv	0.35	0.048	ug/m3
2-Chlorotoluene	ND	11	pptv	ND	0.057	ug/m3
1,3,5-Trimethylbenzene	17	11	pptv	0.085	0.054	ug/m3
1,2,4-Trimethylbenzene	67	11	pptv	0.33	0.054	ug/m3
Benzyl chloride	ND	11	pptv	ND	0.057	ug/m3
1,3-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,4-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,2-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,2,4-Trichlorobenzene	ND	11	pptv	ND	0.082	ug/m3
1,1,2,2-Tetrachloroethane	ND	11	pptv	ND	0.076	ug/m3
1,1,1,2-Tetrachloroethane	ND	11	pptv	ND	0.076	ug/m3
Naphthalene	14	11	pptv	0.072	0.058	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-015 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	11	pptv	ND	0.12	ug/m3
Xylene (total)	290	11	pptv	1.2	0.048	ug/m3
518235-015 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	97		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB18-14D	Batch#: 352933	Prep: METHOD
Lab ID: 518235-016	Sampled: 10/15/24 10:28	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 10/15/24	Analyst: OHD
Diln Fac: 1.200	Analyzed: 10/16/24 23:40	

518235-016 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	480	12	pptv	2.4	0.059	ug/m3
Chloromethane	510	120	pptv	1.1	0.25	ug/m3
Freon 114	17	12	pptv	0.12	0.084	ug/m3
Vinyl Chloride	ND	12	pptv	ND	0.031	ug/m3
Bromomethane	28	12	pptv	0.11	0.047	ug/m3
Chloroethane	13	12	pptv	0.035	0.032	ug/m3
Vinyl bromide	ND	12	pptv	ND	0.052	ug/m3
Trichlorofluoromethane	200	12	pptv	1.1	0.067	ug/m3
1,1-Dichloroethene	ND	12	pptv	ND	0.048	ug/m3
Methylene Chloride	160	24	pptv	0.56	0.083	ug/m3
Freon 113	62	12	pptv	0.47	0.092	ug/m3
trans-1,2-Dichloroethene	ND	12	pptv	ND	0.048	ug/m3
1,1-Dichloroethane	ND	12	pptv	ND	0.049	ug/m3
cis-1,2-Dichloroethene	ND	12	pptv	ND	0.048	ug/m3
Chloroform	29	12	pptv	0.14	0.059	ug/m3
1,2-Dichloroethane	15	12	pptv	0.062	0.049	ug/m3
1,1,1-Trichloroethane	ND	12	pptv	ND	0.065	ug/m3
Benzene	250	12	pptv	0.79	0.038	ug/m3
Carbon Tetrachloride	75	12	pptv	0.47	0.075	ug/m3
1,2-Dichloropropane	ND	12	pptv	ND	0.055	ug/m3
Bromodichloromethane	ND	12	pptv	ND	0.080	ug/m3
Trichloroethene	ND	12	pptv	ND	0.064	ug/m3
cis-1,3-Dichloropropene	ND	12	pptv	ND	0.054	ug/m3
trans-1,3-Dichloropropene	ND	12	pptv	ND	0.054	ug/m3
1,1,2-Trichloroethane	ND	12	pptv	ND	0.065	ug/m3
Toluene	440	12	pptv	1.7	0.045	ug/m3
Dibromochloromethane	ND	12	pptv	ND	0.10	ug/m3
1,2-Dibromoethane	ND	12	pptv	ND	0.092	ug/m3
Tetrachloroethene	ND	12	pptv	ND	0.081	ug/m3
Chlorobenzene	ND	12	pptv	ND	0.055	ug/m3
Ethylbenzene	68	12	pptv	0.30	0.052	ug/m3
m,p-Xylenes	200	12	pptv	0.88	0.052	ug/m3
Bromoform	ND	12	pptv	ND	0.12	ug/m3
Styrene	31	12	pptv	0.13	0.051	ug/m3
o-Xylene	81	12	pptv	0.35	0.052	ug/m3
2-Chlorotoluene	ND	12	pptv	ND	0.062	ug/m3
1,3,5-Trimethylbenzene	22	12	pptv	0.11	0.059	ug/m3
1,2,4-Trimethylbenzene	89	12	pptv	0.44	0.059	ug/m3
Benzyl chloride	ND	12	pptv	ND	0.062	ug/m3
1,3-Dichlorobenzene	ND	12	pptv	ND	0.072	ug/m3
1,4-Dichlorobenzene	ND	12	pptv	ND	0.072	ug/m3
1,2-Dichlorobenzene	ND	12	pptv	ND	0.072	ug/m3
1,2,4-Trichlorobenzene	ND	12	pptv	ND	0.089	ug/m3
1,1,2,2-Tetrachloroethane	ND	12	pptv	ND	0.082	ug/m3
1,1,1,2-Tetrachloroethane	ND	12	pptv	ND	0.082	ug/m3
Naphthalene	14	12	pptv	0.073	0.063	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-016 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	12	pptv	ND	0.13	ug/m3
Xylene (total)	280	12	pptv	1.2	0.052	ug/m3
518235-016 Surrogate	%REC			Limits	Units (M)	
Bromofluorobenzene	95			60-140	ug/m3	

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235		Project#: STANDARD	
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan	
Field ID: WB19-14D	Batch#: 352933	Prep: METHOD	
Lab ID: 518235-017	Sampled: 10/15/24 14:44	Analysis: EPA TO-15 SIM	
Matrix: Air	Received: 10/15/24	Analyst: OHD	
Diln Fac: 1.100	Analyzed: 10/17/24 00:29		

518235-017 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	460	11	pptv	2.3	0.054	ug/m3
Chloromethane	500	110	pptv	1.0	0.23	ug/m3
Freon 114	16	11	pptv	0.11	0.077	ug/m3
Vinyl Chloride	ND	11	pptv	ND	0.028	ug/m3
Bromomethane	21	11	pptv	0.080	0.043	ug/m3
Chloroethane	26	11	pptv	0.069	0.029	ug/m3
Vinyl bromide	ND	11	pptv	ND	0.048	ug/m3
Trichlorofluoromethane	190	11	pptv	1.1	0.062	ug/m3
1,1-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
Methylene Chloride	140	22	pptv	0.50	0.076	ug/m3
Freon 113	59	11	pptv	0.45	0.084	ug/m3
trans-1,2-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
1,1-Dichloroethane	ND	11	pptv	ND	0.045	ug/m3
cis-1,2-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
Chloroform	27	11	pptv	0.13	0.054	ug/m3
1,2-Dichloroethane	17	11	pptv	0.067	0.045	ug/m3
1,1,1-Trichloroethane	ND	11	pptv	ND	0.060	ug/m3
Benzene	320	11	pptv	1.0	0.035	ug/m3
Carbon Tetrachloride	71	11	pptv	0.45	0.069	ug/m3
1,2-Dichloropropane	ND	11	pptv	ND	0.051	ug/m3
Bromodichloromethane	ND	11	pptv	ND	0.074	ug/m3
Trichloroethene	ND	11	pptv	ND	0.059	ug/m3
cis-1,3-Dichloropropene	ND	11	pptv	ND	0.050	ug/m3
trans-1,3-Dichloropropene	ND	11	pptv	ND	0.050	ug/m3
1,1,2-Trichloroethane	ND	11	pptv	ND	0.060	ug/m3
Toluene	480	11	pptv	1.8	0.041	ug/m3
Dibromochloromethane	ND	11	pptv	ND	0.094	ug/m3
1,2-Dibromoethane	ND	11	pptv	ND	0.085	ug/m3
Tetrachloroethene	ND	11	pptv	ND	0.075	ug/m3
Chlorobenzene	ND	11	pptv	ND	0.051	ug/m3
Ethylbenzene	72	11	pptv	0.31	0.048	ug/m3
m,p-Xylenes	220	11	pptv	0.95	0.048	ug/m3
Bromoform	ND	11	pptv	ND	0.11	ug/m3
Styrene	42	11	pptv	0.18	0.047	ug/m3
o-Xylene	86	11	pptv	0.37	0.048	ug/m3
2-Chlorotoluene	ND	11	pptv	ND	0.057	ug/m3
1,3,5-Trimethylbenzene	17	11	pptv	0.081	0.054	ug/m3
1,2,4-Trimethylbenzene	62	11	pptv	0.30	0.054	ug/m3
Benzyl chloride	ND	11	pptv	ND	0.057	ug/m3
1,3-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,4-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,2-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,2,4-Trichlorobenzene	ND	11	pptv	ND	0.082	ug/m3
1,1,2,2-Tetrachloroethane	ND	11	pptv	ND	0.076	ug/m3
1,1,1,2-Tetrachloroethane	ND	11	pptv	ND	0.076	ug/m3
Naphthalene	ND	11	pptv	ND	0.058	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

518235-017 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	11	pptv	ND	0.12	ug/m3
Xylene (total)	300	11	pptv	1.3	0.048	ug/m3
518235-017 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	98		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report: Batch QC

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Type: BS	Diln Fac: 1.000	Prep: METHOD
Lab ID: QC1195606	Batch#: 352933	Analysis: EPA TO-15 SIM
Matrix: Air	Analyzed: 10/16/24 06:49	Analyst: OHD

QC1195606 Analyte	Spiked	Result (V)	Units (V)	%REC	Limits
Freon 12	200.0	213.0	pptv	107	70-130
Chloromethane	200.0	214.0	pptv	107	70-130
Freon 114	200.0	220.1	pptv	110	70-130
Vinyl Chloride	200.0	206.4	pptv	103	70-130
Bromomethane	200.0	215.4	pptv	108	70-130
Chloroethane	200.0	195.5	pptv	98	70-130
Vinyl bromide	200.0	200.5	pptv	100	70-130
Trichlorofluoromethane	200.0	207.1	pptv	104	70-130
1,1-Dichloroethene	200.0	196.8	pptv	98	70-130
Methylene Chloride	200.0	186.6	pptv	93	70-130
Freon 113	200.0	203.2	pptv	102	70-130
trans-1,2-Dichloroethene	200.0	194.4	pptv	97	70-130
1,1-Dichloroethane	200.0	197.8	pptv	99	70-130
cis-1,2-Dichloroethene	200.0	192.0	pptv	96	70-130
Chloroform	200.0	201.8	pptv	101	70-130
1,2-Dichloroethane	200.0	200.7	pptv	100	70-130
1,1,1-Trichloroethane	200.0	205.5	pptv	103	70-130
Benzene	200.0	186.9	pptv	93	70-130
Carbon Tetrachloride	200.0	206.8	pptv	103	70-130
1,2-Dichloropropane	200.0	201.5	pptv	101	70-130
Bromodichloromethane	200.0	210.8	pptv	105	70-130
Trichloroethene	200.0	204.0	pptv	102	70-130
cis-1,3-Dichloropropene	200.0	202.8	pptv	101	70-130
trans-1,3-Dichloropropene	200.0	203.6	pptv	102	70-130
1,1,2-Trichloroethane	200.0	205.8	pptv	103	70-130
Toluene	200.0	184.5	pptv	92	70-130
Dibromochloromethane	200.0	214.0	pptv	107	70-130
1,2-Dibromoethane	200.0	203.3	pptv	102	70-130
Tetrachloroethene	200.0	204.4	pptv	102	70-130
Chlorobenzene	200.0	194.5	pptv	97	70-130
Ethylbenzene	200.0	181.9	pptv	91	70-130
m,p-Xylenes	400.0	378.4	pptv	95	70-130
Bromoform	200.0	214.1	pptv	107	70-130
Styrene	200.0	183.5	pptv	92	70-130
o-Xylene	200.0	194.7	pptv	97	70-130
2-Chlorotoluene	200.0	191.6	pptv	96	70-130
1,3,5-Trimethylbenzene	200.0	198.7	pptv	99	70-130
1,2,4-Trimethylbenzene	200.0	189.8	pptv	95	70-130
Benzyl chloride	200.0	209.0	pptv	105	70-130
1,3-Dichlorobenzene	200.0	199.1	pptv	100	70-130
1,4-Dichlorobenzene	200.0	201.7	pptv	101	70-130
1,2-Dichlorobenzene	200.0	195.0	pptv	97	70-130
1,2,4-Trichlorobenzene	200.0	165.9	pptv	83	70-130
1,1,2,2-Tetrachloroethane	200.0	200.9	pptv	100	70-130
1,1,1,2-Tetrachloroethane	200.0	206.6	pptv	103	70-130
Naphthalene	200.0	142.3	pptv	71	70-130
Hexachlorobutadiene	200.0	178.8	pptv	89	70-130

Enthalpy Analytical - Orange Analytical Report: Batch QC

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

QC1195606 Surrogate	%REC	Limits
Bromofluorobenzene	103	70-130

Type: BSD

Diln Fac: 1.000

Prep: METHOD

Lab ID: QC1195607

Batch#: 352933

Analysis: EPA TO-15 SIM

Matrix: Air

Analyzed: 10/16/24 07:31

Analyst: OHD

QC1195607 Analyte	Spiked	Result (V)	Units (V)	%REC	Limits	RPD	Lim
Freon 12	200.0	216.9	pptv	108	70-130	2	25
Chloromethane	200.0	217.1	pptv	109	70-130	1	25
Freon 114	200.0	223.8	pptv	112	70-130	2	25
Vinyl Chloride	200.0	211.3	pptv	106	70-130	2	25
Bromomethane	200.0	220.7	pptv	110	70-130	2	25
Chloroethane	200.0	198.9	pptv	99	70-130	2	25
Vinyl bromide	200.0	203.9	pptv	102	70-130	2	25
Trichlorofluoromethane	200.0	210.7	pptv	105	70-130	2	25
1,1-Dichloroethene	200.0	201.1	pptv	101	70-130	2	25
Methylene Chloride	200.0	190.5	pptv	95	70-130	2	25
Freon 113	200.0	206.7	pptv	103	70-130	2	25
trans-1,2-Dichloroethene	200.0	198.7	pptv	99	70-130	2	25
1,1-Dichloroethane	200.0	202.3	pptv	101	70-130	2	25
cis-1,2-Dichloroethene	200.0	197.2	pptv	99	70-130	3	25
Chloroform	200.0	205.2	pptv	103	70-130	2	25
1,2-Dichloroethane	200.0	204.8	pptv	102	70-130	2	25
1,1,1-Trichloroethane	200.0	209.6	pptv	105	70-130	2	25
Benzene	200.0	191.1	pptv	96	70-130	2	25
Carbon Tetrachloride	200.0	210.1	pptv	105	70-130	2	25
1,2-Dichloropropane	200.0	204.7	pptv	102	70-130	2	25
Bromodichloromethane	200.0	213.0	pptv	107	70-130	1	25
Trichloroethene	200.0	206.1	pptv	103	70-130	1	25
cis-1,3-Dichloropropene	200.0	206.5	pptv	103	70-130	2	25
trans-1,3-Dichloropropene	200.0	207.0	pptv	104	70-130	2	25
1,1,2-Trichloroethane	200.0	207.9	pptv	104	70-130	1	25
Toluene	200.0	189.0	pptv	95	70-130	2	25
Dibromochloromethane	200.0	216.8	pptv	108	70-130	1	25
1,2-Dibromoethane	200.0	207.1	pptv	104	70-130	2	25
Tetrachloroethene	200.0	207.5	pptv	104	70-130	1	25
Chlorobenzene	200.0	197.3	pptv	99	70-130	1	25
Ethylbenzene	200.0	185.5	pptv	93	70-130	2	25
m,p-Xylenes	400.0	385.7	pptv	96	70-130	2	25
Bromoform	200.0	215.7	pptv	108	70-130	1	25
Styrene	200.0	187.6	pptv	94	70-130	2	25
o-Xylene	200.0	199.2	pptv	100	70-130	2	25
2-Chlorotoluene	200.0	196.0	pptv	98	70-130	2	25
1,3,5-Trimethylbenzene	200.0	203.2	pptv	102	70-130	2	25
1,2,4-Trimethylbenzene	200.0	195.7	pptv	98	70-130	3	25
Benzyl chloride	200.0	215.5	pptv	108	70-130	3	25
1,3-Dichlorobenzene	200.0	206.9	pptv	103	70-130	4	25
1,4-Dichlorobenzene	200.0	201.0	pptv	100	70-130	0	25
1,2-Dichlorobenzene	200.0	199.2	pptv	100	70-130	2	25
1,2,4-Trichlorobenzene	200.0	171.2	pptv	86	70-130	3	25
1,1,2,2-Tetrachloroethane	200.0	203.5	pptv	102	70-130	1	25
1,1,1,2-Tetrachloroethane	200.0	207.9	pptv	104	70-130	1	25

Enthalpy Analytical - Orange Analytical Report: Batch QC

Lab #: 518235

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

QC1195607 Analyte	Spiked	Result (V)	Units (V)	%REC	Limits	RPD	Lim
Naphthalene	200.0	149.1	pptv	75	70-130	5	25
Hexachlorobutadiene	200.0	182.7	pptv	91	70-130	2	25
QC1195607 Surrogate				%REC	Limits		
Bromofluorobenzene				102	70-130		

Legend

RPD: Relative Percent
Difference

**Result
(V):** Result in volume units

Enthalpy Analytical - Orange Analytical Report: Batch QC

Lab #: 518235		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Type: BLANK	Diln Fac: 1.000	Prep: METHOD
Lab ID: QC1195608	Batch#: 352933	Analysis: EPA TO-15 SIM
Matrix: Air	Analyzed: 10/16/24 08:59	Analyst: OHD

QC1195608 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	ND	10	pptv	ND	0.049	ug/m3
Chloromethane	ND	100	pptv	ND	0.21	ug/m3
Freon 114	ND	10	pptv	ND	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	ND	10	pptv	ND	0.039	ug/m3
Chloroethane	ND	10	pptv	ND	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	ND	10	pptv	ND	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	ND	20	pptv	ND	0.069	ug/m3
Freon 113	ND	10	pptv	ND	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	ND	10	pptv	ND	0.049	ug/m3
1,2-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	ND	10	pptv	ND	0.032	ug/m3
Carbon Tetrachloride	ND	10	pptv	ND	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	ND	10	pptv	ND	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	ND	10	pptv	ND	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	ND	10	pptv	ND	0.043	ug/m3
m,p-Xylenes	ND	10	pptv	ND	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	ND	10	pptv	ND	0.043	ug/m3
o-Xylene	ND	10	pptv	ND	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	ND	10	pptv	ND	0.049	ug/m3
1,2,4-Trimethylbenzene	ND	10	pptv	ND	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	ND	10	pptv	ND	0.052	ug/m3
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	ND	10	pptv	ND	0.043	ug/m3

Enthalpy Analytical - Orange Analytical Report: Batch QC**Lab #:** 518235**Project#:** STANDARD**Client:** Catalyst Environmental Solutions**Location:** Walnut Bluff Workplan

QC1195608 Surrogate	%REC	Limits	Units (M)
Bromofluorobenzene	90	70-130	ug/m3

Legend

ND: Not Detected**RL (V):** Reporting Limit**Result (M):** Result in mass units**Result (V):** Result in volume units



Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number : 522442
Report Level : II
Report Date : 12/23/2024

Analytical Report *prepared for:*

Yola Bayram
Catalyst Environmental Solutions
315 Montana Avenue
Suite 311
Santa Monica, CA 90403

Location: Walnut Bluff Workplan

Authorized for release by:

Miguel Gamboa, Project Manager
miguel.gamboa@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105, ORELAP# 4197

Sample Summary

Yola Bayram
Catalyst Environmental
Solutions
315 Montana Avenue
Suite 311
Santa Monica, CA 90403

Lab Job #: 522442
Location: Walnut Bluff Workplan
Date Received: 12/16/24

Sample ID	Lab ID	Collected	Matrix
WB02-14D-R2	522442-001	12/16/24 14:03	Air
WB03-14D-R2	522442-002	12/16/24 14:10	Air
WB05-14D-R2	522442-003	12/16/24 14:15	Air
WB10-14D-R2	522442-004	12/16/24 14:24	Air

Case Narrative

Catalyst Environmental Solutions
315 Montana Avenue
Suite 311
Santa Monica, CA 90403
Yola Bayram

Lab Job Number: 522442
Location: Walnut Bluff Workplan
Date Received: 12/16/24

This data package contains sample and QC results for four air samples, requested for the above referenced project on 12/16/24. The samples were received intact.

Volatile Organics in Air by MS (EPA TO-15 SIM):

No analytical problems were encountered.

Detection Summary

Yola Bayram
Catalyst Environmental Solutions
315 Montana Avenue
Suite 311
Santa Monica, CA 90403

Lab Job #: 522442
Location: Walnut Bluff Workplan
Date Received: 12/16/24

Sample ID: WB02-14D-R2

Lab ID: 522442-001

Collected: 12/16/24 14:03

Matrix: Air

522442-001 Analyte	Result	Qual	Units	RL
Method: EPA TO-15 SIM				
Prep Method: METHOD				
Freon 12	440		pptv	10
Freon 12	2.2		ug/m3	0.049
Chloromethane	540		pptv	100
Chloromethane	1.1		ug/m3	0.21
Freon 114	15		pptv	10
Freon 114	0.10		ug/m3	0.070
Bromomethane	38		pptv	10
Bromomethane	0.15		ug/m3	0.039
Trichlorofluoromethane	190		pptv	10
Trichlorofluoromethane	1.1		ug/m3	0.056
Methylene Chloride	240		pptv	20
Methylene Chloride	0.84		ug/m3	0.069
Freon 113	60		pptv	10
Freon 113	0.46		ug/m3	0.077
Chloroform	39		pptv	10
Chloroform	0.19		ug/m3	0.049
1,2-Dichloroethane	26		pptv	10
1,2-Dichloroethane	0.10		ug/m3	0.040
Benzene	600		pptv	10
Benzene	1.9		ug/m3	0.032
Carbon Tetrachloride	70		pptv	10
Carbon Tetrachloride	0.44		ug/m3	0.063
Toluene	870		pptv	10
Toluene	3.3		ug/m3	0.038
Tetrachloroethene	15		pptv	10
Tetrachloroethene	0.10		ug/m3	0.068
Ethylbenzene	200		pptv	10
Ethylbenzene	0.88		ug/m3	0.043
m,p-Xylenes	580		pptv	10
m,p-Xylenes	2.5		ug/m3	0.043
Styrene	96		pptv	10
Styrene	0.41		ug/m3	0.043
o-Xylene	220		pptv	10
o-Xylene	0.95		ug/m3	0.043
1,3,5-Trimethylbenzene	68		pptv	10
1,3,5-Trimethylbenzene	0.34		ug/m3	0.049
1,2,4-Trimethylbenzene	240		pptv	10
1,2,4-Trimethylbenzene	1.2		ug/m3	0.049
1,4-Dichlorobenzene	14		pptv	10
1,4-Dichlorobenzene	0.082		ug/m3	0.060

Detection Summary

522442-001 Analyte	Result	Qual	Units	RL
Naphthalene	30		pptv	10
Naphthalene	0.15		ug/m3	0.052
Xylene (total)	800		pptv	10
Xylene (total)	3.5		ug/m3	0.043

Detection Summary

Sample ID: WB03-14D-R2
Lab ID: 522442-002
Collected: 12/16/24 14:10
Matrix: Air

522442-002 Analyte	Result	Qual	Units	RL
Method: EPA TO-15 SIM				
Prep Method: METHOD				
Freon 12	440		pptv	10
Freon 12	2.2		ug/m3	0.049
Chloromethane	550		pptv	100
Chloromethane	1.1		ug/m3	0.21
Freon 114	15		pptv	10
Freon 114	0.10		ug/m3	0.070
Bromomethane	40		pptv	10
Bromomethane	0.16		ug/m3	0.039
Trichlorofluoromethane	190		pptv	10
Trichlorofluoromethane	1.1		ug/m3	0.056
Methylene Chloride	270		pptv	20
Methylene Chloride	0.93		ug/m3	0.069
Freon 113	61		pptv	10
Freon 113	0.47		ug/m3	0.077
Chloroform	40		pptv	10
Chloroform	0.20		ug/m3	0.049
1,2-Dichloroethane	24		pptv	10
1,2-Dichloroethane	0.097		ug/m3	0.040
Benzene	540		pptv	10
Benzene	1.7		ug/m3	0.032
Carbon Tetrachloride	72		pptv	10
Carbon Tetrachloride	0.45		ug/m3	0.063
Toluene	860		pptv	10
Toluene	3.2		ug/m3	0.038
Tetrachloroethene	16		pptv	10
Tetrachloroethene	0.11		ug/m3	0.068
Ethylbenzene	170		pptv	10
Ethylbenzene	0.73		ug/m3	0.043
m,p-Xylenes	540		pptv	10
m,p-Xylenes	2.3		ug/m3	0.043
Styrene	110		pptv	10
Styrene	0.46		ug/m3	0.043
o-Xylene	200		pptv	10
o-Xylene	0.89		ug/m3	0.043
1,3,5-Trimethylbenzene	54		pptv	10
1,3,5-Trimethylbenzene	0.26		ug/m3	0.049
1,2,4-Trimethylbenzene	190		pptv	10
1,2,4-Trimethylbenzene	0.92		ug/m3	0.049
1,4-Dichlorobenzene	15		pptv	10
1,4-Dichlorobenzene	0.092		ug/m3	0.060
Naphthalene	21		pptv	10
Naphthalene	0.11		ug/m3	0.052
Xylene (total)	740		pptv	10
Xylene (total)	3.2		ug/m3	0.043

Detection Summary

Detection Summary

Sample ID: WB05-14D-R2
Lab ID: 522442-003
Collected: 12/16/24 14:15
Matrix: Air

522442-003 Analyte	Result	Qual	Units	RL
Method: EPA TO-15 SIM				
Prep Method: METHOD				
Freon 12	440		pptv	11
Freon 12	2.2		ug/m3	0.054
Chloromethane	540		pptv	110
Chloromethane	1.1		ug/m3	0.23
Freon 114	15		pptv	11
Freon 114	0.10		ug/m3	0.077
Bromomethane	39		pptv	11
Bromomethane	0.15		ug/m3	0.043
Trichlorofluoromethane	190		pptv	11
Trichlorofluoromethane	1.1		ug/m3	0.062
Methylene Chloride	260		pptv	22
Methylene Chloride	0.91		ug/m3	0.076
Freon 113	61		pptv	11
Freon 113	0.47		ug/m3	0.084
Chloroform	39		pptv	11
Chloroform	0.19		ug/m3	0.054
1,2-Dichloroethane	24		pptv	11
1,2-Dichloroethane	0.096		ug/m3	0.045
Benzene	550		pptv	11
Benzene	1.7		ug/m3	0.035
Carbon Tetrachloride	71		pptv	11
Carbon Tetrachloride	0.45		ug/m3	0.069
Toluene	890		pptv	11
Toluene	3.4		ug/m3	0.041
Tetrachloroethene	17		pptv	11
Tetrachloroethene	0.12		ug/m3	0.075
Ethylbenzene	170		pptv	11
Ethylbenzene	0.72		ug/m3	0.048
m,p-Xylenes	520		pptv	11
m,p-Xylenes	2.3		ug/m3	0.048
Styrene	110		pptv	11
Styrene	0.47		ug/m3	0.047
o-Xylene	200		pptv	11
o-Xylene	0.87		ug/m3	0.048
1,3,5-Trimethylbenzene	68		pptv	11
1,3,5-Trimethylbenzene	0.33		ug/m3	0.054
1,2,4-Trimethylbenzene	260		pptv	11
1,2,4-Trimethylbenzene	1.3		ug/m3	0.054
1,4-Dichlorobenzene	15		pptv	11
1,4-Dichlorobenzene	0.090		ug/m3	0.066
Naphthalene	31		pptv	11
Naphthalene	0.16		ug/m3	0.058
Xylene (total)	720		pptv	11
Xylene (total)	3.1		ug/m3	0.048

Detection Summary

Detection Summary

Sample ID: WB10-14D-R2
Lab ID: 522442-004
Collected: 12/16/24 14:24
Matrix: Air

522442-004 Analyte	Result	Qual	Units	RL
Method: EPA TO-15 SIM				
Prep Method: METHOD				
Freon 12	440		pptv	10
Freon 12	2.2		ug/m3	0.049
Chloromethane	550		pptv	100
Chloromethane	1.1		ug/m3	0.21
Freon 114	15		pptv	10
Freon 114	0.10		ug/m3	0.070
Bromomethane	37		pptv	10
Bromomethane	0.15		ug/m3	0.039
Trichlorofluoromethane	190		pptv	10
Trichlorofluoromethane	1.1		ug/m3	0.056
Methylene Chloride	250		pptv	20
Methylene Chloride	0.87		ug/m3	0.069
Freon 113	60		pptv	10
Freon 113	0.46		ug/m3	0.077
Chloroform	41		pptv	10
Chloroform	0.20		ug/m3	0.049
1,2-Dichloroethane	25		pptv	10
1,2-Dichloroethane	0.10		ug/m3	0.040
Benzene	610		pptv	10
Benzene	1.9		ug/m3	0.032
Carbon Tetrachloride	71		pptv	10
Carbon Tetrachloride	0.45		ug/m3	0.063
Toluene	850		pptv	10
Toluene	3.2		ug/m3	0.038
Tetrachloroethene	17		pptv	10
Tetrachloroethene	0.12		ug/m3	0.068
Ethylbenzene	190		pptv	10
Ethylbenzene	0.84		ug/m3	0.043
m,p-Xylenes	570		pptv	10
m,p-Xylenes	2.5		ug/m3	0.043
Styrene	85		pptv	10
Styrene	0.36		ug/m3	0.043
o-Xylene	200		pptv	10
o-Xylene	0.87		ug/m3	0.043
1,3,5-Trimethylbenzene	62		pptv	10
1,3,5-Trimethylbenzene	0.30		ug/m3	0.049
1,2,4-Trimethylbenzene	220		pptv	10
1,2,4-Trimethylbenzene	1.1		ug/m3	0.049
Naphthalene	11		pptv	10
Naphthalene	0.060		ug/m3	0.052
Xylene (total)	770		pptv	10
Xylene (total)	3.3		ug/m3	0.043



CUSTOMER INFORMATION				PROJECT INFORMATION								
Company:	Catalyst Environmental Solutions			Name:	Walnut Bluff workplan							
Report To:	Yola Bayram			Number:								
Email:	ybayram@ce.solutions			Address:								
Address:	315 Montana Ave, Suite 311 Santa Monica, CA 90403			Global ID:								
Phone:	(313) 204-8477	Fax:		Sampled By:	Elizabeth Hwang							
Special Instructions:												
Sample ID	Air Type (I) Indoor (A) Ambient (SV) Soil Vapor	Equipment Information		Start Sampling Information		Stop Sampling Information		Analysis Request	Required Turnaround Time	Comments		
		Canister ID	Canister Size (6L or 1L)	Flow Controller ID	Date	Time	Canister Pressure (in. Hg)				Date	Time
1 WB02-140-R2	A	C70018	6L	A70014	12/2/24	14:02	30	12/16/24	14:03	7	X	TO-15 sim
2 WB03-140-R2	A	C70038	6L	A70099	12/2/24	14:07	30	12/16/24	14:10	4	X	
3 WB05-140-R2	A	C70162	6L	A70230	12/2/24	14:13	30	12/16/24	14:15	7	X	
4 WB10-140-R2	A	C70039	6L	A70577	12/2/24	14:22	30	12/16/24	14:24	5	X	
5												
6												
7												
8												
9												
10												

SIGNATURE		PRINT NAME	COMPANY/TITLE	DATE / TIME
RELINQUISHED BY:		Elizabeth Hwang		12/16/24 1526
RECEIVED BY:		Tris Kelly	Entalpy	12/16/24 1526
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				

ENTHALPY

Date Received: 12/16/24 WO# 522442 Client: Catalyst Environmental Solutions

Are custody seals present? ☐ Yes ☒ No

Custody seals intact on arrival? ☒ N/A ☐ Yes ☐ No ☐ On cooler / box ☐ On samples

Shipping Info:

☐ Outside 0.0 - 6.0°C (0.0 - 10.0°C for microbiology) (PM notified)

Date Opened 12/16/24 By (initials) TLK Type of ice used : ☐ Wet ☐ Blue/Gel ☐ None

☐ Samples received on ice directly from the field; cooling process had begun. (if checked, skip temperatures)

☒ Sample matrix doesn't require cooling (e.g. air, bulk PCB). (if checked, skip temperatures)

If no cooler: Observed/Adjusted Temp (°C): _____ / _____ Thermometer/IR Gun: _____ CF: _____

Cooler Temp (°C) #1: / #2: / #3: / #4: / #5: / #6: /

☐ **No microbiology samples submitted (skip 3b)**☐ Within temp range 0.0 - 10.0°C or received on ice directly from field.

☐ Adequate headspace for microbiology analysis.

☐ No air samples submitted (skip 3c)☐ 1.4L Canisters ☒ 6L Canisters ☐ Tedlar Bags ☐ MCE Cassettes ☐ Sorbent Tubes ☐ Other

YES	NO	N/A
-----	----	-----

Section 4: Containers / Labels / Samples	YES	NO	N/A
1) Were custody papers present, filled properly, and legible?	x		
2) Is the sampler's name present on the CoC?	x		
3) Were containers received in good condition (unbroken / unopened / uncompromised)?	x		
4) Were the samples bagged? (required for microbiology samples; recommended for soil samples)			x
5) Were all of, and only, the correct samples received?	x		
6) Are sample labels present, legible, and in agreement with the CoC?	x		
7) Does the container count match the CoC?	x		
8) Was sufficient sample volume / mass received for the analyses requested?	x		
9) Were samples received in proper containers for the analyses requested?	x		
10) Were samples received with > 1/2 holding time remaining?	x		
11) Are samples properly preserved as indicated by CoC / labels?	x		
12) Unpreserved VOAs received - If necessary, was the hold time changed in LIMS?			x
13) Are VOA vials free from headspace/bubbles > 6mm?			x

☐ PM notified

Date Logged 12/16/24 **By (print)** Tris Kelly

(sign) 

Date Labeled 12/16/24 **By (print)** Tris Kelly

(sign) *[Signature]*

Enthalpy Analytical - Orange Analytical Report

Lab #: 522442		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB02-14D-R2	Batch#: 358120	Prep: METHOD
Lab ID: 522442-001	Sampled: 12/16/24 14:03	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 12/16/24	Analyst: OHD
Diln Fac: 1.000	Analyzed: 12/18/24 02:12	

522442-001 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	440	10	pptv	2.2	0.049	ug/m3
Chloromethane	540	100	pptv	1.1	0.21	ug/m3
Freon 114	15	10	pptv	0.10	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	38	10	pptv	0.15	0.039	ug/m3
Chloroethane	ND	10	pptv	ND	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	190	10	pptv	1.1	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	240	20	pptv	0.84	0.069	ug/m3
Freon 113	60	10	pptv	0.46	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	39	10	pptv	0.19	0.049	ug/m3
1,2-Dichloroethane	26	10	pptv	0.10	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	600	10	pptv	1.9	0.032	ug/m3
Carbon Tetrachloride	70	10	pptv	0.44	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	870	10	pptv	3.3	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	15	10	pptv	0.10	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	200	10	pptv	0.88	0.043	ug/m3
m,p-Xylenes	580	10	pptv	2.5	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	96	10	pptv	0.41	0.043	ug/m3
o-Xylene	220	10	pptv	0.95	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	68	10	pptv	0.34	0.049	ug/m3
1,2,4-Trimethylbenzene	240	10	pptv	1.2	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	14	10	pptv	0.082	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	30	10	pptv	0.15	0.052	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 522442

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

522442-001 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	800	10	pptv	3.5	0.043	ug/m3
522442-001 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	96		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 522442		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB03-14D-R2	Batch#: 358299	Prep: METHOD
Lab ID: 522442-002	Sampled: 12/16/24 14:10	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 12/16/24	Analyst: OHD
Diln Fac: 1.000	Analyzed: 12/18/24 12:27	

522442-002 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	440	10	pptv	2.2	0.049	ug/m3
Chloromethane	550	100	pptv	1.1	0.21	ug/m3
Freon 114	15	10	pptv	0.10	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	40	10	pptv	0.16	0.039	ug/m3
Chloroethane	ND	10	pptv	ND	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	190	10	pptv	1.1	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	270	20	pptv	0.93	0.069	ug/m3
Freon 113	61	10	pptv	0.47	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	40	10	pptv	0.20	0.049	ug/m3
1,2-Dichloroethane	24	10	pptv	0.097	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	540	10	pptv	1.7	0.032	ug/m3
Carbon Tetrachloride	72	10	pptv	0.45	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	860	10	pptv	3.2	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	16	10	pptv	0.11	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	170	10	pptv	0.73	0.043	ug/m3
m,p-Xylenes	540	10	pptv	2.3	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	110	10	pptv	0.46	0.043	ug/m3
o-Xylene	200	10	pptv	0.89	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	54	10	pptv	0.26	0.049	ug/m3
1,2,4-Trimethylbenzene	190	10	pptv	0.92	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	15	10	pptv	0.092	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	21	10	pptv	0.11	0.052	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 522442

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

522442-002 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	740	10	pptv	3.2	0.043	ug/m3
522442-002 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	102		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 522442		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB05-14D-R2	Batch#: 358120	Prep: METHOD
Lab ID: 522442-003	Sampled: 12/16/24 14:15	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 12/16/24	Analyst: OHD
Diln Fac: 1.100	Analyzed: 12/18/24 03:00	

522442-003 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	440	11	pptv	2.2	0.054	ug/m3
Chloromethane	540	110	pptv	1.1	0.23	ug/m3
Freon 114	15	11	pptv	0.10	0.077	ug/m3
Vinyl Chloride	ND	11	pptv	ND	0.028	ug/m3
Bromomethane	39	11	pptv	0.15	0.043	ug/m3
Chloroethane	ND	11	pptv	ND	0.029	ug/m3
Vinyl bromide	ND	11	pptv	ND	0.048	ug/m3
Trichlorofluoromethane	190	11	pptv	1.1	0.062	ug/m3
1,1-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
Methylene Chloride	260	22	pptv	0.91	0.076	ug/m3
Freon 113	61	11	pptv	0.47	0.084	ug/m3
trans-1,2-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
1,1-Dichloroethane	ND	11	pptv	ND	0.045	ug/m3
cis-1,2-Dichloroethene	ND	11	pptv	ND	0.044	ug/m3
Chloroform	39	11	pptv	0.19	0.054	ug/m3
1,2-Dichloroethane	24	11	pptv	0.096	0.045	ug/m3
1,1,1-Trichloroethane	ND	11	pptv	ND	0.060	ug/m3
Benzene	550	11	pptv	1.7	0.035	ug/m3
Carbon Tetrachloride	71	11	pptv	0.45	0.069	ug/m3
1,2-Dichloropropane	ND	11	pptv	ND	0.051	ug/m3
Bromodichloromethane	ND	11	pptv	ND	0.074	ug/m3
Trichloroethene	ND	11	pptv	ND	0.059	ug/m3
cis-1,3-Dichloropropene	ND	11	pptv	ND	0.050	ug/m3
trans-1,3-Dichloropropene	ND	11	pptv	ND	0.050	ug/m3
1,1,2-Trichloroethane	ND	11	pptv	ND	0.060	ug/m3
Toluene	890	11	pptv	3.4	0.041	ug/m3
Dibromochloromethane	ND	11	pptv	ND	0.094	ug/m3
1,2-Dibromoethane	ND	11	pptv	ND	0.085	ug/m3
Tetrachloroethene	17	11	pptv	0.12	0.075	ug/m3
Chlorobenzene	ND	11	pptv	ND	0.051	ug/m3
Ethylbenzene	170	11	pptv	0.72	0.048	ug/m3
m,p-Xylenes	520	11	pptv	2.3	0.048	ug/m3
Bromoform	ND	11	pptv	ND	0.11	ug/m3
Styrene	110	11	pptv	0.47	0.047	ug/m3
o-Xylene	200	11	pptv	0.87	0.048	ug/m3
2-Chlorotoluene	ND	11	pptv	ND	0.057	ug/m3
1,3,5-Trimethylbenzene	68	11	pptv	0.33	0.054	ug/m3
1,2,4-Trimethylbenzene	260	11	pptv	1.3	0.054	ug/m3
Benzyl chloride	ND	11	pptv	ND	0.057	ug/m3
1,3-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,4-Dichlorobenzene	15	11	pptv	0.090	0.066	ug/m3
1,2-Dichlorobenzene	ND	11	pptv	ND	0.066	ug/m3
1,2,4-Trichlorobenzene	ND	11	pptv	ND	0.082	ug/m3
1,1,2,2-Tetrachloroethane	ND	11	pptv	ND	0.076	ug/m3
1,1,1,2-Tetrachloroethane	ND	11	pptv	ND	0.076	ug/m3
Naphthalene	31	11	pptv	0.16	0.058	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 522442

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

522442-003 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	11	pptv	ND	0.12	ug/m3
Xylene (total)	720	11	pptv	3.1	0.048	ug/m3
522442-003 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	100		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report

Lab #: 522442		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Field ID: WB10-14D-R2	Batch#: 358120	Prep: METHOD
Lab ID: 522442-004	Sampled: 12/16/24 14:24	Analysis: EPA TO-15 SIM
Matrix: Air	Received: 12/16/24	Analyst: OHD
Diln Fac: 1.000	Analyzed: 12/18/24 03:49	

522442-004 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	440	10	pptv	2.2	0.049	ug/m3
Chloromethane	550	100	pptv	1.1	0.21	ug/m3
Freon 114	15	10	pptv	0.10	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	37	10	pptv	0.15	0.039	ug/m3
Chloroethane	ND	10	pptv	ND	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	190	10	pptv	1.1	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	250	20	pptv	0.87	0.069	ug/m3
Freon 113	60	10	pptv	0.46	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	41	10	pptv	0.20	0.049	ug/m3
1,2-Dichloroethane	25	10	pptv	0.10	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	610	10	pptv	1.9	0.032	ug/m3
Carbon Tetrachloride	71	10	pptv	0.45	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	850	10	pptv	3.2	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	17	10	pptv	0.12	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	190	10	pptv	0.84	0.043	ug/m3
m,p-Xylenes	570	10	pptv	2.5	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	85	10	pptv	0.36	0.043	ug/m3
o-Xylene	200	10	pptv	0.87	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	62	10	pptv	0.30	0.049	ug/m3
1,2,4-Trimethylbenzene	220	10	pptv	1.1	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	11	10	pptv	0.060	0.052	ug/m3

Enthalpy Analytical - Orange Analytical Report

Lab #: 522442

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

522442-004 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	770	10	pptv	3.3	0.043	ug/m3
522442-004 Surrogate	%REC		Limits	Units (M)		
Bromofluorobenzene	96		60-140	ug/m3		

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report: Batch QC

Lab #: 522442		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Type: BS	Diln Fac: 1.000	Prep: METHOD
Lab ID: QC1212995	Batch#: 358120	Analysis: EPA TO-15 SIM
Matrix: Air	Analyzed: 12/17/24 09:37	Analyst: OHD

QC1212995 Analyte	Spiked	Result (V)	Units (V)	%REC	Limits
Freon 12	100.0	100.6	pptv	101	70-130
Chloromethane	100.0	103.1	pptv	103	70-130
Freon 114	100.0	101.4	pptv	101	70-130
Vinyl Chloride	100.0	102.1	pptv	102	70-130
Bromomethane	100.0	100.7	pptv	101	70-130
Chloroethane	100.0	98.78	pptv	99	70-130
Vinyl bromide	100.0	103.4	pptv	103	70-130
Trichlorofluoromethane	100.0	100.9	pptv	101	70-130
1,1-Dichloroethene	100.0	104.4	pptv	104	70-130
Methylene Chloride	100.0	100.7	pptv	101	70-130
Freon 113	100.0	101.5	pptv	102	70-130
trans-1,2-Dichloroethene	100.0	101.7	pptv	102	70-130
1,1-Dichloroethane	100.0	101.2	pptv	101	70-130
cis-1,2-Dichloroethene	100.0	101.5	pptv	102	70-130
Chloroform	100.0	101.0	pptv	101	70-130
1,2-Dichloroethane	100.0	100.2	pptv	100	70-130
1,1,1-Trichloroethane	100.0	99.82	pptv	100	70-130
Benzene	100.0	96.86	pptv	97	70-130
Carbon Tetrachloride	100.0	98.68	pptv	99	70-130
1,2-Dichloropropane	100.0	101.8	pptv	102	70-130
Bromodichloromethane	100.0	98.05	pptv	98	70-130
Trichloroethene	100.0	101.5	pptv	102	70-130
cis-1,3-Dichloropropene	100.0	101.3	pptv	101	70-130
trans-1,3-Dichloropropene	100.0	101.2	pptv	101	70-130
1,1,2-Trichloroethane	100.0	100.7	pptv	101	70-130
Toluene	100.0	88.25	pptv	88	70-130
Dibromochloromethane	100.0	96.65	pptv	97	70-130
1,2-Dibromoethane	100.0	98.05	pptv	98	70-130
Tetrachloroethene	100.0	103.7	pptv	104	70-130
Chlorobenzene	100.0	100.5	pptv	101	70-130
Ethylbenzene	100.0	97.08	pptv	97	70-130
m,p-Xylenes	200.0	191.6	pptv	96	70-130
Bromoform	100.0	96.20	pptv	96	70-130
Styrene	100.0	114.0	pptv	114	70-130
o-Xylene	100.0	97.59	pptv	98	70-130
2-Chlorotoluene	100.0	98.76	pptv	99	70-130
1,3,5-Trimethylbenzene	100.0	126.4	pptv	126	70-130
1,2,4-Trimethylbenzene	100.0	110.1	pptv	110	70-130
Benzyl chloride	100.0	90.91	pptv	91	70-130
1,3-Dichlorobenzene	100.0	100.7	pptv	101	70-130
1,4-Dichlorobenzene	100.0	97.99	pptv	98	70-130
1,2-Dichlorobenzene	100.0	97.58	pptv	98	70-130
1,2,4-Trichlorobenzene	100.0	85.15	pptv	85	70-130
1,1,2,2-Tetrachloroethane	100.0	100.7	pptv	101	70-130
1,1,1,2-Tetrachloroethane	100.0	98.44	pptv	98	70-130
Naphthalene	100.0	79.44	pptv	79	70-130
Hexachlorobutadiene	100.0	90.53	pptv	91	70-130

Enthalpy Analytical - Orange Analytical Report: Batch QC

Lab #: 522442

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

QC1212995 Surrogate	%REC	Limits
Bromofluorobenzene	104	70-130

Type: BSD

Diln Fac: 1.000

Prep: METHOD

Lab ID: QC1212996

Batch#: 358120

Analysis: EPA TO-15 SIM

Matrix: Air

Analyzed: 12/17/24 10:20

Analyst: OHD

QC1212996 Analyte	Spiked	Result (V)	Units (V)	%REC	Limits	RPD	Lim
Freon 12	100.0	102.8	pptv	103	70-130	2	25
Chloromethane	100.0	105.4	pptv	105	70-130	2	25
Freon 114	100.0	103.2	pptv	103	70-130	2	25
Vinyl Chloride	100.0	104.5	pptv	105	70-130	2	25
Bromomethane	100.0	104.0	pptv	104	70-130	3	25
Chloroethane	100.0	101.2	pptv	101	70-130	2	25
Vinyl bromide	100.0	105.6	pptv	106	70-130	2	25
Trichlorofluoromethane	100.0	103.1	pptv	103	70-130	2	25
1,1-Dichloroethene	100.0	106.4	pptv	106	70-130	2	25
Methylene Chloride	100.0	102.5	pptv	102	70-130	2	25
Freon 113	100.0	103.5	pptv	103	70-130	2	25
trans-1,2-Dichloroethene	100.0	103.4	pptv	103	70-130	2	25
1,1-Dichloroethane	100.0	103.1	pptv	103	70-130	2	25
cis-1,2-Dichloroethene	100.0	103.4	pptv	103	70-130	2	25
Chloroform	100.0	103.0	pptv	103	70-130	2	25
1,2-Dichloroethane	100.0	102.6	pptv	103	70-130	2	25
1,1,1-Trichloroethane	100.0	101.4	pptv	101	70-130	2	25
Benzene	100.0	98.66	pptv	99	70-130	2	25
Carbon Tetrachloride	100.0	100.5	pptv	100	70-130	2	25
1,2-Dichloropropane	100.0	104.8	pptv	105	70-130	3	25
Bromodichloromethane	100.0	100.9	pptv	101	70-130	3	25
Trichloroethene	100.0	104.1	pptv	104	70-130	3	25
cis-1,3-Dichloropropene	100.0	103.9	pptv	104	70-130	3	25
trans-1,3-Dichloropropene	100.0	104.4	pptv	104	70-130	3	25
1,1,2-Trichloroethane	100.0	103.3	pptv	103	70-130	3	25
Toluene	100.0	90.34	pptv	90	70-130	2	25
Dibromochloromethane	100.0	99.56	pptv	100	70-130	3	25
1,2-Dibromoethane	100.0	101.1	pptv	101	70-130	3	25
Tetrachloroethene	100.0	106.4	pptv	106	70-130	3	25
Chlorobenzene	100.0	103.8	pptv	104	70-130	3	25
Ethylbenzene	100.0	99.32	pptv	99	70-130	2	25
m,p-Xylenes	200.0	196.6	pptv	98	70-130	3	25
Bromoform	100.0	98.34	pptv	98	70-130	2	25
Styrene	100.0	116.8	pptv	117	70-130	2	25
o-Xylene	100.0	100.3	pptv	100	70-130	3	25
2-Chlorotoluene	100.0	101.1	pptv	101	70-130	2	25
1,3,5-Trimethylbenzene	100.0	129.7	pptv	130	70-130	3	25
1,2,4-Trimethylbenzene	100.0	113.5	pptv	114	70-130	3	25
Benzyl chloride	100.0	94.91	pptv	95	70-130	4	25
1,3-Dichlorobenzene	100.0	104.3	pptv	104	70-130	3	25
1,4-Dichlorobenzene	100.0	102.0	pptv	102	70-130	4	25
1,2-Dichlorobenzene	100.0	101.1	pptv	101	70-130	4	25
1,2,4-Trichlorobenzene	100.0	88.47	pptv	88	70-130	4	25
1,1,2,2-Tetrachloroethane	100.0	104.1	pptv	104	70-130	3	25
1,1,1,2-Tetrachloroethane	100.0	101.8	pptv	102	70-130	3	25

Enthalpy Analytical - Orange Analytical Report: Batch QC

Lab #: 522442

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

QC1212996 Analyte	Spiked	Result (V)	Units (V)	%REC	Limits	RPD	Lim
Naphthalene	100.0	82.72	pptv	83	70-130	4	25
Hexachlorobutadiene	100.0	93.77	pptv	94	70-130	4	25
QC1212996 Surrogate				%REC	Limits		
Bromofluorobenzene				103	70-130		

Legend

RPD: Relative Percent
Difference

**Result
(V):** Result in volume units

Enthalpy Analytical - Orange Analytical Report: Batch QC

Lab #: 522442		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Type: BLANK	Diln Fac: 1.000	Prep: METHOD
Lab ID: QC1212997	Batch#: 358120	Analysis: EPA TO-15 SIM
Matrix: Air	Analyzed: 12/17/24 11:49	Analyst: OHD

QC1212997 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	ND	10	pptv	ND	0.049	ug/m3
Chloromethane	ND	100	pptv	ND	0.21	ug/m3
Freon 114	ND	10	pptv	ND	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	ND	10	pptv	ND	0.039	ug/m3
Chloroethane	ND	10	pptv	ND	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	ND	10	pptv	ND	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	ND	20	pptv	ND	0.069	ug/m3
Freon 113	ND	10	pptv	ND	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	ND	10	pptv	ND	0.049	ug/m3
1,2-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	ND	10	pptv	ND	0.032	ug/m3
Carbon Tetrachloride	ND	10	pptv	ND	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	ND	10	pptv	ND	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	ND	10	pptv	ND	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	ND	10	pptv	ND	0.043	ug/m3
m,p-Xylenes	ND	10	pptv	ND	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	ND	10	pptv	ND	0.043	ug/m3
o-Xylene	ND	10	pptv	ND	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	ND	10	pptv	ND	0.049	ug/m3
1,2,4-Trimethylbenzene	ND	10	pptv	ND	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	ND	10	pptv	ND	0.052	ug/m3
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	ND	10	pptv	ND	0.043	ug/m3

Enthalpy Analytical - Orange Analytical Report: Batch QC

Lab #: 522442

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

QC1212997 Surrogate	%REC	Limits	Units (M)
Bromofluorobenzene	90	70-130	ug/m3

Legend

ND: Not Detected

RL (V): Reporting Limit

Result (M): Result in mass units

Result (V): Result in volume units

Enthalpy Analytical - Orange Analytical Report: Batch QC

Lab #: 522442		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Type: BS	Diln Fac: 1.000	Prep: METHOD
Lab ID: QC1213576	Batch#: 358299	Analysis: EPA TO-15 SIM
Matrix: Air	Analyzed: 12/18/24 07:32	Analyst: OHD

QC1213576 Analyte	Spiked	Result (V)	Units (V)	%REC	Limits
Freon 12	100.0	100.2	pptv	100	70-130
Chloromethane	100.0	101.4	pptv	101	70-130
Freon 114	100.0	100.3	pptv	100	70-130
Vinyl Chloride	100.0	101.1	pptv	101	70-130
Bromomethane	100.0	98.00	pptv	98	70-130
Chloroethane	100.0	98.99	pptv	99	70-130
Vinyl bromide	100.0	103.1	pptv	103	70-130
Trichlorofluoromethane	100.0	100.2	pptv	100	70-130
1,1-Dichloroethene	100.0	104.9	pptv	105	70-130
Methylene Chloride	100.0	98.92	pptv	99	70-130
Freon 113	100.0	101.1	pptv	101	70-130
trans-1,2-Dichloroethene	100.0	101.6	pptv	102	70-130
1,1-Dichloroethane	100.0	100.6	pptv	101	70-130
cis-1,2-Dichloroethene	100.0	101.6	pptv	102	70-130
Chloroform	100.0	100.3	pptv	100	70-130
1,2-Dichloroethane	100.0	99.12	pptv	99	70-130
1,1,1-Trichloroethane	100.0	99.45	pptv	99	70-130
Benzene	100.0	97.97	pptv	98	70-130
Carbon Tetrachloride	100.0	97.79	pptv	98	70-130
1,2-Dichloropropane	100.0	100.5	pptv	100	70-130
Bromodichloromethane	100.0	96.32	pptv	96	70-130
Trichloroethene	100.0	100.0	pptv	100	70-130
cis-1,3-Dichloropropene	100.0	101.6	pptv	102	70-130
trans-1,3-Dichloropropene	100.0	100.8	pptv	101	70-130
1,1,2-Trichloroethane	100.0	98.92	pptv	99	70-130
Toluene	100.0	88.32	pptv	88	70-130
Dibromochloromethane	100.0	95.28	pptv	95	70-130
1,2-Dibromoethane	100.0	96.75	pptv	97	70-130
Tetrachloroethene	100.0	102.3	pptv	102	70-130
Chlorobenzene	100.0	100.5	pptv	101	70-130
Ethylbenzene	100.0	97.87	pptv	98	70-130
m,p-Xylenes	200.0	194.0	pptv	97	70-130
Bromoform	100.0	94.91	pptv	95	70-130
Styrene	100.0	115.8	pptv	116	70-130
o-Xylene	100.0	99.24	pptv	99	70-130
2-Chlorotoluene	100.0	99.33	pptv	99	70-130
1,3,5-Trimethylbenzene	100.0	127.0	pptv	127	70-130
1,2,4-Trimethylbenzene	100.0	110.5	pptv	110	70-130
Benzyl chloride	100.0	90.53	pptv	91	70-130
1,3-Dichlorobenzene	100.0	99.84	pptv	100	70-130
1,4-Dichlorobenzene	100.0	96.97	pptv	97	70-130
1,2-Dichlorobenzene	100.0	96.94	pptv	97	70-130
1,2,4-Trichlorobenzene	100.0	83.43	pptv	83	70-130
1,1,2,2-Tetrachloroethane	100.0	98.86	pptv	99	70-130
1,1,1,2-Tetrachloroethane	100.0	98.31	pptv	98	70-130
Naphthalene	100.0	77.14	pptv	77	70-130
Hexachlorobutadiene	100.0	88.25	pptv	88	70-130

Enthalpy Analytical - Orange Analytical Report: Batch QC

Lab #: 522442

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

QC1213576 Surrogate	%REC	Limits
Bromofluorobenzene	104	70-130

Type: BSD

Diln Fac: 1.000

Prep: METHOD

Lab ID: QC1213577

Batch#: 358299

Analysis: EPA TO-15 SIM

Matrix: Air

Analyzed: 12/18/24 08:15

Analyst: OHD

QC1213577 Analyte	Spiked	Result (V)	Units (V)	%REC	Limits	RPD	Lim
Freon 12	100.0	100.6	pptv	101	70-130	0	25
Chloromethane	100.0	102.8	pptv	103	70-130	1	25
Freon 114	100.0	101.3	pptv	101	70-130	1	25
Vinyl Chloride	100.0	101.8	pptv	102	70-130	1	25
Bromomethane	100.0	101.9	pptv	102	70-130	4	25
Chloroethane	100.0	98.93	pptv	99	70-130	0	25
Vinyl bromide	100.0	104.2	pptv	104	70-130	1	25
Trichlorofluoromethane	100.0	101.1	pptv	101	70-130	1	25
1,1-Dichloroethene	100.0	105.4	pptv	105	70-130	0	25
Methylene Chloride	100.0	100.4	pptv	100	70-130	2	25
Freon 113	100.0	101.7	pptv	102	70-130	1	25
trans-1,2-Dichloroethene	100.0	102.4	pptv	102	70-130	1	25
1,1-Dichloroethane	100.0	101.2	pptv	101	70-130	1	25
cis-1,2-Dichloroethene	100.0	102.0	pptv	102	70-130	0	25
Chloroform	100.0	101.3	pptv	101	70-130	1	25
1,2-Dichloroethane	100.0	100.2	pptv	100	70-130	1	25
1,1,1-Trichloroethane	100.0	100.2	pptv	100	70-130	1	25
Benzene	100.0	98.41	pptv	98	70-130	0	25
Carbon Tetrachloride	100.0	98.75	pptv	99	70-130	1	25
1,2-Dichloropropane	100.0	101.4	pptv	101	70-130	1	25
Bromodichloromethane	100.0	97.14	pptv	97	70-130	1	25
Trichloroethene	100.0	101.4	pptv	101	70-130	1	25
cis-1,3-Dichloropropene	100.0	100.8	pptv	101	70-130	1	25
trans-1,3-Dichloropropene	100.0	101.1	pptv	101	70-130	0	25
1,1,2-Trichloroethane	100.0	99.73	pptv	100	70-130	1	25
Toluene	100.0	88.98	pptv	89	70-130	1	25
Dibromochloromethane	100.0	95.56	pptv	96	70-130	0	25
1,2-Dibromoethane	100.0	97.91	pptv	98	70-130	1	25
Tetrachloroethene	100.0	103.9	pptv	104	70-130	2	25
Chlorobenzene	100.0	101.7	pptv	102	70-130	1	25
Ethylbenzene	100.0	98.57	pptv	99	70-130	1	25
m,p-Xylenes	200.0	194.6	pptv	97	70-130	0	25
Bromoform	100.0	95.85	pptv	96	70-130	1	25
Styrene	100.0	116.8	pptv	117	70-130	1	25
o-Xylene	100.0	98.85	pptv	99	70-130	0	25
2-Chlorotoluene	100.0	101.0	pptv	101	70-130	2	25
1,3,5-Trimethylbenzene	100.0	128.5	pptv	129	70-130	1	25
1,2,4-Trimethylbenzene	100.0	113.2	pptv	113	70-130	2	25
Benzyl chloride	100.0	92.68	pptv	93	70-130	2	25
1,3-Dichlorobenzene	100.0	101.8	pptv	102	70-130	2	25
1,4-Dichlorobenzene	100.0	98.99	pptv	99	70-130	2	25
1,2-Dichlorobenzene	100.0	98.17	pptv	98	70-130	1	25
1,2,4-Trichlorobenzene	100.0	86.20	pptv	86	70-130	3	25
1,1,2,2-Tetrachloroethane	100.0	100.2	pptv	100	70-130	1	25
1,1,1,2-Tetrachloroethane	100.0	98.81	pptv	99	70-130	1	25

Enthalpy Analytical - Orange Analytical Report: Batch QC

Lab #: 522442

Project#: STANDARD

Client: Catalyst Environmental Solutions

Location: Walnut Bluff Workplan

QC1213577 Analyte	Spiked	Result (V)	Units (V)	%REC	Limits	RPD	Lim
Naphthalene	100.0	80.37	pptv	80	70-130	4	25
Hexachlorobutadiene	100.0	90.16	pptv	90	70-130	2	25
QC1213577 Surrogate				%REC	Limits		
Bromofluorobenzene				104	70-130		

Legend

RPD: Relative Percent
Difference

**Result
(V):** Result in volume units

Enthalpy Analytical - Orange Analytical Report: Batch QC

Lab #: 522442		Project#: STANDARD
Client: Catalyst Environmental Solutions		Location: Walnut Bluff Workplan
Type: BLANK	Diln Fac: 1.000	Prep: METHOD
Lab ID: QC1213578	Batch#: 358299	Analysis: EPA TO-15 SIM
Matrix: Air	Analyzed: 12/18/24 09:45	Analyst: OHD

QC1213578 Analyte	Result (V)	RL (V)	Units (V)	Result (M)	RL (M)	Units (M)
Freon 12	ND	10	pptv	ND	0.049	ug/m3
Chloromethane	ND	100	pptv	ND	0.21	ug/m3
Freon 114	ND	10	pptv	ND	0.070	ug/m3
Vinyl Chloride	ND	10	pptv	ND	0.026	ug/m3
Bromomethane	ND	10	pptv	ND	0.039	ug/m3
Chloroethane	ND	10	pptv	ND	0.026	ug/m3
Vinyl bromide	ND	10	pptv	ND	0.044	ug/m3
Trichlorofluoromethane	ND	10	pptv	ND	0.056	ug/m3
1,1-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Methylene Chloride	ND	20	pptv	ND	0.069	ug/m3
Freon 113	ND	10	pptv	ND	0.077	ug/m3
trans-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
1,1-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
cis-1,2-Dichloroethene	ND	10	pptv	ND	0.040	ug/m3
Chloroform	ND	10	pptv	ND	0.049	ug/m3
1,2-Dichloroethane	ND	10	pptv	ND	0.040	ug/m3
1,1,1-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Benzene	ND	10	pptv	ND	0.032	ug/m3
Carbon Tetrachloride	ND	10	pptv	ND	0.063	ug/m3
1,2-Dichloropropane	ND	10	pptv	ND	0.046	ug/m3
Bromodichloromethane	ND	10	pptv	ND	0.067	ug/m3
Trichloroethene	ND	10	pptv	ND	0.054	ug/m3
cis-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
trans-1,3-Dichloropropene	ND	10	pptv	ND	0.045	ug/m3
1,1,2-Trichloroethane	ND	10	pptv	ND	0.055	ug/m3
Toluene	ND	10	pptv	ND	0.038	ug/m3
Dibromochloromethane	ND	10	pptv	ND	0.085	ug/m3
1,2-Dibromoethane	ND	10	pptv	ND	0.077	ug/m3
Tetrachloroethene	ND	10	pptv	ND	0.068	ug/m3
Chlorobenzene	ND	10	pptv	ND	0.046	ug/m3
Ethylbenzene	ND	10	pptv	ND	0.043	ug/m3
m,p-Xylenes	ND	10	pptv	ND	0.043	ug/m3
Bromoform	ND	10	pptv	ND	0.10	ug/m3
Styrene	ND	10	pptv	ND	0.043	ug/m3
o-Xylene	ND	10	pptv	ND	0.043	ug/m3
2-Chlorotoluene	ND	10	pptv	ND	0.052	ug/m3
1,3,5-Trimethylbenzene	ND	10	pptv	ND	0.049	ug/m3
1,2,4-Trimethylbenzene	ND	10	pptv	ND	0.049	ug/m3
Benzyl chloride	ND	10	pptv	ND	0.052	ug/m3
1,3-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,4-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2-Dichlorobenzene	ND	10	pptv	ND	0.060	ug/m3
1,2,4-Trichlorobenzene	ND	10	pptv	ND	0.074	ug/m3
1,1,2,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
1,1,1,2-Tetrachloroethane	ND	10	pptv	ND	0.069	ug/m3
Naphthalene	ND	10	pptv	ND	0.052	ug/m3
Hexachlorobutadiene	ND	10	pptv	ND	0.11	ug/m3
Xylene (total)	ND	10	pptv	ND	0.043	ug/m3

Enthalpy Analytical - Orange Analytical Report: Batch QC**Lab #:** 522442**Project#:** STANDARD**Client:** Catalyst Environmental Solutions**Location:** Walnut Bluff Workplan

QC1213578 Surrogate	%REC	Limits	Units (M)
Bromofluorobenzene	90	70-130	ug/m3

Legend

ND: Not Detected**RL (V):** Reporting Limit**Result (M):** Result in mass units**Result (V):** Result in volume units

Equipment Certification Report for 518235

Yola Bayram
Catalyst Environmental Solutions
315 Montana Avenue
Suite 311
Santa Monica, CA 90403

Lab Job #: 518235
Location: Walnut Bluff Workplan
Date Received: 10/15/24

Client Sample ID	Lab Sample ID	Equipment Cert	Equipment ID	Type	Cleaning Batch
WB01-14D	518235-001	TO15 SIM Indv.	C70196	6L Canister	5884
WB02-14D	518235-002	TO15 SIM Indv.	C70903	6L Canister	5908
WB03-14D	518235-003	TO15 SIM Indv.	C70059	6L Canister	5854
WB04-14D	518235-004	TO15 SIM Indv.	C70932	6L Canister	5914
WB05-14D	518235-005	TO15 SIM Indv.	C70800	6L Canister	5890
WB06-14D	518235-006	TO15 SIM Indv.	C70916	6L Canister	5908
WB07-14D	518235-007	TO15 SIM Indv.	C70901	6L Canister	5908
WB08-14D	518235-008	TO15 SIM Indv.	C70914	6L Canister	5908
WB09-14D	518235-009	TO15 SIM Indv.	C70012	6L Canister	5890
WB10-14D	518235-010	TO15 SIM Indv.	C70331	6L Canister	5890
WB11-14D	518235-011	TO15 SIM Indv.	C70352	6L Canister	5883
WB12-14D	518235-012	TO15 SIM Indv.	C70908	6L Canister	5908
WB13-14D	518235-013	TO15 SIM Indv.	C70249	6L Canister	5890
WB14-14D	518235-014	TO15 SIM Indv.	C70309	6L Canister	5890
WB17-14D	518235-015	TO15 SIM Indv.	C70812	6L Canister	5883
WB18-14D	518235-016	TO15 SIM Indv.	C70938	6L Canister	5914
WB19-14D	518235-017	TO15 SIM Indv.	C70081	6L Canister	5890

Cleaning Batch	Check Run	Equipment ID	Type
5854	374364761015	C70059	6L Canister
5883	504376376016	C70812	6L Canister
5883	504376376021	C70352	6L Canister
5884	504376376019	C70196	6L Canister
5890	504377891012	C70249	6L Canister
5890	504377891019	C70331	6L Canister
5890	504377891020	C70012	6L Canister
5890	504377891023	C70800	6L Canister
5890	504377891024	C70081	6L Canister
5890	504377891028	C70309	6L Canister
5908	504384909010	C70901	6L Canister
5908	504384909016	C70903	6L Canister
5908	504384909017	C70914	6L Canister
5908	504384909019	C70916	6L Canister
5908	504386383008	C70908	6L Canister
5914	504384909015	C70932	6L Canister
5914	504384909018	C70938	6L Canister

Cleaning Batch	Started	Completed	Pressure	Status
5854	09/06/24 12:41	09/09/24 06:27	<0.05 mmHg	Successful
5883	09/13/24 14:35	09/14/24 08:29	<0.05 mmHg	Successful
5884	09/14/24 09:14	09/16/24 06:17	<0.05 mmHg	Successful
5890	09/16/24 14:14	09/17/24 05:07	<0.05 mmHg	Successful
5908	09/19/24 16:35	09/20/24 05:02	<0.05 mmHg	Successful

Equipment Certification Report for 518235

Cleaning Batch	Started	Completed	Pressure	Status
5914	09/21/24 12:43	09/22/24 09:04	<0.05 mmHg	Successful

Equipment Certification Report for 518235

Check Run: 504377891024
Analysis Date/Time: 19-SEP-2024 04:05:00
Equipment ID: C70081

C70081 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504384909017
Analysis Date/Time: 23-SEP-2024 19:31:00
Equipment ID: C70914

C70914 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504377891012
Analysis Date/Time: 18-SEP-2024 18:35:00
Equipment ID: C70249

C70249 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504384909010
Analysis Date/Time: 23-SEP-2024 13:58:00
Equipment ID: C70901

C70901 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504377891020
Analysis Date/Time: 19-SEP-2024 00:55:00
Equipment ID: C70012

C70012 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504384909019
Analysis Date/Time: 23-SEP-2024 21:06:00
Equipment ID: C70916

C70916 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504386383008
Analysis Date/Time: 24-SEP-2024 12:53:00
Equipment ID: C70908

C70908 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504376376021
Analysis Date/Time: 18-SEP-2024 02:07:00
Equipment ID: C70352

C70352 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504384909018
Analysis Date/Time: 23-SEP-2024 20:18:00
Equipment ID: C70938

C70938 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504384909016
Analysis Date/Time: 23-SEP-2024 18:43:00
Equipment ID: C70903

C70903 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504376376016
Analysis Date/Time: 17-SEP-2024 22:10:00
Equipment ID: C70812

C70812 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504377891023
Analysis Date/Time: 19-SEP-2024 03:17:00
Equipment ID: C70800

C70800 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504377891019
Analysis Date/Time: 19-SEP-2024 00:07:00
Equipment ID: C70331

C70331 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504376376019
Analysis Date/Time: 18-SEP-2024 00:32:00
Equipment ID: C70196

C70196 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 374364761015
Analysis Date/Time: 09-SEP-2024 18:04:00
Equipment ID: C70059

C70059 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504384909015
Analysis Date/Time: 23-SEP-2024 17:55:00
Equipment ID: C70932

C70932 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Equipment Certification Report for 518235

Check Run: 504377891028
Analysis Date/Time: 19-SEP-2024 07:16:00
Equipment ID: C70309

C70309 Analyte	Method	Result	Result
1,1,1,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,1-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1,2,2-Tetrachloroethane	EPA TO-15 SIM	<10.00 pptv	<0.06865 ug/m3
1,1,2-Trichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.05456 ug/m3
1,1-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,1-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
1,2,4-Trichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.07421 ug/m3
1,2,4-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,2-Dibromoethane	EPA TO-15 SIM	<10.00 pptv	<0.07684 ug/m3
1,2-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,2-Dichloroethane	EPA TO-15 SIM	<10.00 pptv	<0.04047 ug/m3
1,2-Dichloropropane	EPA TO-15 SIM	<10.00 pptv	<0.04621 ug/m3
1,3,5-Trimethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04916 ug/m3
1,3-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
1,4-Dichlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.06012 ug/m3
2-Chlorotoluene	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Benzene	EPA TO-15 SIM	<10.00 pptv	<0.03195 ug/m3
Benzyl chloride	EPA TO-15 SIM	<10.00 pptv	<0.05177 ug/m3
Bromodichloromethane	EPA TO-15 SIM	<10.00 pptv	<0.06701 ug/m3
Bromoform	EPA TO-15 SIM	<10.00 pptv	<0.1034 ug/m3
Bromomethane	EPA TO-15 SIM	<10.00 pptv	<0.03883 ug/m3
Carbon Tetrachloride	EPA TO-15 SIM	<10.00 pptv	<0.06291 ug/m3
Chlorobenzene	EPA TO-15 SIM	<10.00 pptv	<0.04604 ug/m3
Chloroethane	EPA TO-15 SIM	<10.00 pptv	<0.02639 ug/m3
Chloroform	EPA TO-15 SIM	<10.00 pptv	<0.04883 ug/m3
Chloromethane	EPA TO-15 SIM	<100.0 pptv	<0.2065 ug/m3
cis-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
cis-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Dibromochloromethane	EPA TO-15 SIM	<10.00 pptv	<0.08519 ug/m3
Ethylbenzene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Freon 113	EPA TO-15 SIM	<10.00 pptv	<0.07664 ug/m3
Freon 114	EPA TO-15 SIM	<10.00 pptv	<0.06991 ug/m3
Freon 12	EPA TO-15 SIM	<10.00 pptv	<0.04945 ug/m3
Hexachlorobutadiene	EPA TO-15 SIM	<10.00 pptv	<0.1067 ug/m3
m,p-Xylenes	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Methylene Chloride	EPA TO-15 SIM	<20.00 pptv	<0.06947 ug/m3
Naphthalene	EPA TO-15 SIM	<10.00 pptv	<0.05242 ug/m3
o-Xylene	EPA TO-15 SIM	<10.00 pptv	<0.04342 ug/m3
Styrene	EPA TO-15 SIM	<10.00 pptv	<0.04260 ug/m3
Tetrachloroethene	EPA TO-15 SIM	<10.00 pptv	<0.06783 ug/m3
Toluene	EPA TO-15 SIM	<10.00 pptv	<0.03769 ug/m3
trans-1,2-Dichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.03965 ug/m3
trans-1,3-Dichloropropene	EPA TO-15 SIM	<10.00 pptv	<0.04539 ug/m3
Trichloroethene	EPA TO-15 SIM	<10.00 pptv	<0.05374 ug/m3
Trichlorofluoromethane	EPA TO-15 SIM	<10.00 pptv	<0.05618 ug/m3
Vinyl bromide	EPA TO-15 SIM	<10.00 pptv	<0.04374 ug/m3
Vinyl Chloride	EPA TO-15 SIM	<10.00 pptv	<0.02556 ug/m3

Appendix F

Laboratory Analytical Reports – 24 Hour Samples

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG30\
Data File : 30AUG15.D
Acq On : 31 Aug 2024 5:15 am
Operator : BEP
Sample : BLK-626 2416470-01
Misc : *
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 03 09:56:48 2024
Quant Method : C:\msdchem\1\methods\2024\202408\23-1041\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Fri Aug 23 14:02:10 2024
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	7.259	49	22673	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	48789	500.00	pptv	0.00
29) Chlorobenzene-d5	10.881	117	30168	500.00	pptv	0.00

System Monitoring Compounds

36) 4-Bromofluorobenzene (...)	11.711	95	16015	443.06	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	88.61%

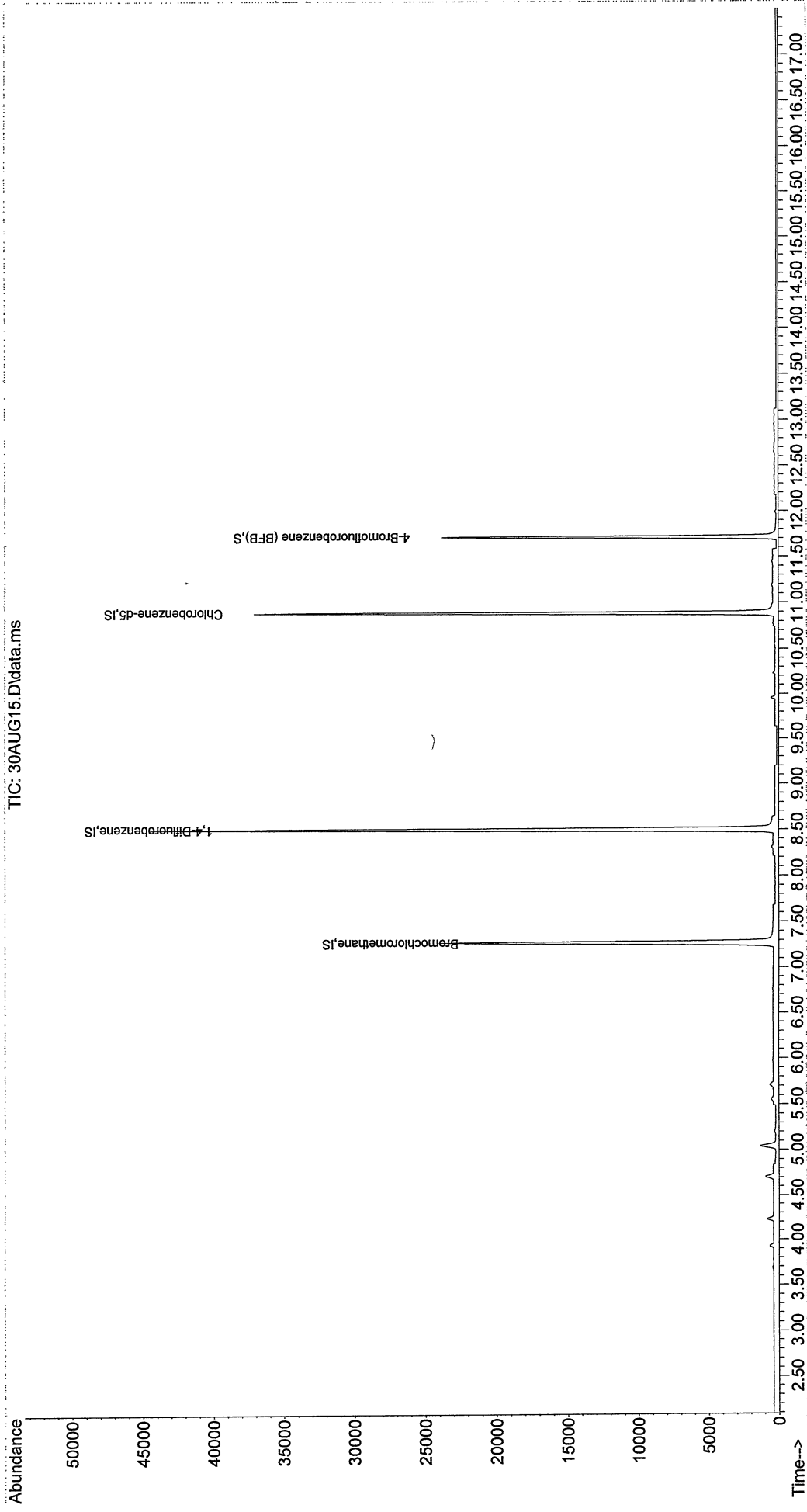
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG30\
Data File : 30AUG15.D
Acq On : 31 Aug 2024 5:15 am
Operator : BEP
Sample : BLK-626
Misc : *
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 03 09:56:48 2024
Quant Method : C:\msdchem\1\methods\2024\202408\23-1041\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Fri Aug 23 14:02:10 2024
Response via : Initial Calibration

TIC: 30AUG15.D\data.ms



Data Path : C:\msdchem\1\data\2024\SEP2024\SEP11\
Data File : 11SEP16.D
Acq On : 12 Sep 2024 4:08 am
Operator : BEP
Sample : blk-813 2416470-02
Misc : *
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 12 08:47:59 2024
Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Wed Sep 04 09:00:16 2024
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

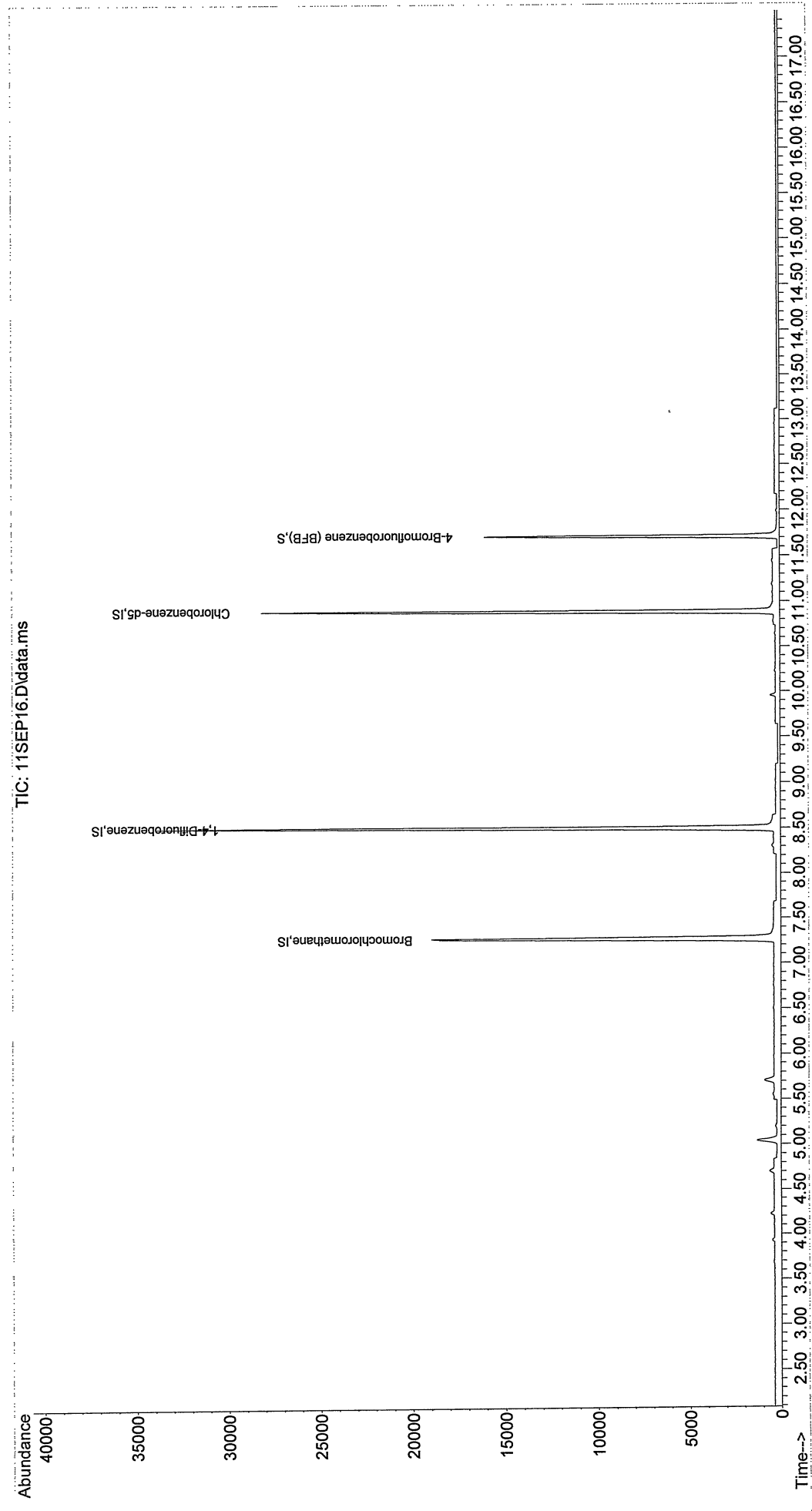
Internal Standards						
1) Bromochloromethane	7.259	49	18517	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	36448	500.00	pptv	0.00
29) Chlorobenzene-d5	10.883	117	22027	500.00	pptv	0.00
System Monitoring Compounds						
36) 4-Bromofluorobenzene (...)	11.708	95	10712	424.31	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	84.86%

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\SEP2024\SEP11\
 Data File : 11SEP16.D
 Acq On : 12 Sep 2024 4:08 am
 Operator : BEP
 Sample : blk-813
 Misc : *
 ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 12 08:47:59 2024
 Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Wed Sep 04 09:00:16 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\SEP2024\SEP11\
Data File : 11SEP08.D
Acq On : 11 Sep 2024 11:18 pm
Operator : BEP
Sample : blk-794 2416470-03
Misc : *
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 12 09:36:31 2024
Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Wed Sep 04 09:00:16 2024
Response via : Initial Calibration

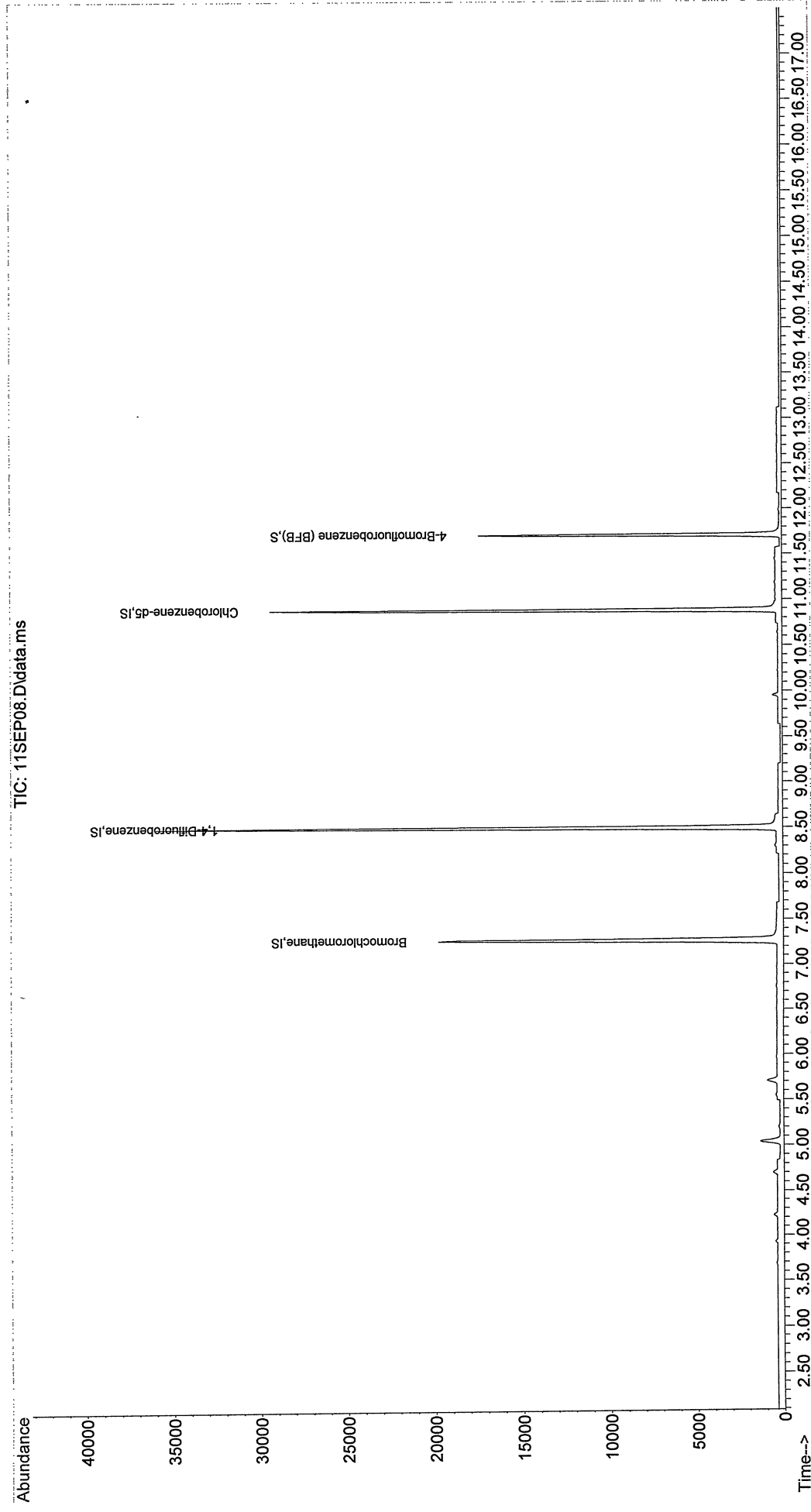
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	7.259	49	19100	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	38859	500.00	pptv	0.00
29) Chlorobenzene-d5	10.883	117	23234	500.00	pptv	0.00
System Monitoring Compounds						
36) 4-Bromofluorobenzene (...)	11.708	95	11559	434.07	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	86.81%

Target Compounds	Qvalue
------------------	--------

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\SEP2024\SEP11\
 Data File : 11SEP08.D
 Acq On : 11 Sep 2024 11:18 pm
 Operator : BEP
 Sample : blk-794
 Misc : *
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 12 09:36:31 2024
 Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Wed Sep 04 09:00:16 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\SEP2024\SEP11\
Data File : 11SEP07.D
Acq On : 11 Sep 2024 10:41 pm
Operator : BEP
Sample : blk-37493 2416470-04
Misc : 13-919
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 12 09:36:02 2024

Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M

Quant Title : TO-15 Vapor analysis

QLast Update : Wed Sep 04 09:00:16 2024

Response via : Initial Calibration

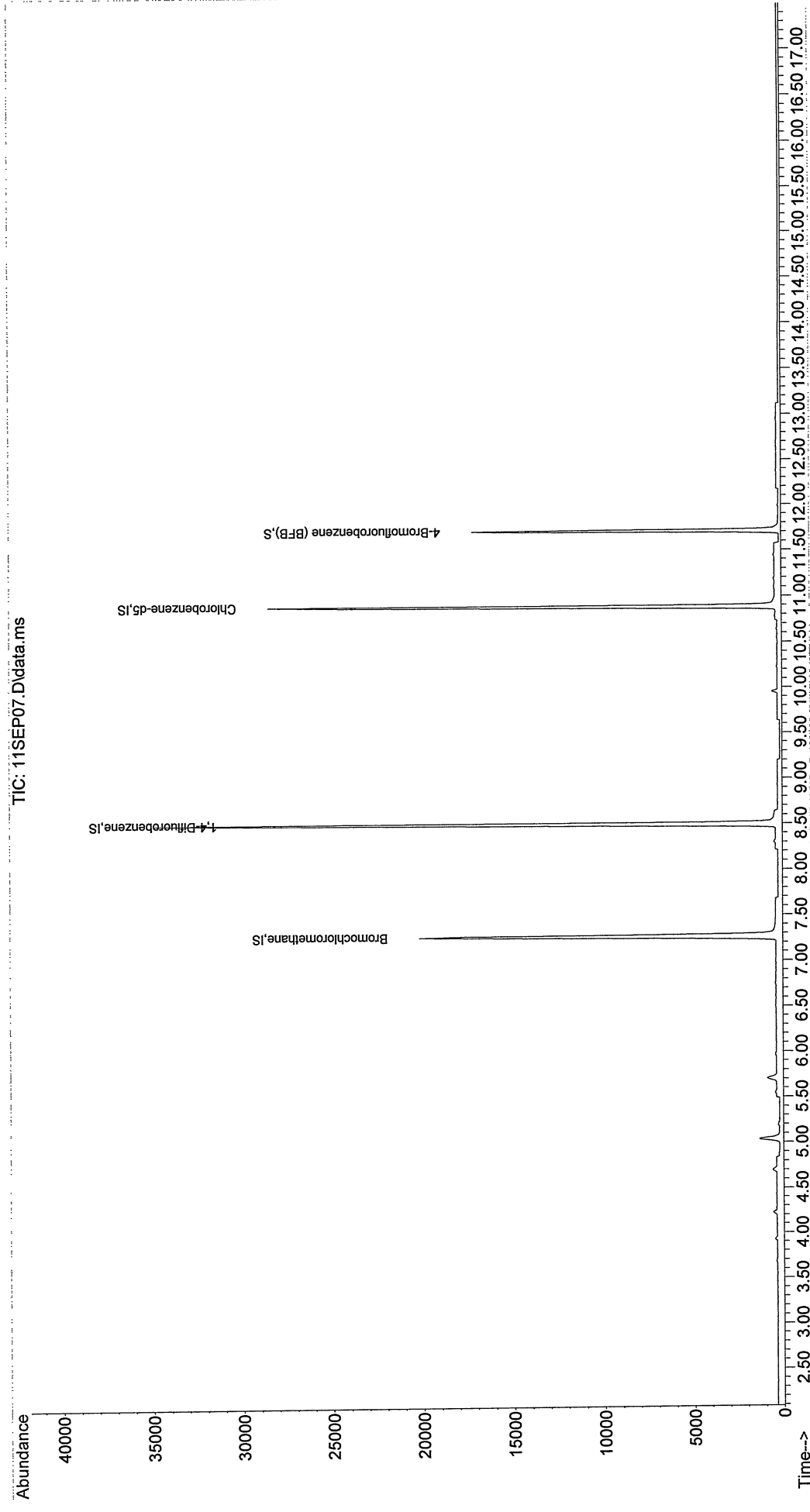
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	7.260	49	18967	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	38791	500.00	pptv	0.00
29) Chlorobenzene-d5	10.883	117	23172	500.00	pptv	0.00
System Monitoring Compounds						
36) 4-Bromofluorobenzene (...)	11.708	95	11368	428.04	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	85.61%

Target Compounds	Qvalue
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(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\SEP2024\SEP11\
 Data File : 11SEP07.D
 Acq On : 11 Sep 2024 10:41 pm
 Operator : BEP
 Sample : blk-37493
 Misc : 13-919
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 12 09:36:02 2024
 Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Wed Sep 04 09:00:16 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\SEP2024\SEP11\
Data File : 11SEP18.D
Acq On : 12 Sep 2024 5:21 am
Operator : BEP
Sample : blk-c8346 2416470-05
Misc : *
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 12 09:49:13 2024
Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Wed Sep 04 09:00:16 2024
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

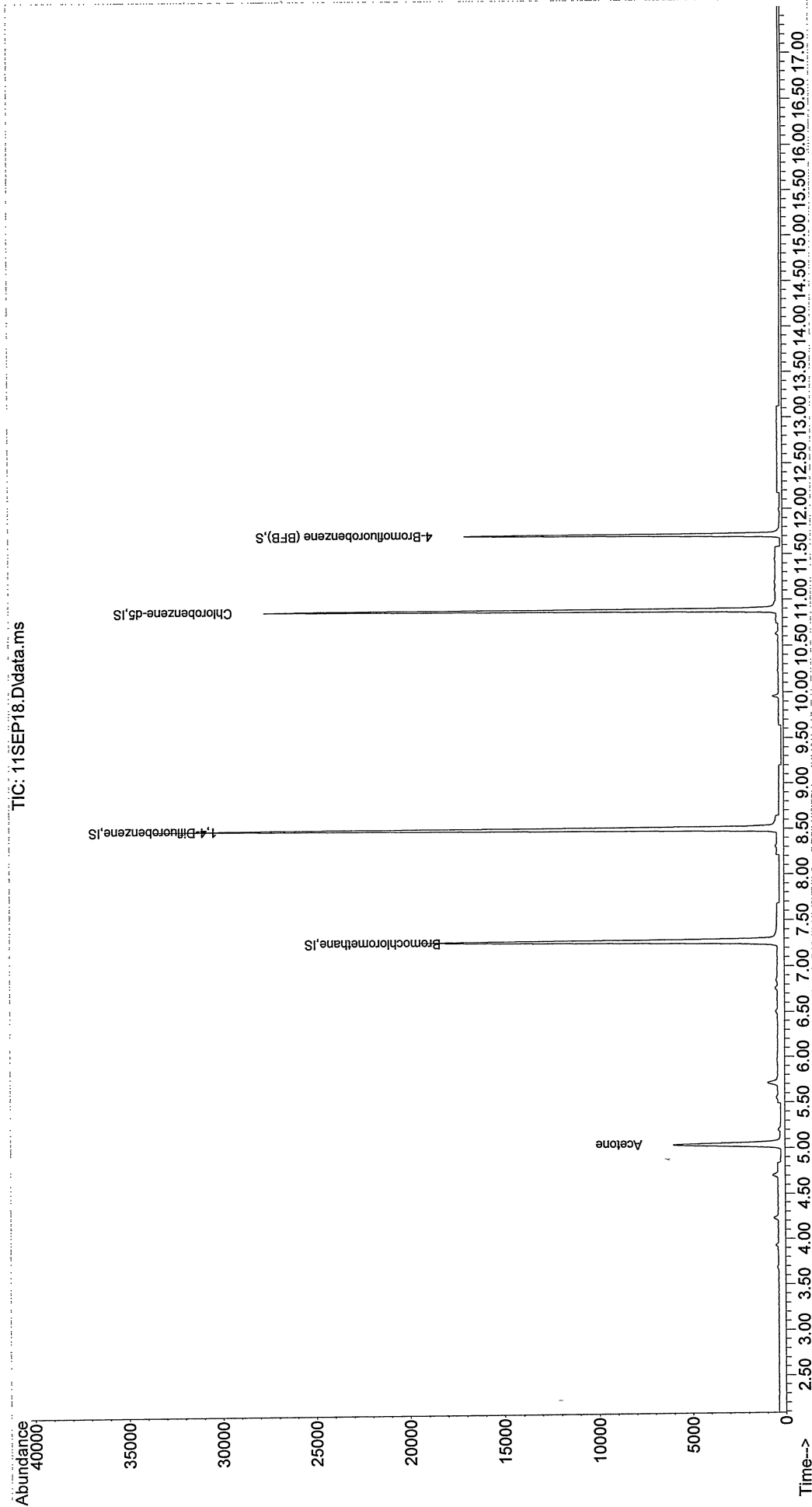
Internal Standards						
1) Bromochloromethane	7.259	49	18330	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	36954	500.00	pptv	0.00
29) Chlorobenzene-d5	10.881	117	22687	500.00	pptv	0.00
System Monitoring Compounds						
36) 4-Bromofluorobenzene (...)	11.711	95	11295	434.39	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	86.88%
Target Compounds						Qvalue
6) Acetone	5.041	58	3173	163.8983	pptv #	64

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\SEP2024\SEP11\
 Data File : 11SEP18.D
 Acq On : 12 Sep 2024 5:21 am
 Operator : BEP
 Sample : blk-c8346
 Misc : *
 ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 12 09:49:13 2024
 Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Wed Sep 04 09:00:16 2024
 Response via : Initial Calibration

TIC: 11SEP18.D\data.ms



Data Path : C:\msdchem\1\data\2024\SEP2024\SEP11\
Data File : 11SEP14.D *561 11/04/24*
Acq On : 12 Sep 2024 2:56 am
Operator : BEP
Sample : blk-747 *2417 2416470-06*
Misc : *
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 12 08:46:59 2024

Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M

Quant Title : TO-15 Vapor analysis

QLast Update : Wed Sep 04 09:00:16 2024

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

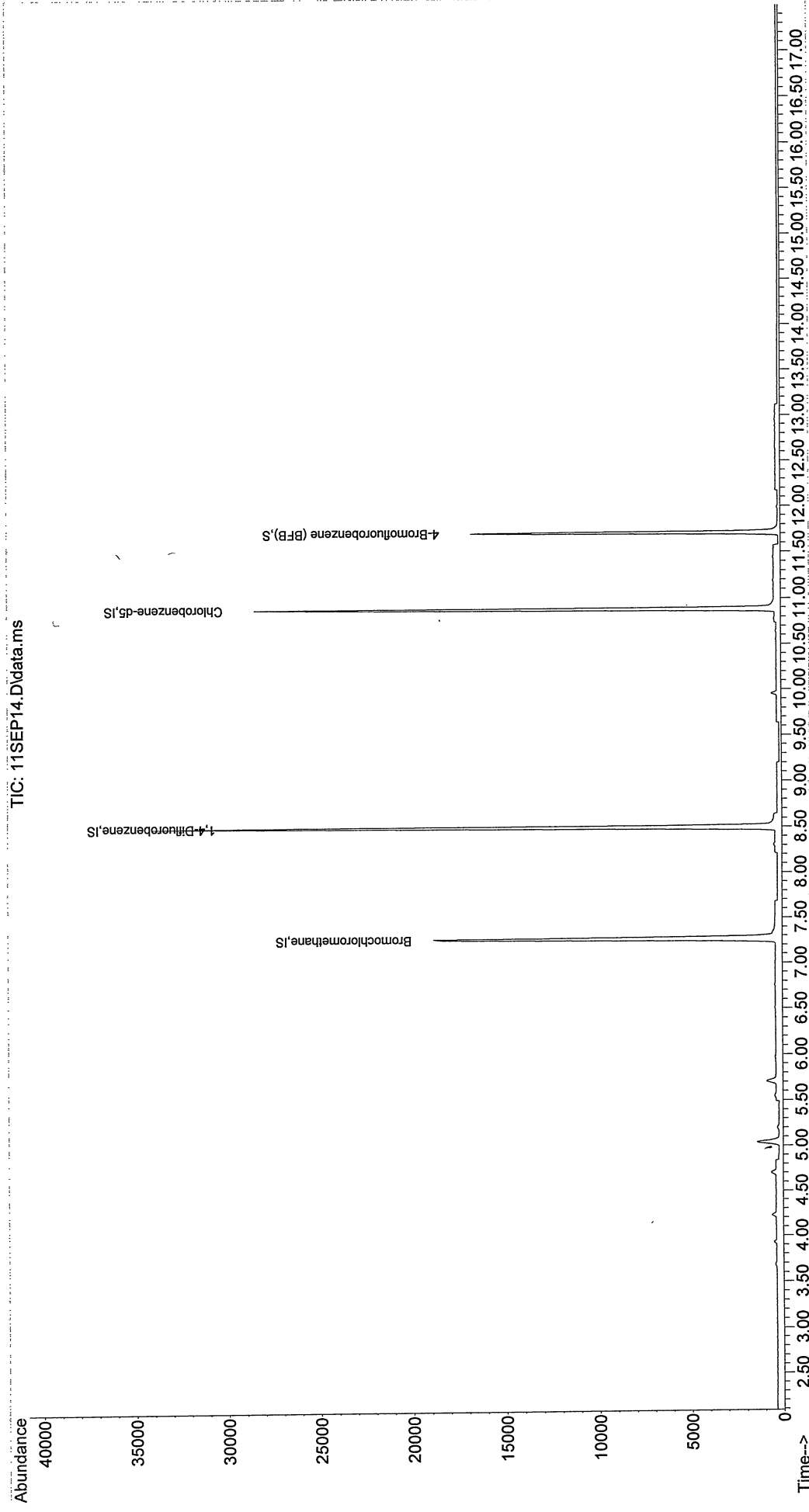
Internal Standards						
1) Bromochloromethane	7.259	49	18347	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	36699	500.00	pptv	0.00
29) Chlorobenzene-d5	10.883	117	22358	500.00	pptv	0.00
System Monitoring Compounds						
36) 4-Bromofluorobenzene (...)	11.708	95	11236	438.48	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	87.70%

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\SEP2024\SEP11\
 Data File : 11SEP14.D
 Acq On : 12 Sep 2024 2:56 am
 Operator : BEP
 Sample : blk-747
 Misc : *
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 12 08:46:59 2024
 Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Wed Sep 04 09:00:16 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\JUL2024\JUL09\
Data File : 09JUL12.D
Acq On : 9 Jul 2024 9:09 pm
Operator : BEP
Sample : blk-616 2416470-07
Misc : 13-825
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jul 10 13:46:08 2024
Quant Method : C:\msdchem\1\methods\2024\202406\26-2146\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Thu Jun 27 12:10:39 2024
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	7.659	49	21792	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.843	114	48485	500.00	pptv	0.00
28) Chlorobenzene-d5	11.188	117	39323	500.00	pptv	0.00

System Monitoring Compounds

34) 4-Bromofluorobenzene (...)	12.027	95	22550	481.58	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	96.32%

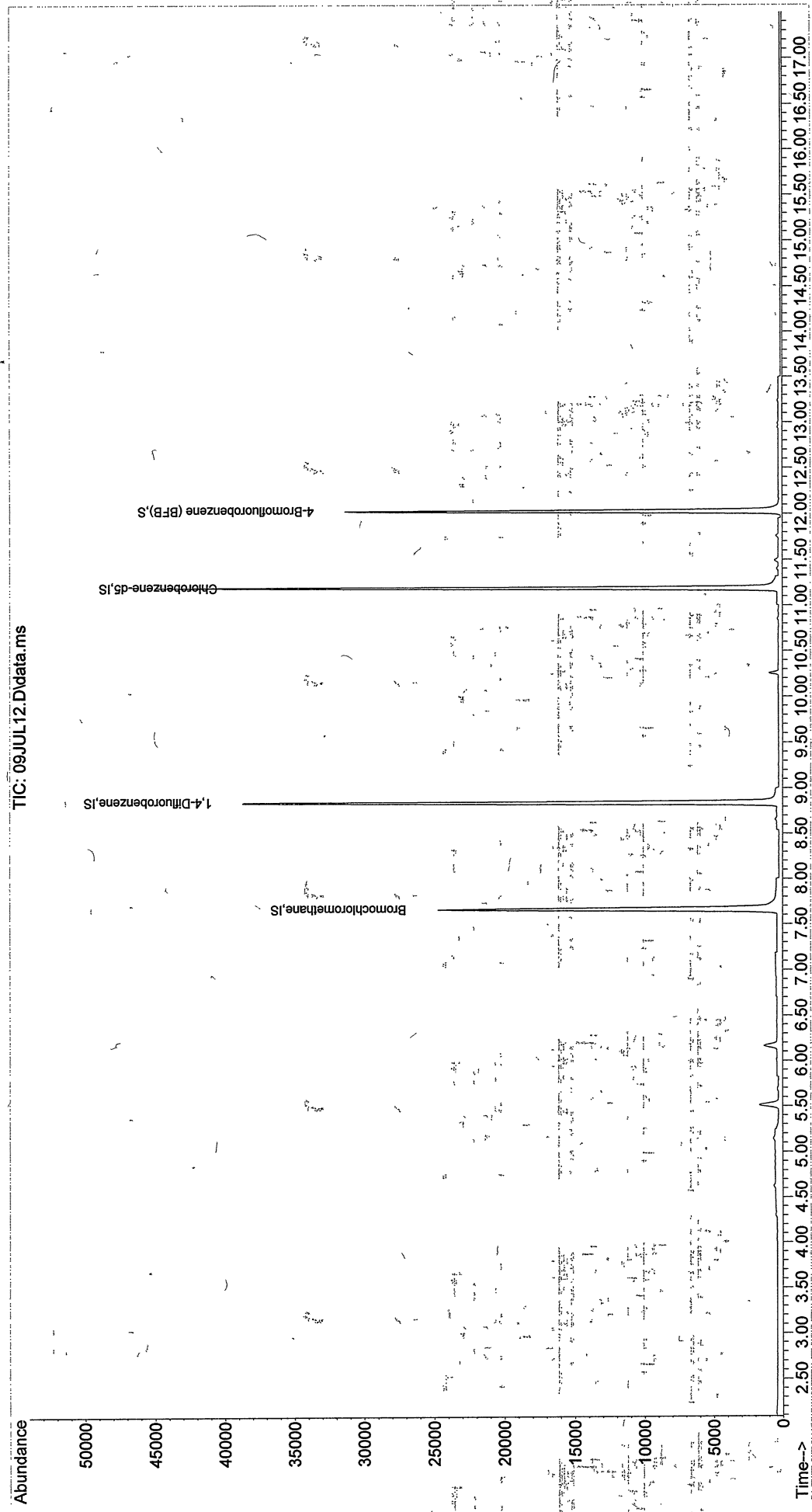
Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\JUL2024\JUL09\
Data File : 09JUL12.D
Acq On : 9 Jul 2024 9:09 pm
Operator : BEP
Sample : blk-616
Misc : 13-825
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jul 10 13:46:08 2024
Quant Method : C:\msdchem\1\methods\2024\202406\26-2146\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
Qlast Update : Thu Jun 27 12:10:39 2024
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\SEP2024\SEP11\
Data File : 11SEP06.D
Acq On : 11 Sep 2024 10:06 pm
Operator : BEP
Sample : blk-35416 2416470-08
Misc : 13-918
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 12 09:35:40 2024
Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Wed Sep 04 09:00:16 2024
Response via : Initial Calibration

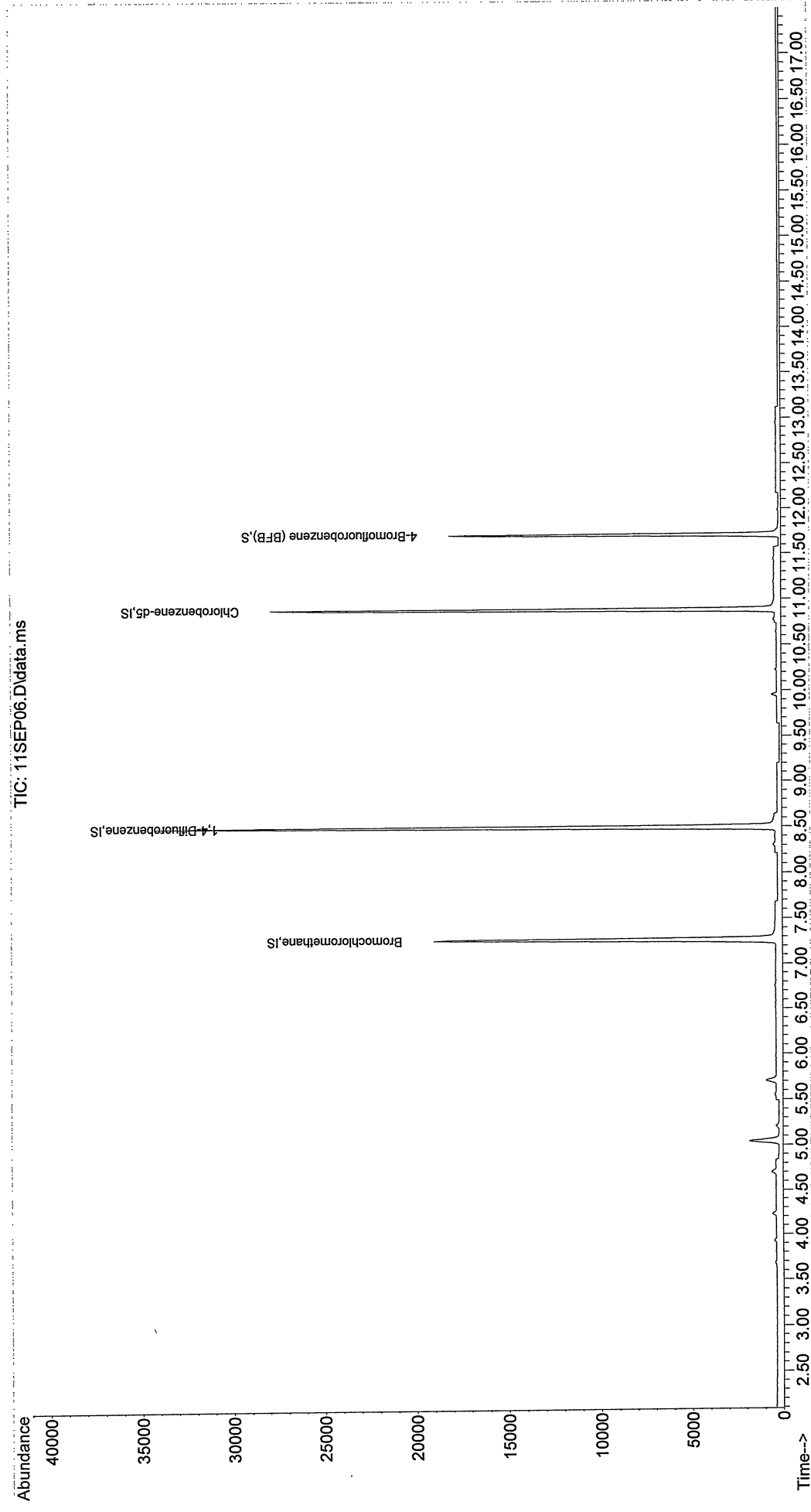
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	7.260	49	18249	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	37543	500.00	pptv	0.00
29) Chlorobenzene-d5	10.883	117	22820	500.00	pptv	0.00
System Monitoring Compounds						
36) 4-Bromofluorobenzene (...)	11.708	95	12057	460.99	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	92.20%

Target Compounds	Qvalue
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(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\SEP2024\SEP11\
 Data File : 11SEP06.D
 Acq On : 11 Sep 2024 10:06 pm
 Operator : BEP
 Sample : blk-35416
 Misc : 13-918
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 12 09:35:40 2024
 Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Wed Sep 04 09:00:16 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\

Data File : 06AUG11.D

Acq On : 6 Aug 2024 8:53 pm

Operator : BEP

Sample : blk-762

Misc : *

ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 06 22:57:08 2024

Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M

Quant Title : TO-15 Vapor analysis

QLast Update : Fri Aug 02 14:17:01 2024

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

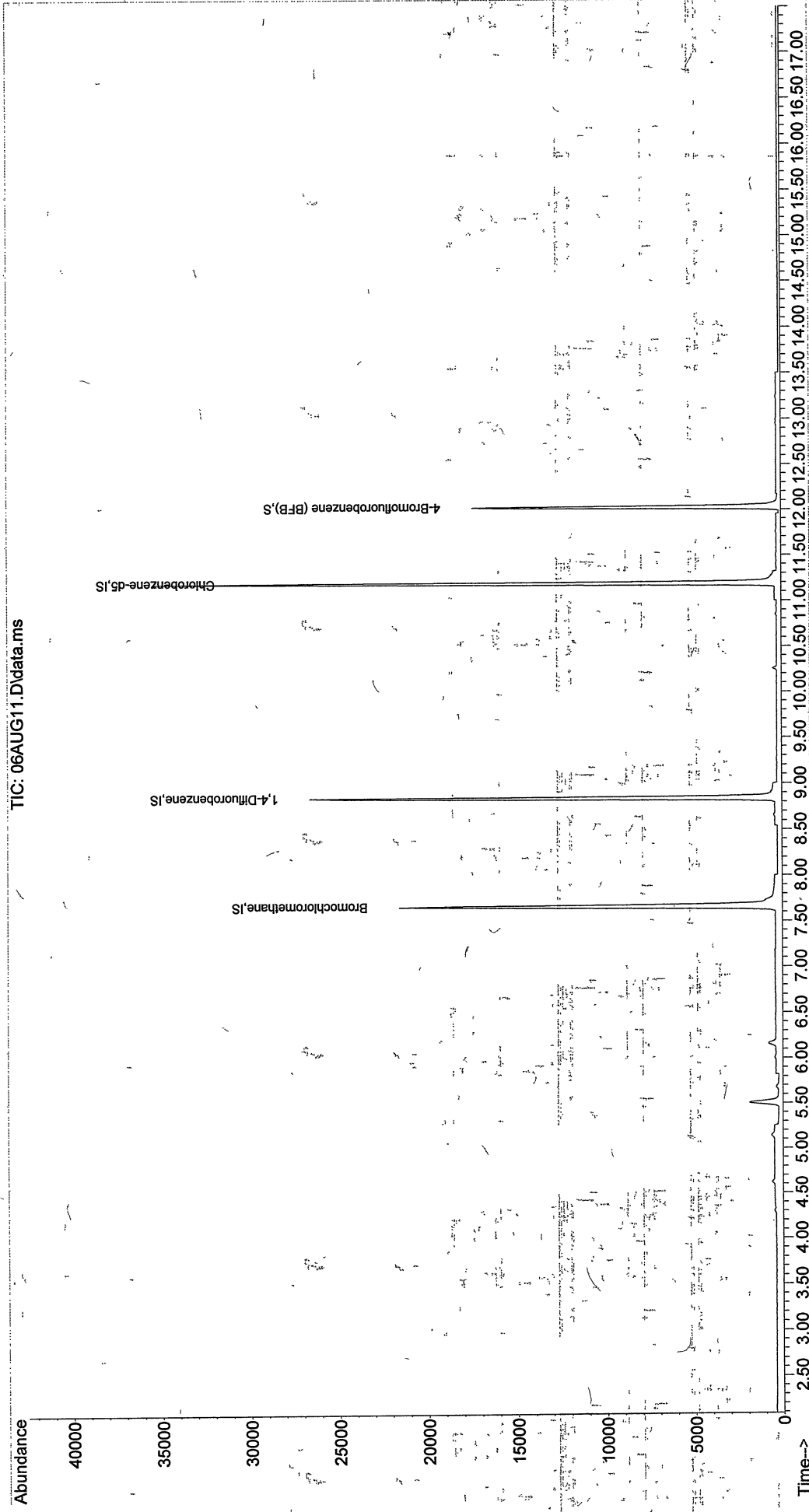
Internal Standards						
1) Bromochloromethane	7.658	49	15836	500.00	pptv	# 0.00
20) 1,4-Difluorobenzene	8.842	114	32095	500.00	pptv	0.00
28) Chlorobenzene-d5	11.186	117	29685	500.00	pptv	0.00
System Monitoring Compounds						
34) 4-Bromofluorobenzene (...	12.025	95	12149	369.05	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	73.81%

Target Compounds	Qvalue
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(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\
 Data File : 06AUG11.D
 Acq On : 6 Aug 2024 8:53 pm
 Operator : BEP
 Sample : blk-762
 Misc : *
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 06 22:57:08 2024
 Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Fri Aug 02 14:17:01 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\SEP2024\SEP11\
Data File : 11SEP17.D
Acq On : 12 Sep 2024 4:44 am
Operator : BEP
Sample : blk-0169 2416470-10
Misc : *
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 12 09:48:36 2024
Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Wed Sep 04 09:00:16 2024
Response via : Initial Calibration

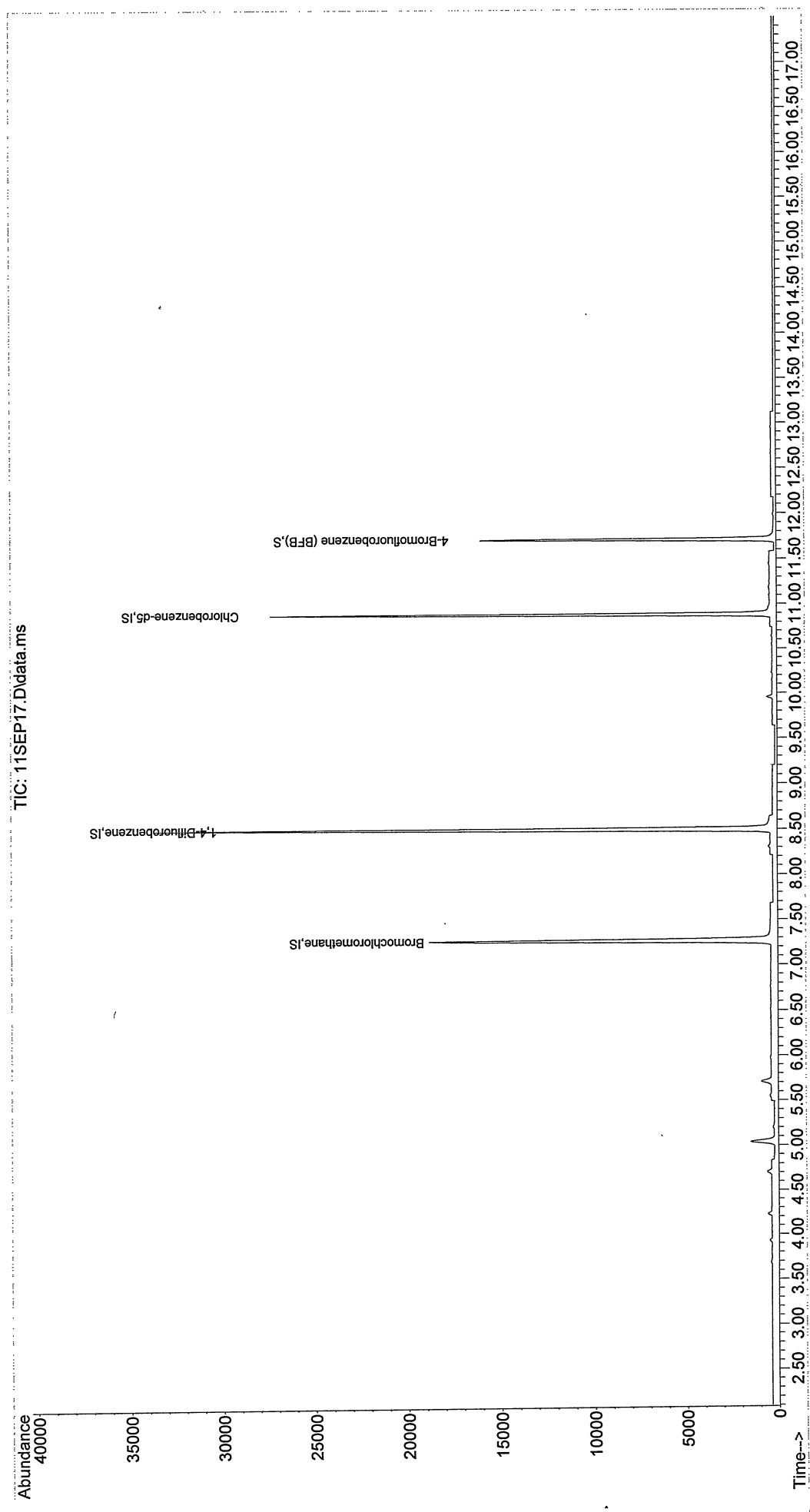
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	7.259	49	18011	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	35717	500.00	pptv	0.00
29) Chlorobenzene-d5	10.881	117	21862	500.00	pptv	0.00
System Monitoring Compounds						
36) 4-Bromofluorobenzene (...)	11.708	95	10719	427.79	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	85.56%

Target Compounds	Qvalue
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(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\SEP2024\SEP11\
Data File : 11SEP17.D
Acq On : 12 Sep 2024 4:44 am
Operator : BEP
Sample : blk-0169
Misc : *
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 12 09:48:36 2024
Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Wed Sep 04 09:00:16 2024
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\AUG2024\AUG01\
Data File : 01AUG34.D
Acq On : 2 Aug 2024 2:40 pm
Operator : BEP
Sample : BLK-684
Misc : *
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 02 15:00:52 2024

Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M

Quant Title : TO-15 Vapor analysis

QLast Update : Fri Aug 02 14:17:01 2024

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	7.658	49	13527	500.00	pptv	# 0.00
20) 1,4-Difluorobenzene	8.842	114	28914	500.00	pptv	0.00
28) Chlorobenzene-d5	11.186	117	27068	500.00	pptv	0.00

System Monitoring Compounds

34) 4-Bromofluorobenzene (...)	12.025	95	10382	345.87	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	69.17%

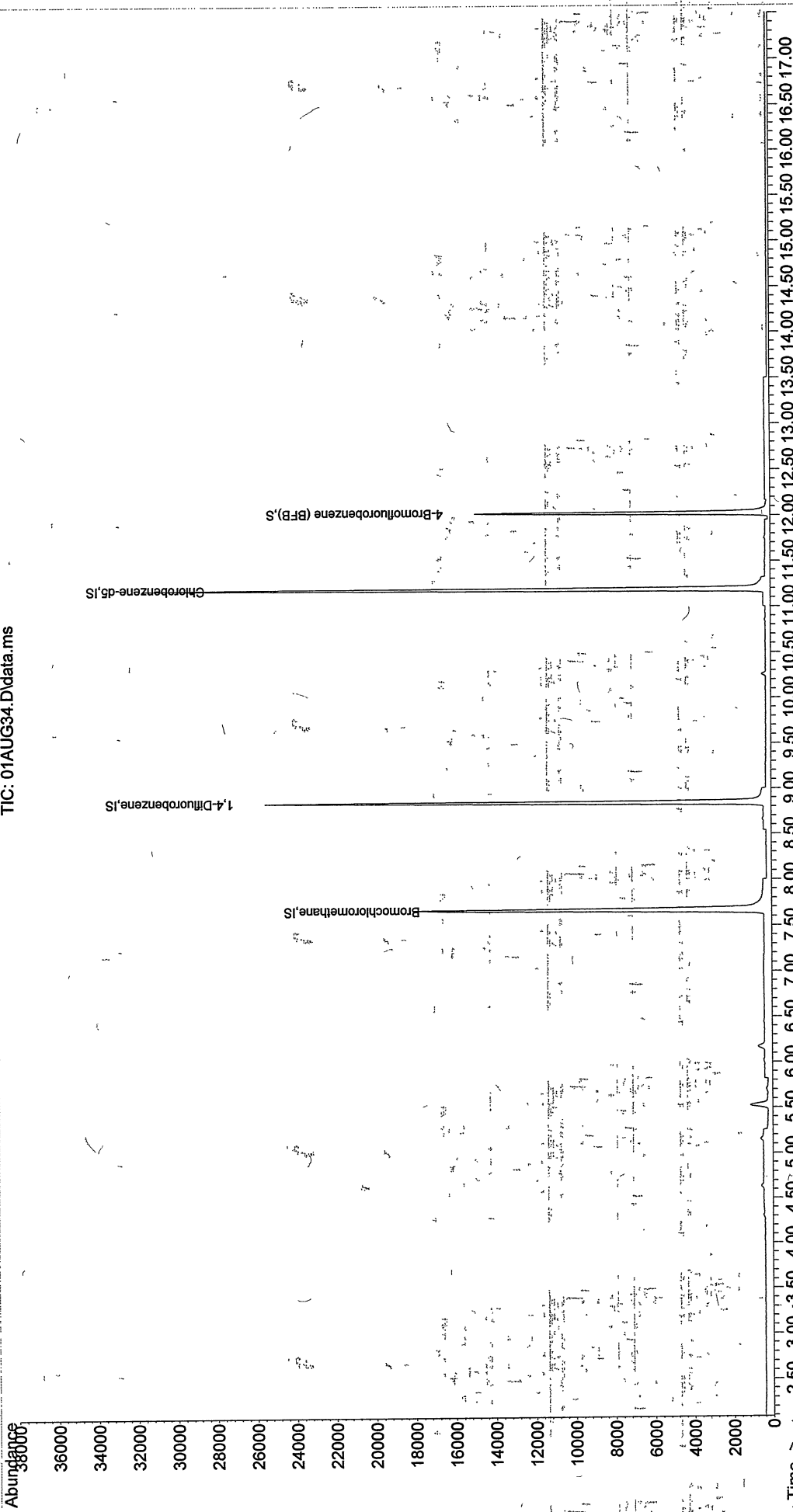
Target Compounds	Qvalue
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(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG01\
 Data File : 01AUG34.D
 Acq On : 2 Aug 2024 2:40 pm
 Operator : BEP
 Sample : BLK-684
 Misc : *
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 02 15:00:52 2024
 Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 Qlast Update : Fri Aug 02 14:17:01 2024
 Response via : Initial Calibration

TIC: 01AUG34.D\data.ms



Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\
Data File : 06AUG20.D
Acq On : 8 Aug 2024 8:29 pm
Operator : BEP
Sample : BLK-27754
Misc : 13-874
ALS Vial : 3 Sample Multiplier: 1

2416470-12

Quant Time: Aug 15 15:15:02 2024
Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Fri Aug 02 14:17:01 2024
Response via : Initial Calibration

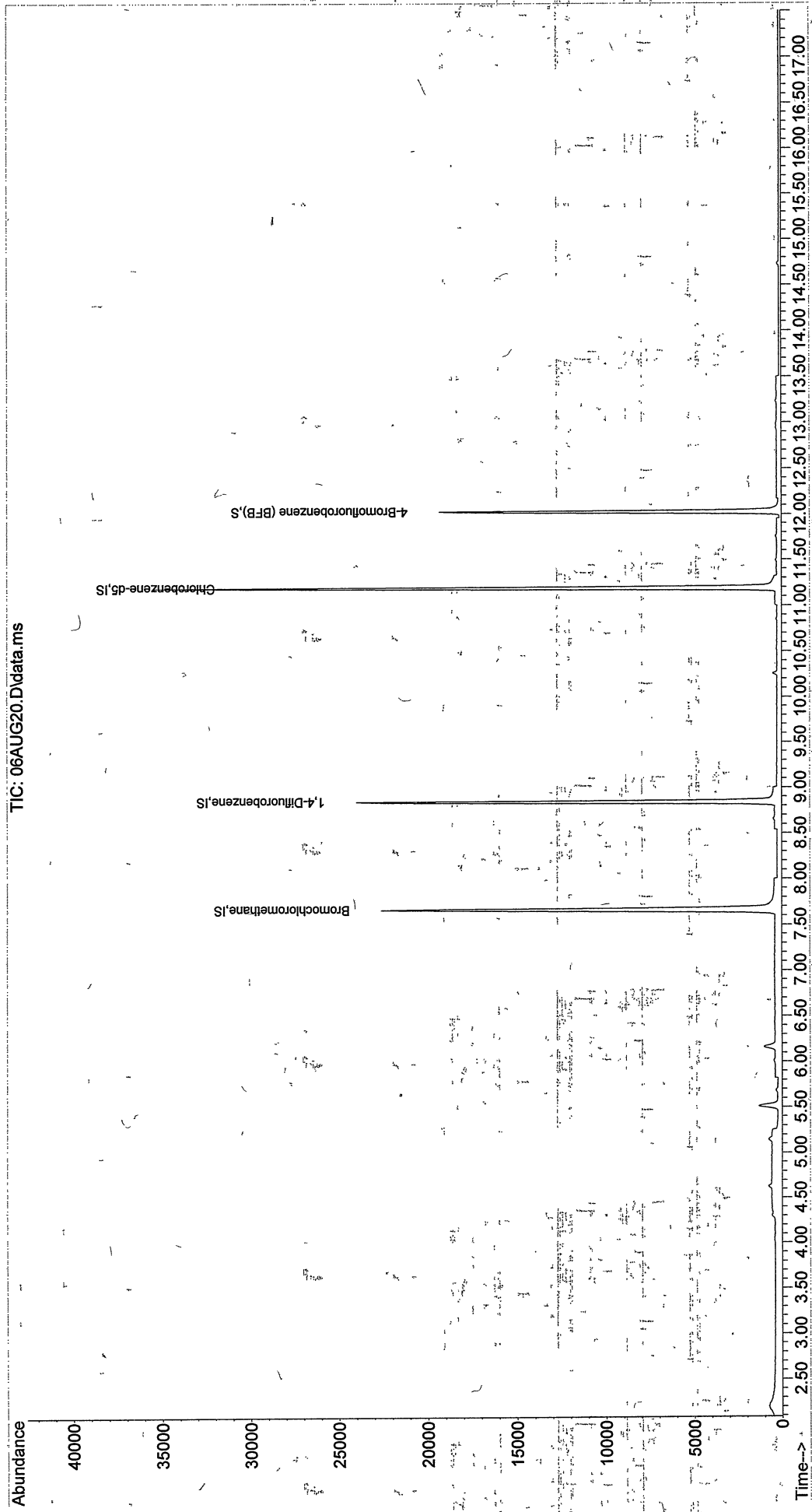
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	7.658	49	16494	500.00	pptv	# 0.00
20) 1,4-Difluorobenzene	8.842	114	29077	500.00	pptv	0.00
28) Chlorobenzene-d5	11.186	117	29355	500.00	pptv	0.00
System Monitoring Compounds						
34) 4-Bromofluorobenzene (...)	12.025	95	13169	404.53	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	80.91%

Target Compounds	Qvalue
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(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\
 Data File : 06AUG20.D
 Acq On : 8 Aug 2024 8:29 pm
 Operator : BEP
 Sample : BLK-27754
 Misc : 13-874
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 15 15:15:02 2024
 Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 Qlast Update : Fri Aug 02 14:17:01 2024
 Response via : Initial Calibration



Data Path: C:\msdchem\1\data\2024\AUG2024\AUG06\
Data File : 06AUG10.D
Acq On : 6 Aug 2024 8:07 pm
Operator : BEP
Sample : blk-681 2416470-13
Misc : *
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 06 20:54:21 2024

Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M

Quant Title : TO-15 Vapor analysis

QLast Update : Fri Aug 02 14:17:01 2024

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)

Internal Standards						
1) Bromochloromethane	7.658	49	15588	500.00	pptv	# 0.00
20) 1,4-Difluorobenzene	8.842	114	31158	500.00	pptv	0.00
28) Chlorobenzene-d5	11.186	117	29454	500.00	pptv	0.00

System Monitoring Compounds

34) 4-Bromofluorobenzene (...	12.025	95	12144	371.79	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	74.36%

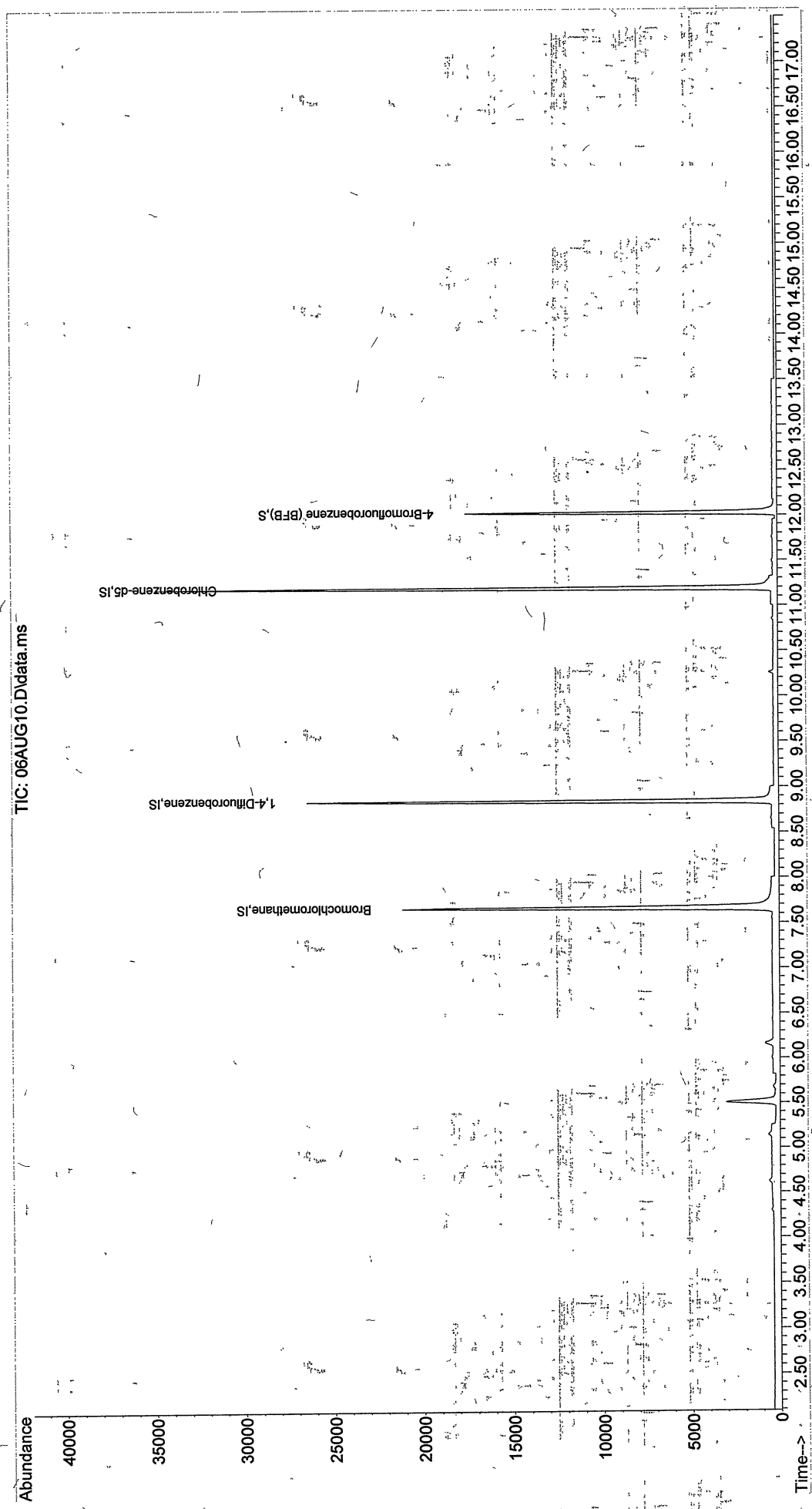
Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\
Data File : 06AUG10.D
Acq On : 6 Aug 2024 8:07 pm
Operator : BEP
Sample : blk-681
Misc : *
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 06 20:54:21 2024
Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
Qlast Update : Fri Aug 02 14:17:01 2024
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\JUL2024\JUL02\
Data File : 02JUL19.D
Acq On : 3 Jul 2024 6:35 am
Operator : BEP
Sample : blk-484 2416470-14
Misc : *
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 03 14:34:20 2024

Quant Method : C:\msdchem\1\methods\2024\202406\26-2146\TO15_SIM.M

Quant Title : TO-15 Vapor analysis

QLast Update : Thu Jun 27 12:10:39 2024

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
Internal Standards						
1) Bromochloromethane	7.658	49	15571	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.842	114	30837	500.00	pptv	0.00
28) Chlorobenzene-d5	11.186	117	25519	500.00	pptv	0.00

System Monitoring Compounds

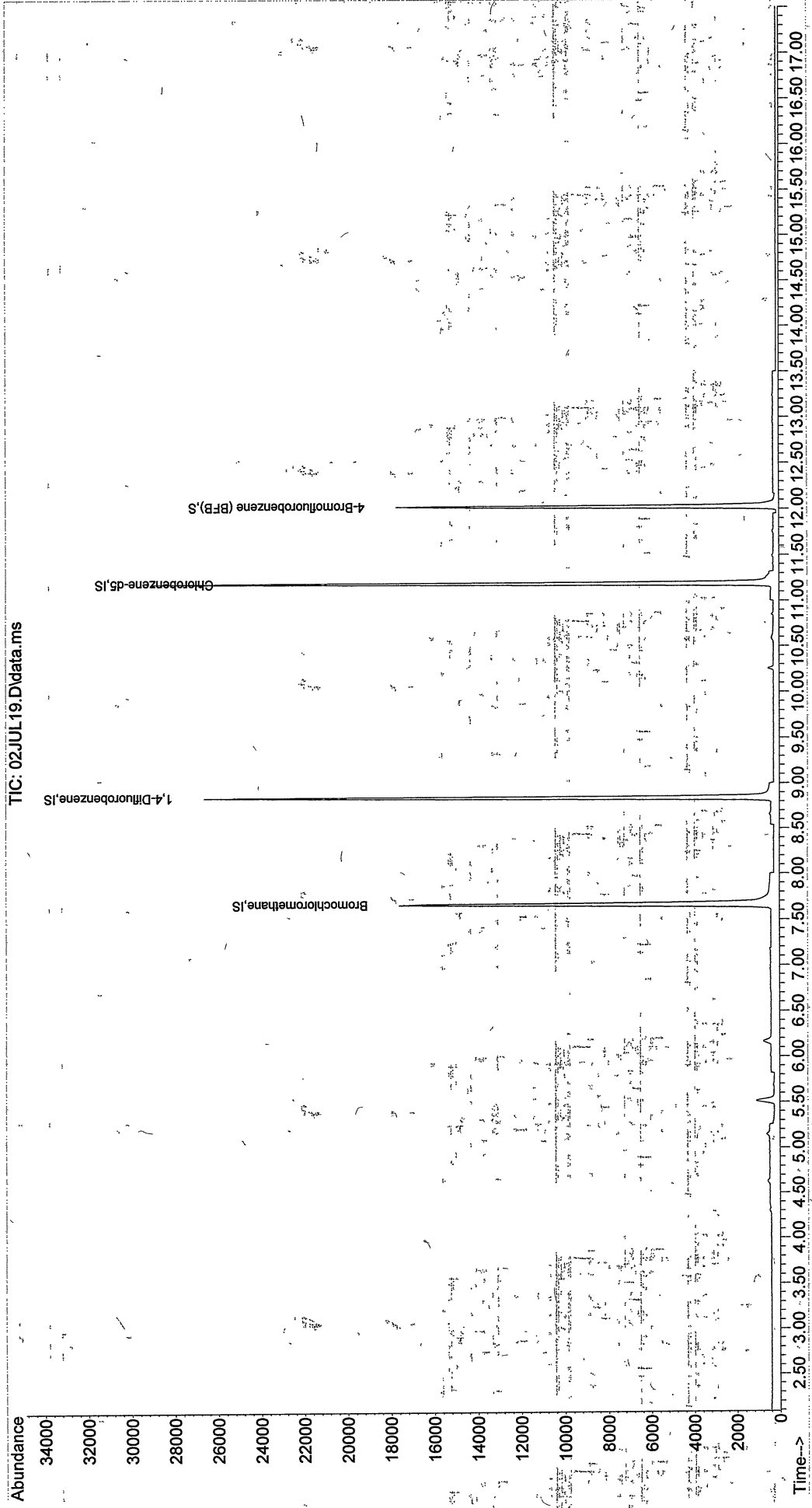
34) 4-Bromofluorobenzene (...)	12.025	95	12287	404.34	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	80.87%

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\JUL2024\JUL02\
Data File : 02JUL19.D
Acq On : 3 Jul 2024 6:35 am
Operator : BEP
Sample : blk-484
Misc : *
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 03 14:34:20 2024
Quant Method : C:\msdchem\1\methods\2024\202406\26-2146\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
Qlast Update : Thu Jun 27 12:10:39 2024
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\
Data File : 06AUG06.D
Acq On : 6 Aug 2024 5:00 pm
Operator : BEP
Sample : blk-685 2416470-15
Misc : 13-
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 06 16:21:33 2024
Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Fri Aug 02 14:17:01 2024
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	7.659	49	15632	500.00	pptv	# 0.00
20) 1,4-Difluorobenzene	8.843	114	32738	500.00	pptv	0.00
28) Chlorobenzene-d5	11.187	117	30721	500.00	pptv	0.00
System Monitoring Compounds						
34) 4-Bromofluorobenzene (...)	12.027	95	12029	353.08	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	70.62%

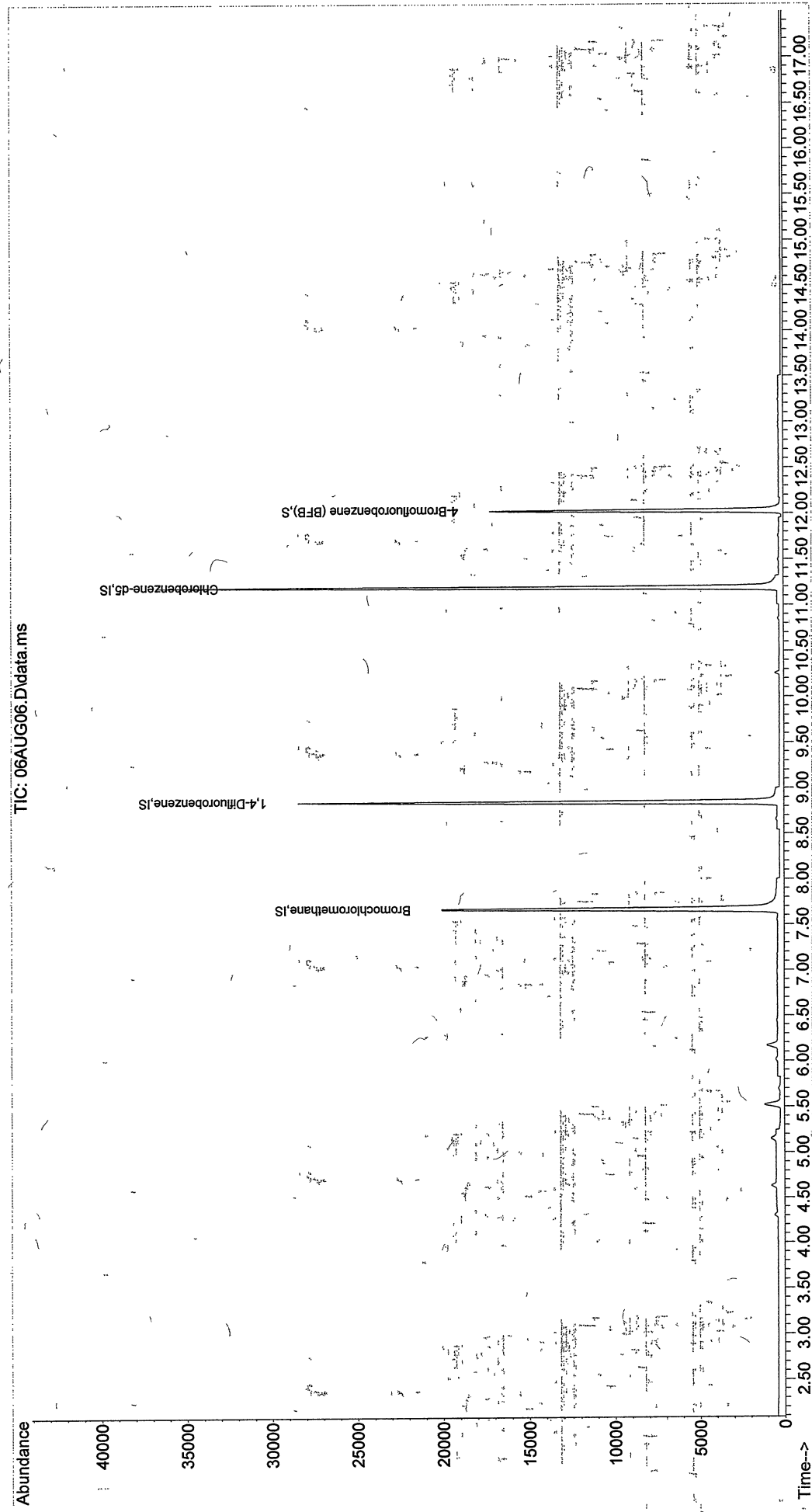
Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\
Data File : 06AUG06.D
Acq On : 6 Aug 2024 5:00 pm
Operator : BEP
Sample : blk-685
Misc : 13-
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 06 16:21:33 2024
Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Fri Aug 02 14:17:01 2024
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\
Data File : 06AUG07.D
Acq On : 6 Aug 2024 5:49 pm
Operator : BEP
Sample : blk-27756 24(6470-16
Misc : 13-
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 06 18:22:24 2024

Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M

Quant Title : TO-15 Vapor analysis

QLast Update : Fri Aug 02 14:17:01 2024

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	7.658	49	15667	500.00	pptv	# 0.00
20) 1,4-Difluorobenzene	8.842	114	31337	500.00	pptv	0.00
28) Chlorobenzene-d5	11.186	117	29753	500.00	pptv	0.00

System Monitoring Compounds

34) 4-Bromofluorobenzene (...	12.025	95	11851	359.18	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	71.84%

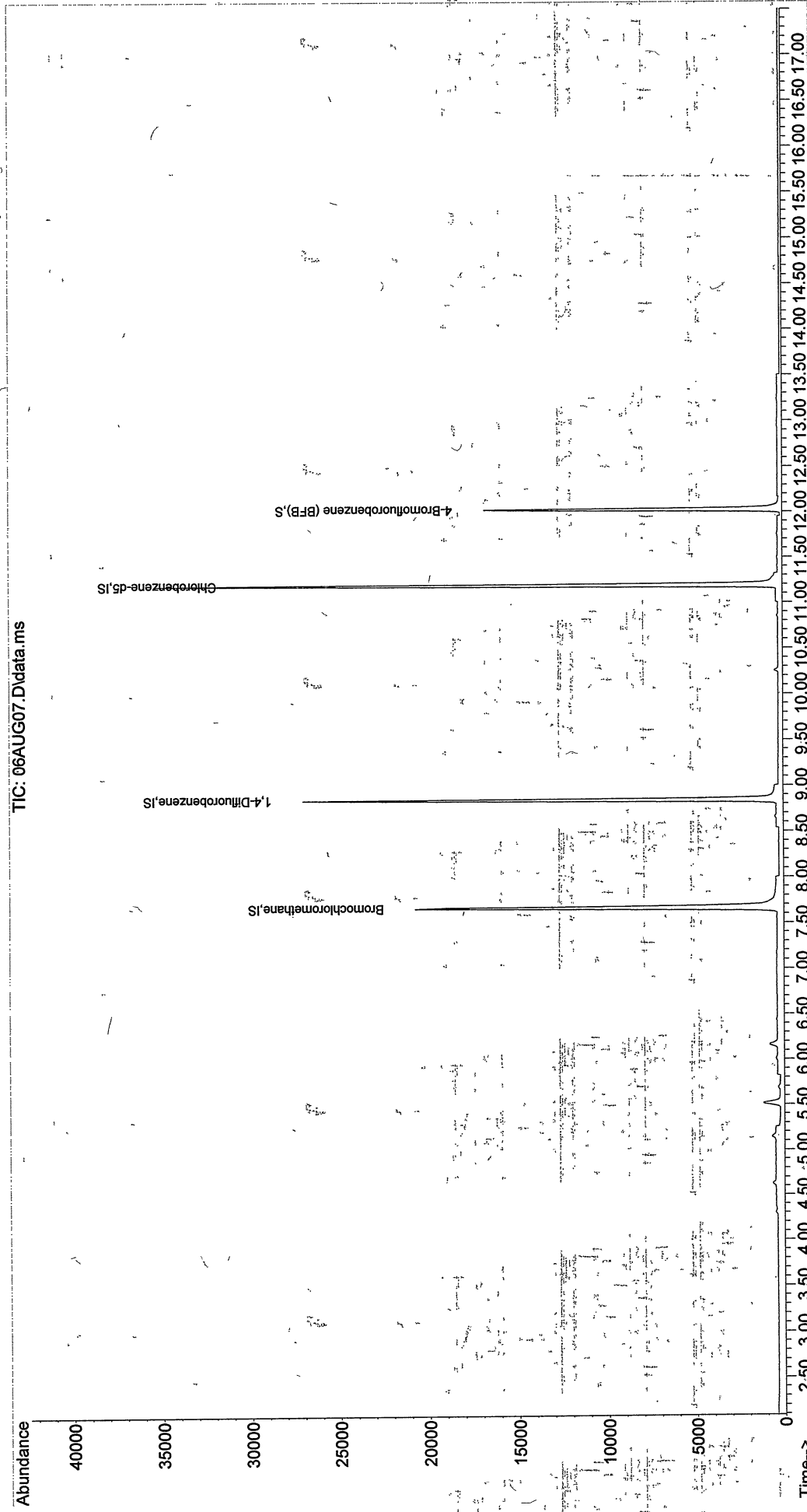
Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\
 Data File : 06AUG07.D
 Acq On : 6 Aug 2024 5:49 pm
 Operator : BEP
 Sample : blk-27756
 Misc : 13-
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 06 18:22:24 2024
 Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M
 Quant Title : TO-15-Vapor analysis
 QLast Update : Fri Aug 02 14:17:01 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\AUG2024\AUG01\
Data File : 01AUG39.D
Acq On : 2 Aug 2024 6:32 pm
Operator : BEP
Sample : BLK-819 2416470-17
Misc : *
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Aug 02 19:00:59 2024

Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M

Quant Title : TO-15 Vapor analysis

QLast Update : Fri Aug 02 14:17:01 2024

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	7.658	49	14119	500.00	pptv	# 0.00
20) 1,4-Difluorobenzene	8.842	114	29808	500.00	pptv	0.00
28) Chlorobenzene-d5	11.186	117	28750	500.00	pptv	0.00

System Monitoring Compounds

34) 4-Bromofluorobenzene (...)	12.025	95	11964	375.25	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	75.05%

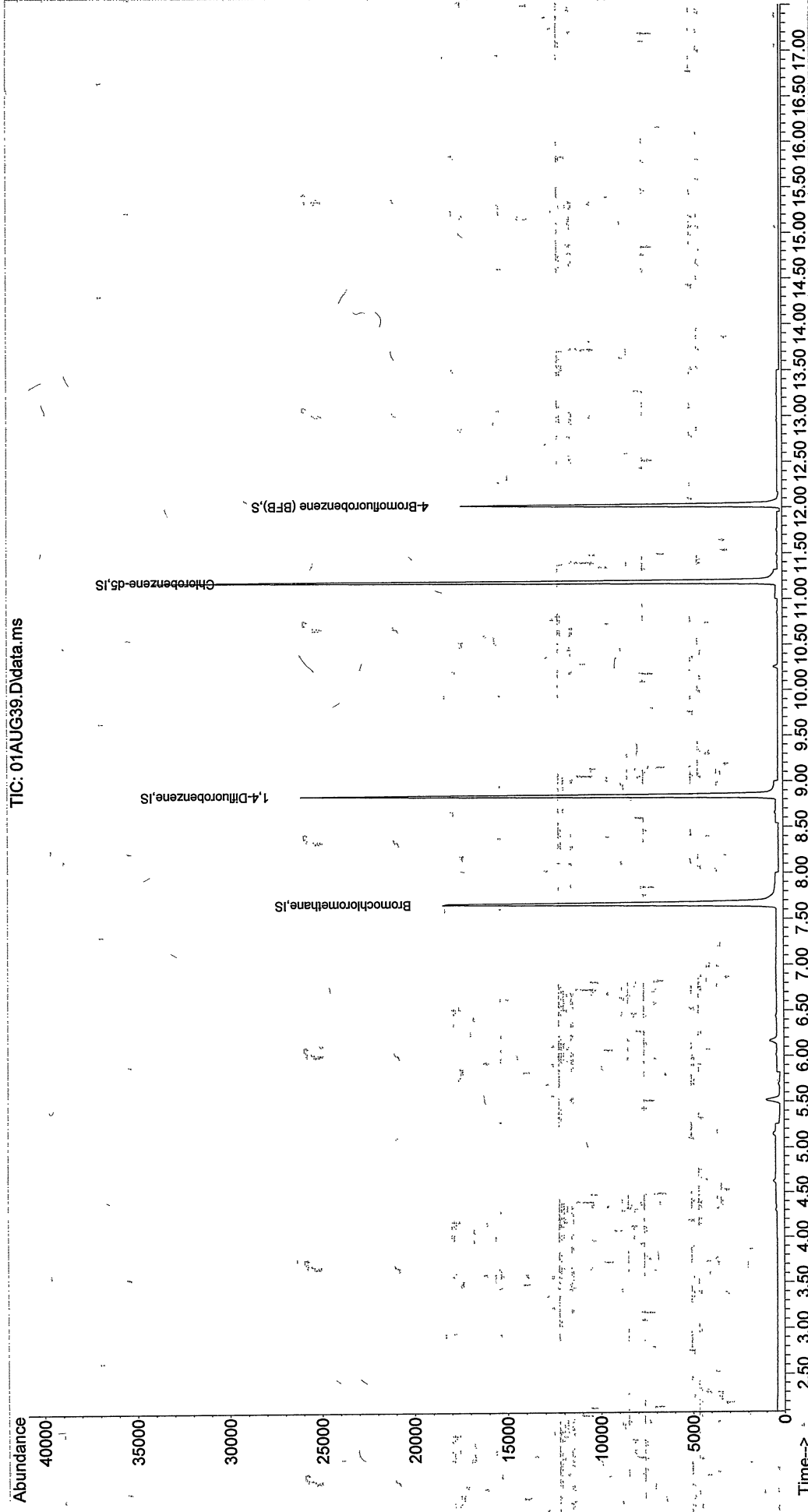
Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG01\
 Data File : 01AUG39.D
 Acq On : 2 Aug 2024 6:32 pm
 Operator : BEP
 Sample : BLK-819
 Misc : *
 ALS Vial : 15 Sample Multiplier: 1

Quant Time: Aug 02 19:00:59 2024
 Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 Qlast Update : Fri Aug 02 14:17:01 2024
 Response via : Initial Calibration





Date of Report: 11/11/2024

Yola Byram

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Client Project: Walnut Bluff Work Plan
Pace Project: Walnut Bluff
Pace Work Order: 2416470
Invoice ID: B506047, B507754

Enclosed are the results of analyses for samples received by the laboratory on 10/ 11/2024. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supersedes Report ID 1001547513

Sincerely,

Contact Person: Brianna Schutte
Client Services Rep

Steve Bennett
Operations Manager

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
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Pace Analytical
BAKERSFIELD

Air

ody Form

Report To:

Client: Catalyst Environmental Solutions

Attn: Yola Bayram

Street Address: 315 Mountain Ave. Suite 311

City, State, Zip: Santa Monica, CA 90403

Phone: (310) 284-8477 Fax:

Email: ybayram@ce-solutions.com

Work Order #: 24-6470

Project #:

Project Name: Walnut Bluff

Sampler(s):

(Print) Ellen Ketterling

Analysis Requested

Air Type

Comm

2416470

Page 1 of 2

Sample #

Field ID / Point Of Collection

Sample ID

Date Sampled

Time Sampled

Soil Vapor (SV)

Initial Pressure (Hg)

Canister ID #

Flow Controller ID #

Start Sampling Information

Canister Pressure (Psi)

Stop Sampling Information

Canister Pressure (Psi)

Time

Time

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2 of 2

LAB USE ONLY: Affix Workorder/Logon Label Here

Scan QR code for instructions

Pace **Pace Location Requested (City/State):** **AIR CHAIN-OF-CUSTODY Analytical Request Document**
Chain of Custody is a LEGAL DOCUMENT - Complete all relevant fields

Customer Name: Catalyst Environmental Solutions
Street Address: 315 Montana Ave, Suite 311
City, State Zip: Santa Monica, CA, 90403
Customer Project #: Walnut Bluff Work Plan
Site Collection Info/Facility ID (as applicable):

Project Name: Walnut Bluff Work Plan
Customer Project #: 315 Montana Ave, Suite 311
Phone: 313-204-8477
E-Mail: ybayram@ce.solutions
CC E-Mail: Susan Mc Mahon
Invoice: 5066666666666666
Purchase Order # (if applicable):
Quote #:

Time Zone Collected: PT MT CT ET
Regulatory Program (CAA, RCRA, etc.): as applicable:
Rush (Pre-approval required):
[] Level II [] Level III [] Level IV
[] EQUIS
[] Other

State origin of sample(s):

Permit # as applicable:

Units for Reporting: ug/m³ PPMV mg/m³ PPMV

Matrix Codes (Insert in Matrix box below): Ambient (A), Indoor (I), Sol Vapor (SV), Other (O)

Field Information

Canister

Pressure / Vacuum

Start Pressure / Vacuum (in Hg)

End Pressure / Vacuum (in Hg)

Duration (minutes)

Flow Rate m³/min or L/min

Total Volume Sampled m³ or L

Analytes Requested

Proj. Manager:

Accum / Client ID:

Table #:

Profile / Template:

Prelog / Bottle Ord. ID:

Sample Comment

Customer Sample ID	Matrix *	Summa Canister ID	Flow Controller ID	Begin Collection Date	Begin Collection Time	End Collection Date	End Collection Time
WB17-24H	-15	A 0685	20197	10/10/24	1447	10/10/24	1451
WB18-24H	-16	A 27756	60296	10/10/24	1458	10/10/24	1445
WB19-24H	-17	A 819	5980	10/10/24	1430	10/10/24	1421

Customer Remarks / Special Conditions / Possible Hazards: Standard TAT

Collected By: Elizabeth Huang
Field Name: Elizabeth Huang
Signature: Elizabeth Huang
Date/Time: 10/10/24 1545
Date/Time: 10/11/24 1300
Date/Time: 10/11/24 1450
Date/Time: 10/11/24 1700

Tracking Number: 1545
Delivered by: In-Person Cooler
Other:

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at <https://info.pacelabs.com/hibits/pas-standard-terms.pdf>

Chain of Custody and Cooler Receipt Form for 2416470 Page 3 of 4

PACE ANALYTICAL		COOLER RECEIPT FORM		Page <u>1</u> Of <u>2</u>
Submission #: <u>24-16470</u>				
SHIPPING INFORMATION Fed Ex ☐ UPS ☐ GSO / GLS ☐ Hand Delivery ☐ Pace Lab Field Service ☒ Other ☐ (Specify) _____			SHIPPING CONTAINER Ice Chest ☐ None ☐ Box ☒ Other ☐ (Specify) _____	
FREE LIQUID YES ☐ NO ☒ W / S				
Refrigerant: Ice ☐ Blue Ice ☐ None ☒ Other ☐ Comments: _____				
Custody Seals: Ice Chest ☐ Containers ☐ None ☒ Comments: _____ Intact? Yes ☐ No ☐ Intact? Yes ☐ No ☐				
All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐				
COC Received ☒ YES ☐ NO		Emissivity: _____ Container: <u>Summa</u> Thermometer ID: _____ Temperature: (A) <u>Room</u> °C / (C) <u>Temp</u> °C		Date/Time <u>10/11/24 1700</u> Analyst Init <u>MDL</u>

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr ⁴⁺										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664B										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608.3/8081A										
QT EPA 515.1/8151A										
QT EPA 525.2										
QT EPA 525.2 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548.1										
QT EPA 549.2										
QT EPA 8015M										
QT EPA 8270C										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER	<u>6L</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>

CHK BY MDL DATE 10/11/24
DISTRIBUTION ☐ SUB OUT ☐

Comments: _____ Date/Time: 10/11/24 1757
 Sample Numbering Completed By: MDL
 A = Actual / C = Corrected

Rev 23 05/20/22

[S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMRECrev 20]

Chain of Custody and Cooler Receipt Form for 2416470 Page 4 of 4

PACE ANALYTICAL		COOLER RECEIPT FORM		Page <u>4</u> Of <u>2</u>	
Submission #: <u>24-16470</u>					
SHIPPING INFORMATION Fed Ex ☐ UPS ☐ GSO / GLS ☐ Hand Delivery ☐ Pace Lab Field Service ☒ Other ☐ (Specify) _____			SHIPPING CONTAINER Ice Chest ☐ None ☐ Box ☒ Other ☐ (Specify) _____		FREE LIQUID YES ☐ NO ☒ W / S
Refrigerant: Ice ☐ Blue Ice ☐ None ☒ Other ☐ Comments: _____					
Custody Seals ☒ Ice Chest ☐ Containers ☐ None ☒ Comments: _____ Intact? Yes ☐ No ☐ Intact? Yes ☐ No ☐					
All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐					
COC Received ☒ YES ☐ NO		Emissivity: _____ Container: <u>Summa</u> Thermometer ID: _____ Temperature: (A) <u>Room</u> °C / (C) <u>Temp</u> °C		Date/Time <u>10/11/24 1706</u> Analyst Init <u>MDL</u>	

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr ⁶										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664B										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608.3/8081A										
QT EPA 515.1/8151A										
QT EPA 525.2										
QT EPA 525.2 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548.1										
QT EPA 549.2										
QT EPA 8015M										
QT EPA 8270C										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER	A	A	A	A	A	A	A			

Comments: _____ Date/Time: 10/11/24 2133
 Sample Numbering Completed By: MDL
 A = Actual / C = Corrected

Rev 23 05/20/22
(S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMRECrev 20)

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2416470-01	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 11:48
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB01-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air
2416470-02	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 12:38
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB02-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air
2416470-03	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 12:42
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB03-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air
2416470-04	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 12:44
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB04-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air
2416470-05	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 12:46
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB05-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air
2416470-06	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 13:05
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB06-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air
2416470-07	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 13:08
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB07-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2416470-08	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 13:11
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB08-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air
2416470-09	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 12:20
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB09-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air
2416470-10	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 13:44
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB10-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air
2416470-11	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 14:13
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB11-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air
2416470-12	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 12:30
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB12-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air
2416470-13	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 13:50
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB13-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air
2416470-14	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 13:55
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB14-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2416470-15	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 14:31
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB17-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air
2416470-16	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 14:45
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB18-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air
2416470-17	COC Number:	---	Receive Date:	10/11/2024 17:00
	Project Number:	---	Sampling Date:	10/10/2024 14:21
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB19-24H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang	Sample Type:	Vapor or Air

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-01		Client Sample Name: WB01-24H, 10/10/2024 11:48:00AM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.74	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.47	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.15	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.067	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.43	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.29	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.21	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	1.3	ug/m3	0.10	0.0062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	0.94	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.32	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.3	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	96.9	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	96.9	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-01		Client Sample Name: WB01-24H, 10/10/2024 11:48:00AM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/24/24 19:32	BEP	MS-A2	1	B199628	EPA TO-15	

DCN = Data Continuation Number

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Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-02		Client Sample Name: WB02-24H, 10/10/2024 12:38:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.88	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.46	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.17	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	0.078	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.070	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.44	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.36	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.43	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	1.9	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		2
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	1.0	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.38	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.4	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	109	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	109	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	81.3	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-02		Client Sample Name: WB02-24H, 10/10/2024 12:38:00PM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/24/24 20:18	BEP	MS-A2	1	B199628	EPA TO-15	
2	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 15:20	BEP	MS-A2	10	B199781	EPA TO-15	

DCN = Data Continuation Number

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Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-03		Client Sample Name: WB03-24H, 10/10/2024 12:42:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.70	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.48	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.17	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.4	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.064	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.48	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.25	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.16	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	1.2	ug/m3	0.10	0.0062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	0.79	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.29	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.1	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	112	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	112	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-03		Client Sample Name: WB03-24H, 10/10/2024 12:42:00PM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/24/24 21:05	BEP	MS-A2	1	B199628	EPA TO-15	

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-04		Client Sample Name: WB04-24H, 10/10/2024 12:44:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.85	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.48	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.15	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.065	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.45	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.28	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.18	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	1.4	ug/m3	0.10	0.0062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	0.93	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.33	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.3	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	105	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	105	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1

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Catalyst Environmental Solutions
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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-04		Client Sample Name: WB04-24H, 10/10/2024 12:44:00PM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/24/24 21:51	BEP	MS-A2	1	B199628	EPA TO-15	

DCN = Data Continuation Number

Catalyst Environmental Solutions
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Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-05		Client Sample Name: WB05-24H, 10/10/2024 12:46:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.91	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.49	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.15	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.067	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.45	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.39	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.19	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	2.0	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		2
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	1.4	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.50	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.9	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	111	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	111	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	83.8	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-05		Client Sample Name: WB05-24H, 10/10/2024 12:46:00PM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/24/24 22:39	BEP	MS-A2	1	B199628	EPA TO-15	
2	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 16:03	BEP	MS-A2	10	B199781	EPA TO-15	

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-06		Client Sample Name: WB06-24H, 10/10/2024 1:05:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.68	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.48	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.16	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.065	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.42	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.25	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.14	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	1.2	ug/m3	0.10	0.0062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	0.82	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.28	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.1	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	102	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	102	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-06		Client Sample Name: WB06-24H, 10/10/2024 1:05:00PM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/24/24 23:25	BEP	MS-A2	1	B199628	EPA TO-15	

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Santa Monica, CA 90403

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Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-07		Client Sample Name: WB07-24H, 10/10/2024 1:08:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.71	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.47	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.16	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.064	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.45	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.25	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.14	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	1.2	ug/m3	0.10	0.0062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.51	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	0.75	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.27	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.0	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	101	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	101	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1

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Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-07		Client Sample Name: WB07-24H, 10/10/2024 1:08:00PM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 00:13	BEP	MS-A2	1	B199628	EPA TO-15	

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-08		Client Sample Name: WB08-24H, 10/10/2024 1:11:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.69	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.48	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.14	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.065	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.43	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.26	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.15	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	1.2	ug/m3	0.10	0.0062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	0.80	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.29	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.1	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	103	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	103	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-08		Client Sample Name: WB08-24H, 10/10/2024 1:11:00PM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 01:00	BEP	MS-A2	1	B199628	EPA TO-15	

DCN = Data Continuation Number

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-09		Client Sample Name: WB09-24H, 10/10/2024 12:20:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.86	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.49	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.32	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.067	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.42	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.38	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.17	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	1.8	ug/m3	0.10	0.0062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.53	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	1.4	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.49	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.9	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	101	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	101	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-09		Client Sample Name: WB09-24H, 10/10/2024 12:20:00PM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 01:45	BEP	MS-A2	1	B199628	EPA TO-15	

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-10		Client Sample Name: WB10-24H, 10/10/2024 1:44:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.1	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.48	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.15	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.072	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.43	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.47	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.28	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	1.7	ug/m3	0.10	0.0062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	1.4	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.41	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.8	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	109	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	109	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-10		Client Sample Name: WB10-24H, 10/10/2024 1:44:00PM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 02:32	BEP	MS-A2	1	B199628	EPA TO-15	

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-11		Client Sample Name: WB11-24H, 10/10/2024 2:13:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.69	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.49	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.14	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.4	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.065	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.44	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.27	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.12	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	1.2	ug/m3	0.10	0.0062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	0.85	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.29	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.1	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	96.4	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	96.4	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-11		Client Sample Name: WB11-24H, 10/10/2024 2:13:00PM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 03:21	BEP	MS-A2	1	B199628	EPA TO-15	

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-12		Client Sample Name: WB12-24H, 10/10/2024 12:30:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.73	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.49	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.15	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.2	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.065	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.44	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.27	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.17	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	1.3	ug/m3	0.10	0.0062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	0.89	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.32	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.2	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	99.7	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	99.7	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-12		Client Sample Name: WB12-24H, 10/10/2024 12:30:00PM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 04:09	BEP	MS-A2	1	B199628	EPA TO-15	

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-13		Client Sample Name: WB13-24H, 10/10/2024 1:50:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.72	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.49	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.17	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.067	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.44	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.26	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.15	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	1.2	ug/m3	0.10	0.0062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.53	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	0.79	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.29	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.1	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	98.0	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	98.0	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-13		Client Sample Name: WB13-24H, 10/10/2024 1:50:00PM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 04:57	BEP	MS-A2	1	B199628	EPA TO-15	

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-14		Client Sample Name: WB14-24H, 10/10/2024 1:55:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.73	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.49	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.15	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.2	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.066	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.43	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.24	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.13	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	1.3	ug/m3	0.10	0.0062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.53	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	0.77	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.27	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.0	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	99.7	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	99.7	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-14		Client Sample Name: WB14-24H, 10/10/2024 1:55:00PM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 05:45	BEP	MS-A2	1	B199628	EPA TO-15	

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-15		Client Sample Name: WB17-24H, 10/10/2024 2:31:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.92	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.50	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.15	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.2	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.068	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.47	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.34	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.22	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	2.2	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		2
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	1.1	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.40	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.5	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	105	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	105	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	83.5	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-15			Client Sample Name: WB17-24H, 10/10/2024 2:31:00PM, Elizabeth Hwang							
DCN	Method	Run				QC				
		Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 06:33	BEP	MS-A2	1	B199628	EPA TO-15		
2	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 16:43	BEP	MS-A2	10	B199781	EPA TO-15		

DCN = Data Continuation Number

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-16		Client Sample Name: WB18-24H, 10/10/2024 2:45:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.94	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.49	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.14	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.2	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.069	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.48	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.51	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.21	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	2.1	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		2
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	1.9	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.64	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	2.6	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	100	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	100	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	77.7	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID:		2416470-16	Client Sample Name:						
			WB18-24H, 10/10/2024 2:45:00PM, Elizabeth Hwang						
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 07:22	BEP	MS-A2	1	B199628	EPA TO-15	
2	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 17:26	BEP	MS-A2	10	B199781	EPA TO-15	

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416470-17		Client Sample Name: WB19-24H, 10/10/2024 2:21:00PM, Elizabeth Hwang						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.1	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.49	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.14	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	ND	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND		1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.076	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.45	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.33	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.16	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	1.5	ug/m3	0.10	0.0062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.51	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	1.1	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.36	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	1.4	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	102	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	102	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416470-17		Client Sample Name: WB19-24H, 10/10/2024 2:21:00PM, Elizabeth Hwang							
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/24/24 10:49	10/25/24 08:10	BEP	MS-A2	1	B199628	EPA TO-15	

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B199628							
Benzene	B199628-BLK1	ND	ug/m3	0.050	0.0032		1
Benzyl chloride	B199628-BLK1	ND	ug/m3	0.50	0.0052		1
Carbon tetrachloride	B199628-BLK1	ND	ug/m3	0.20	0.0063		1
Chlorobenzene	B199628-BLK1	ND	ug/m3	0.10	0.0079		1
Chloroform	B199628-BLK1	ND	ug/m3	0.050	0.0058		1
1,2-Dibromoethane	B199628-BLK1	ND	ug/m3	0.20	0.014		1
1,2-Dichlorobenzene	B199628-BLK1	ND	ug/m3	0.20	0.011		1
1,3-Dichlorobenzene	B199628-BLK1	ND	ug/m3	0.20	0.013		1
1,4-Dichlorobenzene	B199628-BLK1	ND	ug/m3	0.20	0.016		1
Dichlorodifluoromethane	B199628-BLK1	ND	ug/m3	0.050	0.0052		1
1,1-Dichloroethane	B199628-BLK1	ND	ug/m3	0.050	0.0041		1
1,2-Dichloroethane	B199628-BLK1	ND	ug/m3	0.10	0.0046		1
1,1-Dichloroethene	B199628-BLK1	ND	ug/m3	0.050	0.0078		1
cis-1,2-Dichloroethene	B199628-BLK1	ND	ug/m3	0.050	0.0044		1
trans-1,2-Dichloroethene	B199628-BLK1	ND	ug/m3	0.050	0.0075		1
trans-1,3-Dichloropropene	B199628-BLK1	ND	ug/m3	0.050	0.013		1
1,1-Difluoroethane	B199628-BLK1	ND	ug/m3	5.0	0.0027		1
Ethylbenzene	B199628-BLK1	ND	ug/m3	0.050	0.017		1
Naphthalene	B199628-BLK1	ND	ug/m3	0.20	0.020		1
Tetrachloroethene	B199628-BLK1	ND	ug/m3	0.10	0.011		1
Toluene	B199628-BLK1	ND	ug/m3	0.10	0.0062		1
1,1,1-Trichloroethane	B199628-BLK1	ND	ug/m3	0.10	0.0055		1
1,1,2-Trichloroethane	B199628-BLK1	ND	ug/m3	0.10	0.0055		1
Trichloroethene	B199628-BLK1	ND	ug/m3	0.10	0.0095		1
Trichlorofluoromethane	B199628-BLK1	ND	ug/m3	0.050	0.0057		1
1,1,2-Trichloro-1,2,2-trifluoroethane	B199628-BLK1	ND	ug/m3	0.10	0.0078		1
Vinyl chloride	B199628-BLK1	ND	ug/m3	0.020	0.0046		1
p- & m-Xylenes	B199628-BLK1	ND	ug/m3	0.050	0.0082		1
o-Xylene	B199628-BLK1	ND	ug/m3	0.050	0.0044		1
Total Xylenes	B199628-BLK1	ND	ug/m3	0.10	0.013		1
4-Bromofluorobenzene (Surrogate)	B199628-BLK1	86.5	%	50 - 150 (LCL - UCL)			1
QC Batch ID: B199781							
Toluene	B199781-BLK1	ND	ug/m3	0.10	0.0062		2

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
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QC Batch ID: B199781

4-Bromofluorobenzene (Surrogate)	B199781-BLK1	83.5	%	50 - 150 (LCL - UCL)			2
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Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B199628-BLK1	PB	EPA-TO-15-SIM	10/24/24	10/24/24 18:46	BEP	MS-A2	1
2	B199781-BLK1	PB	EPA-TO-15-SIM	10/25/24	10/25/24 14:37	BEP	MS-A2	1

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Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab	
								Percent Recovery	RPD	Quals	Run #
QC Batch ID: B199628											
Benzene	B199628-BS1	LCS	0.33679	0.31948	ug/m3	105		70 - 130			1
	B199628-BSD1	LCSD	0.33734	0.31948	ug/m3	106	0.2	70 - 130	25		2
Benzyl chloride	B199628-BS1	LCS	0.51450	0.51772	ug/m3	99.4		70 - 130			1
	B199628-BSD1	LCSD	0.51448	0.51772	ug/m3	99.4	0.0	70 - 130	25		2
Carbon tetrachloride	B199628-BS1	LCS	0.66978	0.62913	ug/m3	106		70 - 130			1
	B199628-BSD1	LCSD	0.66754	0.62913	ug/m3	106	0.3	70 - 130	25		2
Chlorobenzene	B199628-BS1	LCS	0.49549	0.46036	ug/m3	108		70 - 130			1
	B199628-BSD1	LCSD	0.49226	0.46036	ug/m3	107	0.7	70 - 130	25		2
Chloroform	B199628-BS1	LCS	0.52390	0.48825	ug/m3	107		70 - 130			1
	B199628-BSD1	LCSD	0.51913	0.48825	ug/m3	106	0.9	70 - 130	25		2
1,2-Dibromoethane	B199628-BS1	LCS	0.81772	0.76835	ug/m3	106		70 - 130			1
	B199628-BSD1	LCSD	0.80755	0.76835	ug/m3	105	1.3	70 - 130	25		2
1,2-Dichlorobenzene	B199628-BS1	LCS	0.64607	0.60124	ug/m3	107		70 - 130			1
	B199628-BSD1	LCSD	0.63009	0.60124	ug/m3	105	2.5	70 - 130	25		2
1,3-Dichlorobenzene	B199628-BS1	LCS	0.64921	0.60124	ug/m3	108		70 - 130			1
	B199628-BSD1	LCSD	0.64595	0.60124	ug/m3	107	0.5	70 - 130	25		2
1,4-Dichlorobenzene	B199628-BS1	LCS	0.64543	0.60124	ug/m3	107		70 - 130			1
	B199628-BSD1	LCSD	0.63705	0.60124	ug/m3	106	1.3	70 - 130	25		2
1,1-Dichloroethane	B199628-BS1	LCS	0.42885	0.40474	ug/m3	106		70 - 130			1
	B199628-BSD1	LCSD	0.43366	0.40474	ug/m3	107	1.1	70 - 130	25		2
1,2-Dichloroethane	B199628-BS1	LCS	0.42902	0.40474	ug/m3	106		70 - 130			1
	B199628-BSD1	LCSD	0.42600	0.40474	ug/m3	105	0.7	70 - 130	25		2
1,1-Dichloroethene	B199628-BS1	LCS	0.41563	0.39649	ug/m3	105		70 - 130			1
	B199628-BSD1	LCSD	0.42633	0.39649	ug/m3	108	2.5	70 - 130	25		2
cis-1,2-Dichloroethene	B199628-BS1	LCS	0.41070	0.39649	ug/m3	104		70 - 130			1
	B199628-BSD1	LCSD	0.41668	0.39649	ug/m3	105	1.4	70 - 130	25		2
Tetrachloroethene	B199628-BS1	LCS	0.67497	0.67825	ug/m3	99.5		70 - 130			1
	B199628-BSD1	LCSD	0.67019	0.67825	ug/m3	98.8	0.7	70 - 130	25		2
Toluene	B199628-BS1	LCS	0.40096	0.37684	ug/m3	106		70 - 130			1
	B199628-BSD1	LCSD	0.39894	0.37684	ug/m3	106	0.5	70 - 130	25		2
1,1,1-Trichloroethane	B199628-BS1	LCS	0.57334	0.54562	ug/m3	105		70 - 130			1
	B199628-BSD1	LCSD	0.57571	0.54562	ug/m3	106	0.4	70 - 130	25		2
1,1,2-Trichloroethane	B199628-BS1	LCS	0.57532	0.54562	ug/m3	105		70 - 130			1
	B199628-BSD1	LCSD	0.57331	0.54562	ug/m3	105	0.3	70 - 130	25		2
Trichloroethene	B199628-BS1	LCS	0.56714	0.53737	ug/m3	106		70 - 130			1
	B199628-BSD1	LCSD	0.56981	0.53737	ug/m3	106	0.5	70 - 130	25		2

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Laboratory Control Sample

								Control Limits			
Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab	Run #
QC Batch ID: B199628											
Vinyl chloride	B199628-BS1	LCS	0.27725	0.25562	ug/m3	108		70 - 130			1
	B199628-BSD1	LCSD	0.27433	0.25562	ug/m3	107	1.1	70 - 130	25		2
p- & m-Xylenes	B199628-BS1	LCS	0.92092	0.86843	ug/m3	106		70 - 130			1
	B199628-BSD1	LCSD	0.91407	0.86843	ug/m3	105	0.7	70 - 130	25		2
o-Xylene	B199628-BS1	LCS	0.46891	0.43421	ug/m3	108		70 - 130			1
	B199628-BSD1	LCSD	0.46565	0.43421	ug/m3	107	0.7	70 - 130	25		2
Total Xylenes	B199628-BS1	LCS	1.3898	1.3026	ug/m3	107		70 - 130			1
	B199628-BSD1	LCSD	1.3797	1.3026	ug/m3	106	0.7	70 - 130	25		2
4-Bromofluorobenzene (Surrogate)	B199628-BS1	LCS	3.76	3.58	ug/m3	105		50 - 150			1
	B199628-BSD1	LCSD	3.69	3.58	ug/m3	103	1.7	50 - 150			2

QC Batch ID: B199781											
Toluene	B199781-BS1	LCS	0.41380	0.37684	ug/m3	110		70 - 130			3
	B199781-BSD1	LCSD	0.40998	0.37684	ug/m3	109	0.9	70 - 130	25		4
4-Bromofluorobenzene (Surrogate)	B199781-BS1	LCS	3.47	3.58	ug/m3	96.9		50 - 150			3
	B199781-BSD1	LCSD	3.47	3.58	ug/m3	96.9	0.0	50 - 150			4

Run #	QC Sample ID	QC Type	Method	Prep Date	Run		Analyst	Instrument	Dilution
					Date	Time			
1	B199628-BS1	LCS	EPA-TO-15-SIM	10/24/24	10/24/24	17:18	BEP	MS-A2	1
2	B199628-BSD1	LCSD	EPA-TO-15-SIM	10/24/24	10/24/24	18:00	BEP	MS-A2	1
3	B199781-BS1	LCS	EPA-TO-15-SIM	10/25/24	10/25/24	13:03	BEP	MS-A2	1
4	B199781-BSD1	LCSD	EPA-TO-15-SIM	10/25/24	10/25/24	13:48	BEP	MS-A2	1

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: Walnut Bluff Work Plan
Project Manager: Yola Byram

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. Pace Analytical assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Appendix G

Laboratory Analytical Reports – 1 Hour Samples

Data Path : C:\msdchem\1\data\2024\JUL2024\JUL02\
Data File : 02JUL38.D
Acq On : 4 Jul 2024 6:37 am
Operator : BEP
Sample : BLK-787 2416404-01
Misc : *
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 17 17:55:50 2024

Quant Method : C:\msdchem\1\methods\2024\202406\26-2146\TO15_SIM.M

Quant Title : TO-15 Vapor analysis

QLast Update : Thu Jun 27 12:10:39 2024

Response via : Initial Calibration

Compound	R.T.	Q	Ion	Response	Conc	Units	Dev (Min)

Internal Standards							
1) Bromochloromethane	7.658	49		15583	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.842	114		28672	500.00	pptv	0.00
28) Chlorobenzene-d5	11.186	117		23863	500.00	pptv	0.00

System Monitoring Compounds

34) 4-Bromofluorobenzene (...)	12.025	95		11062	389.29	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	77.86%	

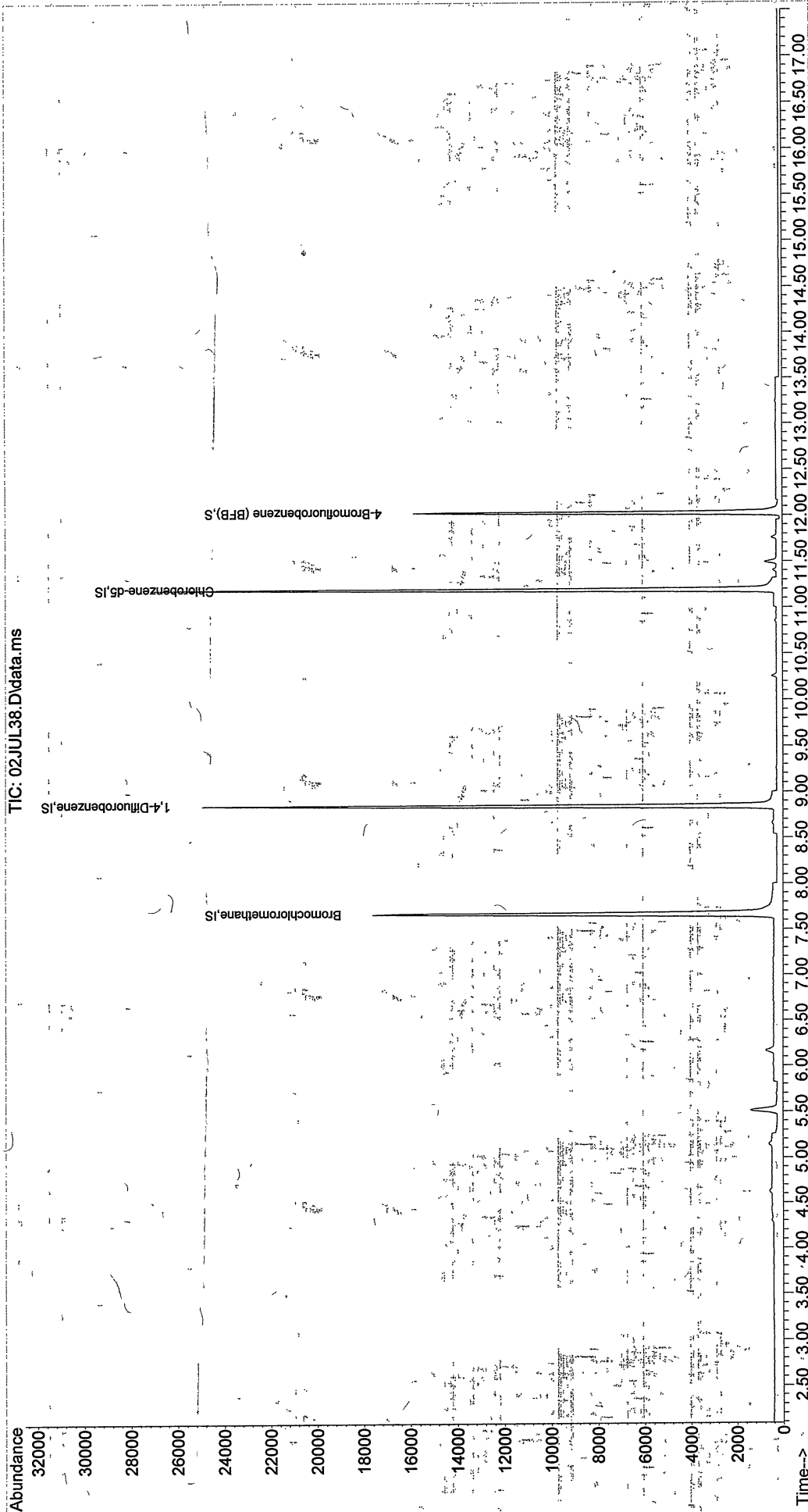
Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\JUL2024\JUL02\
Data File : 02JUL38.D
Acq On : 4 Jul 2024 6:37 am
Operator : BEP
Sample : BLK-787
Misc : *
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 17 17:55:50 2024
Quant Method : C:\msdchem\1\methods\2024\202406\26-2146\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
Quant Update : Thu Jun 27 12:10:39 2024
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\SEP2024\SEP20\
Data File : 19SEP20.D
Acq On : 21 Sep 2024 4:55 am
Operator : BEP
Sample : BLK-796 2416404-02
Misc : *
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 23 10:34:21 2024
Quant Method : C:\msdchem\1\methods\2024\202409\18-1821\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Thu Sep 19 11:48:20 2024
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	7.629	49	22920	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.813	114	41699	500.00	pptv	0.00
29) Chlorobenzene-d5	11.152	117	37081	500.00	pptv	0.00

System Monitoring Compounds						
36) 4-Bromofluorobenzene (...)	11.991	95	17832	431.16	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	86.23%

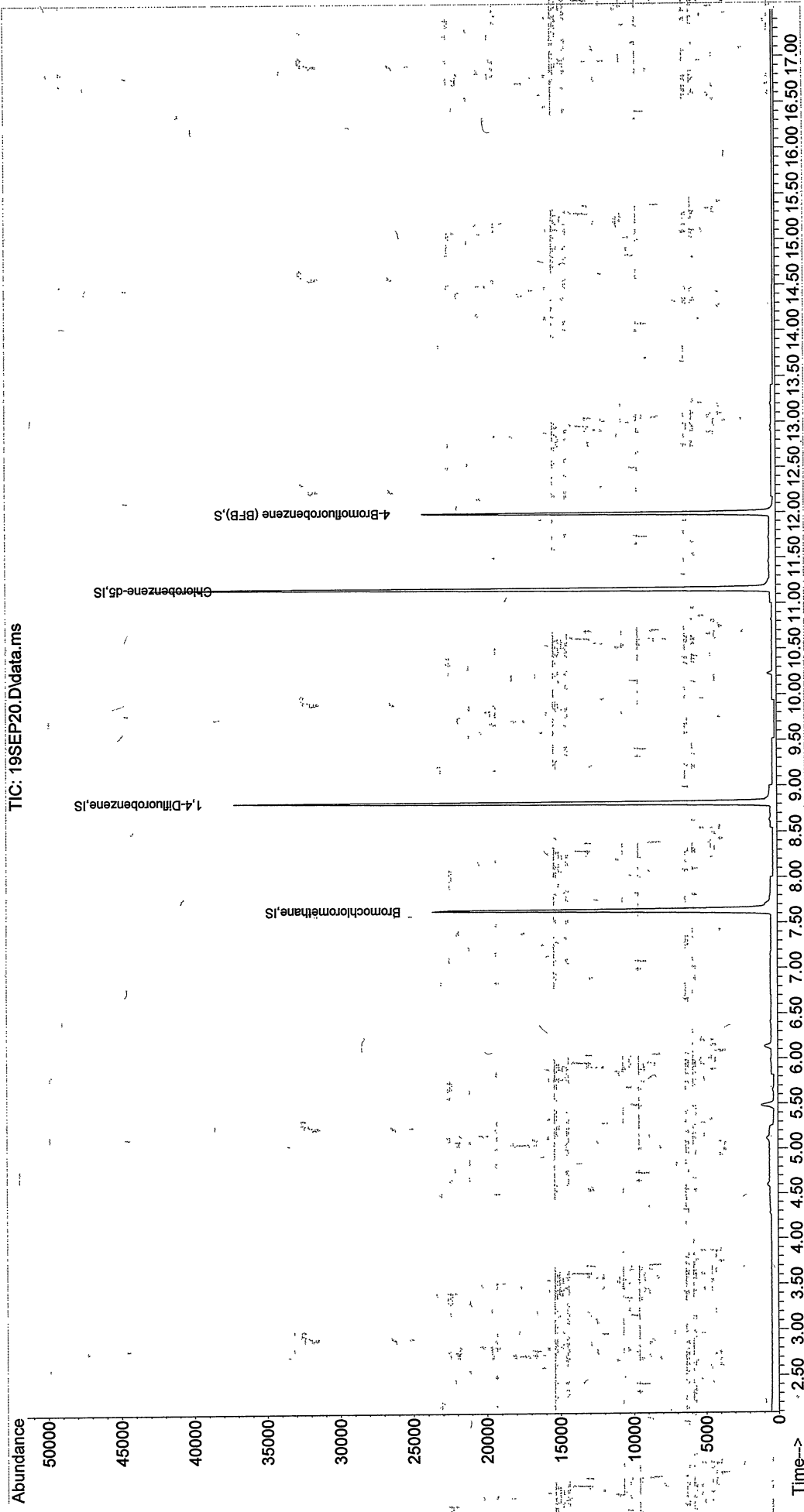
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\SEP2024\SEP20\
 Data File : 19SEP20.D
 Acq On : 21 Sep 2024 4:55 am
 Operator : BEP
 Sample : BLK-796
 Misc : *
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 23 10:34:21 2024
 Quant Method : C:\msdchem\1\methods\2024\202409\18-1821\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 Qlast Update : Thu Sep 19 11:48:20 2024
 Response via : Initial Calibration

TIC: 19SEP20.D\data.ms



Data Path : C:\msdchem\1\data\2024\SEP2024\SEP20\
Data File : 19SEP22.D
Acq On : 21 Sep 2024 6:28 am
Operator : BEP
Sample : BLK-803 2416404-03
Misc : *
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 23 10:35:05 2024
Quant Method : C:\msdchem\1\methods\2024\202409\18-1821\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Thu Sep 19 11:48:20 2024
Response via : Initial Calibration

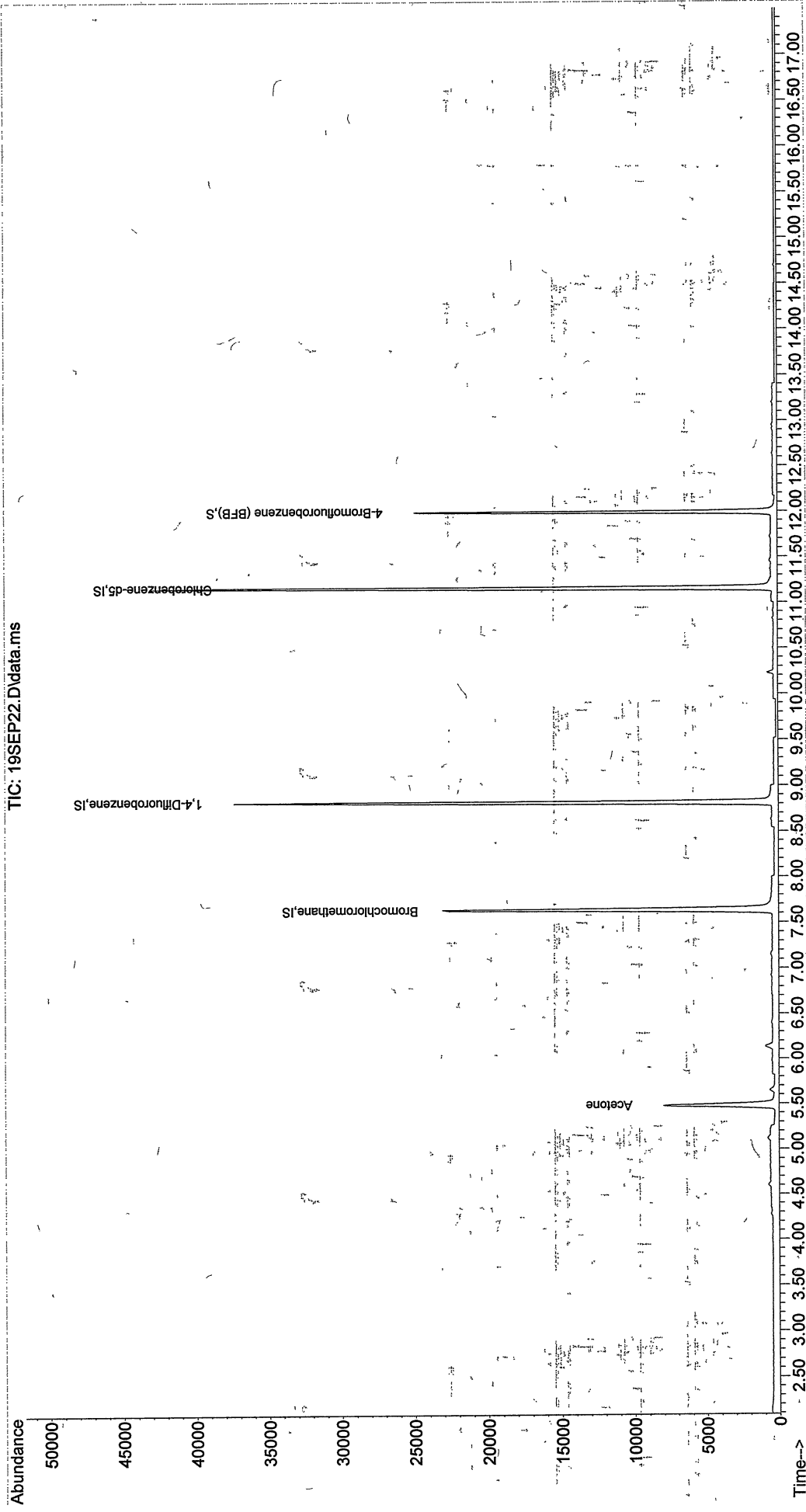
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	7.629	49	22821	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.813	114	42239	500.00	pptv	0.00
29) Chlorobenzene-d5	11.152	117	36958	500.00	pptv	0.00
System Monitoring Compounds						
36) 4-Bromofluorobenzene (...)	11.991	95	18727	454.30	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	90.86%
Target Compounds						
6) Acetone	5.480	43	15762	132.2757	pptv	Qvalue 94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\SEP2024\SEP20\
Data File : 19SEP22.D
Acq On : 21 Sep 2024 6:28 am
Operator : BEP
Sample : BLK-803
Misc : *
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 23 10:35:05 2024
Quant Method : C:\msdchem\1\methods\2024\202409\18-1821\TO15_SIM.M.
Quant Title : TO-15 Vapor analysis
Qlast Update : Thu Sep 19 11:48:20 2024
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\AUG2024\AUG30\
Data File : 30AUG08.D
Acq On : 31 Aug 2024 1:04 am
Operator : BEP
Sample : BLK-23803 2416404-04
Misc : *
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 03 16:22:24 2024
Quant Method : C:\msdchem\1\methods\2024\202408\23-1041\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Fri Aug 23 14:02:10 2024
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

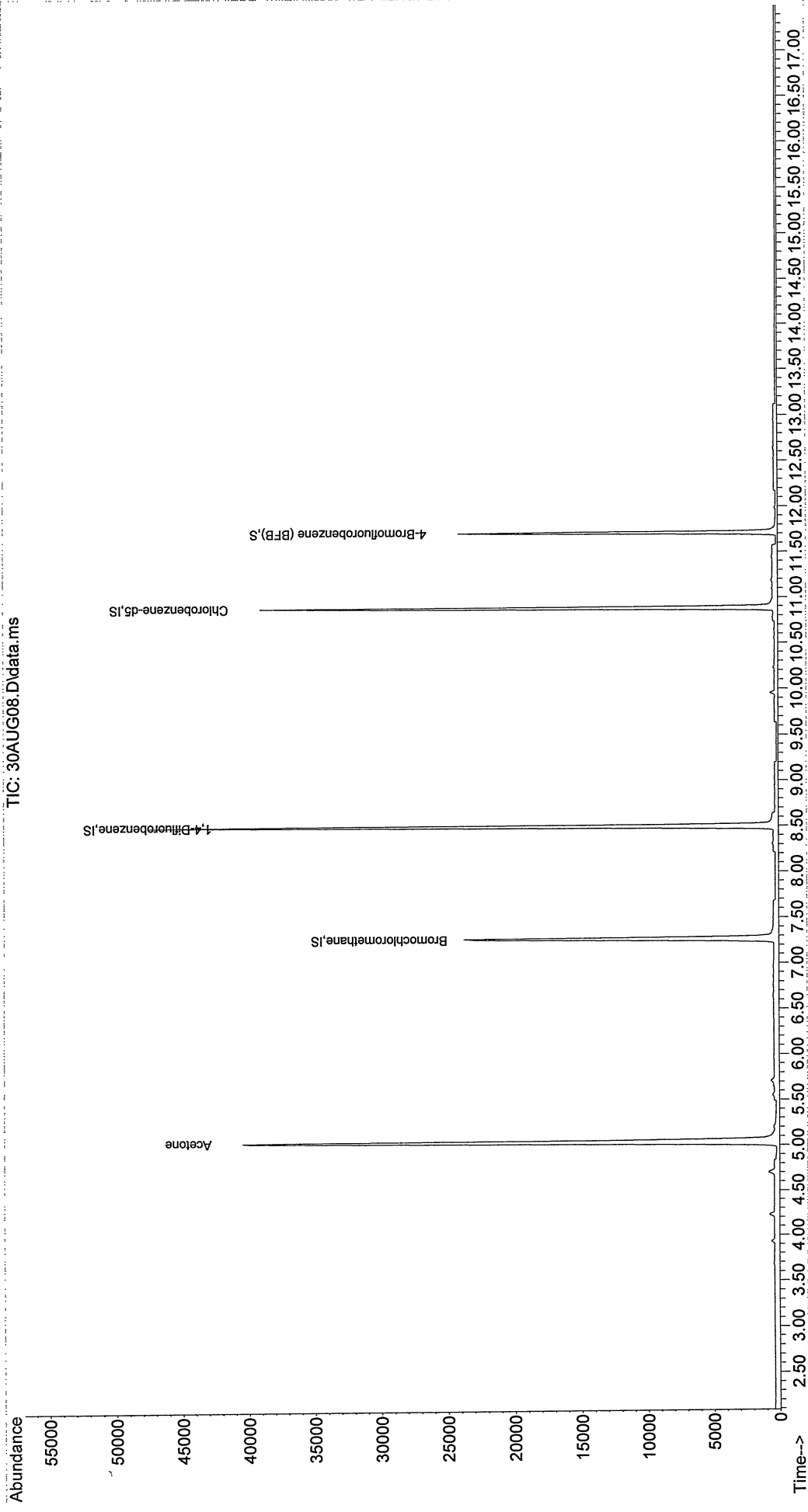
Internal Standards						
1) Bromochloromethane	7.259	49	23162	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	51666	500.00	pptv	0.00
29) Chlorobenzene-d5	10.883	117	30647	500.00	pptv	0.00
System Monitoring Compounds						
36) 4-Bromofluorobenzene (...)	11.708	95	15979	435.16	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	87.03%
Target Compounds						
6) Acetone	5.035	58	20889	1363.9623	pptv	73

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG30\
 Data File : 30AUG08.D
 Acq On : 31 Aug 2024 1:04 am
 Operator : BEP
 Sample : BLK-23803
 Misc : *
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 03 16:22:24 2024
 Quant Method : C:\msdchem\1\methods\2024\202408\23-1041\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Fri Aug 23 14:02:10 2024
 Response via : Initial Calibration

TIC: 30AUG08.D\data.ms



Data Path : C:\msdchem\1\data\2024\SEP2024\SEP09\
Data File : 09SEP24.D
Acq On : 10 Sep 2024 5:35 pm
Operator : BEP
Sample : blk-37503 2416404-05
Misc : *
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 11 11:28:42 2024
Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Wed Sep 04 09:00:16 2024
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	7.259	49	16267	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	34344	500.00	pptv	0.00
29) Chlorobenzene-d5	10.883	117	20377	500.00	pptv	0.00

System Monitoring Compounds

36) 4-Bromofluorobenzene (...)	11.708	95	10205	436.96	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	87.39%

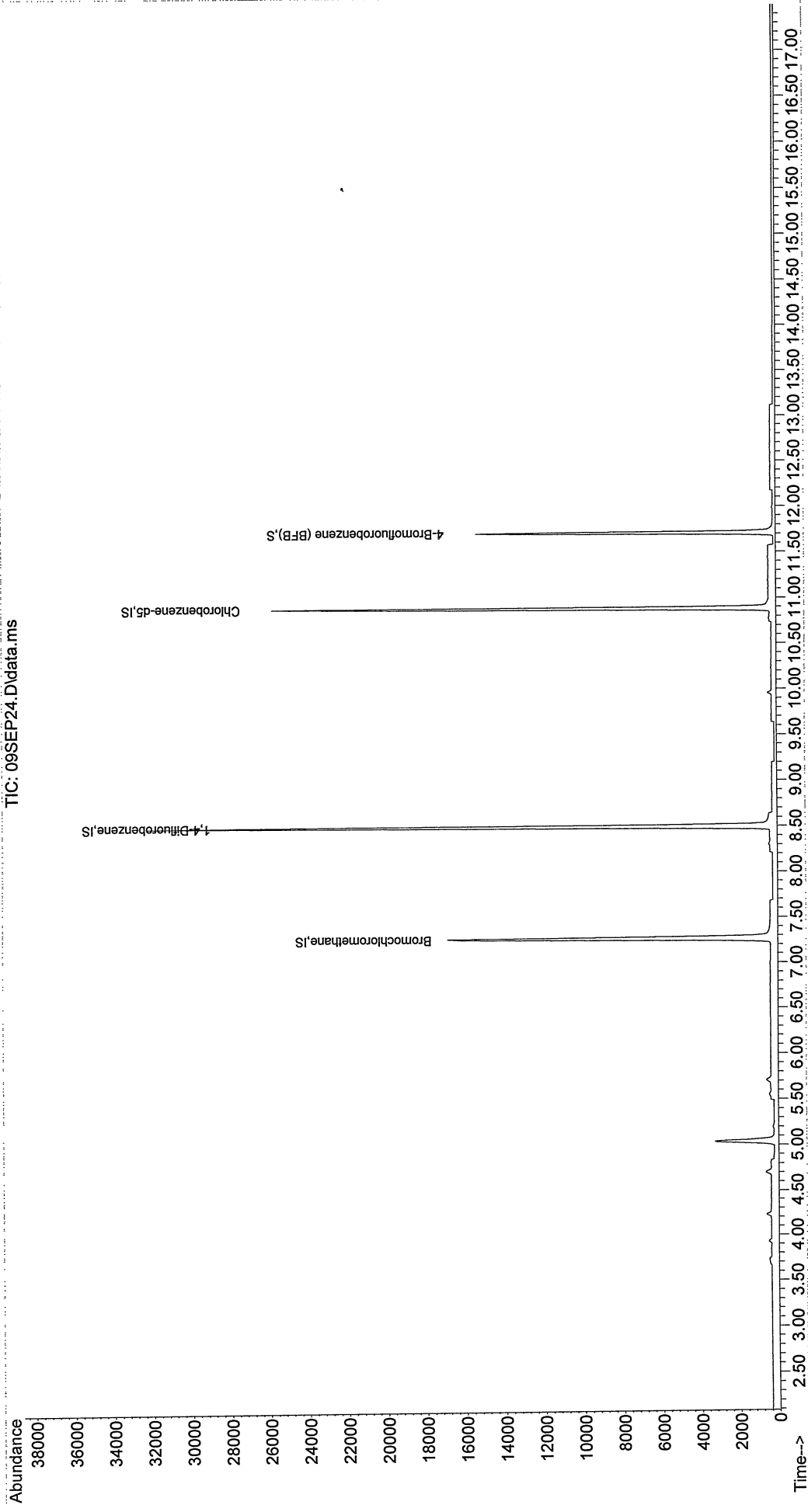
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\SEP2024\SEP09\
 Data File : 09SEP24.D
 Acq On : 10 Sep 2024 5:35 pm
 Operator : BEP
 Sample : blk-37503
 Misc : *
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 11 11:28:42 2024
 Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Wed Sep 04 09:00:16 2024
 Response via : Initial Calibration

TIC: 09SEP24.D\data.ms



Data Path : C:\msdchem\1\data\2024\AUG2024\AUG21\
Data File : 21AUG12.D
Acq On : 22 Aug 2024 2:26 am
Operator : BEP
Sample : BLK-43531 2416404-06
Misc : *
ALS Vial : 10 Sample Multiplier: 1

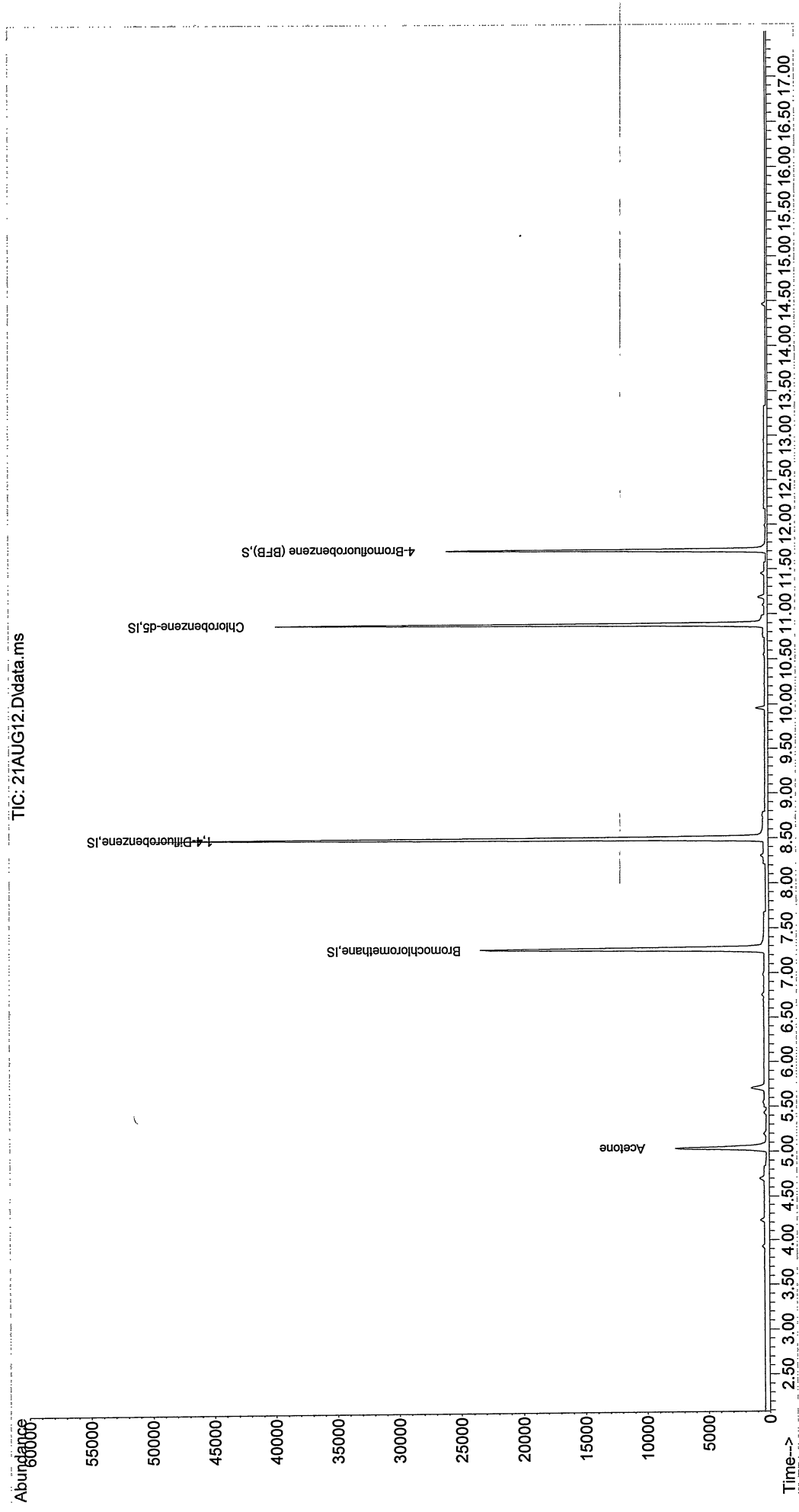
Quant Time: Aug 30 14:37:53 2024
Quant Method : C:\msdchem\1\methods\2024\202408\23-1041\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Fri Aug 23 14:02:10 2024
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
Internal Standards						
1) Bromochloromethane	7.259	49	23025	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	53678	500.00	pptv	0.00
29) Chlorobenzene-d5	10.880	117	31278	500.00	pptv	0.00
System Monitoring Compounds						
36) 4-Bromofluorobenzene (...)	11.710	95	17552	468.35	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	93.67%
Target Compounds						
6) Acetone	5.035	58	4095	253.7771	pptv	Qvalue 67

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG21\
 Data File : 21AUG12.D
 Acq On : 22 Aug 2024 2:26 am
 Operator : BEP
 Sample : BLK-43531
 Misc : *
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 30 14:37:53 2024
 Quant Method : C:\msdchem\1\methods\2024\202408\23-1041\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Fri Aug 23 14:02:10 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\AUG2024\AUG26\
Data File : 26AUG16.D
Acq On : 26 Aug 2024 10:28 pm
Operator : BEP
Sample : BLK-49958 2416404-08
Misc : *
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 27 15:08:24 2024
Quant Method : C:\msdchem\1\methods\2024\202408\23-1041\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Fri Aug 23 14:02:10 2024
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	7.259	49	23698	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	55023	500.00	pptv	0.00
29) Chlorobenzene-d5	10.881	117	32653	500.00	pptv	0.00

System Monitoring Compounds

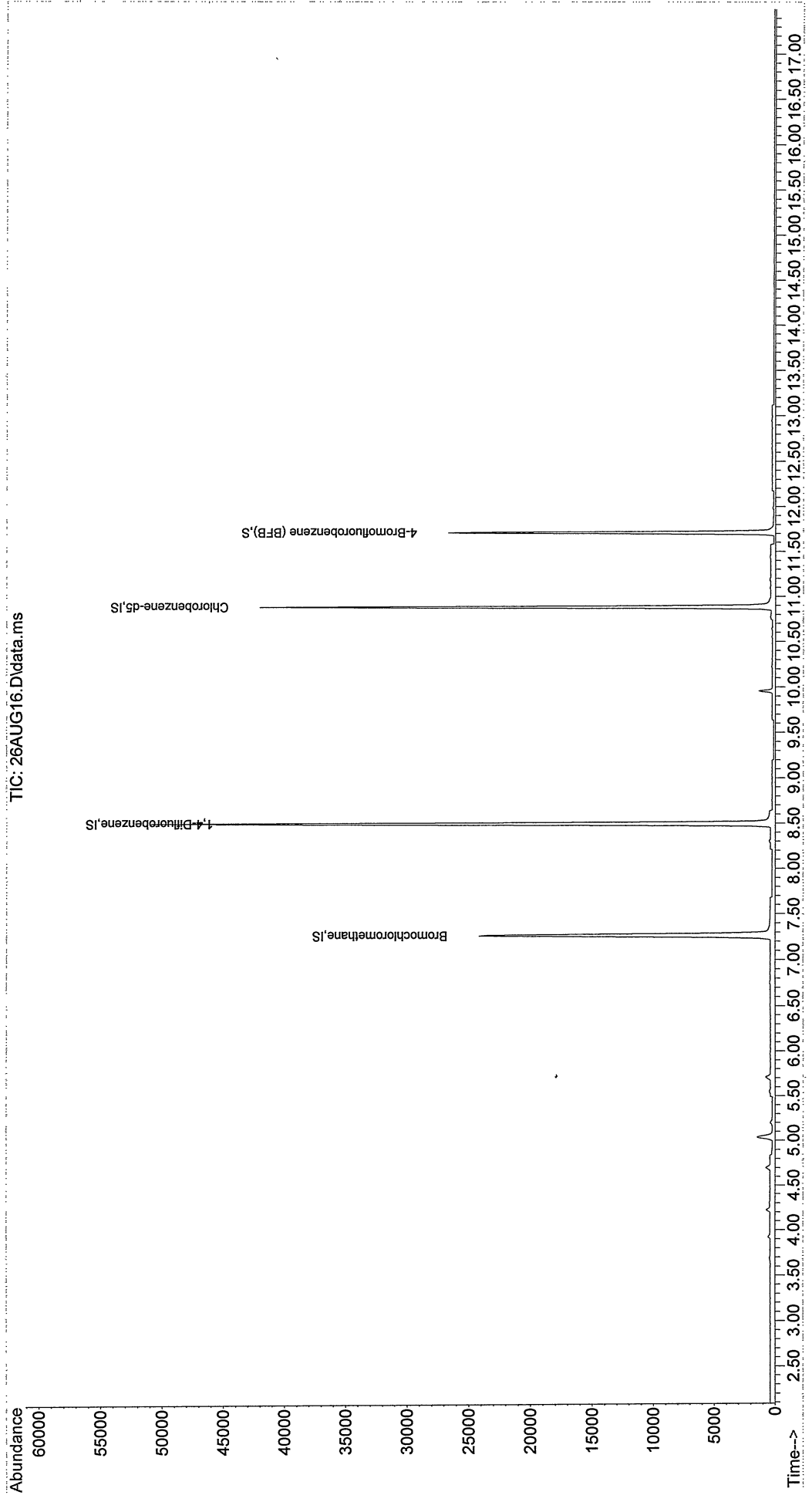
36) 4-Bromofluorobenzene (...)	11.708	95	18056	461.51	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	92.30%

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG26\
 Data File : 26AUG16.D
 Acq On : 26 Aug 2024 10:28 pm
 Operator : BEP
 Sample : BLK-49958
 Misc : *
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 27 15:08:24 2024
 Quant Method : C:\msdchem\1\methods\2024\202408\23-1041\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Fri Aug 23 14:02:10 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\
Data File : 06AUG17.D
Acq On : 7 Aug 2024 1:29 am
Operator : BEP
Sample : blk-800b 2416404-09
Misc : *
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Aug 07 14:56:14 2024

Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M

Quant Title : TO-15 Vapor analysis

QLast Update : Fri Aug 02 14:17:01 2024

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	7.658	49	16129	500.00	pptv	# 0.00
20) 1,4-Difluorobenzene	8.842	114	30177	500.00	pptv	0.00
28) Chlorobenzene-d5	11.186	117	29465	500.00	pptv	0.00

System Monitoring Compounds

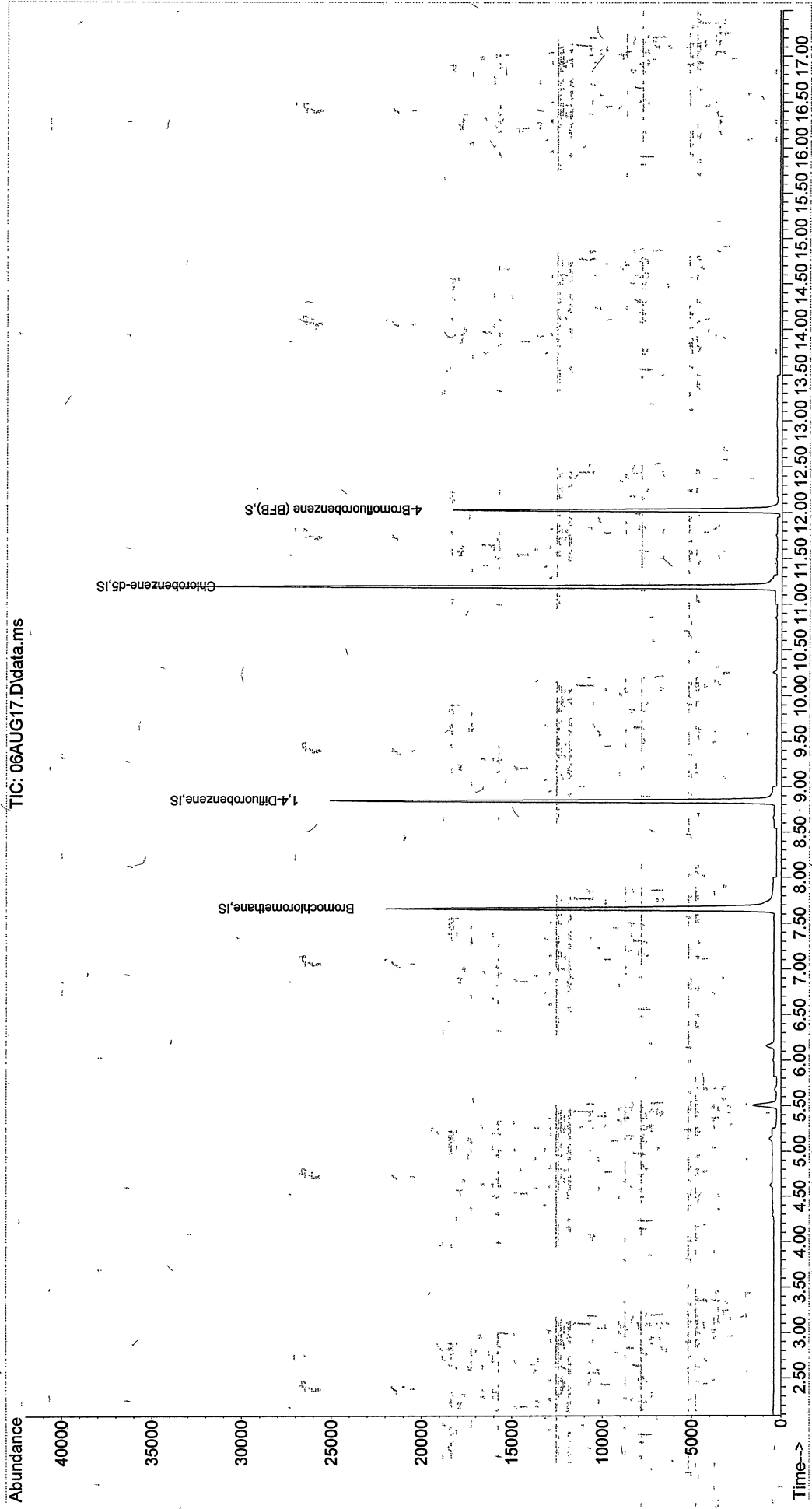
34) 4-Bromofluorobenzene (... 12.025 95 12599 385.58 pptv 0.00
Spiked Amount 500.000 Range 50 - 150 Recovery = 77.12%

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\
 Data File : 06AUG17.D
 Acq On : 7 Aug 2024 1:29 am
 Operator : BEP
 Sample : blk-800b
 Misc : *
 ALS Vial : 13 Sample Multiplier: 1

Quant Time: Aug 07 14:56:14 2024
 Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 Qlast Update : Fri Aug 02 14:17:01 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\SEP2024\SEP09\
 Data File : 09SEP22.D
 Acq On : 10 Sep 2024 4:20 pm
 Operator : BEP
 Sample : blk-679 2416404-10
 Misc : *
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 11 11:28:01 2024
 Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Wed Sep 04 09:00:16 2024
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

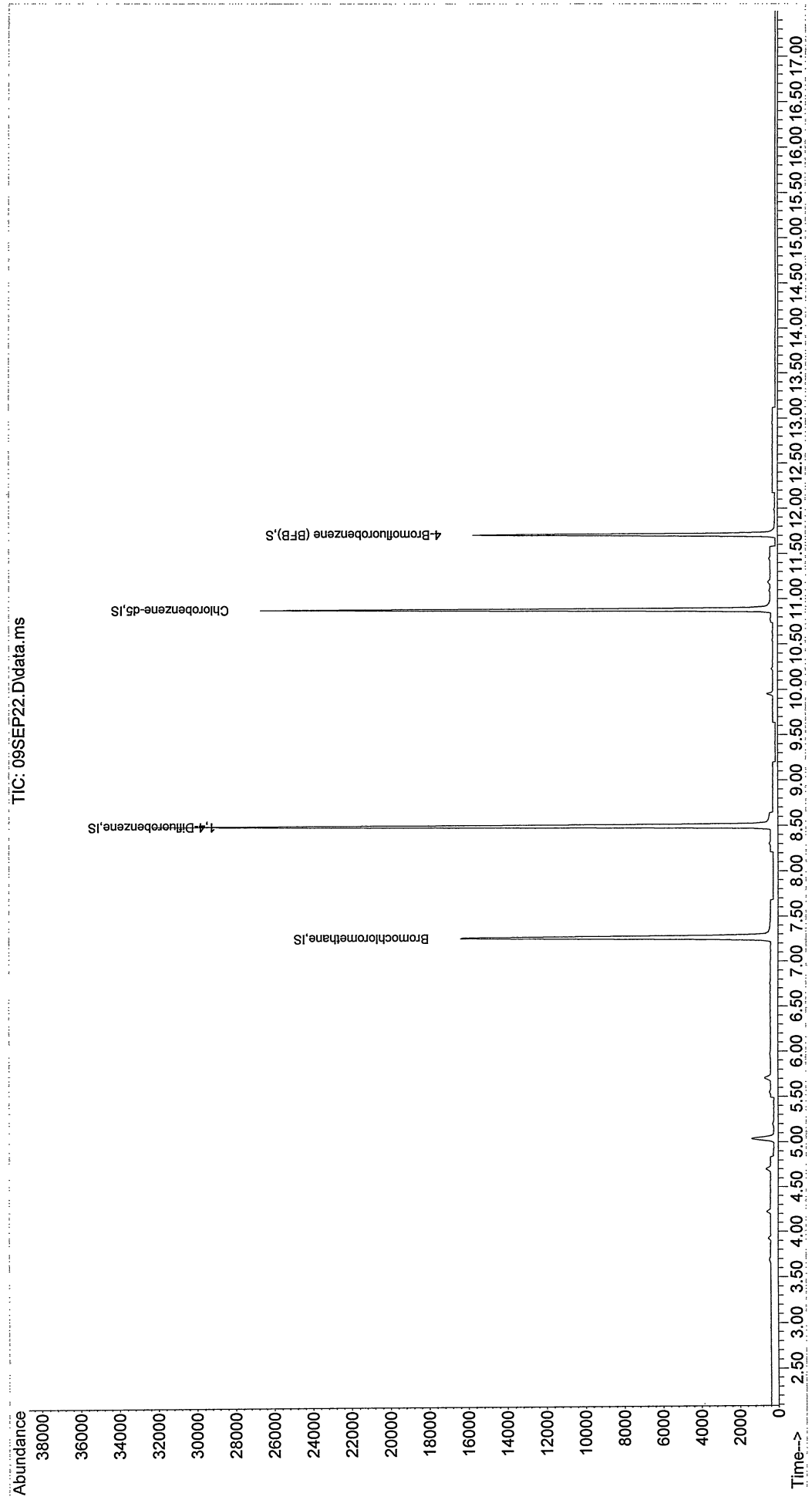
Internal Standards						
1) Bromochloromethane	7.259	49	16094	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	34647	500.00	pptv	0.00
29) Chlorobenzene-d5	10.881	117	20750	500.00	pptv	0.00
System Monitoring Compounds						
36) 4-Bromofluorobenzene (...)	11.708	95	10547	443.48	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	88.70%

Target Compounds	Qvalue
-----	-----

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\SEP2024\SEP09\
Data File : 09SEP22.D
Acq On : 10 Sep 2024 4:20 pm
Operator : BEP
Sample : blk-679
Misc : *
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 11 11:28:01 2024
Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Wed Sep 04 09:00:16 2024
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\MAY2024\MAY15\
Data File : 15MAY18.D
Acq On : 16 May 2024 7:03 pm
Operator : RMK
Sample : BLK-35427 2416404 -11
Misc : 13-756
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 17 12:55:33 2024
Quant Method : C:\msdchem\1\METHODS\2024\202404\25-1228\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Tue May 14 08:57:22 2024
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	7.677	49	13667	500.00	pptv	# 0.00
20) 1,4-Difluorobenzene	8.861	114	18955	500.00	pptv	0.00
28) Chlorobenzene-d5	11.204	82	10296	500.00	pptv	0.00
System Monitoring Compounds						
34) 4-Bromofluorobenzene (...)	12.043	95	8561	374.85	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	74.97%

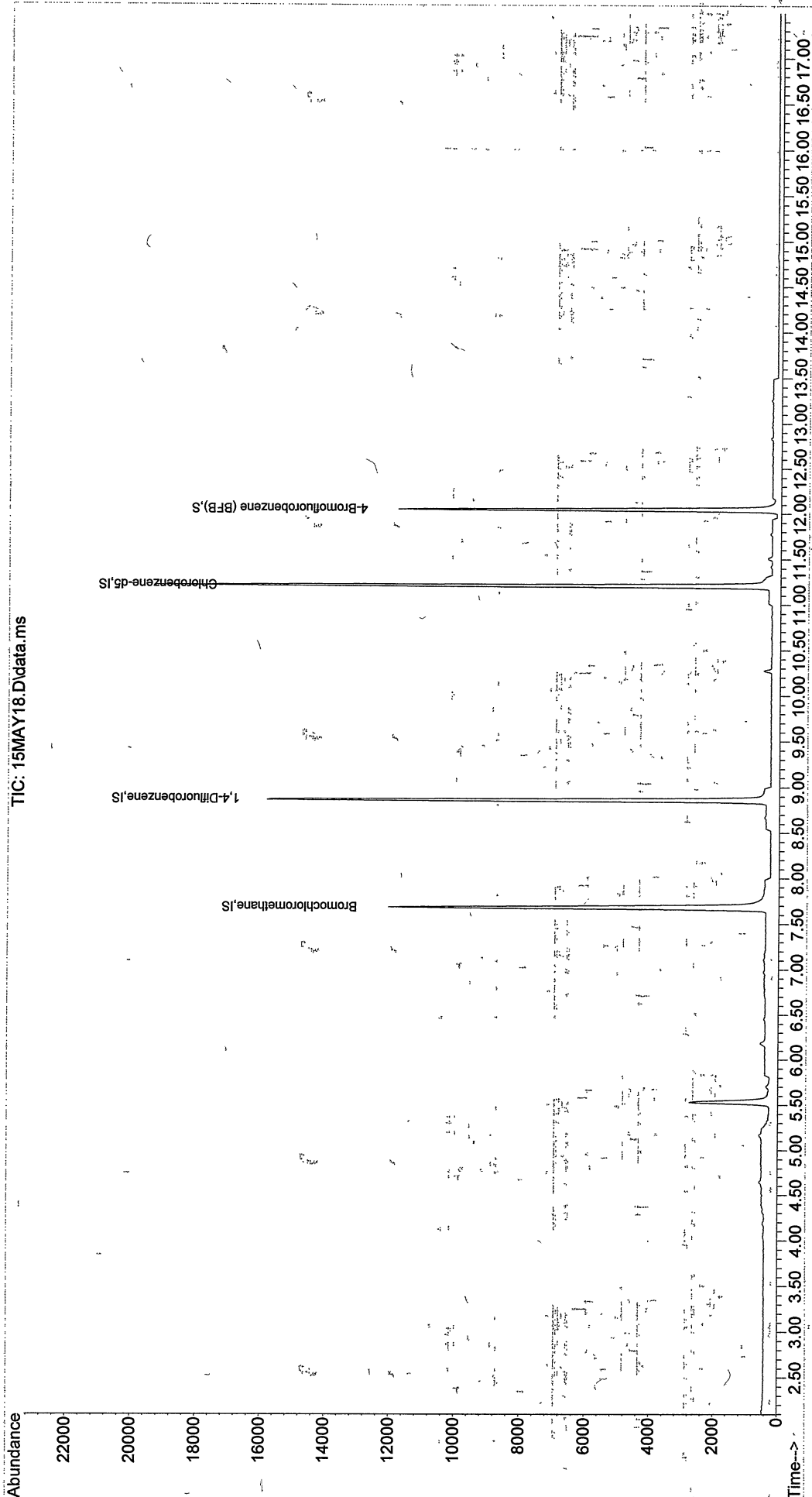
Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\MAY2024\MAY15\
 Data File : 15MAY18.D
 Acq On : 16 May 2024 7:03 pm
 Operator : RMK
 Sample : BLK-35427
 Misc : 13-756
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 17 12:55:33 2024
 Quant Method : C:\msdchem\1\METHODS\2024\202404\25-1228\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 Qlast Update : Tue May 14 08:57:22 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\
Data File : 06AUG13.D
Acq On : 6 Aug 2024 10:26 pm
Operator : BEP
Sample : blk-c8345 2416404-12
Misc : *
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 06 22:58:00 2024

Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M

Quant Title : TO-15 Vapor analysis

QLast Update : Fri Aug 02 14:17:01 2024

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

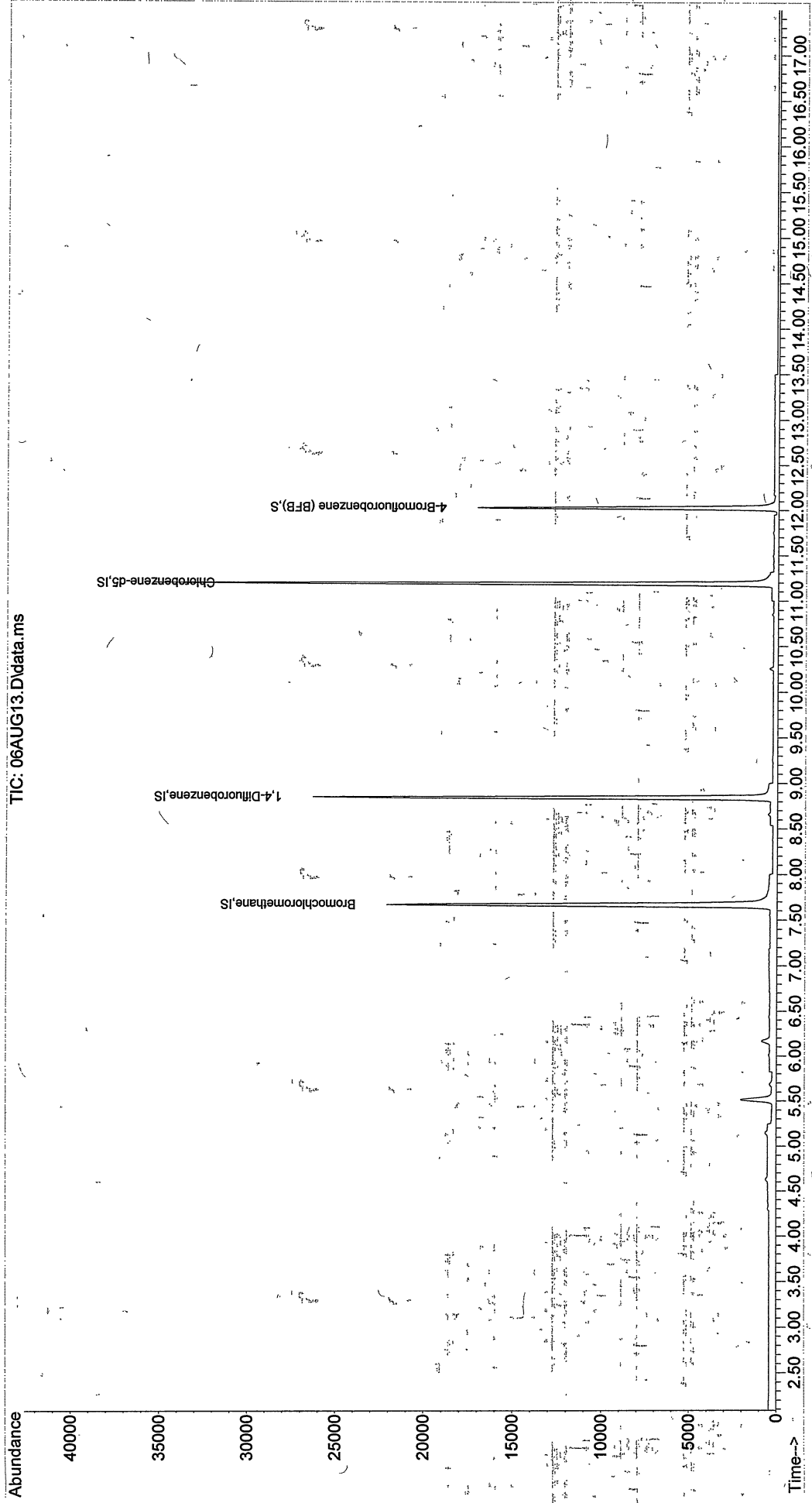
Internal Standards						
1) Bromochloromethane	7.659	49	16537	500.00	pptv	# 0.00
20) 1,4-Difluorobenzene	8.843	114	31068	500.00	pptv	0.00
28) Chlorobenzene-d5	11.188	117	29673	500.00	pptv	0.00
System Monitoring Compounds						
34) 4-Bromofluorobenzene (...)	12.027	95	12021	365.31	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	73.06%

Target Compounds	Qvalue
------------------	--------

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\
 Data File : 06AUG13.D
 Acq On : 6 Aug 2024 10:26 pm
 Operator : BEP
 Sample : blk-c8345
 Misc : *
 ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 06 22:58:00 2024
 Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Fri Aug 02 14:17:01 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\
Data File : 06AUG15.D
Acq On : 6 Aug 2024 11:58 pm
Operator : BEP
Sample : blk-49967 2416404-13
Misc : *
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Aug 07 14:55:09 2024

Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M

Quant Title : TO-15 Vapor analysis

QLast Update : Fri Aug 02 14:17:01 2024

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	7.658	49	16136	500.00	pptv	# 0.00
20) 1,4-Difluorobenzene	8.842	114	30838	500.00	pptv	0.00
28) Chlorobenzene-d5	11.186	117	29107	500.00	pptv	0.00

System Monitoring Compounds

34) 4-Bromofluorobenzene (...)	12.025	95	11659	361.20	pptv	-0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	72.24%

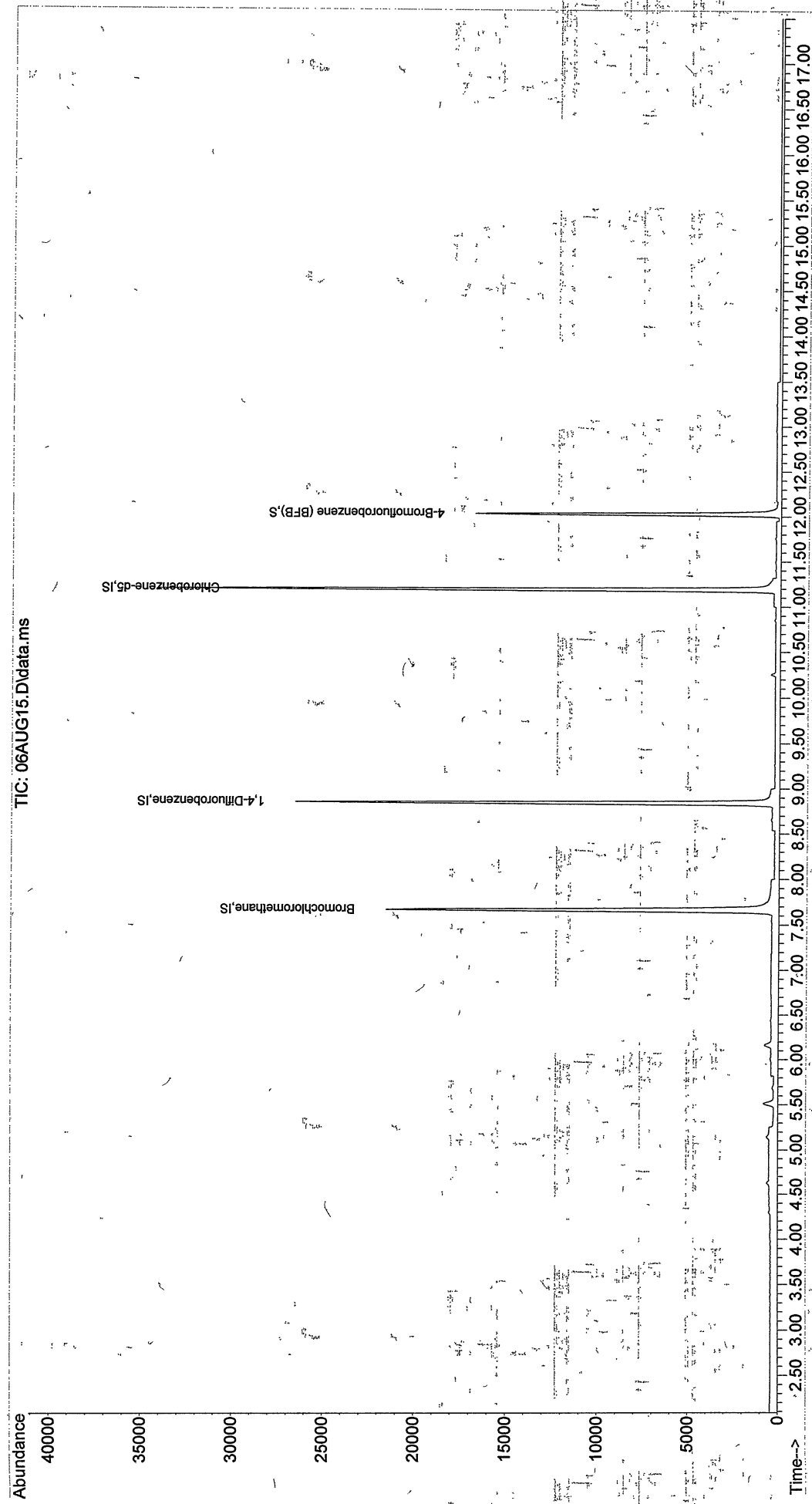
Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG06\
Data File : 06AUG15.D
Acq On : 6 Aug 2024 11:58 pm
Operator : BEP
Sample : blk-49967
Misc : *
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Aug 07 14:55:09 2024
Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Fri Aug 02 14:17:01 2024
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\AUG2024\AUG26\
Data File : 26AUG17.D
Acq On : 26 Aug 2024 11:04 pm
Operator : BEP
Sample : BLK-802 2416404-14
Misc : *
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 27 15:09:14 2024
Quant Method : C:\msdchem\1\methods\2024\202408\23-1041\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Fri Aug 23 14:02:10 2024
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Bromochloromethane	7.260	49	23951	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	55174	500.00	pptv	0.00
29) Chlorobenzene-d5	10.883	117	32400	500.00	pptv	0.00

System Monitoring Compounds

36) 4-Bromofluorobenzene (...)	11.707	95	17587	453.04	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	90.61%

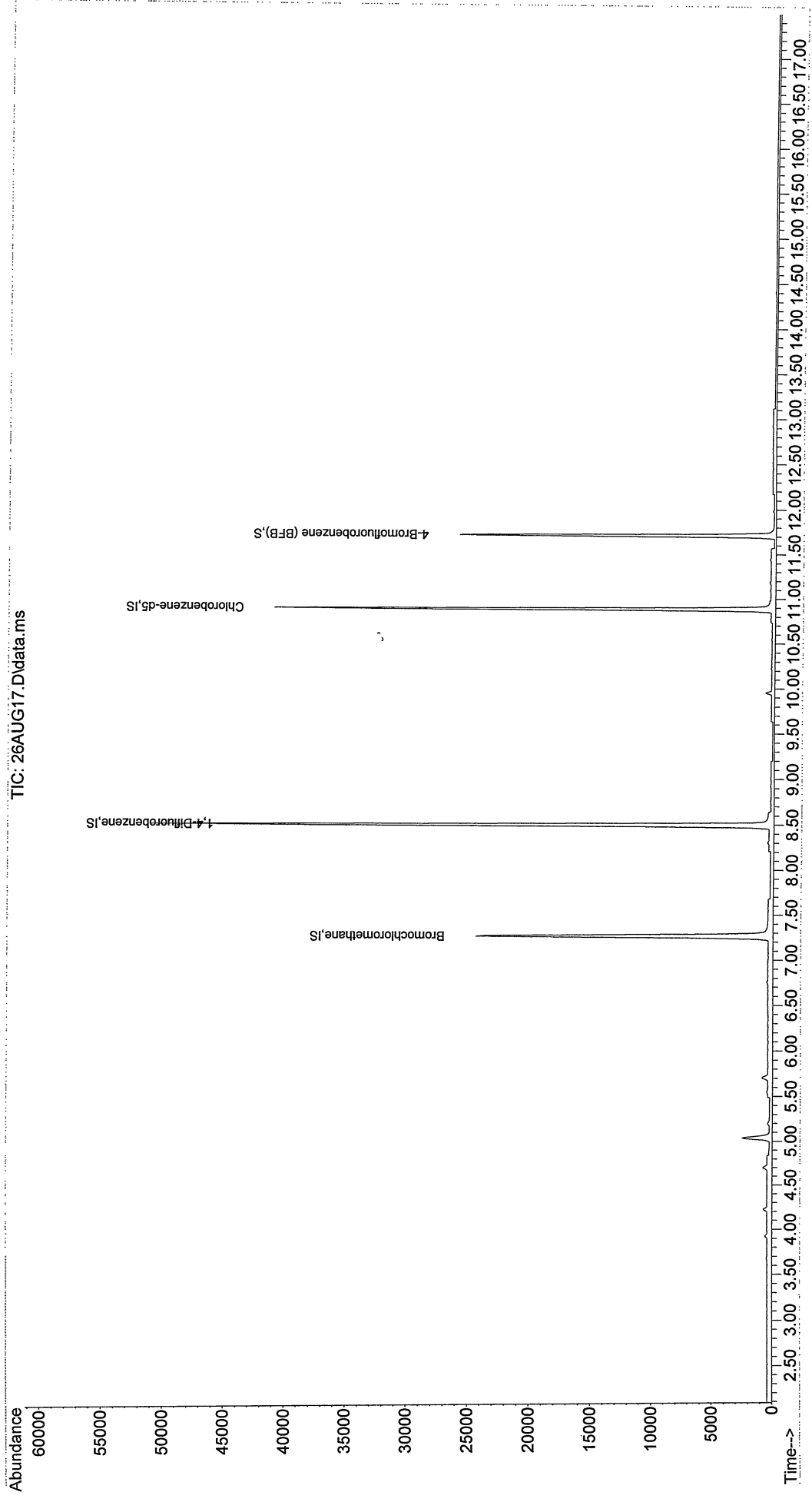
Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG26\
 Data File : 26AUG17.D
 Acq On : 26 Aug 2024 11:04 pm
 Operator : BEP
 Sample : BLK-802
 Misc : *
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 27 15:09:14 2024
 Quant Method : C:\msdchem\1\methods\2024\202408\23-1041\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Fri Aug 23 14:02:10 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\SEP2024\SEP09\
Data File : 09SEP23.D

Acq On : 10 Sep 2024 4:58 pm

Operator : BEP

Sample : blk-37519

Misc : *

ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 11 11:28:22 2024

Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M

Quant Title : TO-15 Vapor analysis

QLast Update : Wed Sep 04 09:00:16 2024

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)

Internal Standards						
1) Bromochloromethane	7.259	49	16115	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.495	114	34136	500.00	pptv	0.00
29) Chlorobenzene-d5	10.883	117	20429	500.00	pptv	0.00

System Monitoring Compounds

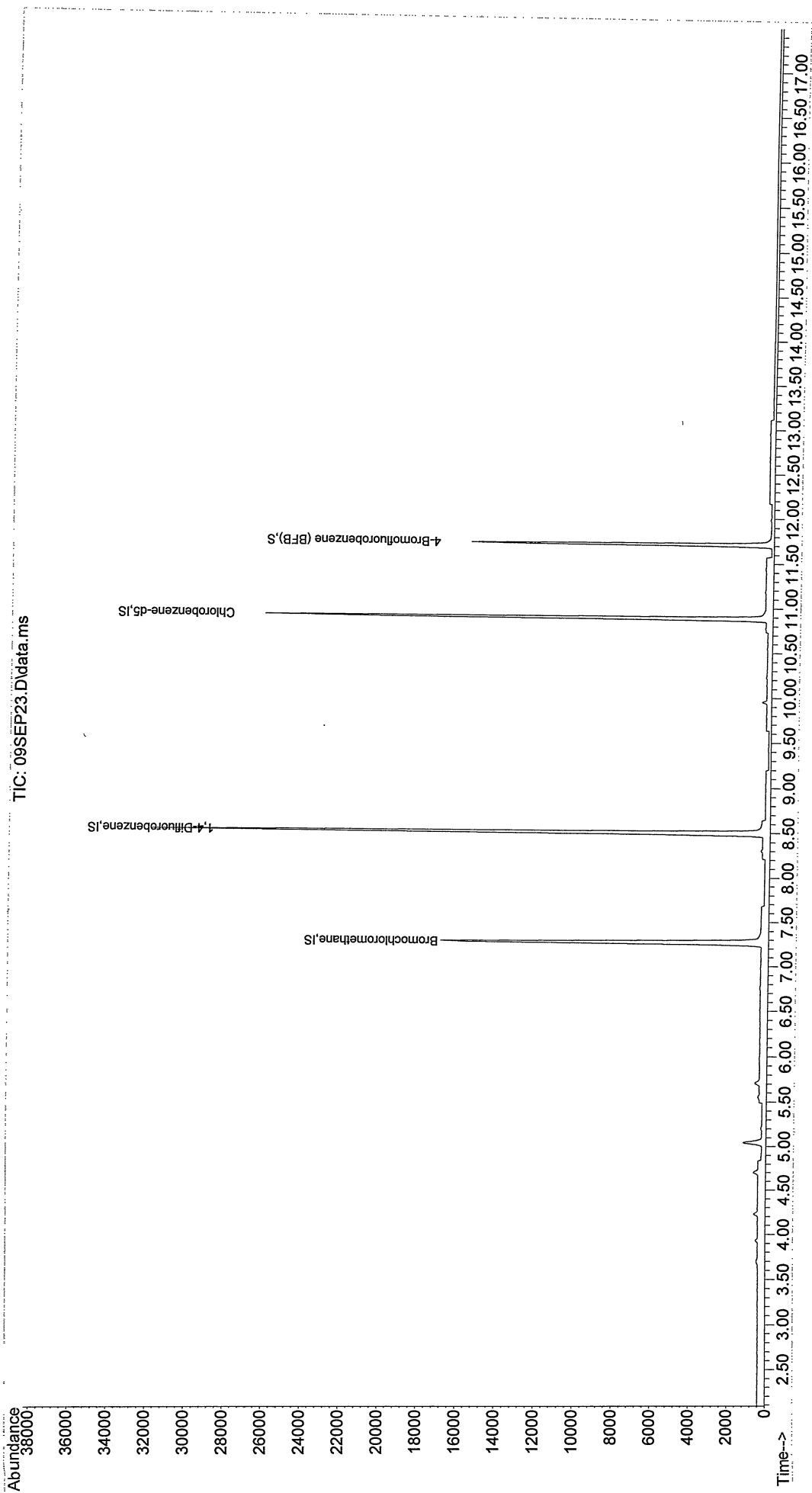
36) 4-Bromofluorobenzene (...)	11.708	95	10341	441.65	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	88.33%

Target Compounds

Qvalue-----
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\SEP2024\SEP09\
 Data File : 09SEP23.D
 Acq On : 10 Sep 2024 4:58 pm
 Operator : BEP
 Sample : blk-37519
 Misc : *
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 11 11:28:22 2024
 Quant Method : C:\msdchem\1\methods\2024\202409\03-2116\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Wed Sep 04 09:00:16 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\AUG2024\AUG01\
Data File : 01AUG31.D
Acq On : 2 Aug 2024 12:20 pm
Operator : BEP
Sample : BLK-761 2416404-16
Misc : *
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 02 14:51:34 2024
Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
QLast Update : Fri Aug 02 14:17:01 2024
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

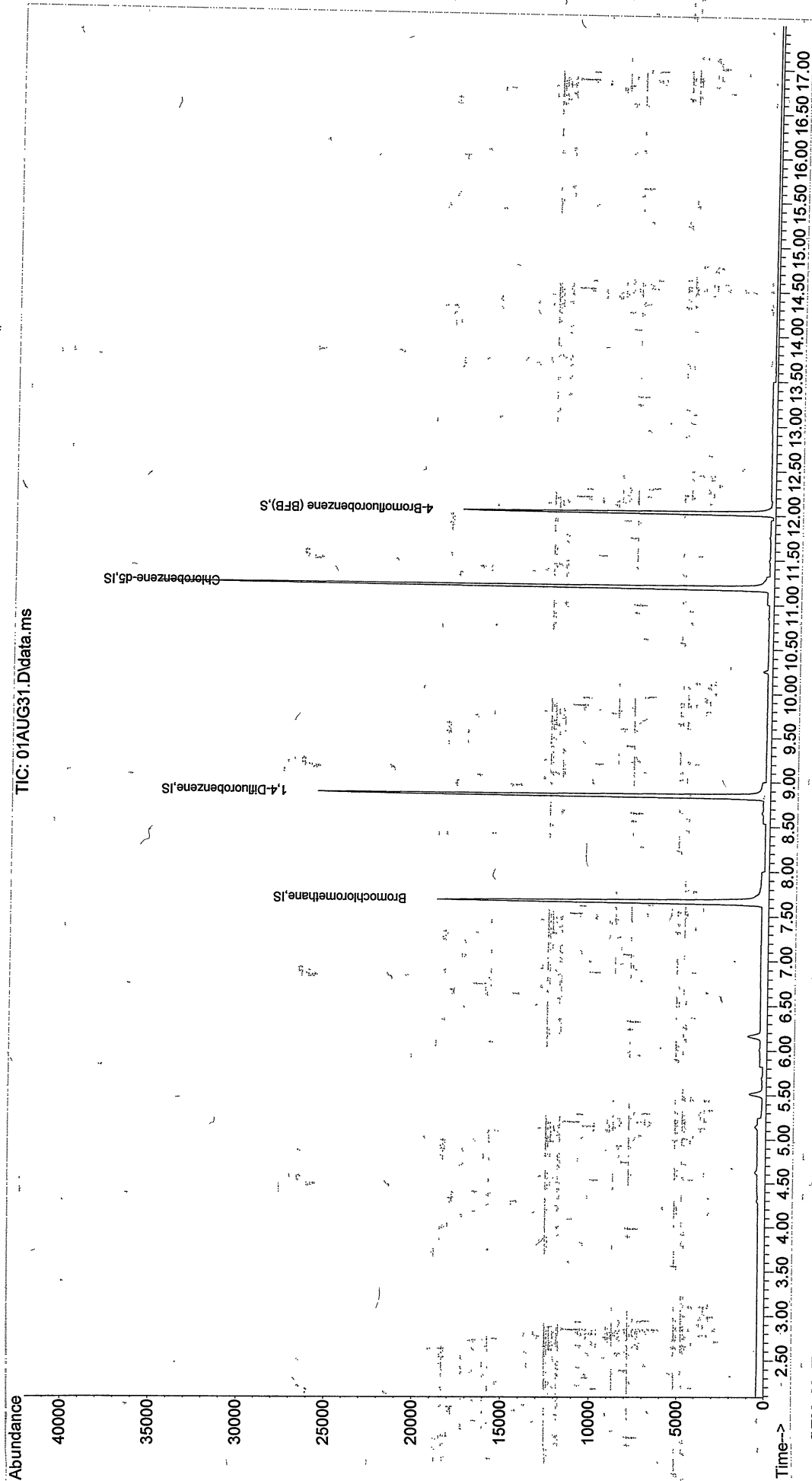
Internal Standards						
1) Bromochloromethane	7.659	49	13808	500.00	pptv	# 0.00
20) 1,4-Difluorobenzene	8.843	114	30939	500.00	pptv	0.00
28) Chlorobenzene-d5	11.188	117	29094	500.00	pptv	0.00
System Monitoring Compounds						
34) 4-Bromofluorobenzene (...)	12.027	95	12294	381.04	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	76.21%

Target Compounds	Qvalue
------------------	--------

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\AUG2024\AUG01\
 Data File : 01AUG31.D
 Acq On : 2 Aug 2024 12:20 pm
 Operator : BEP
 Sample : BLK-761
 Misc : *
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 02 14:51:34 2024
 Quant Method : C:\msdchem\1\methods\2024\202408\01-2136\TO15_SIM.M
 Quant Title : TO-15 Vapor analysis
 QLast Update : Fri Aug 02 14:17:01 2024
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2024\SEP2024\SEP20\
Data File : 19SEP17.D
Acq On : 21 Sep 2024 2:35 am
Operator : BEP
Sample : BLK-744 2416404-17
Misc : *
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 23 10:33:05 2024

Quant Method : C:\msdchem\1\methods\2024\202409\18-1821\TO15_SIM.M

Quant Title : TO-15 Vapor analysis

QLast Update : Thu Sep 19 11:48:20 2024

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	7.629	49	23065	500.00	pptv	0.00
20) 1,4-Difluorobenzene	8.813	114	42333	500.00	pptv	0.00
29) Chlorobenzene-d5	11.152	117	37348	500.00	pptv	0.00
System Monitoring Compounds						
36) 4-Bromofluorobenzene (...)	11.985	95	17897	429.64	pptv	0.00
Spiked Amount	500.000	Range	50 - 150	Recovery	=	85.93%

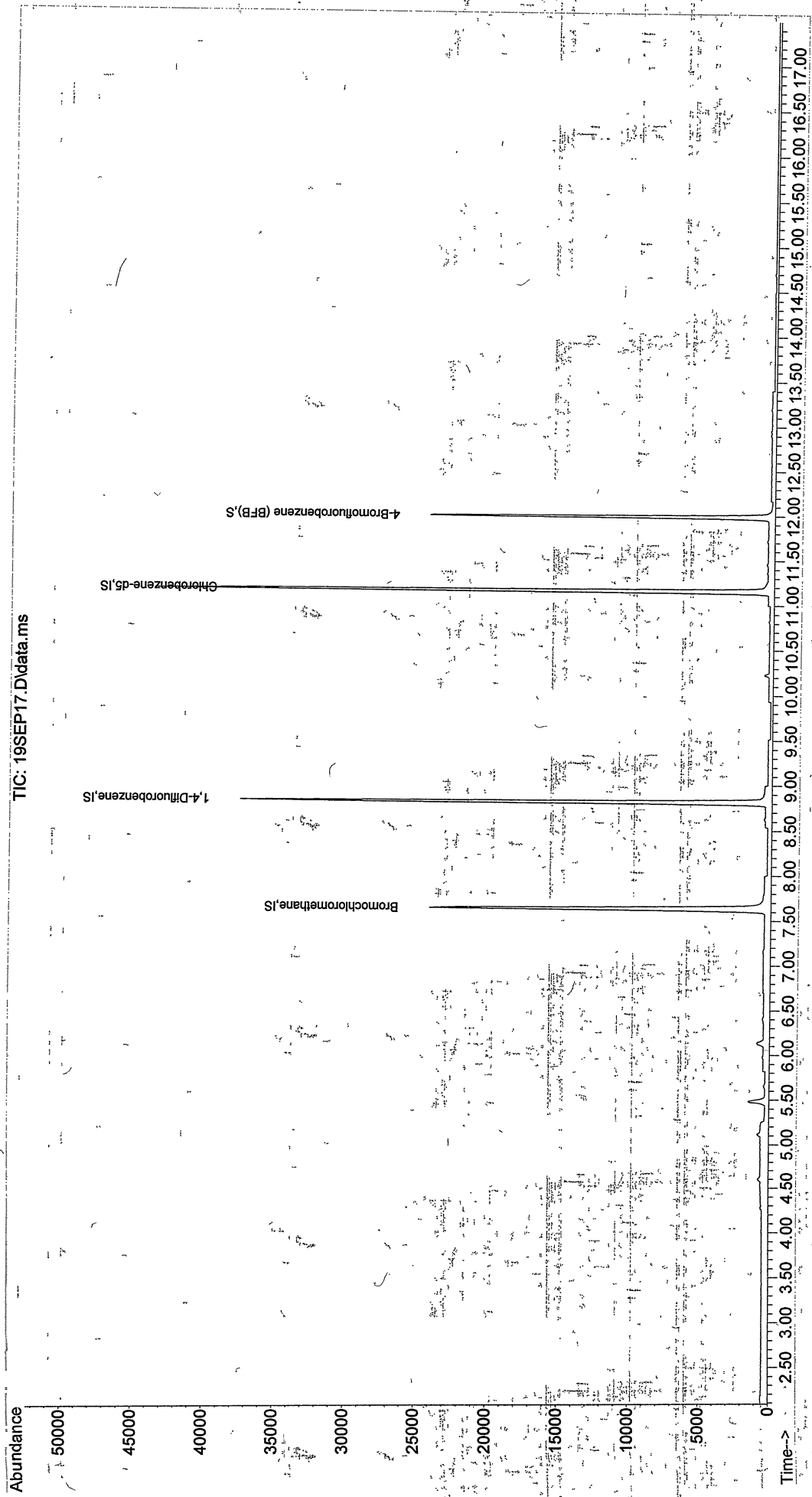
Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2024\SEP2024\SEP20\
Data File : 19SEP17.D
Acq On : 21 Sep 2024 2:35 am
Operator : BEP
Sample : BLK-744
Misc : *
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 23 10:33:05 2024
Quant Method : C:\msdchem\1\methods\2024\202409\18-1821\TO15_SIM.M
Quant Title : TO-15 Vapor analysis
Qlast Update : Thu Sep 19 11:48:20 2024
Response via : Initial Calibration





Date of Report: 11/11/2024

Yola Byram

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Client Project: [none]
Pace Project: Walnut Bluff
Pace Work Order: 2416404
Invoice ID: B506064, B507753

Enclosed are the results of analyses for samples received by the laboratory on 10/10/2024. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supersedes Report ID 1001544909

Sincerely,

Contact Person: Brianna Schutte
Client Services Rep

Steve Bennett
Operations Manager

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
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Case Narratives

Case Narrative for Work Order 2416404

Notified client via email sample number 2416404-07 with the sample name WB07-1H was received fully evacuated

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Case Narrative

Sample Receipt

COC Number:

Samples received refrigerated to 25 °C

Sample List

<u>Lab Number</u>	<u>Date/Time Sampled</u>	<u>Sample Name</u>
2416404-01	10/09/2024 09:59	WB01-1H
2416404-02	10/09/2024 11:31	WB02-1H
2416404-03	10/09/2024 11:33	WB03-1H
2416404-04	10/09/2024 11:46	WB04-1H
2416404-05	10/09/2024 12:08	WB05-1H
2416404-06	10/09/2024 11:42	WB06-1H
2416404-07	10/09/2024 09:42	WB07-1H
2416404-08	10/09/2024 12:11	WB08-1H
2416404-09	10/09/2024 12:24	WB09-1H
2416404-10	10/09/2024 12:20	WB10-1H
2416404-11	10/09/2024 12:51	WB11-1H
2416404-12	10/09/2024 12:58	WB12-1H
2416404-13	10/09/2024 10:09	WB13-1H
2416404-14	10/09/2024 10:19	WB14-1H
2416404-15	10/09/2024 14:37	WB17-1H
2416404-16	10/09/2024 14:56	WB18-1H
2416404-17	10/09/2024 10:54	WB19-1H

Requested Analysis

EPA-TO-15-SIM

<u>Sample</u>	<u>Analyte</u>	<u>Flag</u>
---------------	----------------	-------------

Sample Qualifier Summary

There are no qualifiers for the samples.

Holding Times

All holding time requirements were met.

Method Blanks

There were no detections in the Method Blank(s).

LCS

The LCS recoveries are within QC limits.

Discussion

2A 10-10-24 Air Chain of

2416404

Pace Analytical
BAKERSFIELD

Report To: Client: Catalyst Environmental Solutions
Attn: Yla Bayram
Street Address: 315 Montana Ave. 311
City, State, Zip: Santa Monica, CA, 90403
Phone: (313) 204-8477 Fax:
Email: y.bayram@ce.solutions
Work Order #: 24-16404

Project #: Project Name: Walnut
Bluff Work Plan
Sampler(s): Elizabeth Huang
Miaia Hogen

Sample #	Sample ID	Field ID / Point Of Collection	Date Sampled	Time Sampled
1	W801-1H	10 9 24	0959	
2	W802-1H	10 9 24	1131	
3	W803-1H	10 9 24	1133	
4	W804-1H	10 9 24	1146	
5	W805-1H	10 9 24	1208	
6	W806-1H	10 9 24	1142	
7	W807-1H	10 9 24	0942	
8	W808-1H	10 9 24	1211	
9	W809-1H	10 9 24	1224	
10	W810-1H	10 9 24	1220	
11	W811-1H	10 9 24	1251	
12	W812-1H	10 9 24	1258	
13	W813-1H	10 9 24	1004	
14	W814-1H	10 9 24	1019	

Analysis Requested: Air Type: _____

Comments: _____

Sample #	Sample ID	Field ID / Point Of Collection	Date Sampled	Time Sampled	Sampling Equipment		Start Sampling Information		Stop Sampling Information		Lab Received Pressure (psi)	CLP Level
					Canister ID #	Flow Controller ID #	Canister Pressure ("Hg)	Time	Canister Pressure ("Hg)	Time		
1	W801-1H	10 9 24	0959		29	0787	18118	9100	29	959	5	
2	W802-1H	10 9 24	1131		29	0796	6057	1031	29	1131	4	
3	W803-1H	10 9 24	1133		29	0803	5983	1035	27	1133	4	
4	W804-1H	10 9 24	1146		29	23803	6016	1047	29	1146	4	
5	W805-1H	10 9 24	1208		29	37503	6013	1106	29	1208	4	
6	W806-1H	10 9 24	1142		30	43531	13686	1043	30	1142	4	
7	W807-1H	10 9 24	0942		28	0790	13685	836	28	0942	4	
8	W808-1H	10 9 24	1211		29	49958	17517	1111	29	1211	4	
9	W809-1H	10 9 24	1224		29	0800	1629	1122	29	1224	4	
10	W810-1H	10 9 24	1220		28	0679	17512	1117	28	1220	3	
11	W811-1H	10 9 24	1251		27	35427	18715	1152	27	1251	5	
12	W812-1H	10 9 24	1258		28	68345	13694	1158	28	1258	3	
13	W813-1H	10 9 24	1004		28	49967	13676	0910	28	1009	4.5	
14	W814-1H	10 9 24	1019		29	802	20201	0918	29	1019	5	

Billing: [X] Same as above

Client: _____ Street Address: _____ City: _____ State: _____ Zip: _____ Attn: _____ P.O.#: _____

Result Request: [X] STD (if any) [] Surchage

1. Relinquished By: [Signature] Date: 10/9/24 Time: 1615
2. Relinquished By: [Signature] Date: 10/10/24 Time: 1330
3. Relinquished By: [Signature] Date: 10/10/24 Time: 1745

1. Received By: [Signature] Date: 10/9/24 Time: 4:15 PM
2. Received By: [Signature] Date: 10-10-24 Time: 1345
3. Received By: [Signature] Date: 10-10-24 Time: 1745

4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com

Air Chain of Custody Form

Page 2 of 2

Report To:		Project #:		Project Name:		Sampler(s):		Phone:		Email:		Work Order #:		Field ID / Point Of Collection		Date Sampled		Time Sampled		Air Type		Analysis Requested		Comments:	
Client: Catalina Environmental Solutions		Attn: Yola Bayram		Street Address: 315 Montana Ave. Suite 311		City, State, Zip: Santa Monica, CA 90403		Phone: (313) 204-8471 Fax:		Email: y.bayram@ce.solutions		Work Order #: 241-16404		Sample ID		Date		Time		Air Type		Analysis Requested		Comments:	
Sample #	Sample ID	Field ID / Point Of Collection	Date	Time	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
-15	WB18-1H	17	10/9/24	1437	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
-14	WB18-1H	18	10/9/24	1456	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
-17	WB19-1H	19	10/9/24	1054	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Billing		Result Request		Surcharge		STD (10 Days)		1 Day**		2 Day**		3 Day**		4 Day**		5 Day**		6 Day**		7 Day**		8 Day**		9 Day**		10 Day**	
Client:	Street Address:	City:	State:	Zip:	Attn:	P.O.#:	1. Relinquished By:	2. Relinquished By:	3. Relinquished By:	1. Received By:	2. Received By:	3. Received By:	1. Received By:	2. Received By:	3. Received By:	1. Received By:	2. Received By:	3. Received By:	1. Received By:	2. Received By:	3. Received By:	1. Received By:	2. Received By:	3. Received By:	1. Received By:	2. Received By:	3. Received By:

Chain of Custody and Cooler Receipt Form for 2416404 Page 3 of 4

PACE ANALYTICAL		COOLER RECEIPT FORM		Page 1 of 2									
Submission #: <u>241-16404</u>													
SHIPPING INFORMATION Fed Ex ☐ UPS ☐ GSO / GLS ☐ Hand Delivery ☐ Pace Lab Field Service ☒ Other ☐ (Specify) _____			SHIPPING CONTAINER Ice Chest ☐ None ☐ Box ☒ Other ☐ (Specify) _____		FREE LIQUID YES ☐ NO ☒ W / S ☒								
Refrigerant: Ice ☐ Blue Ice ☐ None ☒ Other ☐ Comments: _____													
Custody Seals: Ice Chest ☐ Containers ☐ None ☒ Comments: _____ Intact? Yes ☐ No ☐ Intact? Yes ☐ No ☐													
All samples received? Yes ☐ No ☐ All samples containers intact? Yes ☐ No ☐ Description(s) match COC? Yes ☐ No ☐													
COC Received ☒ YES ☐ NO		Emissivity: _____ Container: <u>Summa</u> Thermometer ID: _____ Temperature: (A) <u>Room</u> °C / (C) <u>Temp</u> °C		Date/Time <u>10/10/14</u> Analyst Init <u>EC2 1745</u>									
SAMPLE CONTAINERS		SAMPLE NUMBERS											
		1 2 3 4 5 6 7 8 9 10											
QT PE UNPRES													
4oz / 8oz / 16oz PE UNPRES													
2oz Cr ⁴													
QT INORGANIC CHEMICAL METALS													
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz													
PT CYANIDE													
PT NITROGEN FORMS													
PT TOTAL SULFIDE													
2oz NITRATE / NITRITE													
PT TOTAL ORGANIC CARBON													
PT CHEMICAL OXYGEN DEMAND													
PA PHENOLICS													
40ml VOA VIAL TRAVEL BLANK													
40ml VOA VIAL													
QT EPA 1664B													
PT ODOR													
RADIOLOGICAL													
BACTERIOLOGICAL													
40 ml VOA VIAL- 504													
QT EPA 508/608.3/8081A													
QT EPA 515.1/8151A													
QT EPA 525.2													
QT EPA 525.2 TRAVEL BLANK													
40ml EPA 547													
40ml EPA 531.1													
8oz EPA 548.1													
QT EPA 549.2													
QT EPA 8015M													
QT EPA 8270C													
8oz / 16oz / 32oz AMBER													
8oz / 16oz / 32oz JAR													
SOIL SLEEVE													
PCB VIAL													
PLASTIC BAG													
TEDLAR BAG													
FERROUS IRON													
ENCORE													
SMART KIT													
SUMMA CANISTER		<u>6L</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>

Comments:

Sample Numbering Completed By: VJ1

A = Actual / C = Corrected

Date/Time: 10/11/14 0700

Rev 23 05/20/22

[B:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMRECrev 20]

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Chain of Custody and Cooler Receipt Form for 2416404 Page 4 of 4

PACE ANALYTICAL		COOLER RECEIPT FORM		Page <u>2</u> Of <u>2</u>							
Submission #: <u>241-16404</u>											
SHIPPING INFORMATION Fed Ex ☐ UPS ☐ GSO / GLS ☐ Hand Delivery ☐ Pace Lab Field Service ☒ Other ☐ (Specify) _____			SHIPPING CONTAINER Ice Chest ☐ None ☐ Box ☒ Other ☐ (Specify) _____		FREE LIQUID YES ☐ NO ☒ W / S ☒						
Refrigerant: Ice ☐ Blue Ice ☐ None ☒ Other ☐ Comments: _____											
Custody Seals: Ice Chest ☐ Containers ☐ None ☒ Comments: _____ Intact? Yes ☐ No ☐ Intact? Yes ☐ No ☐											
All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☐ No ☐											
COC Received ☒ YES ☐ NO		Emissivity: _____ Container: <u>Small</u> Thermometer ID: _____ Temperature: (A) <u>Room</u> °C / (C) <u>Temp</u> °C		Date/Time <u>10/10/24</u> Analyst Init <u>ECZ 1745</u>							
SAMPLE CONTAINERS		SAMPLE NUMBERS									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr ⁴⁺											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PIA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664B											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/608.3/8081A											
QT EPA 515.1/8151A											
QT EPA 525.2											
QT EPA 525.2 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548.1											
QT EPA 549.2											
QT EPA 8015M											
QT EPA 8270C											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz JAR											
SOIL SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER		<u>UL</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>		

Comments:

Sample Numbering Completed By: VBT

Date/Time: 10/11/24 0700

Rev 23 05/29/22

A = Actual / C = Corrected

[S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\ISAMRECrev 26]

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2416404-01	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 09:59
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB01-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter
2416404-02	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 11:31
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB02-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter
2416404-03	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 11:33
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB03-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter
2416404-04	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 11:46
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB04-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter
2416404-05	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 12:08
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB05-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter
2416404-06	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 11:42
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB06-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter
2416404-07	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 09:42
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB07-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2416404-08	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 12:11
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB08-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter
2416404-09	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 12:24
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB09-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter
2416404-10	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 12:20
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB10-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter
2416404-11	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 12:51
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB11-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter
2416404-12	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 12:58
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB12-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter
2416404-13	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 10:09
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB13-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter
2416404-14	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 10:19
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB14-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2416404-15	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 14:37
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB17-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter
2416404-16	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 14:56
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB18-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter
2416404-17	COC Number:	---	Receive Date:	10/10/2024 17:45
	Project Number:	---	Sampling Date:	10/09/2024 10:54
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	WB19-1H	Lab Matrix:	Air
	Sampled By:	Elizabeth Hwang/Olivia Hogan	Sample Type:	Air Filter

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-01		Client Sample Name: WB01-1H, 10/9/2024 9:59:00AM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.8	ug/m3	0.50	0.032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		2
Carbon tetrachloride	0.50	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		2
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		2
Chloroform	0.25	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		2
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		2
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		2
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		2
1,4-Dichlorobenzene	0.090	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	2
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		2
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		2
1,2-Dichloroethane	0.11	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND		2
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		2
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		2
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		2
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		2
1,1-Difluoroethane	1.1	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	2
Ethylbenzene	0.57	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		2
Naphthalene	0.22	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		2
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		2
Toluene	2.8	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		2
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		2
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		2
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		2
1,1,2-Trichloro-1,2,2-trifluoroethane	0.53	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		2
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		2
p- & m-Xylenes	2.0	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		2
o-Xylene	0.65	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		2
Total Xylenes	2.6	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		2
4-Bromofluorobenzene (Surrogate)	91.1	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	103	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2
4-Bromofluorobenzene (Surrogate)	103	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416404-01		Client Sample Name: WB01-1H, 10/9/2024 9:59:00AM, Elizabeth Hwang/Olivia Hogan						
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-TO-15-SIM	10/11/24 09:33	10/12/24 01:54	BEP	MS-A2	10	B198723	EPA TO-15
2	EPA-TO-15-SIM	10/11/24 09:33	10/11/24 15:11	BEP	MS-A2	1	B198723	EPA TO-15

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-02		Client Sample Name: WB02-1H, 10/9/2024 11:31:00AM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.4	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.49	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.27	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	0.12	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.093	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	1.1	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.75	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.29	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		1
Tetrachloroethene	0.081	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND	J	1
Toluene	2.8	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		2
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	2.6	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.86	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	3.4	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	109	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	109	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	92.5	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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315 Montana Ave Suite 311
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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID:		2416404-02	Client Sample Name:						WB02-1H, 10/9/2024 11:31:00AM, Elizabeth Hwang/Olivia Hogan
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/11/24 09:33	10/11/24 15:57	BEP	MS-A2	1	B198723	EPA TO-15	
2	EPA-TO-15-SIM	10/11/24 09:33	10/12/24 02:33	BEP	MS-A2	10	B198723	EPA TO-15	

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-03		Client Sample Name: WB03-1H, 10/9/2024 11:33:00AM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.4	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.50	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.23	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	0.11	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.093	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	1.1	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.81	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.20	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		1
Tetrachloroethene	0.090	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND	J	1
Toluene	2.6	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		2
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	2.8	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.91	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	3.7	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	106	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	106	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	97.8	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416404-03		Client Sample Name: WB03-1H, 10/9/2024 11:33:00AM, Elizabeth Hwang/Olivia Hogan						
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-TO-15-SIM	10/11/24 09:33	10/11/24 16:44	BEP	MS-A2	1	B198723	EPA TO-15
2	EPA-TO-15-SIM	10/11/24 09:33	10/12/24 03:13	BEP	MS-A2	10	B198723	EPA TO-15

DCN = Data Continuation Number

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-04		Client Sample Name: WB04-1H, 10/9/2024 11:46:00AM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.4	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.50	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.23	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	0.10	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.091	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	1.2	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.74	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.17	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	2.6	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		2
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	2.5	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.82	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	3.4	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	113	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	113	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	92.5	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID:		2416404-04	Client Sample Name:						WB04-1H, 10/9/2024 11:46:00AM, Elizabeth Hwang/Olivia Hogan
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-TO-15-SIM	10/11/24 09:33	10/11/24 17:30	BEP	MS-A2	1	B198723	EPA TO-15	
2	EPA-TO-15-SIM	10/11/24 09:33	10/14/24 20:42	BEP	MS-A2	10	B198806	EPA TO-15	

DCN = Data Continuation Number

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-05		Client Sample Name: WB05-1H, 10/9/2024 12:08:00PM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.3	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.50	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.20	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	0.093	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.092	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	1.1	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.58	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.38	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	2.3	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		2
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	1.8	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.64	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	2.5	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	108	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	108	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	95.0	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416404-05		Client Sample Name: WB05-1H, 10/9/2024 12:08:00PM, Elizabeth Hwang/Olivia Hogan						
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-TO-15-SIM	10/11/24 09:33	10/11/24 18:16	BEP	MS-A2	1	B198723	EPA TO-15
2	EPA-TO-15-SIM	10/11/24 09:33	10/14/24 21:21	BEP	MS-A2	10	B198806	EPA TO-15

DCN = Data Continuation Number

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-06		Client Sample Name: WB06-1H, 10/9/2024 11:42:00AM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.4	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.49	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.23	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	0.10	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.093	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	1.2	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.66	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.23	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	2.6	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		2
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	2.2	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.74	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	2.9	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	108	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	108	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	89.1	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416404-06		Client Sample Name: WB06-1H, 10/9/2024 11:42:00AM, Elizabeth Hwang/Olivia Hogan						
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-TO-15-SIM	10/11/24 09:33	10/11/24 19:03	BEP	MS-A2	1	B198723	EPA TO-15
2	EPA-TO-15-SIM	10/11/24 09:33	10/14/24 22:01	BEP	MS-A2	10	B198806	EPA TO-15

DCN = Data Continuation Number

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-08		Client Sample Name: WB08-1H, 10/9/2024 12:11:00PM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.4	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.50	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.21	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	0.086	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	1
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.088	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	1.1	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.56	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.16	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	2.6	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		2
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.3	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.53	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	1.7	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.62	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	2.3	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	108	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	108	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	82.7	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416404-08		Client Sample Name: WB08-1H, 10/9/2024 12:11:00PM, Elizabeth Hwang/Olivia Hogan						
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-TO-15-SIM	10/11/24 09:33	10/11/24 19:49	BEP	MS-A2	1	B198723	EPA TO-15
2	EPA-TO-15-SIM	10/11/24 09:33	10/14/24 22:43	BEP	MS-A2	10	B198806	EPA TO-15

DCN = Data Continuation Number

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-09		Client Sample Name: WB09-1H, 10/9/2024 12:24:00PM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.3	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.50	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.22	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	0.093	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	1
Dichlorodifluoromethane	2.4	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.086	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	1.0	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.72	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.34	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	2.7	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		2
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.3	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.53	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	2.4	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.90	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	3.3	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	109	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	109	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	93.3	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416404-09		Client Sample Name: WB09-1H, 10/9/2024 12:24:00PM, Elizabeth Hwang/Olivia Hogan						
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-TO-15-SIM	10/11/24 09:33	10/11/24 20:35	BEP	MS-A2	1	B198723	EPA TO-15
2	EPA-TO-15-SIM	10/11/24 09:33	10/14/24 23:22	BEP	MS-A2	10	B198806	EPA TO-15

DCN = Data Continuation Number

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-10		Client Sample Name: WB10-1H, 10/9/2024 12:20:00PM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.8	ug/m3	0.50	0.032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		2
Carbon tetrachloride	0.51	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		2
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		2
Chloroform	0.22	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		2
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		2
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		2
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		2
1,4-Dichlorobenzene	0.10	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	2
Dichlorodifluoromethane	2.4	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		2
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		2
1,2-Dichloroethane	0.089	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	2
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		2
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		2
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		2
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		2
1,1-Difluoroethane	1.1	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	2
Ethylbenzene	0.61	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		2
Naphthalene	0.25	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		2
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		2
Toluene	7.2	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		2
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		2
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		2
Trichlorofluoromethane	1.3	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		2
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		2
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		2
p- & m-Xylenes	1.9	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		2
o-Xylene	0.64	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		2
Total Xylenes	2.5	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		2
4-Bromofluorobenzene (Surrogate)	93.0	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	109	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2
4-Bromofluorobenzene (Surrogate)	109	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416404-10		Client Sample Name: WB10-1H, 10/9/2024 12:20:00PM, Elizabeth Hwang/Olivia Hogan						
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-TO-15-SIM	10/11/24 09:33	10/15/24 00:03	BEP	MS-A2	10	B198806	EPA TO-15
2	EPA-TO-15-SIM	10/11/24 09:33	10/11/24 21:21	BEP	MS-A2	1	B198723	EPA TO-15

DCN = Data Continuation Number

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315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-11		Client Sample Name: WB11-1H, 10/9/2024 12:51:00PM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.8	ug/m3	0.50	0.032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		2
Carbon tetrachloride	0.50	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		2
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		2
Chloroform	0.19	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		2
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		2
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		2
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		2
1,4-Dichlorobenzene	0.11	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	2
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		2
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		2
1,2-Dichloroethane	0.10	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND		2
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		2
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		2
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		2
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		2
1,1-Difluoroethane	0.89	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	2
Ethylbenzene	0.67	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		2
Naphthalene	0.31	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		2
Tetrachloroethene	0.077	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND	J	2
Toluene	2.8	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		2
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		2
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		2
Trichlorofluoromethane	1.3	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		2
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		2
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		2
p- & m-Xylenes	2.1	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		2
o-Xylene	0.75	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		2
Total Xylenes	2.8	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		2
4-Bromofluorobenzene (Surrogate)	95.3	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	115	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2
4-Bromofluorobenzene (Surrogate)	115	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416404-11		Client Sample Name: WB11-1H, 10/9/2024 12:51:00PM, Elizabeth Hwang/Olivia Hogan						
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-TO-15-SIM	10/11/24 09:33	10/15/24 00:42	BEP	MS-A2	10	B198806	EPA TO-15
2	EPA-TO-15-SIM	10/11/24 09:33	10/11/24 22:08	BEP	MS-A2	1	B198723	EPA TO-15

DCN = Data Continuation Number

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-12		Client Sample Name: WB12-1H, 10/9/2024 12:58:00PM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.7	ug/m3	0.50	0.032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		2
Carbon tetrachloride	0.50	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		2
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		2
Chloroform	0.20	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		2
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		2
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		2
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		2
1,4-Dichlorobenzene	0.085	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	2
Dichlorodifluoromethane	2.4	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		2
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		2
1,2-Dichloroethane	0.10	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND		2
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		2
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		2
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		2
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		2
1,1-Difluoroethane	1.7	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	2
Ethylbenzene	0.80	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		2
Naphthalene	0.30	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		2
Tetrachloroethene	0.072	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND	J	2
Toluene	3.0	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		2
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		2
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		2
Trichlorofluoromethane	1.3	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		2
1,1,2-Trichloro-1,2,2-trifluoroethane	0.53	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		2
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		2
p- & m-Xylenes	2.6	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		2
o-Xylene	0.92	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		2
Total Xylenes	3.5	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		2
4-Bromofluorobenzene (Surrogate)	94.1	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	107	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2
4-Bromofluorobenzene (Surrogate)	107	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416404-12		Client Sample Name: WB12-1H, 10/9/2024 12:58:00PM, Elizabeth Hwang/Olivia Hogan						
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-TO-15-SIM	10/11/24 09:33	10/15/24 01:22	BEP	MS-A2	10	B198806	EPA TO-15
2	EPA-TO-15-SIM	10/11/24 09:33	10/11/24 22:54	BEP	MS-A2	1	B198723	EPA TO-15

DCN = Data Continuation Number

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315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-13		Client Sample Name: WB13-1H, 10/9/2024 10:09:00AM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.9	ug/m3	0.50	0.032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		2
Carbon tetrachloride	0.50	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		2
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		2
Chloroform	0.22	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		2
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		2
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		2
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		2
1,4-Dichlorobenzene	0.093	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	2
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		2
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		2
1,2-Dichloroethane	0.11	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND		2
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		2
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		2
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		2
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		2
1,1-Difluoroethane	0.98	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	2
Ethylbenzene	0.57	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		2
Naphthalene	0.24	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		2
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		2
Toluene	2.9	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		2
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		2
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		2
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		2
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		2
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		2
p- & m-Xylenes	1.9	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		2
o-Xylene	0.65	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		2
Total Xylenes	2.6	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		2
4-Bromofluorobenzene (Surrogate)	84.6	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	111	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2
4-Bromofluorobenzene (Surrogate)	111	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416404-13		Client Sample Name: WB13-1H, 10/9/2024 10:09:00AM, Elizabeth Hwang/Olivia Hogan						
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-TO-15-SIM	10/11/24 09:33	10/15/24 02:04	BEP	MS-A2	10	B198806	EPA TO-15
2	EPA-TO-15-SIM	10/11/24 09:33	10/11/24 23:40	BEP	MS-A2	1	B198723	EPA TO-15

DCN = Data Continuation Number

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Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-14		Client Sample Name: WB14-1H, 10/9/2024 10:19:00AM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.9	ug/m3	0.50	0.032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		2
Carbon tetrachloride	0.50	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		2
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		2
Chloroform	0.24	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		2
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		2
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		2
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		2
1,4-Dichlorobenzene	0.097	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	2
Dichlorodifluoromethane	2.3	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		2
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		2
1,2-Dichloroethane	0.11	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND		2
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		2
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		2
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		2
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		2
1,1-Difluoroethane	0.99	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	2
Ethylbenzene	0.58	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		2
Naphthalene	0.23	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		2
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		2
Toluene	3.2	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		2
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		2
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		2
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		2
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		2
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		2
p- & m-Xylenes	2.0	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		2
o-Xylene	0.68	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		2
Total Xylenes	2.7	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		2
4-Bromofluorobenzene (Surrogate)	85.8	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	109	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2
4-Bromofluorobenzene (Surrogate)	109	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416404-14		Client Sample Name: WB14-1H, 10/9/2024 10:19:00AM, Elizabeth Hwang/Olivia Hogan						
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-TO-15-SIM	10/11/24 09:33	10/15/24 02:45	BEP	MS-A2	10	B198806	EPA TO-15
2	EPA-TO-15-SIM	10/11/24 09:33	10/12/24 00:27	BEP	MS-A2	1	B198723	EPA TO-15

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-15		Client Sample Name: WB17-1H, 10/9/2024 2:37:00PM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	0.88	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.50	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.19	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	0.080	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	1
Dichlorodifluoromethane	2.4	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.070	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.67	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.61	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.18	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	0.074	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND	J	1
Toluene	1.7	ug/m3	0.10	0.0062	EPA-TO-15-SIM	ND		1
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.3	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.53	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	2.0	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.67	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	2.6	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	107	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	107	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1

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315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416404-15		Client Sample Name: WB17-1H, 10/9/2024 2:37:00PM, Elizabeth Hwang/Olivia Hogan					
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-TO-15-SIM	10/11/24 09:33	10/12/24 01:13	BEP	MS-A2	1	B198723 EPA TO-15

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-16		Client Sample Name: WB18-1H, 10/9/2024 2:56:00PM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.1	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.50	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.20	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	0.092	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	1
Dichlorodifluoromethane	2.4	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.073	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND	J	1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	0.80	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.52	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.13	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND	J	1
Tetrachloroethene	0.12	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	2.5	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		2
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.3	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.53	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	1.5	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.56	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	2.0	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	106	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	106	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	86.3	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416404-16		Client Sample Name: WB18-1H, 10/9/2024 2:56:00PM, Elizabeth Hwang/Olivia Hogan						
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-TO-15-SIM	10/14/24 09:06	10/14/24 19:16	BEP	MS-A2	1	B198806	EPA TO-15
2	EPA-TO-15-SIM	10/14/24 09:06	10/15/24 03:24	BEP	MS-A2	10	B198806	EPA TO-15

DCN = Data Continuation Number

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Pace Sample ID: 2416404-17		Client Sample Name: WB19-1H, 10/9/2024 10:54:00AM, Elizabeth Hwang/Olivia Hogan						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	1.6	ug/m3	0.050	0.0032	EPA-TO-15-SIM	ND		1
Benzyl chloride	ND	ug/m3	0.50	0.0052	EPA-TO-15-SIM	ND		1
Carbon tetrachloride	0.50	ug/m3	0.20	0.0063	EPA-TO-15-SIM	ND		1
Chlorobenzene	ND	ug/m3	0.10	0.0079	EPA-TO-15-SIM	ND		1
Chloroform	0.23	ug/m3	0.050	0.0058	EPA-TO-15-SIM	ND		1
1,2-Dibromoethane	ND	ug/m3	0.20	0.014	EPA-TO-15-SIM	ND		1
1,2-Dichlorobenzene	ND	ug/m3	0.20	0.011	EPA-TO-15-SIM	ND		1
1,3-Dichlorobenzene	ND	ug/m3	0.20	0.013	EPA-TO-15-SIM	ND		1
1,4-Dichlorobenzene	0.091	ug/m3	0.20	0.016	EPA-TO-15-SIM	ND	J	1
Dichlorodifluoromethane	2.4	ug/m3	0.050	0.0052	EPA-TO-15-SIM	ND		1
1,1-Dichloroethane	ND	ug/m3	0.050	0.0041	EPA-TO-15-SIM	ND		1
1,2-Dichloroethane	0.11	ug/m3	0.10	0.0046	EPA-TO-15-SIM	ND		1
1,1-Dichloroethene	ND	ug/m3	0.050	0.0078	EPA-TO-15-SIM	ND		1
cis-1,2-Dichloroethene	ND	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
trans-1,2-Dichloroethene	ND	ug/m3	0.050	0.0075	EPA-TO-15-SIM	ND		1
trans-1,3-Dichloropropene	ND	ug/m3	0.050	0.013	EPA-TO-15-SIM	ND		1
1,1-Difluoroethane	1.1	ug/m3	5.0	0.0027	EPA-TO-15-SIM	ND	J	1
Ethylbenzene	0.69	ug/m3	0.050	0.017	EPA-TO-15-SIM	ND		1
Naphthalene	0.77	ug/m3	0.20	0.020	EPA-TO-15-SIM	ND		1
Tetrachloroethene	ND	ug/m3	0.10	0.011	EPA-TO-15-SIM	ND		1
Toluene	2.8	ug/m3	1.0	0.062	EPA-TO-15-SIM	ND		2
1,1,1-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
1,1,2-Trichloroethane	ND	ug/m3	0.10	0.0055	EPA-TO-15-SIM	ND		1
Trichloroethene	ND	ug/m3	0.10	0.0095	EPA-TO-15-SIM	ND		1
Trichlorofluoromethane	1.2	ug/m3	0.050	0.0057	EPA-TO-15-SIM	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.54	ug/m3	0.10	0.0078	EPA-TO-15-SIM	ND		1
Vinyl chloride	ND	ug/m3	0.020	0.0046	EPA-TO-15-SIM	ND		1
p- & m-Xylenes	2.4	ug/m3	0.050	0.0082	EPA-TO-15-SIM	ND		1
o-Xylene	0.78	ug/m3	0.050	0.0044	EPA-TO-15-SIM	ND		1
Total Xylenes	3.1	ug/m3	0.10	0.013	EPA-TO-15-SIM	ND		1
4-Bromofluorobenzene (Surrogate)	105	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	105	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			1
4-Bromofluorobenzene (Surrogate)	96.6	%	50 - 150 (LCL - UCL)		EPA-TO-15-SIM			2

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315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 2416404-17		Client Sample Name: WB19-1H, 10/9/2024 10:54:00AM, Elizabeth Hwang/Olivia Hogan						
DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-TO-15-SIM	10/14/24 09:06	10/14/24 20:02	BEP	MS-A2	1	B198806	EPA TO-15
2	EPA-TO-15-SIM	10/14/24 09:06	10/15/24 09:56	BEP	MS-A2	10	B198806	EPA TO-15

DCN = Data Continuation Number

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Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B198723							
Benzene	B198723-BLK1	ND	ug/m3	0.050	0.0032		1
Benzyl chloride	B198723-BLK1	ND	ug/m3	0.50	0.0052		1
Carbon tetrachloride	B198723-BLK1	ND	ug/m3	0.20	0.0063		1
Chlorobenzene	B198723-BLK1	ND	ug/m3	0.10	0.0079		1
Chloroform	B198723-BLK1	ND	ug/m3	0.050	0.0058		1
1,2-Dibromoethane	B198723-BLK1	ND	ug/m3	0.20	0.014		1
1,2-Dichlorobenzene	B198723-BLK1	ND	ug/m3	0.20	0.011		1
1,3-Dichlorobenzene	B198723-BLK1	ND	ug/m3	0.20	0.013		1
1,4-Dichlorobenzene	B198723-BLK1	ND	ug/m3	0.20	0.016		1
Dichlorodifluoromethane	B198723-BLK1	ND	ug/m3	0.050	0.0052		1
1,1-Dichloroethane	B198723-BLK1	ND	ug/m3	0.050	0.0041		1
1,2-Dichloroethane	B198723-BLK1	ND	ug/m3	0.10	0.0046		1
1,1-Dichloroethene	B198723-BLK1	ND	ug/m3	0.050	0.0078		1
cis-1,2-Dichloroethene	B198723-BLK1	ND	ug/m3	0.050	0.0044		1
trans-1,2-Dichloroethene	B198723-BLK1	ND	ug/m3	0.050	0.0075		1
trans-1,3-Dichloropropene	B198723-BLK1	ND	ug/m3	0.050	0.013		1
1,1-Difluoroethane	B198723-BLK1	ND	ug/m3	5.0	0.0027		1
Ethylbenzene	B198723-BLK1	ND	ug/m3	0.050	0.017		1
Naphthalene	B198723-BLK1	ND	ug/m3	0.20	0.020		1
Tetrachloroethene	B198723-BLK1	ND	ug/m3	0.10	0.011		1
Toluene	B198723-BLK1	ND	ug/m3	0.10	0.0062		1
1,1,1-Trichloroethane	B198723-BLK1	ND	ug/m3	0.10	0.0055		1
1,1,2-Trichloroethane	B198723-BLK1	ND	ug/m3	0.10	0.0055		1
Trichloroethene	B198723-BLK1	ND	ug/m3	0.10	0.0095		1
Trichlorofluoromethane	B198723-BLK1	ND	ug/m3	0.050	0.0057		1
1,1,2-Trichloro-1,2,2-trifluoroethane	B198723-BLK1	ND	ug/m3	0.10	0.0078		1
Vinyl chloride	B198723-BLK1	ND	ug/m3	0.020	0.0046		1
p- & m-Xylenes	B198723-BLK1	ND	ug/m3	0.050	0.0082		1
o-Xylene	B198723-BLK1	ND	ug/m3	0.050	0.0044		1
Total Xylenes	B198723-BLK1	ND	ug/m3	0.10	0.013		1
4-Bromofluorobenzene (Surrogate)	B198723-BLK1	92.1	%	50 - 150 (LCL - UCL)			1
QC Batch ID: B198806							
Benzene	B198806-BLK1	ND	ug/m3	0.050	0.0032		2

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Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B198806							
Benzyl chloride	B198806-BLK1	ND	ug/m3	0.50	0.0052		2
Carbon tetrachloride	B198806-BLK1	ND	ug/m3	0.20	0.0063		2
Chlorobenzene	B198806-BLK1	ND	ug/m3	0.10	0.0079		2
Chloroform	B198806-BLK1	ND	ug/m3	0.050	0.0058		2
1,2-Dibromoethane	B198806-BLK1	ND	ug/m3	0.20	0.014		2
1,2-Dichlorobenzene	B198806-BLK1	ND	ug/m3	0.20	0.011		2
1,3-Dichlorobenzene	B198806-BLK1	ND	ug/m3	0.20	0.013		2
1,4-Dichlorobenzene	B198806-BLK1	ND	ug/m3	0.20	0.016		2
Dichlorodifluoromethane	B198806-BLK1	ND	ug/m3	0.050	0.0052		2
1,1-Dichloroethane	B198806-BLK1	ND	ug/m3	0.050	0.0041		2
1,2-Dichloroethane	B198806-BLK1	ND	ug/m3	0.10	0.0046		2
1,1-Dichloroethene	B198806-BLK1	ND	ug/m3	0.050	0.0078		2
cis-1,2-Dichloroethene	B198806-BLK1	ND	ug/m3	0.050	0.0044		2
trans-1,2-Dichloroethene	B198806-BLK1	ND	ug/m3	0.050	0.0075		2
trans-1,3-Dichloropropene	B198806-BLK1	ND	ug/m3	0.050	0.013		2
1,1-Difluoroethane	B198806-BLK1	ND	ug/m3	5.0	0.0027		2
Ethylbenzene	B198806-BLK1	ND	ug/m3	0.050	0.017		2
Naphthalene	B198806-BLK1	ND	ug/m3	0.20	0.020		2
Tetrachloroethene	B198806-BLK1	ND	ug/m3	0.10	0.011		2
Toluene	B198806-BLK1	ND	ug/m3	0.10	0.0062		2
1,1,1-Trichloroethane	B198806-BLK1	ND	ug/m3	0.10	0.0055		2
1,1,2-Trichloroethane	B198806-BLK1	ND	ug/m3	0.10	0.0055		2
Trichloroethene	B198806-BLK1	ND	ug/m3	0.10	0.0095		2
Trichlorofluoromethane	B198806-BLK1	ND	ug/m3	0.050	0.0057		2
1,1,2-Trichloro-1,2,2-trifluoroethane	B198806-BLK1	ND	ug/m3	0.10	0.0078		2
Vinyl chloride	B198806-BLK1	ND	ug/m3	0.020	0.0046		2
p- & m-Xylenes	B198806-BLK1	ND	ug/m3	0.050	0.0082		2
o-Xylene	B198806-BLK1	ND	ug/m3	0.050	0.0044		2
Total Xylenes	B198806-BLK1	ND	ug/m3	0.10	0.013		2
4-Bromofluorobenzene (Surrogate)	B198806-BLK1	95.4	%	50 - 150 (LCL - UCL)			2

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Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Method Blank Analysis

Run #	QC Sample ID	QC Type	Method	Prep Date	Run		Analyst	Instrument	Dilution
					Date	Time			
1	B198723-BLK1	PB	EPA-TO-15-SIM	10/11/24	10/11/24	14:23	BEP	MS-A2	1
2	B198806-BLK1	PB	EPA-TO-15-SIM	10/14/24	10/14/24	16:11	BEP	MS-A2	1

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Project: Walnut Bluff
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Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab	
								Percent Recovery	RPD	Quals	Run #
QC Batch ID: B198723											
Benzene	B198723-BS1	LCS	0.33316	0.31948	ug/m3	104		70 - 130			1
	B198723-BSD1	LCSD	0.34254	0.31948	ug/m3	107	2.8	70 - 130		25	2
Benzyl chloride	B198723-BS1	LCS	0.57789	0.51772	ug/m3	112		70 - 130			1
	B198723-BSD1	LCSD	0.49353	0.51772	ug/m3	95.3	15.7	70 - 130		25 J	2
Carbon tetrachloride	B198723-BS1	LCS	0.72246	0.62913	ug/m3	115		70 - 130			1
	B198723-BSD1	LCSD	0.70909	0.62913	ug/m3	113	1.9	70 - 130		25	2
Chlorobenzene	B198723-BS1	LCS	0.53771	0.46036	ug/m3	117		70 - 130			1
	B198723-BSD1	LCSD	0.51817	0.46036	ug/m3	113	3.7	70 - 130		25	2
Chloroform	B198723-BS1	LCS	0.56905	0.48825	ug/m3	117		70 - 130			1
	B198723-BSD1	LCSD	0.56923	0.48825	ug/m3	117	0.0	70 - 130		25	2
1,2-Dibromoethane	B198723-BS1	LCS	0.91575	0.76835	ug/m3	119		70 - 130			1
	B198723-BSD1	LCSD	0.87062	0.76835	ug/m3	113	5.1	70 - 130		25	2
1,2-Dichlorobenzene	B198723-BS1	LCS	0.67972	0.60124	ug/m3	113		70 - 130			1
	B198723-BSD1	LCSD	0.64027	0.60124	ug/m3	106	6.0	70 - 130		25	2
1,3-Dichlorobenzene	B198723-BS1	LCS	0.69255	0.60124	ug/m3	115		70 - 130			1
	B198723-BSD1	LCSD	0.63229	0.60124	ug/m3	105	9.1	70 - 130		25	2
1,4-Dichlorobenzene	B198723-BS1	LCS	0.70998	0.60124	ug/m3	118		70 - 130			1
	B198723-BSD1	LCSD	0.63415	0.60124	ug/m3	105	11.3	70 - 130		25	2
1,1-Dichloroethane	B198723-BS1	LCS	0.45441	0.40474	ug/m3	112		70 - 130			1
	B198723-BSD1	LCSD	0.45405	0.40474	ug/m3	112	0.1	70 - 130		25	2
1,2-Dichloroethane	B198723-BS1	LCS	0.47149	0.40474	ug/m3	116		70 - 130			1
	B198723-BSD1	LCSD	0.47265	0.40474	ug/m3	117	0.2	70 - 130		25	2
1,1-Dichloroethene	B198723-BS1	LCS	0.42913	0.39649	ug/m3	108		70 - 130			1
	B198723-BSD1	LCSD	0.43508	0.39649	ug/m3	110	1.4	70 - 130		25	2
cis-1,2-Dichloroethene	B198723-BS1	LCS	0.42444	0.39649	ug/m3	107		70 - 130			1
	B198723-BSD1	LCSD	0.42756	0.39649	ug/m3	108	0.7	70 - 130		25	2
Tetrachloroethene	B198723-BS1	LCS	0.80707	0.67825	ug/m3	119		70 - 130			1
	B198723-BSD1	LCSD	0.80118	0.67825	ug/m3	118	0.7	70 - 130		25	2
Toluene	B198723-BS1	LCS	0.40311	0.37684	ug/m3	107		70 - 130			1
	B198723-BSD1	LCSD	0.39207	0.37684	ug/m3	104	2.8	70 - 130		25	2
1,1,1-Trichloroethane	B198723-BS1	LCS	0.63396	0.54562	ug/m3	116		70 - 130			1
	B198723-BSD1	LCSD	0.63793	0.54562	ug/m3	117	0.6	70 - 130		25	2
1,1,2-Trichloroethane	B198723-BS1	LCS	0.66127	0.54562	ug/m3	121		70 - 130			1
	B198723-BSD1	LCSD	0.64257	0.54562	ug/m3	118	2.9	70 - 130		25	2
Trichloroethene	B198723-BS1	LCS	0.62429	0.53737	ug/m3	116		70 - 130			1
	B198723-BSD1	LCSD	0.61305	0.53737	ug/m3	114	1.8	70 - 130		25	2

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Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab	
								Percent Recovery	RPD	Quals	Run #
QC Batch ID: B198723											
Vinyl chloride	B198723-BS1	LCS	0.29600	0.25562	ug/m3	116		70 - 130			1
	B198723-BSD1	LCSD	0.29587	0.25562	ug/m3	116	0.0	70 - 130	25		2
p- & m-Xylenes	B198723-BS1	LCS	0.93244	0.86843	ug/m3	107		70 - 130			1
	B198723-BSD1	LCSD	0.94491	0.86843	ug/m3	109	1.3	70 - 130	25		2
o-Xylene	B198723-BS1	LCS	0.47821	0.43421	ug/m3	110		70 - 130			1
	B198723-BSD1	LCSD	0.48047	0.43421	ug/m3	111	0.5	70 - 130	25		2
Total Xylenes	B198723-BS1	LCS	1.4107	1.3026	ug/m3	108		70 - 130			1
	B198723-BSD1	LCSD	1.4254	1.3026	ug/m3	109	1.0	70 - 130	25		2
4-Bromofluorobenzene (Surrogate)	B198723-BS1	LCS	3.75	3.58	ug/m3	105		50 - 150			1
	B198723-BSD1	LCSD	3.47	3.58	ug/m3	96.9	8.0	50 - 150			2
QC Batch ID: B198806											
Benzene	B198806-BS1	LCS	0.35204	0.31948	ug/m3	110		70 - 130			3
	B198806-BSD1	LCSD	0.35688	0.31948	ug/m3	112	1.4	70 - 130	25		4
Benzyl chloride	B198806-BS1	LCS	0.60417	0.51772	ug/m3	117		70 - 130			3
	B198806-BSD1	LCSD	0.59163	0.51772	ug/m3	114	2.1	70 - 130	25		4
Carbon tetrachloride	B198806-BS1	LCS	0.70353	0.62913	ug/m3	112		70 - 130			3
	B198806-BSD1	LCSD	0.72010	0.62913	ug/m3	114	2.3	70 - 130	25		4
Chlorobenzene	B198806-BS1	LCS	0.52251	0.46036	ug/m3	114		70 - 130			3
	B198806-BSD1	LCSD	0.54190	0.46036	ug/m3	118	3.6	70 - 130	25		4
Chloroform	B198806-BS1	LCS	0.57621	0.48825	ug/m3	118		70 - 130			3
	B198806-BSD1	LCSD	0.58433	0.48825	ug/m3	120	1.4	70 - 130	25		4
1,2-Dibromoethane	B198806-BS1	LCS	0.89439	0.76835	ug/m3	116		70 - 130			3
	B198806-BSD1	LCSD	0.91096	0.76835	ug/m3	119	1.8	70 - 130	25		4
1,2-Dichlorobenzene	B198806-BS1	LCS	0.70758	0.60124	ug/m3	118		70 - 130			3
	B198806-BSD1	LCSD	0.69842	0.60124	ug/m3	116	1.3	70 - 130	25		4
1,3-Dichlorobenzene	B198806-BS1	LCS	0.72037	0.60124	ug/m3	120		70 - 130			3
	B198806-BSD1	LCSD	0.71854	0.60124	ug/m3	120	0.3	70 - 130	25		4
1,4-Dichlorobenzene	B198806-BS1	LCS	0.74288	0.60124	ug/m3	124		70 - 130			3
	B198806-BSD1	LCSD	0.74449	0.60124	ug/m3	124	0.2	70 - 130	25		4
1,1-Dichloroethane	B198806-BS1	LCS	0.46873	0.40474	ug/m3	116		70 - 130			3
	B198806-BSD1	LCSD	0.46911	0.40474	ug/m3	116	0.1	70 - 130	25		4
1,2-Dichloroethane	B198806-BS1	LCS	0.47500	0.40474	ug/m3	117		70 - 130			3
	B198806-BSD1	LCSD	0.48588	0.40474	ug/m3	120	2.3	70 - 130	25		4
1,1-Dichloroethene	B198806-BS1	LCS	0.44522	0.39649	ug/m3	112		70 - 130			3
	B198806-BSD1	LCSD	0.46220	0.39649	ug/m3	117	3.7	70 - 130	25		4
cis-1,2-Dichloroethene	B198806-BS1	LCS	0.44975	0.39649	ug/m3	113		70 - 130			3
	B198806-BSD1	LCSD	0.44477	0.39649	ug/m3	112	1.1	70 - 130	25		4

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Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab	
								Percent Recovery	RPD	Quals	Run #
QC Batch ID: B198806											
Tetrachloroethene	B198806-BS1	LCS	0.77710	0.67825	ug/m3	115		70 - 130			3
	B198806-BSD1	LCSD	0.80833	0.67825	ug/m3	119	3.9	70 - 130	25		4
Toluene	B198806-BS1	LCS	0.40225	0.37684	ug/m3	107		70 - 130			3
	B198806-BSD1	LCSD	0.42078	0.37684	ug/m3	112	4.5	70 - 130	25		4
1,1,1-Trichloroethane	B198806-BS1	LCS	0.64072	0.54562	ug/m3	117		70 - 130			3
	B198806-BSD1	LCSD	0.65835	0.54562	ug/m3	121	2.7	70 - 130	25		4
1,1,2-Trichloroethane	B198806-BS1	LCS	0.62359	0.54562	ug/m3	114		70 - 130			3
	B198806-BSD1	LCSD	0.64832	0.54562	ug/m3	119	3.9	70 - 130	25		4
Trichloroethene	B198806-BS1	LCS	0.60167	0.53737	ug/m3	112		70 - 130			3
	B198806-BSD1	LCSD	0.62790	0.53737	ug/m3	117	4.3	70 - 130	25		4
Vinyl chloride	B198806-BS1	LCS	0.29952	0.25562	ug/m3	117		70 - 130			3
	B198806-BSD1	LCSD	0.30319	0.25562	ug/m3	119	1.2	70 - 130	25		4
p- & m-Xylenes	B198806-BS1	LCS	0.96885	0.86843	ug/m3	112		70 - 130			3
	B198806-BSD1	LCSD	0.99360	0.86843	ug/m3	114	2.5	70 - 130	25		4
o-Xylene	B198806-BS1	LCS	0.48972	0.43421	ug/m3	113		70 - 130			3
	B198806-BSD1	LCSD	0.50139	0.43421	ug/m3	115	2.4	70 - 130	25		4
Total Xylenes	B198806-BS1	LCS	1.4586	1.3026	ug/m3	112		70 - 130			3
	B198806-BSD1	LCSD	1.4950	1.3026	ug/m3	115	2.5	70 - 130	25		4
4-Bromofluorobenzene (Surrogate)	B198806-BS1	LCS	3.86	3.58	ug/m3	108		50 - 150			3
	B198806-BSD1	LCSD	3.74	3.58	ug/m3	105	3.0	50 - 150			4

Run #	QC Sample ID	QC Type	Method	Prep Date	Run		Analyst	Instrument	Dilution
					Date	Time			
1	B198723-BS1	LCS	EPA-TO-15-SIM	10/11/24	10/11/24	12:53	BEP	MS-A2	1
2	B198723-BSD1	LCSD	EPA-TO-15-SIM	10/11/24	10/11/24	13:37	BEP	MS-A2	1
3	B198806-BS1	LCS	EPA-TO-15-SIM	10/14/24	10/14/24	14:40	BEP	MS-A2	1
4	B198806-BSD1	LCSD	EPA-TO-15-SIM	10/14/24	10/14/24	16:54	BEP	MS-A2	1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. Pace Analytical assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Catalyst Environmental Solutions
315 Montana Ave Suite 311
Santa Monica, CA 90403

Reported: 11/11/2024 15:09
Project: Walnut Bluff
Project Number: [none]
Project Manager: Yola Byram

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit

Appendix H

PID Calibration Certificates



**FIELD ENVIRONMENTAL
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301 Brushton Ave
Suite A
Pittsburgh, PA 15221
Toll Free (800) 393-4009
Local (412) 436-2600
Fax (412) 436-2616

Photo-Ionization Detector Calibration Certificate

	Lot #	Expiration
Isobutylene Gas	22-8650	11/29/2026

ID: 107 or 1693 Cal Standard	Reading	Acceptable Range
10 ppm ▼	10	(98 - 102) ▼

Pump Flow mL/min	Acceptable Range
481	(300+) ▼

Response Factor
1.0

Bump Test Reading	Acceptable Range
9.94	9.0 - 11.0 ▼

Ensure Water Trap (ID: 2609) and Tubing Included with Rental Package	Confirmed
Alkaline Pack Batteries Checked / Removal Tool Screwdriver Included (4 X AA Batteries)	Yes

Model	ppbRae 3000 ▼
Lamp	10.6 eV ▼
S/N	594-000293
Barcode	U55428X
Order #	561931

Calibrated By	Christian Pinto ▼
---------------	-------------------

Date of Calibration 9/25/2024

Rev 4.0 6/7/24

All calibrations performed by FEI conform to manufacturer's specifications. Please report any issues within 24 hours of receiving equipment.

All calibration gas used is traceable to NIST. Additional documentation is available upon request.



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	Lot #	Expiration
Isobutylene Gas	22-8650	11/29/2026

ID: 107 or 1693 Cal Standard	Reading	Acceptable Range
10 ppm ▼	10	(98 - 102) ▼

Pump Flow mL/min	Acceptable Range
523	(300+) ▼

Response Factor
1.0

Bump Test Reading	Acceptable Range
9.96	9.0 - 11.0 ▼

Ensure Water Trap (ID: 2609) and Tubing Included with Rental Package	Confirmed
Alkaline Pack Batteries Checked / Removal Tool Screwdriver Included (4 X AA Batteries)	Yes

Model	ppbRae 3000 ▼
Lamp	10.6 eV ▼
S/N	594-900569
Barcode	U57479X
Order #	561931

Calibrated By	Christian Pinto ▼
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Date of Calibration 9/25/2024

Rev 4.0 6/7/24

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	Lot #	Expiration
Isobutylene Gas	22-8650	11/29/2026

ID: 107 or 1693 Cal Standard	Reading	Acceptable Range
10 ppm ▼	10	(9.8 - 10.2) ▼

Pump Flow mL/min	Acceptable Range
570	(300+) ▼

Response Factor
1.0

Bump Test Reading	Acceptable Range
10.01	9.0 - 11.0 ▼

Ensure Water Trap (ID: 2609) and Tubing Included with Rental Package	Confirmed
Alkaline Pack Batteries Checked / Removal Tool Screwdriver Included (4 X AA Batteries)	Yes

Model	ppbRae 3000 ▼
Lamp	10.6 eV ▼
S/N	594900570
Barcode	U57503X
Order #	561931

Calibrated By	Christian Pinto ▼
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Date of Calibration 9/26/2024

Rev 4.0 6/7/24

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Photo-Ionization Detector Calibration Certificate

	Lot #	Expiration
Isobutylene Gas	22-8650	11/29/2026

ID: 107 or 1693 Cal Standard	Reading	Acceptable Range
10 ppm ▼	10	(9.8 - 10.2) ▼

Pump Flow mL/min	Acceptable Range
510	(300+) ▼

Response Factor
1.0

Bump Test Reading	Acceptable Range
9.94	9.0 - 11.0 ▼

Ensure Water Trap (ID: 2609) and Tubing Included with Rental Package	Confirmed
Alkaline Pack Batteries Checked / Removal Tool Screwdriver Included (4 X AA Batteries)	Yes

Model	ppbRae 3000 ▼
Lamp	10.6 eV ▼
S/N	594-900568
Barcode	U57541X
Order #	561931

Calibrated By	Christian Pinto ▼
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Date of Calibration 9/26/2024

Rev 4.0 6/7/24

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Photo-Ionization Detector Calibration Certificate

	Lot #	Expiration
Isobutylene Gas	22-8650	11/29/2026

ID: 107 or 1693

Cal Standard

10 ppm ▼

Reading

10

Acceptable Range

(98 - 102) ▼

Pump Flow mL/min

499

Acceptable Range

(300+) ▼

Response Factor

1.0

Bump Test Reading

10.07

Acceptable Range

9.0 - 11.0 ▼

Ensure Water Trap (ID: 2609) and Tubing Included with Rental Package

Confirmed

Alkaline Pack Batteries Checked / Removal Tool Screwdriver Included
(4 X AA Batteries)

Yes

Model

ppbRae 3000 ▼

Lamp

10.6 eV ▼

S/N

594-900641

Barcode

U58038X

Order #

561931

Calibrated By

Christian Pinto ▼

Date of Calibration

9/25/2024

Rev 4.0 6/7/24

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Photo-Ionization Detector Calibration Certificate

	Lot #	Expiration
Isobutylene Gas	22-8650	11/29/2026

ID: 107 or 1693 Cal Standard	Reading	Acceptable Range
10 ppm ▼	10	(98 - 102) ▼

Pump Flow mL/min	Acceptable Range
523	(300+) ▼

Response Factor
1.0

Bump Test Reading	Acceptable Range
10.02	9.0 - 11.0 ▼

Ensure Water Trap (ID: 2609) and Tubing Included with Rental Package	Confirmed
Alkaline Pack Batteries Checked / Removal Tool Screwdriver Included (4 X AA Batteries)	Yes

Model	ppbRae 3000 ▼
Lamp	10.6 eV ▼
S/N	594-901576
Barcode	U62797X
Order #	561931

Calibrated By	Christian Pinto ▼
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Date of Calibration 9/25/2024

Rev 4.0 6/7/24

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All calibration gas used is traceable to NIST. Additional documentation is available upon request.



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Fax (412) 436-2616

Photo-Ionization Detector Calibration Certificate

	Lot #	Expiration
Isobutylene Gas	22-8650	11/29/2026

ID: 107 or 1693

Cal Standard

10 ppm ▼

Reading

10

Acceptable Range

(98 - 102) ▼

Pump Flow mL/min

555

Acceptable Range

(300+) ▼

Response Factor

1.0

Bump Test Reading

9.94

Acceptable Range

9.0 - 11.0 ▼

Ensure Water Trap (ID: 2609) and Tubing Included with Rental Package

Confirmed

Alkaline Pack Batteries Checked / Removal Tool Screwdriver Included
(4 X AA Batteries)

Yes

Model ppbRae 3000 ▼
Lamp 10.6 eV ▼
S/N 594-902247
Barcode U65825X
Order # 561931

Calibrated By

Christian Pinto ▼

Date of Calibration

9/25/2024

Rev 4.0 6/7/24

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Fax (412) 436-2616

Photo-Ionization Detector Calibration Certificate

	Lot #	Expiration
Isobutylene Gas	22-8650	11/29/2026

ID: 107 or 1693

Cal Standard

10 ppm ▼

Reading

10

Acceptable Range

(9.8 - 10.2) ▼

Pump Flow mL/min

427

Acceptable Range

(300+) ▼

Response Factor

1.0

Bump Test Reading

10.04

Acceptable Range

9.0 - 11.0 ▼

Ensure Water Trap (ID: 2609) and Tubing Included with Rental Package

Confirmed

Alkaline Pack Batteries Checked / Removal Tool Screwdriver Included
(4 X AA Batteries)

Yes

Model

Lamp

10.6 eV ▼

S/N

M01FA04151

Barcode

U85284X

Order #

561931

Calibrated By

Christian Pinto ▼

Date of Calibration

9/26/2024

Rev 4.0 6/7/24

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Photo-Ionization Detector Calibration Certificate

	Lot #	Expiration
Isobutylene Gas	22-8650	11/29/2026

ID: 107 or 1693

Cal Standard

10 ppm ▼

Reading

10

Acceptable Range

(98 - 102) ▼

Pump Flow mL/min

506

Acceptable Range

(300+) ▼

Response Factor

1.0

Bump Test Reading

10.2

Acceptable Range

9.0 - 11.0 ▼

Ensure Water Trap (ID: 2609) and Tubing Included with Rental Package

Confirmed

Alkaline Pack Batteries Checked / Removal Tool Screwdriver Included
(4 X AA Batteries)

Yes

Model	ppbRae 3000 ▼
Lamp	10.6 eV ▼
S/N	594-917344
Barcode	U107793X
Order #	561931

Calibrated By Christian Pinto ▼

Date of Calibration 9/25/2024

Rev 4.0 6/7/24

All calibrations performed by FEI conform to manufacturer's specifications. Please report any issues within 24 hours of receiving equipment.

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Photo-Ionization Detector Calibration Certificate

	Lot #	Expiration
Isobutylene Gas	22-8650	11/29/2026

ID: 107 or 1693

Cal Standard

10 ppm ▼

Reading

10

Acceptable Range

(9.8 - 10.2) ▼

Pump Flow mL/min

483

Acceptable Range

(300+) ▼

Response Factor

1.0

Bump Test Reading

10.06

Acceptable Range

9.0 - 11.0 ▼

Ensure Water Trap (ID: 2609) and Tubing Included with Rental Package

Confirmed

Alkaline Pack Batteries Checked / Removal Tool Screwdriver Included
(4 X AA Batteries)

Yes

Model

ppbRae 3000 ▼

Lamp

10.6 eV ▼

S/N

594-917345

Barcode

U110414X

Order #

561931

Calibrated By

Christian Pinto ▼

Date of Calibration

9/26/2024

Rev 4.0 6/7/24

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Photo-Ionization Detector Calibration Certificate

	Lot #	Expiration
Isobutylene Gas	22-8650	11/29/2026

ID: 107 or 1693 Cal Standard	Reading	Acceptable Range
10 ppm ▼	10	(98 - 102) ▼

Pump Flow mL/min	Acceptable Range
512	(300+) ▼

Response Factor
1.0

Bump Test Reading	Acceptable Range
9.97	9.0 - 11.0 ▼

Ensure Water Trap (ID: 2609) and Tubing Included with Rental Package	Confirmed
Alkaline Pack Batteries Checked / Removal Tool Screwdriver Included (4 X AA Batteries)	Yes

Model	ppbRae 3000 ▼
Lamp	10.6 eV ▼
S/N	594-912843
Barcode	U110744X
Order #	561931

Calibrated By	Christian Pinto ▼
---------------	-------------------

Date of Calibration 9/25/2024

Rev 4.0 6/7/24

All calibrations performed by FEI conform to manufacturer's specifications. Please report any issues within 24 hours of receiving equipment.

All calibration gas used is traceable to NIST. Additional documentation is available upon request.

EXCLUSIVE NEGOTIATION AGREEMENT
(National Core/Signal Hill)

THIS EXCLUSIVE NEGOTIATION AGREEMENT (“*Agreement*”) is entered into as of February [], 2024 (“*Effective Date*”), by and between the CITY OF SIGNAL HILL (“*City*”), CITY OF SIGNAL HILL HOUSING AUTHORITY (“*HA*”) and NATIONAL COMMUNITY RENAISSANCE OF CALIFORNIA, a California nonprofit public benefit corporation (“*Developer*”). City and HA are sometimes collectively referred to as “*City*” herein. HA, City and Developer are hereinafter sometimes referred to collectively as the “*Parties*” or individually as a “*Party*.”

I. NEGOTIATIONS

City issued a Notice of Funding Availability (“*NOFA*”) to secure an affordable housing developer to work with the City and Signal Hill Petroleum, a local property owner, to develop an affordable housing project on two separate sites known as: “Orange Bluff” an 8.6-acre property located on the south side of East 28th Street between Orange Avenue and Gundry Avenue and “Walnut Bluff” a 2-acre property located at the northwest corner of East Willow Street and Walnut Avenue.

The sites are owned by Signal Hill Petroleum (“*SHP*”) and described in the legal description attached hereto as Exhibit A and by this reference incorporated herein (the “*Property*”).

Developer’s NOFA response identified the development of:

1. Approximately 85 units on 2.0 acres at Walnut Bluff
2. Approximately 290 units on 8.6 acres at Orange Bluff

The current site entitlements cap the development at 90 units at the Walnut Bluff site and 290 at the Orange Bluff site.

The City’s NOFA indicated that the City has set aside approximately \$10,000,000 from multiple sources specifically to reduce an anticipated funding gap relating to the development and construction of affordable housing projects on the Property. Upon the satisfaction of conditions acceptable to, and execution of agreements between, the City and the Developer acceptable to the City, the City and its Signal Hill Housing Authority (“*Authority*”) will provide the negotiated financing to assist with development and construction of the affordable housing community:

Pursuant to the terms of this Agreement, City and Developer shall negotiate in good faith, for the period stated in Section II below, the terms of an affordable housing agreement or other form of agreement or agreements (“*AHA*”) to be entered into between City and Developer concerning Developer’s development of the Property with a multifamily affordable housing development. Additionally, during the pendency of this Agreement Developer and SHP will negotiate a private transaction for the sale and purchase of the Property based upon the Schedule of Performance attached hereto as Exhibit B.

City agrees, for the period stated in Section II below, not to negotiate with any other Person regarding the use of funds identified in the NOFA without the prior written consent of Developer. For purposes of this Agreement, the term “**Person(s)**” means any one or more individuals, partnerships (whether general or limited), limited liability companies, trusts, estates, associations, corporations, or any other entities recognized by law or custom.

II. NEGOTIATION PERIOD AND DEPOSIT

A. Negotiation Period.

For a period of three hundred sixty-five (365) days commencing as of the Effective Date (the “**Exclusive Negotiation Period**”), the City and Developer agree to negotiate the terms of an AHA; provided, however that upon written request of Developer, the City may in the sole and absolute discretion of the City Manager extend the Exclusive Negotiation Period one or more times for up to a cumulative total of one hundred twenty (120) additional days. The term of the Exclusive Negotiation Period, as it may be extended, to the extent such extension(s) is/are granted, shall hereinafter be defined as the “**Negotiation Period.**” At any time, Developer and City may mutually agree to terminate this Agreement without liability to either Party. Except as provided below, if, upon the expiration of the Negotiation Period, City and Developer have not each approved and executed an AHA, then this Agreement shall automatically terminate and Developer shall have no further rights regarding the subject matter of this Agreement or the funds identified in the NOFA, and City shall be free to negotiate with any other Person(s) with regard to the funds identified in the NOFA.

B. Deposit.

Concurrent with the Developer’s execution of this Agreement, the Developer shall pay a deposit of Thirty Thousand Dollars (\$30,000) in immediately available funds (“**Deposit**”) to the City to defray certain reasonable third-party costs which may be incurred by City in pursuing the contemplated negotiations with the Developer during the Negotiation Period, such as expenses incurred by the City for the services of consultants and attorneys. In no event shall Deposit funds be used to reimburse City for internal staff costs or overhead. Developer shall be entitled to a refund of any Deposit funds remaining with the City following the termination of this Agreement. City shall provide Developer a summary accounting of expenses charged against the Deposit monthly.

III. OBLIGATIONS OF DEVELOPER

A. Schedule of Performance

Unless any time period provided therein is modified at the sole discretion of the City Manager, Developer shall commence and complete all tasks required to be completed hereunder within the times set forth in the Schedule of Performance attached hereto as Exhibit B and by this reference incorporated herein. By its execution of the Consent and Acknowledgment attached hereto as Exhibit C, SHP acknowledges the tasks and timing provided in the Schedule of Performance and additionally authorizes Developer to process with the City for entitlements necessary to develop an affordable housing project on the Property.

B. Community Outreach

Within the time set forth in the Schedule of Performance, Developer, at its cost and in consultation with City, shall conduct community outreach designed to familiarize the community with the type of development typically developed by Developer and the type proposed by Developer for the Property. Not less than ten (10) days prior to any such meeting, Developer shall mail notice of such meeting to all property owners (and residents who are not owners but who have requested such notice) located within five hundred (500) feet of the exterior boundaries of the Property. Developer shall provide the attendees of such meetings and any other members of the community who have indicated their interest with the name and communication information of a Developer representative who may be contacted with additional questions any of such persons may have.

C. Evidence of Financing

Within the time set forth in the Schedule of Performance, Developer, at its cost, shall provide the Deputy City Manager with a schedule of proposed sources of funding for, and uses of funds and financial pro forma for, the development of the Property. In addition, during the term of this Agreement, Developer shall promptly provide the City Manager with copies of any applications for funding or other funding requests submitted by Developer to finance the development of the Property, and any response documentation received in connection with such submittals. Notwithstanding the foregoing, however, Developer shall not be required to obtain written commitments for any such financing during the term of this Agreement; the Parties anticipate that this subject will be dealt with in the AHA.

D. Development Plans, Entitlements, and CEQA Review

The Parties acknowledge that as a part of the NOFA process Developer has submitted to the City both a conceptual site plan for the Property (the “*Site Plan*”) and a financing plan, copies of which are attached hereto as Exhibit D. City and Developer acknowledge that during the Negotiation Period, the Site Plan will be refined, based on discussions and meetings with City representatives and the activities to be conducted by Developer pursuant to this Agreement, including, without limitation, the neighborhood outreach described in Paragraph C above. Concurrently with such refinement, and in accordance with the timeframes set forth in the Schedule of Performance, Developer shall commence processing any entitlements necessary for development of the Property (collectively, the “*Entitlements*”), and shall furnish such information to City regarding the Site Plan as may be required by City to perform an environmental review for an AHA, the Entitlements, and any permits for the development of the Property required pursuant to the California Environmental Quality Act (“*CEQA*”). All fees and expenses for engineers, architects, financial consultants, legal, planning or other consultants retained by Developer to perform Developer’s obligations set forth in this Agreement shall be the sole responsibility of Developer. City shall not be obligated to pay or reimburse any such fees and expenses incurred by Developer whether or not this Agreement is eventually terminated or extended, or whether or not an AHA is entered into between City and Developer in the future. All costs associated with any formal submittals and all costs associated with the preparation of environmental documents under CEQA shall be borne by Developer. Nothing herein reduces or eliminates any requirements

of City or any other governmental entity with jurisdiction over the Property with respect to development of the Property.

E. Developer's Findings and Reports to City Manager

Developer, at its cost, shall, at the request of the City Manager, make periodic oral progress reports on all matters related to the Project and all studies being made related to Developer's acquisition and development of the Property, to the extent that they do not include confidential matters. Developer, at its cost, shall provide qualified representatives to participate in workshops, meetings, or presentations concerning the Property as reasonably required by the City Manager.

F. Restrictions Against Change In Ownership, Management And Control of Developer and Assignment of Agreement

1. The qualifications and identity of Developer and its principals are of particular concern to the City. It is because of these qualifications and identity that City has entered into this Agreement with Developer. Except as provided below, during the Negotiation Period, no voluntary or involuntary successor-in-interest of Developer shall acquire any rights or powers under this Agreement. Developer shall not assign or transfer all or any part of this Agreement or any rights in or under this Agreement, without the prior written approval of the City Manager, which approval may be given or withheld in the City Manager's sole and absolute discretion. Any assignment or transfer of an interest, whether voluntary or involuntary, by Developer that has not been approved in writing by the City Manager prior to the time of such assignment or transfer shall be deemed a material breach of this Agreement by Developer which shall entitle City to terminate this Agreement, without liability, by sending written notice of termination to Developer, referencing this Paragraph F. Notwithstanding the foregoing, Developer shall be permitted to assign its rights under this Agreement to a limited partnership, the general partner of which is either (i) Developer, or (ii) an entity owned by Developer and over which Developer has managerial control, provided Developer and the proposed assignee execute an assignment and assumption agreement in a form approved by the Signal Hill City Attorney, pursuant to which the proposed assignee assumes all of Developer's obligations hereunder.

2. Developer shall give prompt written notice to the City Manager of any and all changes whatsoever in the identity of the business entities or individuals in control of Developer of which information Developer or any of its members, partners or officers are notified or may otherwise have knowledge or information. Failure of Developer to so notify the City Manager in writing within five (5) business days of such changes or obtaining such knowledge shall constitute a material breach by Developer of this Agreement and City may terminate this Agreement, without liability to City, by sending written notice of termination to Developer, referencing this Paragraph F.

G. Acknowledgments and Reservations

1. If this Agreement expires or is terminated for any reason, or a future AHA is not executed by both City and Developer for any reason, neither City nor Developer shall be under any further obligation to each other regarding the disposition of the Property or the development thereof.

2. Developer acknowledges and agrees that no provision of this Agreement shall be deemed to be an offer or proposal by City to Developer, nor an acceptance by City of any offer or proposal from Developer, for City to provide any financial or other assistance to Developer for development of the Property. The Parties anticipate that any such financial commitments will be contained in the AHA.

H. Developer Financial Disclosures

City reserves the right to obtain further information, data, and commitments to ascertain the ability and capacity of Developer to develop the Property. Developer acknowledges that it may be requested to make certain confidential financial disclosures to City, its staff or legal counsel, as part of the financial due diligence investigations of City relating to the potential disposition of the Property and its development. City and Developer recognize that such financial disclosures may contain sensitive information relating to other business transactions of Developer, that the disclosure of such information to third parties could impose commercially unreasonable and/or anti-competitive burdens on Developer and, correspondingly, diminish the value or fiscal benefit that may accrue to City upon the disposition of the Property and development thereof by Developer, if a future AHA is entered into between City and Developer. Accordingly, City agrees to maintain the confidentiality of any business records of Developer disclosed to City, except as the City Attorney reasonably determines must be disclosed pursuant to the California Public Records Act or other applicable law. The defense of any action seeking disclosure of protected business records shall be at Developer's expense and handled by legal counsel selected by Developer and reasonably acceptable to the Signal Hill City Attorney.

I. Nondiscrimination

In undertaking its obligations under this Agreement, Developer covenants by and for itself and its representatives, officers, administrators, and assigns, and all persons claiming under or through them, that there shall be no discrimination against or segregation of, any person or group of persons on account of any basis listed in subdivision (a) or (d) of Section 12955 of the Government Code as those bases are defined in Sections 12926, 12926.1, subdivision (m) and paragraph (1) of subdivision (p) of Section 12955, and Section 12955.2 of the Government Code, nor shall Developer or any person claiming under or through Developer, establish or permit any practice or practices of discrimination or segregation with reference to the selection, location, number, use or occupancy of tenants, lessees, subtenants, sublessees, or vendees.

J. Infill Infrastructure Grant

The Parties anticipate that the development of the Property for subsequent construction of an affordable housing community would be facilitated by a successful award of a grant from the State of California under its Infill Infrastructure Grant Program ("**IIG**") administered by the California Department of Housing and Community Development ("**HCD**"). IIG awards are made to promote infill housing development by providing financial assistance for capital improvement projects to facilitate the development of affordable housing. Awards are made in response to an HCD NOFA, and IIG grants to pay project eligible costs (such as utility service relocation and improvement, streets, transit linkages, site preparation and demolition) are made based upon the competitive process outlined in such an HCD NOFA and upon the provision by the State of

California of funding to the IIG Grant Program. The Parties acknowledge that while the award of an IIG grant would enhance the development of an affordable housing community on the Property, HCD must first issue its NOFA and the State must fund the Infill Infrastructure Grant Program. Consequently, Developer shall work with the City as early as reasonably possible during the term of this Agreement to prepare on the City's behalf an application for an IIG grant in the amount of up to \$30,000,000. The Parties anticipate that IIG funding would be used to pay eligible costs to address existing shortcomings at and around the Property including utility and frontage improvements, demolition, grading, retaining wall construction, wet and dry utilities, and erosion control. If, and once, an IIG grant is awarded, Developer shall implement and administer the IIG grant funds for the City.

IV. REMEDIES

A. Default and Breach

1. Failure or delay by either Party to perform any material term or provision of this Agreement shall constitute a "default" under this Agreement. Subject to the effect of applicable force majeure provisions of Section VI, Paragraph K, if the Party who is claimed to be in default by the other Party commences to cure, correct, or remedy the default within fifteen (15) calendar days after receipt of written notice specifying such default and diligently completes such cure, correction or remedy within fifteen (15) calendar days after the expiration of the initial fifteen (15) day period (for a total of thirty (30) calendar days to cure the default), such Party shall not be in default under this Agreement. In no event shall any time to cure, correct or remedy a default extend the Negotiation Period.

2. The Party claiming that a default has occurred shall give written notice of default to the Party claimed to be in default, describing the alleged default with reasonable specificity. Delay in giving such notice shall not constitute a waiver of any default nor shall it change the time of default. However, the injured Party shall have no right to exercise any remedy permitted for a "breach" (as defined below) under this Agreement, without first delivering written notice of the default.

3. Any failure or delay by a Party in asserting any of its rights or remedies as to any default shall not operate as a waiver of any default or of any rights or remedies associated with a default. Except with respect to rights and remedies expressly declared to be exclusive in this Agreement, the rights and remedies of the Parties are cumulative and the exercise by either Party of one or more of such rights or remedies shall not preclude the exercise by such Party, at the same or different times, of any other rights or remedies for the same default or any other default by the other Party.

4. Subject to applicable force majeure provisions of this Agreement, if a Party in default fails either (i) to commence to cure, correct or remedy the default within fifteen (15) calendar days following written notice of such default, or (ii) to complete such cure, correction or remedy within fifteen (15) calendar days after the expiration of the initial fifteen (15) day period (for a total of thirty (30) calendar days to cure the default), a "breach" of this Agreement by the defaulting Party shall be deemed to have occurred. In no event shall City's disapproval or conditional approval of the Site Plan, the AHA, any CEQA review, or any other matters that

require City's approval pursuant to this Agreement or applicable law constitute a default or breach under this Agreement by City.

B. Remedies for Breach of Agreement.

In the event of an uncured default under this Agreement, the sole remedy of the non-defaulting Party shall be to terminate this Agreement. Following the termination of this Agreement, neither Party shall have any further rights, remedies, or obligations under this Agreement, except as specifically set forth herein. Neither Party shall have any liability to the other for monetary damages for the breach of this Agreement, or failure to reach agreement on an AHA, and each Party hereby waives and releases any such rights or claims it may otherwise have at law or at equity. The Parties' rights and obligations under this Paragraph B shall survive the expiration or termination of this Agreement.

V. INDEMNIFICATION, RIGHT OF ENTRY, INSURANCE, AND OTHER ISSUES

A. Indemnification

Developer shall defend, indemnify and hold harmless the City and its officers, officials, members, employees, agents, representatives, and volunteers (when acting in an official capacity), from and against all damages and liability, including but not limited to any and all claims, demands, expenses, fees, costs, liabilities, suits, causes of action, litigation, attorney's fees, and expert witness fees (all of the foregoing, collectively, "***Claims***") arising from or related to the performance or nonperformance by Developer or its principals, directors, managers, shareholders, partners, employees, agents, or representatives in connection with this Agreement, including but not limited to Developer's investigation of the Property. Notwithstanding the foregoing, Developer shall not be responsible for any damages or liability to the extent caused by the negligence or willful misconduct of City or any of its officers, officials, members, employees, agents, representatives, or volunteers acting in an official capacity. This indemnity shall survive the termination of this Agreement.

B. Insurance

1. Within ten (10) days of the Effective Date of this Agreement, without limiting Developer's indemnification obligations as set forth in this Agreement, Developer shall procure and maintain, at its sole cost and expense, the following policies of insurance:

a. Commercial General Liability insurance written on a per occurrence basis in an amount not less than \$1,000,000 per occurrence.

b. Business Auto Coverage written on a per accident basis in an amount not less than \$1,000,000 per accident. If Developer or Developer's employees use personal autos in connection with the performance of work under this Agreement, Developer shall provide evidence of personal auto liability coverage for each such person or of evidence of such coverage or of reasonably similar coverage under any umbrella insurance policy maintained by Developer.

c. If applicable, Worker's Compensation insurance providing statutory benefits as required by California law.

2. All of the insurance policies required hereunder, except the worker's compensation insurance, shall comply with the following requirements:

a. All insurance shall be written by insurers that are admitted and licensed to do business in the State of California and with A.M. Bests rating of A- or better and a minimum financial size VII.

b. The policies shall be endorsed to name as additional insureds the City and its officers, officials, members, employees, and agents.

c. All of Developer's insurance: (a) shall contain no special limitations on the scope of protection afforded to the additional insureds; and (b) shall be primary insurance with regard to additional insureds and any insurance or self-insurance maintained by the additional insureds or any of them shall be in excess of Developer's insurance and shall not contribute with it.

d. The policies shall be "occurrence" rather than "claims made" insurance.

e. The policies shall apply separately to each insured against whom a claim is made or suit is brought, except with respect to the limits of the insurer's liability.

f. The policies shall prohibit Developer from waiving the right of subrogation prior to a loss.

g. The policies shall not contain any provision or definition that would serve to eliminate so-called "third party action over" claims, including any exclusion for bodily injury to an employee of the insured.

3. Developer shall provide the City Manager with certificates of insurance evidencing the above insurance coverages and said certificates of insurance have been reasonably approved by City. In the event any of said policies of insurance are reduced in limits or cancelled for any reason, Developer shall, prior to the cancellation date, submit new evidence of insurance, in conformance with this Paragraph B.

4. The provisions of any workers' compensation or similar act shall not limit the obligations of Developer under this Agreement. Developer expressly agrees not to use any statutory immunity defenses under such laws with respect to City or its officers, officials, members, employees, agents, representatives, or volunteers acting in an official capacity.

5. Developer agrees to provide immediate notice to City of any claim or loss against Developer arising out of any acts or omissions of Developer under this Agreement. City assumes no obligation or liability by such notice, but has the right to monitor the handling of any such claim or claims if they are likely to involve the City or any officer, official, member, employee, agent, or representative of City acting in an official capacity.

VI. MISCELLANEOUS

A. Compliance With Law

Developer acknowledges that any future AHA, if approved by City, will require Developer (among other things) to carry out the development of the Property in conformity with all applicable laws, including all applicable building, planning and zoning laws, environmental laws, safety laws, and, if applicable, federal and state labor and wage laws including, but not limited to, any prevailing wage requirements pursuant to California Labor Code section 1720 *et seq.*

B. Third-Party Beneficiaries

None of the terms or provisions of this Agreement are intended to benefit any person or entity other than City or Developer. No affiliate or joint venturer or partner of Developer has any rights pursuant to this Agreement.

C. No Broker or Finder

Developer shall indemnify, defend, and hold harmless City from and against any claim or lawsuit (including reasonable attorneys' fees and costs and all costs of suit, expert witness fees, costs on appeal, and for discovery) for the payment of any real estate commissions or finder's or broker's fees arising out of this Agreement.

D. Governing Law; Venue; Attorneys' Fees

City and Developer agree that this Agreement shall be governed by, interpreted under, and construed and enforced in accordance with, the internal laws of the State of California without application of principles of conflicts of law. City and Developer acknowledge and agree that this Agreement was negotiated and entered into in the City of Signal Hill, California. Any legal action brought under this Agreement must be instituted in the Superior Court of the County of Los Angeles, or in the Federal District Court of the applicable federal district of California. In the event of any litigation between the Parties, the prevailing Party shall be entitled to receive, in addition to the relief granted, its reasonable attorneys' fees and costs and such other costs incurred in investigating the action and prosecuting the same, including costs for expert witnesses, costs on appeal, and for discovery.

E. Partial Invalidity

If any term or provision or portion thereof of this Agreement or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Agreement, or the application of such term or provision or portion thereof to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby, and each such term and provision of this Agreement shall be valid and enforced to the fullest extent permitted by law.

F. Waivers

No waiver of any breach of any covenant or provision contained in this Agreement shall be deemed a waiver of any preceding or succeeding breach of such provision, or of any other covenant or provision contained in this Agreement. Unless required by the force majeure provisions of this Agreement, no extension of the time for performance of any obligation or act or any waiver of any provision of this Agreement shall be enforceable against City or Developer, unless made in writing and executed by both City and Developer.

G. Notices.

All notices under this Agreement shall be delivered by personal delivery, by a reputable same-day or overnight courier service that provides a receipt with the date and time of delivery, or by mailing in the U.S. mail by prepaid certified mail. Notices shall be directed to the respective Parties as follows:

If to City: City of Signal Hill
Attn: Carlo Tomaino, City Manager
2175 Cherry Ave
Signal Hill, CA 90755

If to Developer: National Community Renaissance of California
Attn: Michael Ruane, President
9692 Haven Avenue, Suite 100
Rancho Cucamonga, CA 91730

A Party may change the address for delivery of notices to it as such Party may from time to time designate in writing to the other Party by a written notice conforming to the requirements of this section. Notices delivered by personal delivery, or same-day or overnight courier service shall be effective upon receipt (provided that any notices received after 5:00 p.m. on a business day or on a holiday or a weekend shall not be deemed received until 9:00 a.m. the next business day). Notices delivered by mail shall be effective as of noon on the second business day following deposit with the United States Postal Service.

H. Calendar Days and Business Days

As used herein, the term “days” shall mean calendar days unless the term “business days” is used. As used herein, a “business day” shall mean a day that Signal Hill City Hall is open for business to the general public. Developer acknowledges that Signal Hill City Hall is closed for holidays designated by the State of California or by ordinance or resolution of the City Council of the City. If the date on which City or Developer are required to take any action pursuant to the terms of this Agreement is not a business day, the action shall be taken on the next succeeding business day.

I. Construction

Headings at the beginning of each section and subsection of this Agreement are solely for the convenience of reference of City and Developer and are not a part of this Agreement.

Whenever required by the context of this Agreement, the singular shall include the plural and the masculine shall include the feminine and vice versa. This Agreement shall not be construed as if it had been prepared by one or the other of City or Developer but rather as if both City and Developer prepared this Agreement. Unless otherwise indicated, all references to sections are to this Agreement. If any exhibits are referred to in this Agreement, such exhibits are either attached to this Agreement or incorporated into this Agreement by reference.

J. Nonliability of City Officials, Officers, and Employees

No officer, official, member, employee, agent, representative, or volunteer (when acting in an official capacity) of the City shall be personally liable to Developer, or any successors in interest, in the event of any default or breach by City of this Agreement, or for any amount which may become due to Developer or to any successors under this Agreement, or for a breach by City of any obligation of the terms of this Agreement.

K. Enforced Delay; Extension of Times of Performance

In addition to specific provisions of this Agreement, performance by either Party (who is not then otherwise in material default) shall not be deemed to be in default where delays or defaults are due to war, insurrection, strikes, lock-outs, riots, floods, earthquakes, fires, casualties, supernatural causes, acts of the public enemy, terrorism, epidemics, quarantine restrictions, freight embargoes, lack of transportation, governmental restrictions or priority, litigation, unusually severe weather, inability to secure necessary labor, materials or tools, delays of any contractor, subcontractor or supplies, acts of the other Party, acts or failure to act of City or any other public or governmental agency or entity, including, without limitation, unreasonable delays in the processing and issuance of required permits for a development project required by Developer (except that any act or failure to act of City shall not excuse performance by City) or any other causes beyond the reasonable control or without the fault of the Party claiming an extension of time to perform, for up to a maximum cumulative period of ninety (90) days. Notwithstanding the foregoing, inability to secure satisfactory financing, tenant or manufacturer commitments, or market and economic conditions shall not entitle Developer to an extension of time to perform. An extension of time for any such cause shall be for the period of the enforced delay and shall commence to run from the time of the commencement of the cause, if notice by the Party claiming such extension is sent to the other Party within ten (10) days of knowledge of the commencement of the cause. In addition, times of performance under this Agreement may be extended by mutual written agreement by City and Developer.

L. Time of the Essence

Time is of the essence in this Agreement and of each and every term and provision hereof, it being understood that the Parties hereto have specifically negotiated the dates or time limits for the completion of each obligation herein.

M. Entire Agreement; Amendment.

This Agreement sets forth the entire agreement between the Parties with respect to the subject matter set forth herein and supersedes all prior discussions and negotiations between the

Parties with respect thereto. No amendment to this Agreement shall be effective unless set forth in a writing signed by an authorized signatory of each Party.

N. Counterparts.

This Agreement may be executed in any number of duplicate originals, all of which shall be of equal legal force and effect upon all of the Parties hereto signing this Agreement.

P. Warranty Against Payment of Consideration for Agreement. The Developer warrants that it has not paid or given, and will not pay or give, any third party any money or other consideration for obtaining this Agreement. Third parties, for the purposes of this Section VI, P, shall not include persons to whom fees are paid for professional services, if rendered by attorneys, financial consultants, accountants, engineers, architects, brokers and other consultants, when such fees are considered necessary by the Developer.

Q. Press Releases. The Developer agrees to obtain the approval of the City Manager or his or her designee or successor in function of any press releases Developer may propose relating to the sale or development of the Property or negotiation of an AHA with the City, prior to publication.

[Signature pages follow]

EXCLUSIVE NEGOTIATION AGREEMENT
(National Core/Signal Hill)

IN WITNESS WHEREOF, the Parties have executed and entered into this Agreement as of the Effective Date.

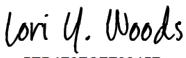
DEVELOPER:

NATIONAL COMMUNITY RENAISSANCE OF
CALIFORNIA,
a California non-profit public benefit corporation

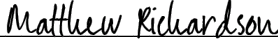
By: 
Name: M i c h a e l R u a n e
Title: President

CITY:

CITY OF SIGNAL HILL ,
a public body corporate and politic

By: 
Name: L o r i Y . W o o d s
Title: Mayor

ATTEST:
By: 
City Clerk, Kimberly Boles, Senior
Deputy City Clerk

APPROVED AS TO FORM:

Matthew Richardson

By: _____
Name: C i t y A t t o r n e y

EXHIBIT A

LEGAL DESCRIPTION

[Attached.]

EXHIBIT A
LEGAL DESCRIPTION

ORANGE BLUFF SITE

PROPERTY ADDRESS: None assigned; 2751-71± Gundry Avenue, Signal Hill, California 90755

APNs: 7212-008-049, 051 AND 7212-010-010, 019, 020

LEGAL DESCRIPTION: Portion of Lot 60, American Colony Tract, per map recorded in Book 19, Page 89 and 90 of Miscellaneous Records; and Lots 1 and 2, Cook Tract, per map recorded in Book 10, Page 131 of Maps; and Portion of Lot 1, Block A, La Vista Tract, per map recorded in Book 6, Page 160 of Maps, in the office of the County Recorder, County of Los Angeles, California, excepting therefrom all minerals, gas, oils, petroleum, etc.

WALNUT BLUFF SITE

APN: 7212-010-038

PROPERTY ADDRESS: None assigned; 1451± Willow Avenue, Signal Hill, California 90755

LEGAL DESCRIPTION: Portion of lot 67, American Colony Tract, per map recorded in Book 19, Page 89 and 90 of Miscellaneous Records; County of Los Angeles, California, excepting therefrom all minerals, gas, oils, petroleum, etc.

EXHIBIT B**SCHEDULE OF PERFORMANCE**

ITEM OF PERFORMANCE		TIME FOR PERFORMANCE
1.	Negotiate terms of site control with Signal Hill Petroleum.	Within sixty (60) calendar days of effective date.
2.	Refine and present to HA and City staff, for review, the following for each site: (a) Site Plan. A conceptual development site plan for each proposed Projects that describes and depicts: (1) the location and orientation of proposed buildings; and (2) the architecture of the proposed buildings; and (3) floor plans including unit plans; (b) Financial Pro Forma. A preliminary financial pro forma for each Project that includes cost financing (sources and uses), development costs, income, operating expenses and a cash flow analysis; (c) Project Schedule. A proposed time schedule from commencement to completion of the Projects;	Within one hundred and twenty (120) calendar days of effective date.
3.	Enter into a valid, enforceable contingent purchase and sale agreement or option agreement to establish site control.	Within sixty (60) calendar days of finalizing the terms for site control.
4.	Conduct HA Board/City Council/Community workshop.	Within sixty (60) calendar days of submitting the refined development plan, Developer shall facilitate at least one workshop for the HA Board, City Council, and community in a format to be designed in concert with HA and City staff.
5.	Negotiation of Affordable Housing Agreement.	Within three hundred and sixty-five (365) calendar days of effective date, or as required for funding applications, whichever is first.

EXHIBIT C

Signal Hill Petroleum Consent and Acknowledgement

[Attached.]

CONSENT AND ACKNOWLEDGEMENT

I, _____, in my capacity as _____ for Signal Hill Petroleum consent to the City and Developer, as those terms are defined in the Exclusive Negotiation Agreement among the City of Signal Hill and National Community Renaissance of Southern California, pursuing and processing all necessary applications and entitlements for the development of an affordable housing project at the following locations:

1. _____

2. _____

Additionally, I, on behalf of Signal Hill Petroleum, acknowledge and agree to use best efforts to comply the Schedule of Performance and to complete the land transaction between Signal Hill Petroleum and Developer consistent with the timeframe set forth therein.

By: _____
Name: _____
Title: _____

EXHIBIT D
SITE PLAN AND FINANCING PLAN

Conceptual Site Plan

ORANGE BLUFF



297 units in three buildings

- **Phase 1 (Bldg A,B,C):** 205 units (90 one-bedroom, 62 two-bedroom, 53 three-bedroom)
- **Phase 2 (Bldg D+E):** 92 units (42 one-bedroom, 26 two-bedroom, 24 three-bedroom)

3-story Contemporary design

Parking – 309 spaces per code

Community Amenities:

- 5,160 SF Boys & Girls Club/Community Center
- Central Lawn
- Swimming Pool
- Playground
- BBQ Lounge Areas
- Pet Pocket Parks



Rendering

ORANGE BLUFF



Rendering

ORANGE BLUFF



Conceptual Site Plan

WALNUT BLUFF



85 units in one courtyard building:

- 38 one-bedrooms
- 25 two-bedrooms
- 22 three-bedrooms

4-story Contemporary design

Parking – 88 spaces per code

Community Amenities:

- 3,000 SF Community Center
- Playground
- Shaded BBQ Lounge Areas
- Fitness Area
- Community Gardens



Rendering

WALNUT BLUFF



CITY OF SIGNAL HILL



Rendering

WALNUT BLUFF



Rendering

WALNUT BLUFF



CITY OF SIGNAL HILL

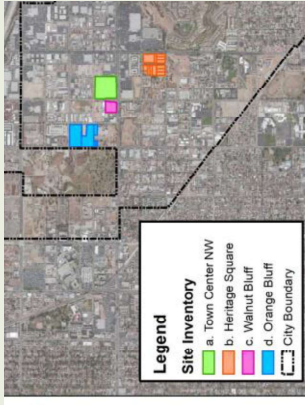


Approach to Financing

- Concurrently develop the Walnut and Orange Bluff sites while avoiding competing funding cycles
- Maximize leveraging of City's \$10M for a \$183M development delivering 382 apartment homes + 5,000 SF Boys & Girls Club Facility
- Reduce risk by undertaking infrastructure improvements with long lead times early
 - Phase O: Infrastructure
- Prioritize sources that do not require state and/or federal pre-vailing wages to contain costs
- Utilize CORE's bond proceeds for predevelopment

Phase 0 – Infrastructure

INFILL INFRASTRUCTURE GRANT (IIG) – Up to \$30M



Offsite

- Utilities
- Frontage Improvements

Onsite

- Demolition
- Grading
- Retaining Wall
- Wet Utility
- Dry Utility
- Erosion Control

Walnut Bluff Financing

85 units on 2.0 acres

AFFORDABILITY

- 60% AMI – 11 units
- 70% AMI – 12 units
- 80% AMI – 8 units
- 1 managers unit

UNIT MIX

- 30% AMI - 24 units
- 40% AMI – 11 units
- 50% AMI - 18 units

- 38 one-bedroom
- 25 two-bedroom
- 22 three-bedroom

Potential Funding Sources		Estimated Amount
LIHTC – 9%		\$ 30,107,459
Permanent Loan		\$ 3,492,256
DTSC / EPA Grant		\$ 3,000,000
Gateway Cities Housing Trust		\$ 2,500,000
FLHB AHP		\$ 850,000
Affordable Housing In-Lieu		\$ 745,419
PLHA		\$ 167,262
TOTAL		\$ 40,862,496

¹ TCAC Rents

² Assumes 8 Project Based Vouchers

³ Standard Wages

⁴ Tax Credit Pricing (Federal) \$0.95 / (State) \$0.88



Orange Bluff Phase 1 Financing

205 units on 6.4 acres

AFFORDABILITY

- 70% AMI – 22 units
- 80% AMI – 16 units
- 2 managers units

UNIT MIX

- 30% AMI - 63 units
- 45% AMI – 62 units
- 55% AMI - 40 units

- 90 one-bedroom
- 62 two-bedroom
- 53 three-bedroom

Potential Funding Sources	Estimated Amount
LIHTC – 4%	\$ 57,618,480
Permanent Loan	\$ 4,654,199
CalHFA MIP	\$ 8,000,000
City Loan	\$ 6,400,000
DTSC / EPA Grant	\$ 9,000,000
Gateway Cities Housing Trust	\$ 3,000,000
FHLB AHP	\$ 1,000,000
Deferred Developer Fee	\$ 7,036,424
TOTAL	\$ 97,585,568

¹ HSC Rents: 30% units at 30% AMI and 18% units above 60% AMI

² Assumes 8 Project Based Vouchers

³ Standard Wages

⁴ Tax Credit Pricing (Federal) \$0.95 / (State) \$0.88

Orange Bluff Phase 2 Financing

- 92 units on 2.2 acres
- AFFORDABILITY
 - 70% AMI – 5 units
 - 80% AMI – 8 units
 - 1 managers units
- Unit Mix
 - 42 one-bedroom
 - 30% AMI – 28 units
 - 45% AMI – 28 units
 - 55% AMI - 22 units
 - 26 two-bedroom
 - 24 three-bedroom

Potential Funding Sources	Estimated Amount
LIHTC – 9%	\$ 31,619,097
Permanent Loan	\$ 2,864,187
City Loan	\$ 3,000,000
DTSC / EPA Grant	\$ 3,000,000
Gateway Cities Housing Trust	\$ 2,500,000
FHLB AHP	\$ 920,000
TOTAL	\$ 43,903,384

¹ HSC Rents – 30% units at 30% AMI and 14% units above 60% AMI
² Assumes 8 Project Based Vouchers
³ Standard Wages
⁴ Tax Credit Pricing (Federal) \$0.95 / (State) \$0.88



EXCLUSIVE NEGOTIATION AGREEMENT
(National Core/Signal Hill)

THIS EXCLUSIVE NEGOTIATION AGREEMENT (“Agreement”) is entered into as of November [___], 2025 (“**Effective Date**”), by and between the CITY OF SIGNAL HILL (“**City**”), CITY OF SIGNAL HILL HOUSING AUTHORITY (“**HA**”) and NATIONAL COMMUNITY RENAISSANCE OF CALIFORNIA, a California nonprofit public benefit corporation (“**Developer**”). City and HA are sometimes collectively referred to as “**City**” herein. HA, City and Developer are hereinafter sometimes referred to collectively as the “**Parties**” or individually as a “**Party**.”

I. NEGOTIATIONS

In 2023 and 2024, City issued a Notice of Funding Availability (“**NOFA**”) to secure an affordable housing developer to work with the City and Signal Hill Petroleum, a local property owner, to develop an affordable housing project on two separate sites known as: “Orange Bluff” an 8.6-acre property located on the south side of East 28th Street between Orange Avenue and Gundry Avenue and “Walnut Bluff” a 2-acre property located at the northwest corner of East Willow Street and Walnut Avenue.

Developer and City entered into an Affordable Housing Agreement for the development of the Walnut Bluff location. The ENA governing the Orange Bluff site expires on November 15, 2025.

The Parties would now like to enter into a new ENA regarding the Orange Bluff site and an additional property, publicly or privately owned. The City has identified a potential site, known as the 28th Street Property. The Orange Bluff site is owned by Signal Hill Petroleum (“**SHP**”) and described in the legal description attached hereto as Exhibit A and by this reference incorporated herein (the “**OB Property**”). The City owns the 28th Street site and it is described in the legal description attached hereto as Exhibit A-1 and by this reference incorporated herein (the “**28th Street Property**”). The OB Property and 28th Street Property or alternative site are referred to as “**Property**” herein. Additionally, City and Developer will continue to work to identify another site within the City that could accommodate the proposed 28th St project (or something similar) to ensure the Parties have identified the most advantageous site for the development of an affordable housing project.

Pursuant to the terms of this Agreement, City and Developer shall negotiate in good faith, for the period stated in Section II below, the terms of an affordable housing agreement or other form of agreement or agreements (“**AHA**”) to be entered into between City and Developer concerning Developer’s development of the 28th Street Property or alternative identified site with a multifamily affordable housing development based on the Schedule of Performance attached hereto as Exhibit B-1. Additionally, during the pendency of this Agreement Developer and SHP will negotiate a private transaction for the sale and purchase of the OB Property based upon the Schedule of Performance attached hereto as Exhibit B.

City agrees, for the period stated in Section II below, not to negotiate with any other Person regarding the use of the remaining funds identified in the NOFA or the 28th Street Property without the prior written consent of Developer. For purposes of this Agreement, the term “**Person(s)**” means any one or more individuals, partnerships (whether general or limited), limited liability companies, trusts, estates, associations, corporations, or any other entities recognized by law or custom.

II. NEGOTIATION PERIOD AND DEPOSIT

A. Negotiation Period.

For a period of three hundred sixty-five (365) days commencing as of the Effective Date (the “**Exclusive Negotiation Period**”), the City and Developer agree to negotiate the terms of an AHA for the 28th Street Property or other identified site and seven hundred –thirty (730) days to negotiate the terms of an AHA for the OB Property; provided, however that upon written request of Developer, the City may in the sole and absolute discretion of the City Manager extend the Exclusive Negotiation Period one or more times for up to a cumulative total of one hundred twenty (120) additional days for each property. The term of the Exclusive Negotiation Period, as it may be extended, to the extent such extension(s) is/are granted, shall hereinafter be defined as the “**Negotiation Period.**” Upon identification of an alternative to the 28th Street Property, the Parties will present an amendment to this ENA to the City Council for consideration. At any time, Developer and City may mutually agree to terminate this Agreement without liability to either Party. Except as provided below, if, upon the expiration of the Negotiation Period, City and Developer have not each approved and executed an AHA, then this Agreement shall automatically terminate and Developer shall have no further rights regarding the subject matter of this Agreement or the remaining funds identified in the NOFA, and City shall be free to negotiate with any other Person(s) with regard to the remaining funds identified in the NOFA or the City owned property identified herein.

B. Deposit.

Concurrent with the Developer’s execution of this Agreement, the Developer shall pay a deposit of Thirty Thousand Dollars (\$30,000) in immediately available funds (“**Deposit**”) to the City to defray certain reasonable third-party costs which may be incurred by City in pursuing the contemplated negotiations with the Developer during the Negotiation Period, such as expenses incurred by the City for the services of consultants and attorneys. In no event shall Deposit funds be used to reimburse City for internal staff costs or overhead. Developer shall be entitled to a refund of any Deposit funds remaining with the City following the termination of this Agreement. City shall provide Developer a summary accounting of expenses charged against the Deposit monthly.

III. OBLIGATIONS OF DEVELOPER

A. Schedule of Performance

Unless any time period provided therein is modified at the sole discretion of the City Manager, Developer shall commence and complete all tasks required to be completed hereunder within the times set forth in the respective Schedules of Performance attached hereto as Exhibit B

and Exhibit B-1 and by this reference incorporated herein. By its execution of the Consent and Acknowledgment attached hereto as Exhibit C, SHP acknowledges the tasks and timing provided in the Schedule of Performance concerning the OB Property and additionally authorizes Developer to process with the City for entitlements necessary to develop an affordable housing project on the OB Property.

B. Evidence of Financing

Within the time set forth in the applicable Schedule of Performance, Developer, at its cost, shall provide the Deputy City Manager with a schedule of proposed sources of funding for, and uses of funds and financial pro forma for, the development of the Property. In addition, during the term of this Agreement, Developer shall promptly provide the City Manager with copies of any applications for funding or other funding requests submitted by Developer to finance the development of the Property, and any response documentation received in connection with such submittals. Notwithstanding the foregoing, however, Developer shall not be required to obtain written commitments for any such financing during the term of this Agreement; the Parties anticipate that this subject will be dealt with in the AHA.

C. Development Plans, Entitlements, and CEQA Review

The Parties acknowledge that Developer has submitted to the City a project description for the 28th Street Property (the “**Site Plan**”) which is attached hereto as Exhibit D. City and Developer acknowledge that during the Negotiation Period, a Site Plan will be refined, based on discussions and meetings with City representatives and the activities to be conducted by Developer pursuant to this Agreement. Concurrently with such refinement, and in accordance with the timeframes set forth in the Schedule of Performance, Developer shall commence processing any entitlements necessary for development of the Property (collectively, the “**Entitlements**”), and shall furnish such information to City regarding a Site Plan as may be required by City to perform an environmental review for an AHA, the Entitlements, and any permits for the development of the 28th Street Property or alternative site required pursuant to the California Environmental Quality Act (“**CEQA**”). All fees and expenses for engineers, architects, financial consultants, legal, planning or other consultants retained by Developer to perform Developer’s obligations set forth in this Agreement shall be the sole responsibility of Developer. City shall not be obligated to pay or reimburse any such fees and expenses incurred by Developer whether or not this Agreement is eventually terminated or extended, or whether or not an AHA is entered into between City and Developer in the future. All costs associated with any formal submittals and all costs associated with the preparation of environmental documents under CEQA shall be borne by Developer. Nothing herein reduces or eliminates any requirements of City or any other governmental entity with jurisdiction over the Property with respect to development of the Property.

D. Developer’s Findings and Reports to City Manager

Developer, at its cost, shall, at the request of the City Manager, make periodic oral progress reports on all matters related to the Project and all studies being made related to Developer’s acquisition and development of the Property, to the extent that they do not include confidential matters. Developer, at its cost, shall provide qualified representatives to participate in workshops, meetings, or presentations concerning the Property as reasonably required by the City Manager.

E. Restrictions Against Change In Ownership, Management And Control of Developer and Assignment of Agreement

1. The qualifications and identity of Developer and its principals are of particular concern to the City. It is because of these qualifications and identity that City has entered into this Agreement with Developer. Except as provided below, during the Negotiation Period, no voluntary or involuntary successor-in-interest of Developer shall acquire any rights or powers under this Agreement. Developer shall not assign or transfer all or any part of this Agreement or any rights in or under this Agreement, without the prior written approval of the City Manager, which approval may be given or withheld in the City Manager's sole and absolute discretion. Any assignment or transfer of an interest, whether voluntary or involuntary, by Developer that has not been approved in writing by the City Manager prior to the time of such assignment or transfer shall be deemed a material breach of this Agreement by Developer which shall entitle City to terminate this Agreement, without liability, by sending written notice of termination to Developer, referencing this Paragraph F. Notwithstanding the foregoing, Developer shall be permitted to assign its rights under this Agreement to a limited partnership, the general partner of which is either (i) Developer, or (ii) an entity owned by Developer and over which Developer has managerial control, provided Developer and the proposed assignee execute an assignment and assumption agreement in a form approved by the Signal Hill City Attorney, pursuant to which the proposed assignee assumes all of Developer's obligations hereunder.

2. Developer shall give prompt written notice to the City Manager of any and all changes whatsoever in the identity of the business entities or individuals in control of Developer of which information Developer or any of its members, partners or officers are notified or may otherwise have knowledge or information. Failure of Developer to so notify the City Manager in writing within five (5) business days of such changes or obtaining such knowledge shall constitute a material breach by Developer of this Agreement and City may terminate this Agreement, without liability to City, by sending written notice of termination to Developer, referencing this Paragraph F.

F. Acknowledgments and Reservations

1. If this Agreement expires or is terminated for any reason, or a future AHA is not executed by both City and Developer for any reason, neither City nor Developer shall be under any further obligation to each other regarding the disposition of the Property or the development thereof.

2. Developer acknowledges and agrees that no provision of this Agreement shall be deemed to be an offer or proposal by City to Developer, nor an acceptance by City of any offer or proposal from Developer, for City to provide any financial or other assistance to Developer for development of the Property. The Parties anticipate that any such financial commitments will be contained in the AHA.

G. Developer Financial Disclosures

City reserves the right to obtain further information, data, and commitments to ascertain the ability and capacity of Developer to develop the Property. Developer acknowledges that it

may be requested to make certain confidential financial disclosures to City, its staff or legal counsel, as part of the financial due diligence investigations of City relating to the potential disposition of the Property and its development. City and Developer recognize that such financial disclosures may contain sensitive information relating to other business transactions of Developer, that the disclosure of such information to third parties could impose commercially unreasonable and/or anti-competitive burdens on Developer and, correspondingly, diminish the value or fiscal benefit that may accrue to City upon the disposition of the Property and development thereof by Developer, if a future AHA is entered into between City and Developer. Accordingly, City agrees to maintain the confidentiality of any business records of Developer disclosed to City, except as the City Attorney reasonably determines must be disclosed pursuant to the California Public Records Act or other applicable law. The defense of any action seeking disclosure of protected business records shall be at Developer's expense and handled by legal counsel selected by Developer and reasonably acceptable to the Signal Hill City Attorney.

H. Nondiscrimination

In undertaking its obligations under this Agreement, Developer covenants by and for itself and its representatives, officers, administrators, and assigns, and all persons claiming under or through them, that there shall be no discrimination against or segregation of, any person or group of persons on account of any basis listed in subdivision (a) or (d) of Section 12955 of the Government Code as those bases are defined in Sections 12926, 12926.1, subdivision (m) and paragraph (1) of subdivision (p) of Section 12955, and Section 12955.2 of the Government Code, nor shall Developer or any person claiming under or through Developer, establish or permit any practice or practices of discrimination or segregation with reference to the selection, location, number, use or occupancy of tenants, lessees, subtenants, sublessees, or vendees.

IV. REMEDIES

A. Default and Breach

1. Failure or delay by either Party to perform any material term or provision of this Agreement shall constitute a "default" under this Agreement. Subject to the effect of applicable force majeure provisions of Section VI, Paragraph K, if the Party who is claimed to be in default by the other Party commences to cure, correct, or remedy the default within fifteen (15) calendar days after receipt of written notice specifying such default and diligently completes such cure, correction or remedy within fifteen (15) calendar days after the expiration of the initial fifteen (15) day period (for a total of thirty (30) calendar days to cure the default), such Party shall not be in default under this Agreement. In no event shall any time to cure, correct or remedy a default extend the Negotiation Period.

2. The Party claiming that a default has occurred shall give written notice of default to the Party claimed to be in default, describing the alleged default with reasonable specificity. Delay in giving such notice shall not constitute a waiver of any default nor shall it change the time of default. However, the injured Party shall have no right to exercise any remedy permitted for a "breach" (as defined below) under this Agreement, without first delivering written notice of the default.

3. Any failure or delay by a Party in asserting any of its rights or remedies as to any default shall not operate as a waiver of any default or of any rights or remedies associated with a default. Except with respect to rights and remedies expressly declared to be exclusive in this Agreement, the rights and remedies of the Parties are cumulative and the exercise by either Party of one or more of such rights or remedies shall not preclude the exercise by such Party, at the same or different times, of any other rights or remedies for the same default or any other default by the other Party.

4. Subject to applicable force majeure provisions of this Agreement, if a Party in default fails either (i) to commence to cure, correct or remedy the default within fifteen (15) calendar days following written notice of such default, or (ii) to complete such cure, correction or remedy within fifteen (15) calendar days after the expiration of the initial fifteen (15) day period (for a total of thirty (30) calendar days to cure the default), a “breach” of this Agreement by the defaulting Party shall be deemed to have occurred. In no event shall City’s disapproval or conditional approval of the Site Plan, the AHA, any CEQA review, or any other matters that require City’s approval pursuant to this Agreement or applicable law constitute a default or breach under this Agreement by City.

B. Remedies for Breach of Agreement.

In the event of an uncured default under this Agreement, the sole remedy of the non-defaulting Party shall be to terminate this Agreement. Following the termination of this Agreement, neither Party shall have any further rights, remedies, or obligations under this Agreement, except as specifically set forth herein. Neither Party shall have any liability to the other for monetary damages for the breach of this Agreement, or failure to reach agreement on an AHA, and each Party hereby waives and releases any such rights or claims it may otherwise have at law or at equity. The Parties’ rights and obligations under this Paragraph B shall survive the expiration or termination of this Agreement.

V. INDEMNIFICATION, RIGHT OF ENTRY, INSURANCE, AND OTHER ISSUES

A. Indemnification

Developer shall defend, indemnify and hold harmless the City and its officers, officials, members, employees, agents, representatives, and volunteers (when acting in an official capacity), from and against all damages and liability, including but not limited to any and all claims, demands, expenses, fees, costs, liabilities, suits, causes of action, litigation, attorney’s fees, and expert witness fees (all of the foregoing, collectively, “**Claims**”) arising from or related to the performance or nonperformance by Developer or its principals, directors, managers, shareholders, partners, employees, agents, or representatives in connection with this Agreement, including but not limited to Developer’s investigation of the Property. Notwithstanding the foregoing, Developer shall not be responsible for any damages or liability to the extent caused by the negligence or willful misconduct of City or any of its officers, officials, members, employees, agents, representatives, or volunteers acting in an official capacity. This indemnity shall survive the termination of this Agreement.

B. Insurance

1. Within ten (10) days of the Effective Date of this Agreement, without limiting Developer's indemnification obligations as set forth in this Agreement, Developer shall procure and maintain, at its sole cost and expense, the following policies of insurance:

a. Commercial General Liability insurance written on a per occurrence basis in an amount not less than \$1,000,000 per occurrence.

b. Business Auto Coverage written on a per accident basis in an amount not less than \$1,000,000 per accident. If Developer or Developer's employees use personal autos in connection with the performance of work under this Agreement, Developer shall provide evidence of personal auto liability coverage for each such person or of evidence of such coverage or of reasonably similar coverage under any umbrella insurance policy maintained by Developer.

c. If applicable, Worker's Compensation insurance providing statutory benefits as required by California law.

2. All of the insurance policies required hereunder, except the worker's compensation insurance, shall comply with the following requirements:

a. All insurance shall be written by insurers that are admitted and licensed to do business in the State of California and with A.M. Best's rating of A- or better and a minimum financial size VII.

b. The policies shall be endorsed to name as additional insureds the City and its officers, officials, members, employees, and agents.

c. All of Developer's insurance: (a) shall contain no special limitations on the scope of protection afforded to the additional insureds; and (b) shall be primary insurance with regard to additional insureds and any insurance or self-insurance maintained by the additional insureds or any of them shall be in excess of Developer's insurance and shall not contribute with it.

d. The policies shall be "occurrence" rather than "claims made" insurance.

e. The policies shall apply separately to each insured against whom a claim is made or suit is brought, except with respect to the limits of the insurer's liability.

f. The policies shall prohibit Developer from waiving the right of subrogation prior to a loss.

g. The policies shall not contain any provision or definition that would serve to eliminate so-called "third party action over" claims, including any exclusion for bodily injury to an employee of the insured.

3. Developer shall provide the City Manager with certificates of insurance evidencing the above insurance coverages and said certificates of insurance have been reasonably approved by City. In the event any of said policies of insurance are reduced in limits or cancelled for any reason, Developer shall, prior to the cancellation date, submit new evidence of insurance, in conformance with this Paragraph B.

4. The provisions of any workers' compensation or similar act shall not limit the obligations of Developer under this Agreement. Developer expressly agrees not to use any statutory immunity defenses under such laws with respect to City or its officers, officials, members, employees, agents, representatives, or volunteers acting in an official capacity.

5. Developer agrees to provide immediate notice to City of any claim or loss against Developer arising out of any acts or omissions of Developer under this Agreement. City assumes no obligation or liability by such notice, but has the right to monitor the handling of any such claim or claims if they are likely to involve the City or any officer, official, member, employee, agent, or representative of City acting in an official capacity.

VI. MISCELLANEOUS

A. Compliance With Law

Developer acknowledges that any future AHA, if approved by City, will require Developer (among other things) to carry out the development of the real property subject thereto in conformity with all applicable laws, including all applicable building, planning and zoning laws, environmental laws, safety laws, and, if applicable, federal and state labor and wage laws including, but not limited to, any prevailing wage requirements pursuant to California Labor Code section 1720 *et seq.*

B. Third-Party Beneficiaries

None of the terms or provisions of this Agreement are intended to benefit any person or entity other than City or Developer. No affiliate or joint venturer or partner of Developer has any rights pursuant to this Agreement.

C. No Broker or Finder

Developer shall indemnify, defend, and hold harmless City from and against any claim or lawsuit (including reasonable attorneys' fees and costs and all costs of suit, expert witness fees, costs on appeal, and for discovery) for the payment of any real estate commissions or finder's or broker's fees arising out of this Agreement.

D. Governing Law; Venue; Attorneys' Fees

City and Developer agree that this Agreement shall be governed by, interpreted under, and construed and enforced in accordance with, the internal laws of the State of California without application of principles of conflicts of law. City and Developer acknowledge and agree that this Agreement was negotiated and entered into in the City of Signal Hill, California. Any legal action brought under this Agreement must be instituted in the Superior Court of the County of Los

Angeles, or in the Federal District Court of the applicable federal district of California. In the event of any litigation between the Parties, the prevailing Party shall be entitled to receive, in addition to the relief granted, its reasonable attorneys' fees and costs and such other costs incurred in investigating the action and prosecuting the same, including costs for expert witnesses, costs on appeal, and for discovery.

E. Partial Invalidity

If any term or provision or portion thereof of this Agreement or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Agreement, or the application of such term or provision or portion thereof to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby, and each such term and provision of this Agreement shall be valid and enforced to the fullest extent permitted by law.

F. Waivers

No waiver of any breach of any covenant or provision contained in this Agreement shall be deemed a waiver of any preceding or succeeding breach of such provision, or of any other covenant or provision contained in this Agreement. Unless required by the force majeure provisions of this Agreement, no extension of the time for performance of any obligation or act or any waiver of any provision of this Agreement shall be enforceable against City or Developer, unless made in writing and executed by both City and Developer.

G. Notices.

All notices under this Agreement shall be delivered by personal delivery, by a reputable same-day or overnight courier service that provides a receipt with the date and time of delivery, or by mailing in the U.S. mail by prepaid certified mail. Notices shall be directed to the respective Parties as follows:

If to City: City of Signal Hill
 Attn: Carlo Tomaino, City Manager
 2175 Cherry Ave
 Signal Hill, CA 90755

If to Developer: National Community Renaissance of California
 Attn: Michael Ruane, President
 9692 Haven Avenue, Suite 100
 Rancho Cucamonga, CA 91730

A Party may change the address for delivery of notices to it as such Party may from time to time designate in writing to the other Party by a written notice conforming to the requirements of this section. Notices delivered by personal delivery, or same-day or overnight courier service shall be effective upon receipt (provided that any notices received after 5:00 p.m. on a business day or on a holiday or a weekend shall not be deemed received until 9:00 a.m. the next business day). Notices delivered by mail shall be effective as of noon on the second business day following deposit with the United States Postal Service.

H. Calendar Days and Business Days

As used herein, the term “days” shall mean calendar days unless the term “business days” is used. As used herein, a “business day” shall mean a day that Signal Hill City Hall is open for business to the general public. Developer acknowledges that Signal Hill City Hall is closed for holidays designated by the State of California or by ordinance or resolution of the City Council of the City. If the date on which City or Developer are required to take any action pursuant to the terms of this Agreement is not a business day, the action shall be taken on the next succeeding business day.

I. Construction

Headings at the beginning of each section and subsection of this Agreement are solely for the convenience of reference of City and Developer and are not a part of this Agreement. Whenever required by the context of this Agreement, the singular shall include the plural and the masculine shall include the feminine and vice versa. This Agreement shall not be construed as if it had been prepared by one or the other of City or Developer but rather as if both City and Developer prepared this Agreement. Unless otherwise indicated, all references to sections are to this Agreement. If any exhibits are referred to in this Agreement, such exhibits are either attached to this Agreement or incorporated into this Agreement by reference.

J. Nonliability of City Officials, Officers, and Employees

No officer, official, member, employee, agent, representative, or volunteer (when acting in an official capacity) of the City shall be personally liable to Developer, or any successors in interest, in the event of any default or breach by City of this Agreement, or for any amount which may become due to Developer or to any successors under this Agreement, or for a breach by City of any obligation of the terms of this Agreement.

K. Enforced Delay; Extension of Times of Performance

In addition to specific provisions of this Agreement, performance by either Party (who is not then otherwise in material default) shall not be deemed to be in default where delays or defaults are due to war, insurrection, strikes, lock-outs, riots, floods, earthquakes, fires, casualties, supernatural causes, acts of the public enemy, terrorism, epidemics, quarantine restrictions, freight embargoes, lack of transportation, governmental restrictions or priority, litigation, unusually severe weather, inability to secure necessary labor, materials or tools, delays of any contractor, subcontractor or supplies, acts of the other Party, acts or failure to act of City or any other public or governmental agency or entity, including, without limitation, unreasonable delays in the processing and issuance of required permits for a development project required by Developer (except that any act or failure to act of City shall not excuse performance by City) or any other causes beyond the reasonable control or without the fault of the Party claiming an extension of time to perform, for up to a maximum cumulative period of ninety (90) days. Notwithstanding the foregoing, inability to secure satisfactory financing, tenant or manufacturer commitments, or market and economic conditions shall not entitle Developer to an extension of time to perform. An extension of time for any such cause shall be for the period of the enforced delay and shall commence to run from the time of the commencement of the cause, if notice by the Party claiming

such extension is sent to the other Party within ten (10) days of knowledge of the commencement of the cause. In addition, times of performance under this Agreement may be extended by mutual written agreement by City and Developer.

L. Time of the Essence

Time is of the essence in this Agreement and of each and every term and provision hereof, it being understood that the Parties hereto have specifically negotiated the dates or time limits for the completion of each obligation herein.

M. Entire Agreement; Amendment.

This Agreement sets forth the entire agreement between the Parties with respect to the subject matter set forth herein and supersedes all prior discussions and negotiations between the Parties with respect thereto. No amendment to this Agreement shall be effective unless set forth in a writing signed by an authorized signatory of each Party.

N. Counterparts.

This Agreement may be executed in any number of duplicate originals, all of which shall be of equal legal force and effect upon all of the Parties hereto signing this Agreement.

P. Warranty Against Payment of Consideration for Agreement. The Developer warrants that it has not paid or given, and will not pay or give, any third party any money or other consideration for obtaining this Agreement. Third parties, for the purposes of this Section VI, P, shall not include persons to whom fees are paid for professional services, if rendered by attorneys, financial consultants, accountants, engineers, architects, brokers and other consultants, when such fees are considered necessary by the Developer.

Q. Press Releases. The Developer agrees to obtain the approval of the City Manager or his or her designee or successor in function of any press releases Developer may propose relating to the sale or development of the Property or negotiation of an AHA with the City, prior to publication.

[Signature pages follow]

EXCLUSIVE NEGOTIATION AGREEMENT
(National Core/Signal Hill)

IN WITNESS WHEREOF, the Parties have executed and entered into this Agreement as of the Effective Date.

DEVELOPER:

NATIONAL COMMUNITY RENAISSANCE OF
CALIFORNIA,
a California non-profit public benefit corporation

By: _____
Name: _____
Title: _____

CITY:

CITY OF SIGNAL HILL ,
a public body corporate and politic

By: _____
Name: _____
Title: _____

ATTEST:

City Clerk,

APPROVED AS TO FORM:

By: _____
Name: _____

EXHIBIT A AND A-1
LEGAL DESCRIPTION

[Attached.]

EXHIBIT A
OB PROPERTY

EXHIBIT A-1

28TH ST PROPERTY

EXHIBIT B

SCHEDULE OF PERFORMANCE – ORANGE BLUFF

Effective Date is November 15, 2025

ITEM OF PERFORMANCE		TIME FOR PERFORMANCE
1.	Conduct due diligence to determine feasibility of development.	By October 15, 2026.
2.	Establish site control with Signal Hill Petroleum.	Within thirty (30) calendar days of completing due diligence. <i>(November 15, 2026)</i>
3.	Refine and present to HA and City staff, for review, the following for each site: (a) Site Plan. A conceptual development site plan for each proposed Projects that describes and depicts: (1) the location and orientation of proposed buildings; and (2) the architecture of the proposed buildings; and (3) floor plans including unit plans; (b) Financial Pro Forma. A preliminary financial pro forma for each Project that includes cost financing (sources and uses), development costs, income, operating expenses and a cash flow analysis; (c) Project Schedule. A proposed time schedule from commencement to completion of the Projects;	Within one hundred and eighty (180) calendar days of completing due diligence. <i>(May 15, 2027)</i>
4.	Conduct HA Board/City Council/Community workshop.	Within sixty (60) calendar days of submitting the refined development plan, Developer shall facilitate at least one workshop for the HA Board, City Council, and community in a format to be designed in concert with HA and City staff. <i>(July 15, 2027)</i>
5.	Negotiation of Affordable Housing Agreement.	Within ninety (60) calendar days of HA Board/City Council workshop, or as required for funding applications, whichever is first. <i>(September 15, 2027)</i>

EXHIBIT B-1

SCHEDULE OF PERFORMANCE–

28TH & WALNUT OR ALTERNATIVE SITE

Effective Date is November 15, 2025

ITEM OF PERFORMANCE		TIME FOR PERFORMANCE
1.	Conduct due diligence to determine feasibility of development.	By March 1, 2026.
2.	Refine and present to HA and City staff, for review, the following for each site: (a) Site Plan. A conceptual development site plan for each proposed Projects that describes and depicts: (1) the location and orientation of proposed buildings; and (2) the architecture of the proposed buildings; and (3) floor plans including unit plans; (b) Financial Pro Forma. A preliminary financial pro forma for each Project that include cost financing (sources and uses), development costs, income, operating expenses and a cash flow analysis; (c) Project Schedule. A proposed time schedule from commencement to completion of the Projects.	Within forty-five (45) calendar days of completing due diligence. <i>(April 15, 2026)</i>
3.	Conduct HA Board/City Council/Community workshop.	Within thirty (30) calendar days of submitting the refined development plan, Developer shall facilitate at least one workshop for the HA Board, City Council, and community in a format to be designed in concert with HA and City staff. <i>(May 15, 2026)</i>
4.	Negotiation of Affordable Housing Agreement.	Within sixty (60) calendar days of HA Board/City Council workshop or as required for funding applications, whichever is first. <i>(July 15, 2026)</i>

EXHIBIT C

Signal Hill Petroleum Consent and Acknowledgement

CONSENT AND ACKNOWLEDGEMENT

I, _____, in my capacity as _____ for Signal Hill Petroleum consent to the City and Developer, as those terms are defined in the Exclusive Negotiation Agreement among the City of Signal Hill and National Community Renaissance of Southern California, pursuing and processing all necessary applications and entitlements for the development of an affordable housing project at the following locations:

1. _____

2. _____

Additionally, I, on behalf of Signal Hill Petroleum, acknowledge and agree to use best efforts to comply the Schedule of Performance and to complete the land transaction between Signal Hill Petroleum and Developer consistent with the timeframe set forth therein.

By: _____
Name: _____
Title: _____

EXHIBIT D
PROJECT DESCRIPTION–
28TH STREET PROPERTY

PROJECT DESCRIPTION

The 28th & Walnut apartment home community will be a new construction located on a 1.3-acre property at the southwest corner of East 28th Street and Walnut Avenue in Signal Hill, CA. The project site will support a single 3-4-story residential building with approximately 60 units and a leasing and property management office, a 1,000 square foot community room and a private office for support services. A surface parking lot accommodates approximately 64 stalls. The project will include a total of 59 affordable apartment homes for individuals and families earning below 80% of the area median income (AMI) with a mix of one-, two-, and three-bedroom units. One (1) three-bedroom unit will be reserved for an onsite property manager and is not rent or occupancy restricted.