HERRERA

# TECHNICAL MEMORANDUM

**Date:** March 10, 2022

**To:** Washington State Department of Ecology

**Copy to:** Randy Loveless, City of Everett Public Works

Kate Snider, Floyd | Snider

**From:** Tyson Wright and Camryn Steiner, Herrera Environmental Consultants, Inc.

**Subject:** City of Everett Landfill Gas Emission – 2021 Confirmational Sampling Results

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## INTRODUCTION

Herrera Environmental Consultants, Inc. (Herrera) was requested by City of Everett Public Works (the City) to conduct air sampling as part of their desired support in the operations and maintenance of the existing perimeter and newly constructed Riverfront Boulevard landfill gas system at the closed Everett Landfill. This technical memorandum summarizes air quality sampling data for the confirmational sampling event of landfill gas emission points conducted on September 30, 2021. The sampling meets requirements of the Compliance Monitoring and Contingency Plan (CMCP) prepared by The Floyd & Snider Team in March 2001 for the City of Everett. The CMCP is incorporated into the Cleanup Action Plan (CAP), which is incorporated into the Consent Decree (CD) governing all cleanup and monitoring requirements at the site.

## SITE BACKGROUND

The Everett landfill actively collected waste until 1974 after 50 years of operation. Beginning in 1977, the landfill was used by a commercial recycling operation to store and handle old rubber tires on portions of the landfill site. The City was requested by Ecology to perform an environmental characterization of the fire ash after two separate fires broke out in the tire piles in 1983 and 1984. Subsequently, the Landfill/ Tire Fire Site was listed under the Model Toxics Control Act due to the presence of toxic compounds in the tire ash.

The landfill property was designated for redevelopment through the City of Everett's Comprehensive Planning process and the process for Shoreline Master Program revisions. Environmental requirements for future development were evaluated in the Brownfield Feasibility Study (BFS) conducted by Floyd & Snider in 2000 to ensure that contaminated materials could not compromise environmental exposure pathways. The four environmental exposure pathways addressed in the BFS, as requested by Ecology, were gas, groundwater, direct contact and surface water.

The gas exposure pathway considered landfill gas produced by decomposing buried refuse. Air studies were completed for the site in 1996 and 1999 and included landfill gas sampling, ambient air sampling and related evaluation for a full suite of chemical analytes. The landfill gas evaluation, completed in 2000, concluded that emissions to ambient air did not exceed the proposed cleanup levels of PSCAA Regulation III Acceptable Source Impact Levels (ASILs). The evaluation in 2000 determined the landfill gas constituents of concern (COCs).

In 2001, the City entered into a Consent Decree (CD) with the Department of Ecology. The Cleanup Action Plan (CAP) incorporated into the CD defined cleanup requirements for all exposure pathways for both existing undeveloped, and future developed conditions. The CAP included the Compliance Monitoring and Contingency Plan (CMCP) defining monitoring requirements for all exposure pathways, including landfill gas and its COCs.

In the CAP, required cleanup actions for landfill gas for undeveloped conditions included control measures for existing onsite facilities, perimeter monitoring, and contingent installation of perimeter landfill gas migration controls. Required cleanup actions for future developed conditions included installation of active gas collection systems and low permeability barriers in developed areas.

There are two blower facilities (the North Blower Facility and South Blower Facility) that provide vacuum for the existing perimeter and 41$^{st}$ Street landfill gas (LFG) collection systems at the site and represent the points of LFG emissions from active landfill gas collection.

In 2021, the initial phase of the Riverfront Development project on the landfill was completed, including the Riverfront Boulevard and its active LFG collection system. The Riverfront Boulevard LFG collection system connects to the North Blower Facility. Dedication of Riverfront Boulevard occurred in July of 2021 at which time it became open for public use and the LFG collection system was officially active and under the control and monitoring of the City.

## CONFIRMATIONAL SAMPLING AND EVALUATION PLAN

As stated in the CMCP, confirmation sampling is to occur at each landfill gas emission vent pipe one time after the active gas collection system has reached stable operating conditions. This is to occur no sooner than 30 days after system start-up and no later than 90 days after system start-up. This process is to take place each time a new portion of the active LFG collection system becomes operational. The sampling event described in this memo occurred 90 days after Riverfront Boulevard was opened for public use.

Confirmational sampling took place according to the approach described in Section 3.6 of the CMCP. A gas sample was collected at each of the two system emission locations (North and South Blower Stations). Sample ports located at each of the blower stations allowed a sample collection of landfill gas representative of what was in the stack prior to mixing with atmospheric air. The process of taking a sample directly from the stack is standard practice for meeting Puget Sound Clean Air Agency (PSCAA) Air Permit requirements. The flow rates through the vents were also measured at the time of sample collection.

After collection of the sample, the process for determining compliance was based on the following approach as described in Section 3.6 of the CMCP:

1. The samples were analyzed for the compounds defined in Table 1 of the CMCP, included as Attachment A. These were the compounds previously determined to be Everett Landfill's constituents of concern (COCs)

2. The laboratory reported analyte concentration results were compared to the Acceptable Source Impact Levels (ASILs), which are the screening concentration limits of toxic air pollutants (TAPs) in the air. If the analyte concentration was below the corresponding ASIL, the analyte met emission compliance.

If all reported analyte concentrations are less than the corresponding ASILs then the site meets compliance and Steps 3 and 4 below are not required to determine compliance.

3. For any analytes that had concentrations higher than the corresponding ASILs, the gas flow rate at the sample location was used to calculate analyte loading limits to compare to the regulated limits for Small Quantity Emission Rate (SQER) and *de minimis* rates. If the loading rates were lower than the corresponding SQERs, by definition, the analytes and total emissions met compliance and do not require further dispersion modeling to determine compliance.

If all reported analyte concentrations are either below the corresponding ASILs or analyte loadings are below the SQERs, then the site meets compliance and Step 4 below is not required to determine compliance.

4. For any analytes that had exceedances of the SQER criteria, the United States Environmental Protection Agency (EPA) screening-level air dispersion model (AERSCREEN) would be applied to show that diluted – ambient – concentration levels at any public receptor are below the Model Toxics Control Act (MTCA) cleanup levels and ASIL standards in Table 1 of the CMCP, included as Attachment A. These public receptor points are not at the blower vent stack but exist in the breathing zone of people that could be present within adjacent areas that are publicly accessible. If it is determined that MTCA cleanup levels and ASIL standards are not exceeded in publicly accessible ambient air, no further action will be required. If compliance is not met – i.e., if dispersion modeling determines a potential exceedance – then treatment or a revised stack design is required.

The steps outlined in this section will be referenced throughout the rest of the document.

# SAMPLING FIELD METHODS

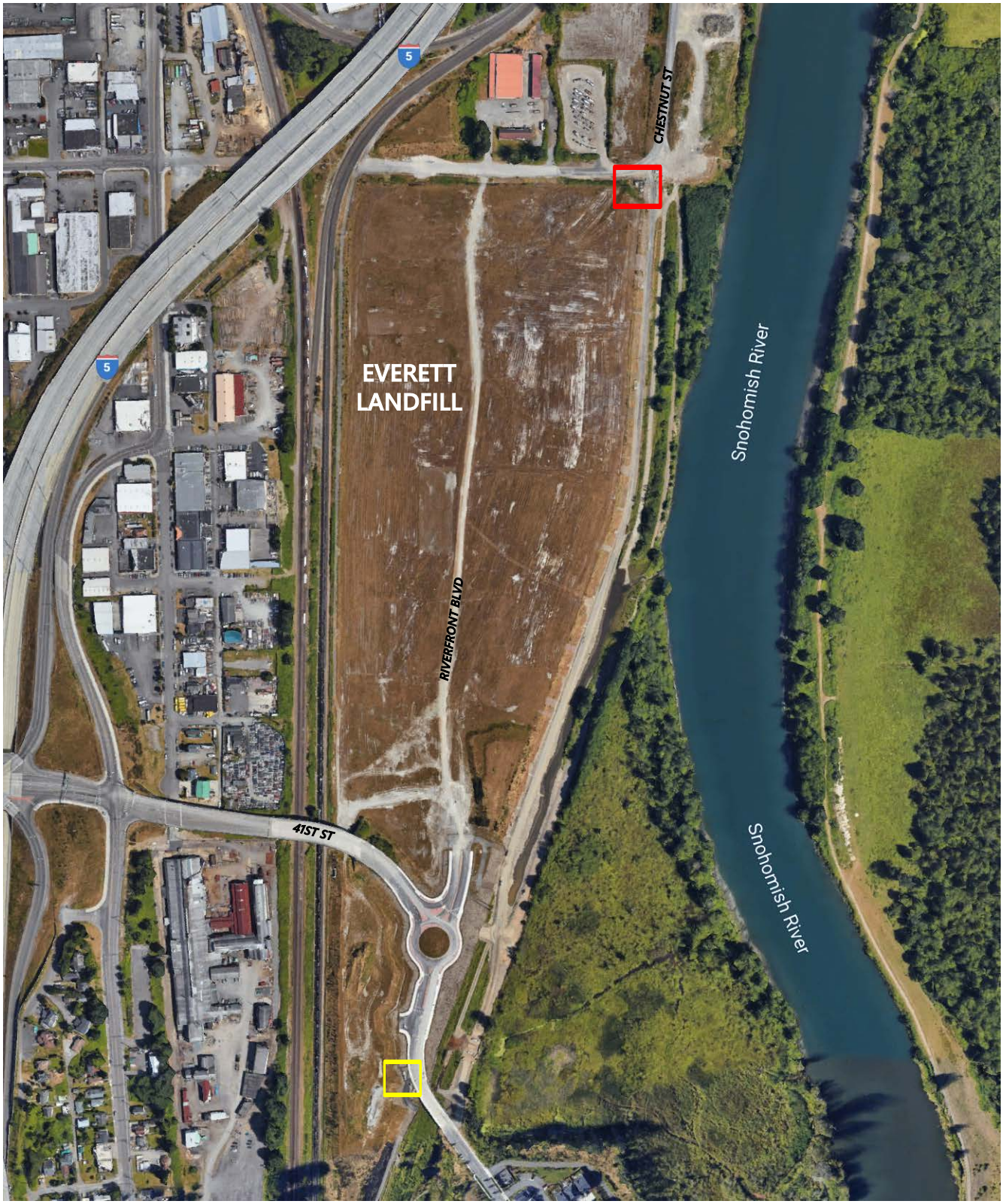
On September 30, 2021, a Herrera representative, with the assistance of a City representative, collected two representative air samples from the LFG system emission vents, one from the North Blower and one from the South Blower (see Figure 1 for location map):

- Sample location 1 – South Blower
- Sample location 2 – North Blower

Air samples were collected with 1-liter Summa Canisters placed at each of the sampling locations at sampling ports representative of the stack emissions under normal operating conditions. The stack emission flow rate was recorded at each location. At the South Blower a flow meter records the flow via SCADA. At the North Blower flow is measured using the differential pressure flow orifice and logged on a GEM 2000 gas analyzer. Note that both blower stations are equipped with diffuser valves. Flow measurements and air samples were taken downstream of the diffuser valves which were representative of stack emissions. At the time of sampling, both South Blower and North Blower diffuser valves were in the closed position as part of normal operations.

Summa Canisters were equipped with a flow regulator set to 85 milliliters per minute. The sample collection for the South Blower began at 7:52 a.m.; and the valve on each canister was fully opened sequentially. The initial vacuum was 30 inches of mercury in each canister and the canister valve was left opened until pressure reached approximately 5 inches of mercury. It took around 5 seconds for the canister to fill. Figures 2 and 3 show the sampling effort at the South Blower before and after the sample was grabbed, respectively. The sample collection for the North Blower began at 8:16 a.m. Figures 4 and 5 show the sampling effort at the North Blower before and after the sample was grabbed, respectively.

The final vacuum for each canister was recorded on the chain of custody form. The canisters were hand delivered to the laboratory for analysis.




## Legend

- Sample Location 1 - South Blower Station
- Sample Location 2 - North Blower Station

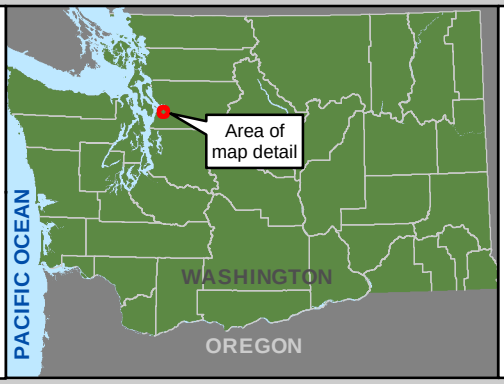



**Figure 1.**
**Vicinity Map of Everett Landfill Sampling Locations**

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Snohomish County, Aerial (2017)

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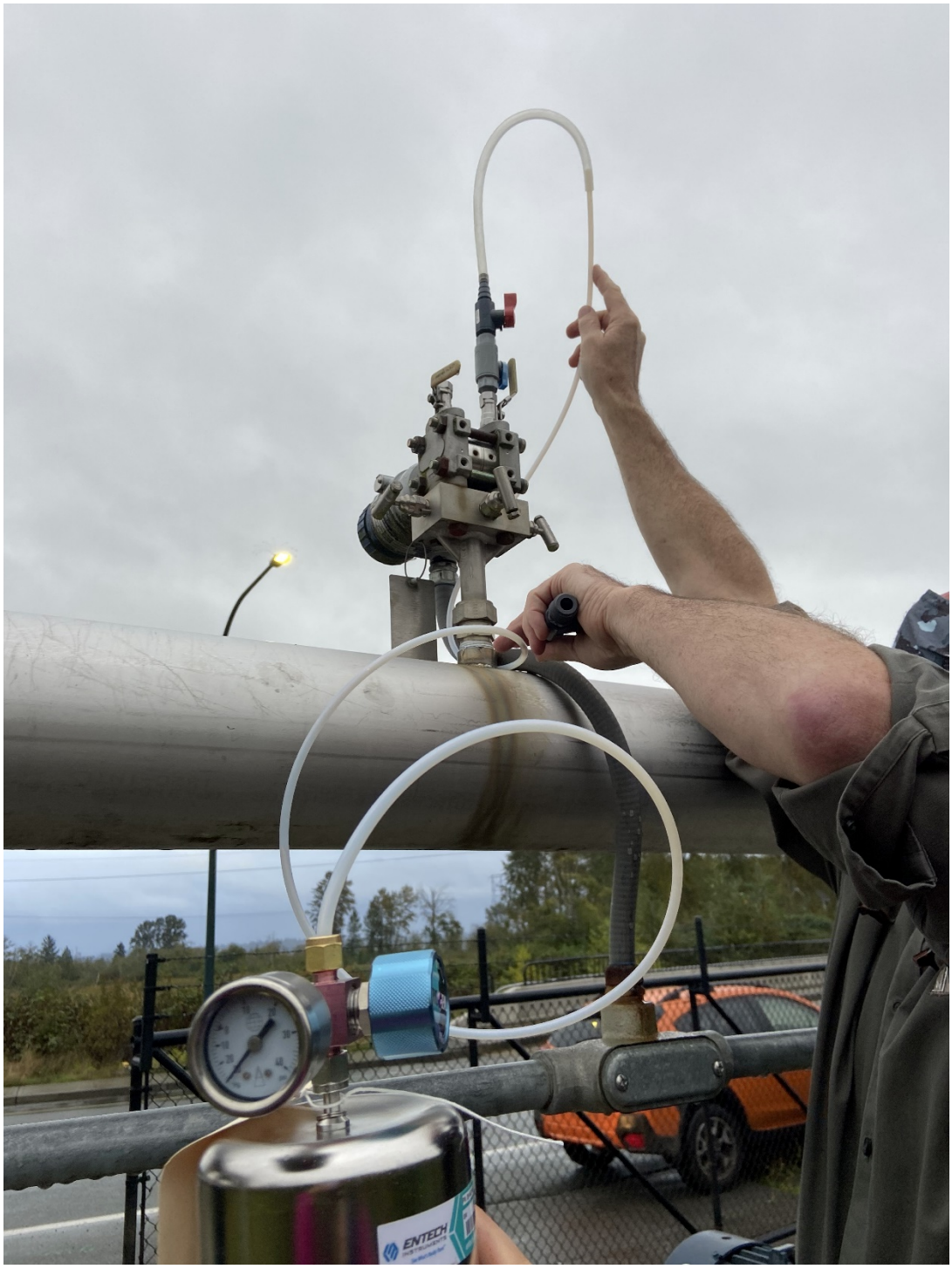


**Figure 2. Sampling at South Blower. Initial vacuum at 30 inches of mercury.**

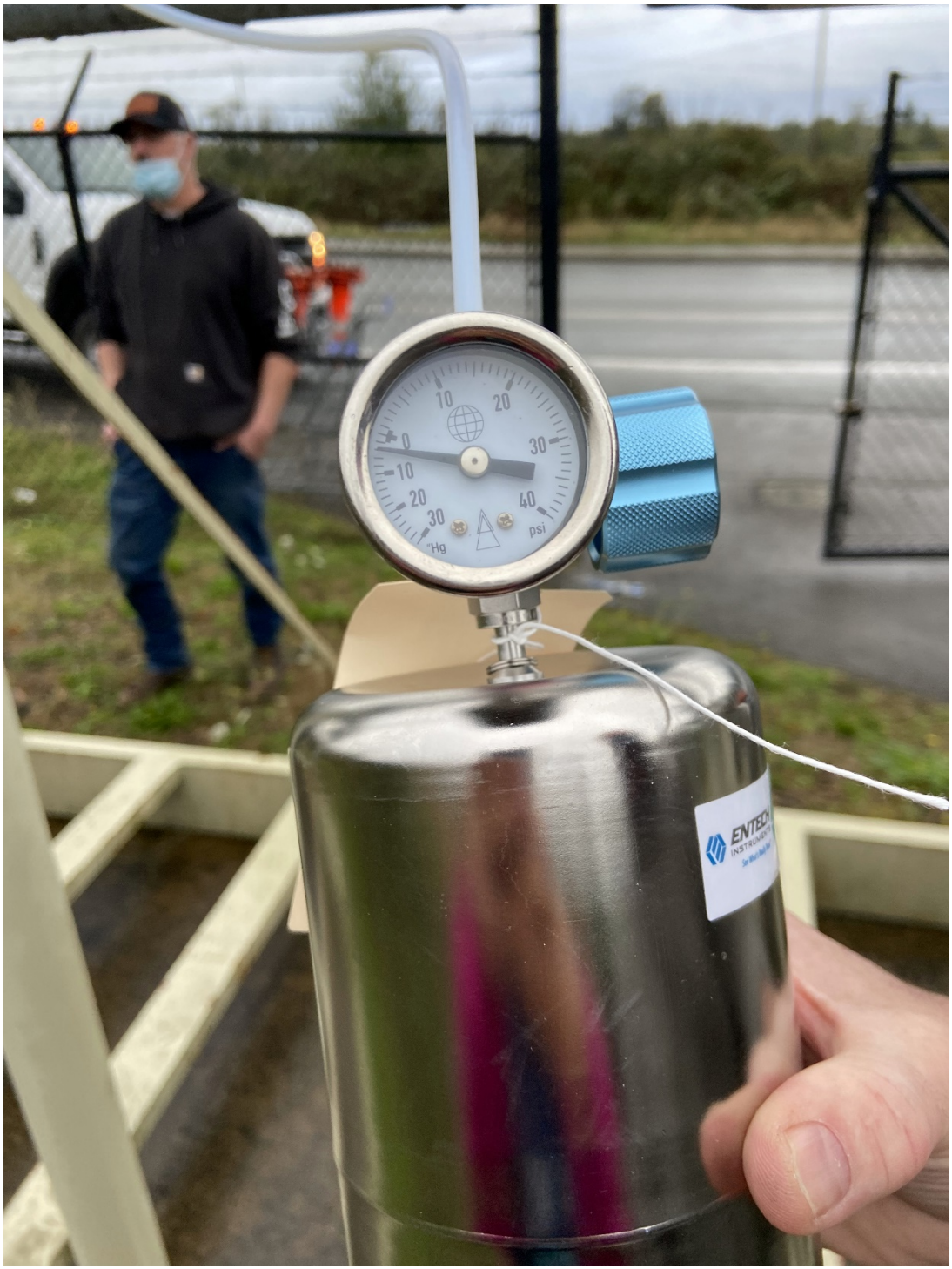


**Figure 3. Pressure gauge after sample was grabbed at South Blower. Final vacuum at 4 inches of mercury.**

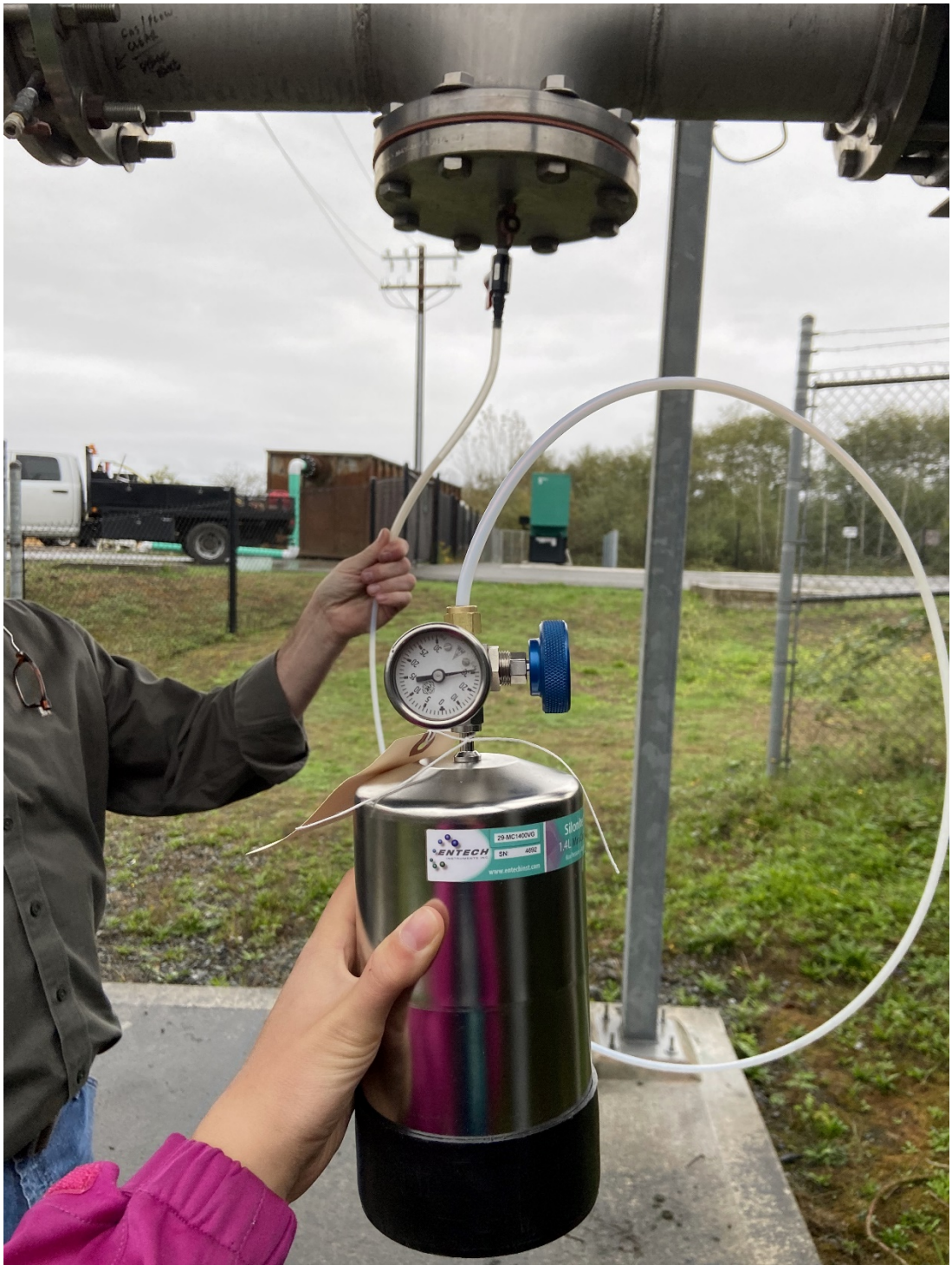


**Figure 4. Sampling at North Blower. Initial vacuum at 30 inches of mercury.**

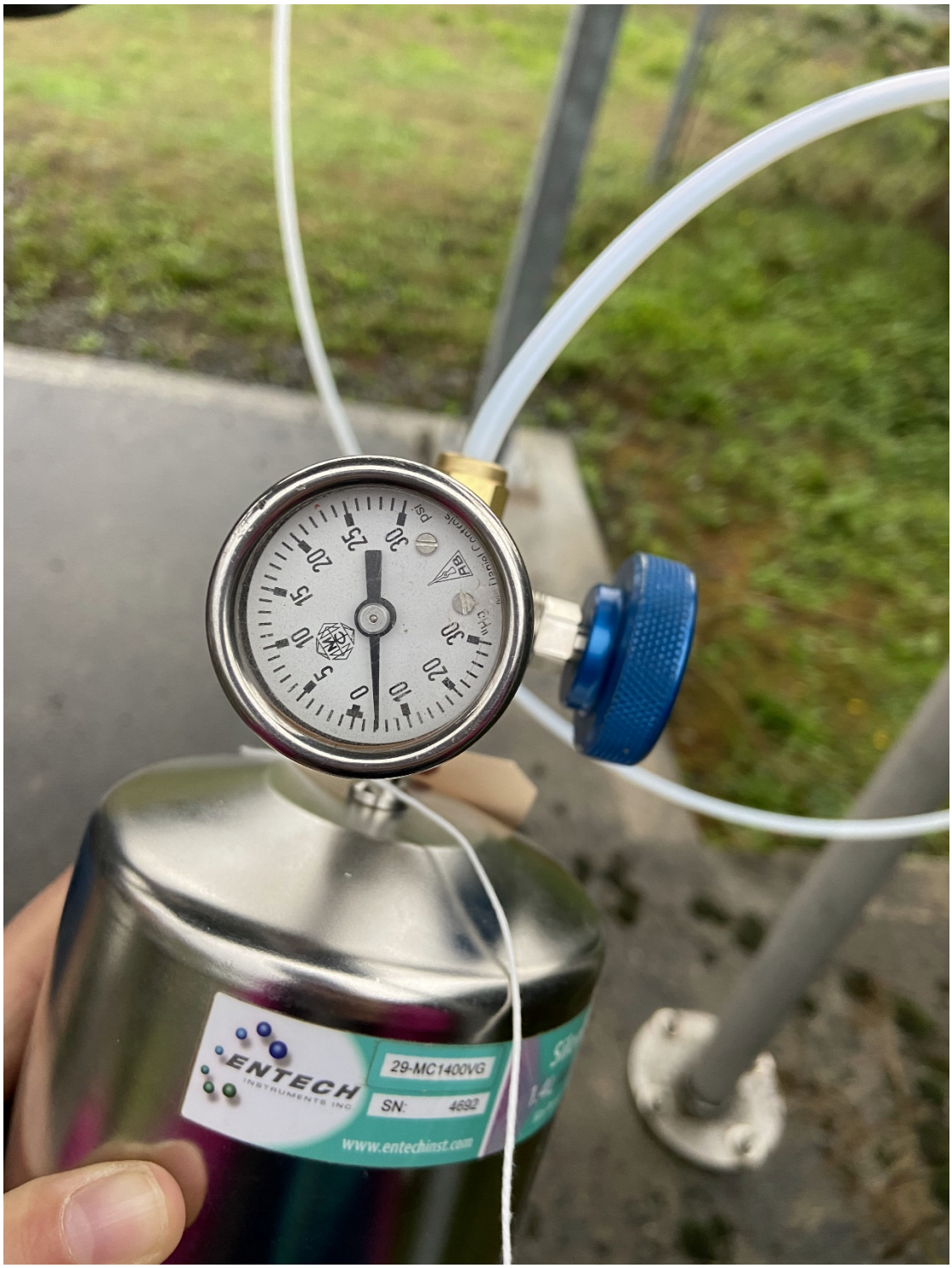


**Figure 5. Pressure gauge after sample was grabbed at North Blower. Final vacuum at 4 inches of mercury.**

# SAMPLE ANALYSIS

The collected samples were submitted to Fremont Analytical of Seattle, Washington, on September 30, 2021, under chain of custody for analysis of:

- Sulfur Compounds by EPA Method TO-15
- Volatile Organic Compounds by EPA Method TO-15

The results of the sampling are shown in the laboratory report included in Attachment B.

# CONCENTRATION AND LOADING ANALYSIS

The normal operating stack emission flow rate at each of the blower stations was recorded at the time of sampling and used to calculate the emission loading based on gas concentrations at each blower station respectively. The loading at each blower station was added for a combined total site loading.

The collected samples were analyzed for the COCs as defined in the CMCP. These constituents and their associated ASILs and MTCA thresholds identified at the time of the BFS are listed in Table 1 of the CMCP included as Attachment A. As per the compliance determination process outlined in the section that begins on page 2 above, the COC lab results will first be compared to the ASILs (Step 2). Where there are exceedances of ASILs, calculations will be done to compare to the SQERs (Step 3). If compliance is not confirmed after Steps 2 and 3, both ASIL criteria and MTCA Cleanup Levels (CULs) in Table 1 of the CMCP, included as Attachment A, will be used to determine compliance as per Step 4.

Significant regulatory updates that govern acceptable air emissions have been made since the CMCP was written. To evaluate emission loadings relative to current requirements, the current Washington Administrative Code (WAC) 173-460 Controls for New Sources of Toxic Air Pollutants (TAPs) was reviewed and the regulated ASIL limits and corresponding Small Quantity Emission Rate (SQER) and *De Minimis* Rates were updated to reflect the current emission thresholds. TAPs are pollutants that are known or suspected to cause cancer or other serious health effects, or adverse environmental effects. Not all TAPs listed as part of WAC 173-460 are defined as COCs of the landfill. Table 1 shows the TAPs that are included as COCs in the CMCP and also have current WAC standards for ASILs, SQER, and *de minimis* rates.

**Table 1. TAPs with Current WAC Standards**

| TAP | CAS No. | M.W. (g/mol) | ASIL (ug/m3) | SQER (lb/averaging period) | *De Minimis* (lb/averaging period) |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Chloromethane (Methyl Chloride) | 74-87-3 | 50.49 | 90 | 6.7 | 0.33 |
| Vinyl Chloride | 75-01-4 | 62.5 | 0.11 | 18 | 0.92 |
| Chloroethane (Ethyl Chloride) | 75-00-3 | 64.51 | 30000 | 2200 | 110 |
| 1,1-Dichloroethene | 75-35-4 | 96.94 | 200 | 15 | 0.74 |
| Methylene Chloride (Dichloromethane) | 75-09-2 | 84.94 | 60 | 9800 | 490 |
| 1,1-Dichloroethane | 75-34-3 | 98.96 | 0.63 | 100 | 5.1 |
| Chloroform | 67-66-3 | 119.39 | 0.043 | 7.1 | 0.35 |
| 1,2-Dichloroethane | 107-06-2 | 98.96 | 0.038 | 6.2 | 0.31 |
| Benzene | 71-43-2 | 78.11 | 0.13 | 21 | 1 |
| Toluene | 108-88-3 | 92.13 | 5000 | 370 | 19 |
| Tetrachloroethene | 127-18-4 | 165.83 | 0.16 | 27 | 1.3 |
| Chlorobenzene | 108-90-7 | 112.56 | 1000 | 74 | 3.7 |
| Ethylbenzene | 100-41-4 | 106.07 | 0.4 | 65 | 3.2 |
| m,p-Xylene | 179601-23-1 | 106.16 | 220 | 16 | 0.82 |
| Styrene | 100-42-5 | 104.15 | 870 | 65 | 3.2 |
| o-Xylene | 95-47-6 | 106.16 | 220 | 16 | 0.82 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 167.85 | 0.017 | 2.8 | 0.14 |
| 1,3,5-Trimethylbenzene | 108-67-8 | 120.19 | 60 | 4.4 | 0.22 |
| 1,2,4-Trimethylbenzene | 95-63-6 | 120.19 | 60 | 4.4 | 0.22 |
| 1,4-Dichlorobenzene | 106-46-7 | 147 | 0.091 | 15 | 0.74 |
| Hexachlorobutadiene | 87-68-3 | 260.76 | 0.045 | 7.4 | 0.37 |
| Methyl Ethyl Ketone (2-Butanone) | 78-93-3 | 72.11 | 5000 | 370 | 19 |

| | | | | | |
|---|---|---|---|---|---|
| Hydrogen Sulfide | 7783-06-4 | 34.08 | 2 | 0.15 | 0.0074 |

TAP = Toxic Air Pollutant
CAS = Chemical Abstract Service
M.W. = Molecular Weight
ASIL = Acceptable Source Impact Level
SQER = Small Quantity Emission Rate

Where updated ASIL limits were not available, the ASIL thresholds identified at the time of the Brownfield Feasibility Study, and listed in the CMCP, were used. Gas constituents without current ASILs do not have a reported SQER or *de minimis* loading values because prior to 2009 TAP-specific SQERs and *de minimis* loading values were not reported. To demonstrate compliance for constituents without current ASIL's and corresponding SQER or *de minimis* loading values, the laboratory reported concentrations were compared to the ASIL included at the time of the Brownfield Feasibility Study in which the designated cleanup level concentration limits were developed. The landfill gas evaluation completed in 2000 concluded that emissions to ambient air did not exceed the proposed cleanup levels of PSCAA Regulation III ASILs.

Table 2 shows the TAPs that were originally included as COCs in the BFS and CMCP but do not have current WAC standards for ASILs, SQER, and *de minimis* rates.

**Table 2. TAPs without Current WAC Standards**

| TAP | CAS No. | M.W. (g/mol) | ASIL (ug/m3) |
|---|---|---|---|
| Dichlorodifluoromethane | 75-71-8 | 120.91 | 16000 |
| 1,2-Dichloro-1,1,2,2-tetrafluorethane(1,2-Dichlorotetrafluoroethane) | 76-14-2 | 170.92 | 23000 |
| Trichlorofluoromethane | 75-69-4 | 137.38 | 19000 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane(Trichlorotrifluoroethane CFC-113) | 76-13-1 | 187.37 | 27000 |
| cis-1,2-Dichloroethene | 156-59-2 | 96.94 | 2600 |
| 1,2-Dichlorobenzene | 95-50-1 | 147 | 1000 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 181.45 | 120 |

TAP = Toxic Air Pollutant
CAS = Chemical Abstract Service
M.W. = Molecular Weight
ASIL = Acceptable Source Impact Level

The analyte of 1,3-Dichlorobenzene did not have an updated ASIL limit available nor was an ASIL available at the time of the BFS. For this analyte, the assigned ASIL, SQER, and *de minimis* was that of 1,4-Dichlorobenzene as shown in Table 3.

**Table 3. TAP without Current or 2000 WAC Standard**

| TAP | CAS No. | M.W. (g/mol) | ASIL (ug/m3) | SQER (lb/averaging period) | *De Minimis* (lb/averaging period) |
|---|---|---|---|---|---|
| 1,3-Dichlorobenzene | 541-73-1 | 147 | 0.091 | 15 | 0.74 |

TAP = Toxic Air Pollutant
CAS = Chemical Abstract Service
M.W. = Molecular Weight
ASIL = Acceptable Source Impact Level
SQER = Small Quantity Emission Rate

# COMPLIANCE RESULTS

To determine if the current conditions comply with the Washington Administrative Code (WAC) 173-460 Controls for New Sources of Toxic Air Pollutants, the laboratory reported analyte concentrations at each blower station were compared to the corresponding ASILs as per Step 2 of the compliance determination process. The WAC 173-460-150 Table of ASIL, SQER, and *de minimis* emission values was referenced for the current ASIL criteria. Analyte comparison to current ASILs are shown in Table 4 for the South Blower and Table 5 for the North Blower.

Not all analytes tested for were included in the current WAC Table of ASIL, SQER, and *de minimis* emission values. For the analytes without current emission values, the laboratory reported concentrations were compared to ASILs specified at the time of the BFS and included in the CMCP. The rows that included analytes for which the CMCP ASILs were used are highlighted in Tables 4 and 5 and are separated as Table 6. All the analytes for which the ASILs compared to were from the time of study had measured concentrations that were less than the ASIL.

The same twelve (12) analytes in both the north and south blower samples had reported concentrations that exceeded their corresponding ASILs. Exceedances of the ASILs are depicted by the yellow highlighted "NO" boxes listed under the "Standard Comparison Check". A "NO" highlighted box means that compliance could not be confirmed nor denied with comparison to ASIL, and the loading rate of the emitted analyte needed to be compared to the regulated limits for SQER and *de minimis* rates to determine compliance. The remaining nineteen (19) analytes complied with the ASILs as depicted by the green highlighted "YES" boxes. A "YES" highlighted box means the analyte meets emission compliance.

With twelve (12) ASIL exceedances in the samples, compliance for the analytes had to be checked by using the analyte loading rates and comparing to SQER and *de minimis* rates according to Step 3 of the compliance determination process. The air pollutant emission loading rates were calculated using the sampled pollutant concentrations at the current stack emission flow rate. This data is summarized in Tables 4 and 5. The column titled "Loading Rates (lb/averaging period)" is a calculated loading rate by use of the laboratory reported pollutant concentration, averaging period of each analyte as determined by WAC, and measured emission flow rates identified in September 2021. The loading rates for each blower station were calculated individually in Tables 4 and 5 and then were combined in Table 7 to determine the loading of TAPs for the entire landfill site.

The calculated loading rates for the entire landfill were compared to SQERs and as a further check, *de minimis* rates set by the WAC in Table 7. SQER represent the threshold above which dispersion modeling is required to show compliance. *De minimis* represents the threshold below which emissions are insignificant and do not pose any threat to human health and the environment.

Results from comparing the actual stack emission loading rates to the SQERs showed no exceedance of any analyte for the combined loading from the landfill. The analytes of 1-4, dichlorobenzene and hydrogen sulfide exceeded their corresponding *de minimis* rates but had combined loadings below the SQERs and still met compliance.

Every analyte had a corresponding ASIL, either from the current WAC Table or from 2001 when the CMCP was finalized. The last column under "Standard Comparison Check" on Tables 4 through 7 indicates whether the analyte met emission compliance by having a concentration below the ASIL or by having a loading below SQER/*de minimis* rate. A green highlighted box under "Complies with" means the analyte met emission compliance. All boxes are green signifying that all COCs were emitted at low enough levels to meet compliance.

Because all the loading rates were lower than the corresponding SQERs, by definition, the analytes and total emissions met compliance and do not require further dispersion modeling and comparison to MTCA CULs to determine compliance – i.e. Step 4 of the compliance determination process is not required.

# SUMMARY

The air quality sampling data analysis presented in this technical memorandum demonstrates that the Everett Landfill remains in compliance with emission requirements.

To determine compliance, analytical results for the COCs defined in the CMCP were first compared to ASILs per Step 2. ASILs are screening concentrations of TAPs in the outdoor atmosphere set by the WAC to evaluate the air quality impacts of a single source. If the analyte concentration was below the ASIL, the analyte met emission compliance and does not need to be regulated. Data analysis results showed that out of the thirty-one (31) analytes tested for,

twelve (12) analytes exceeded the corresponding ASILs. Exceedance of the ASIL does not automatically mean the emitted analyte is not compliant. Analyte concentrations above ASILs are regulated and need to be compared to loadings to confirm compliance.

To check compliance of the analytes that had ASIL exceedances, the stack emission loading rates of the analytes were calculated and compared to SQER and *de minimis* rates per Step 3. If the loading rates were lower than the corresponding SQERs, by definition, the analytes and total emissions met compliance and do not require further dispersion modeling to determine compliance. All twenty-four (24) analytes that had defined SQERs, including all twelve (12) analytes that exceeded their ASILs, had emission loading rates that were below the SQERs, confirming that the LFG emitted from both blower's met compliance for the COCs and additional dispersion modeling and analyte comparison to MTCA CULs per Step 4 was not required.

Of the thirty-one (31) total analytes that were tested for, seven (7) analytes did not have current ASILs, SQERs, or *de minimis* rates defined in the updated WAC 173-460-150 Table of ASIL, SQER, and *de minimis* emission values. The concentrations of these analytes were compared to the ASILs identified in the CMCP. The seven (7) analytes had concentrations lower than the CMCP ASILs demonstrating that these seven (7) analytes met emission compliance with the CMCP per Step 2.

With the compliance of all analytes from both blower stations individually and combined, the landfill gas is compliant with emission requirements, and no further air modeling or treatment is needed to demonstrate compliance. When future portions of the LFG collection system for property development become active, additional monitoring will be performed as required by the CMCP.

# RECOMMENDATIONS

Herrera offers the following recommendations:

- No additional modeling or treatment is required based on the results of the loading analysis. The site is in compliance with emission requirements.

The Site will be developed in phases and air quality sampling will occur as future zones of development are connected to the existing LFG system. A technical memorandum will be prepared after each sampling event.

# Table 4: Everett Landfill: Closed Landfill Data Collection Analysis - South Blower Station

| Analyte | CAS Number | Molecular Weight (g/mol) | | Reported Concentration - October 1st, 2021 Sample | | Averaging Period | Flow Volume per Averaging Period | ASIL | Small Quantity Emission Rate (SQER)[a] | *De Minimis* Rate[b] | Loading Rates | Standard Comparison Check | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (µg/m³) | | | (scf) | (µg/m³) | (lbs/averaging period) | (lbs/averaging period) | (lbs/averaging period) | Concentration < ASIL? | Loading < SQER? | Loading < *De Minimis*? | Complies with |
| **TAPs** | | | | | | | | | | | | | | | |
| Dichlorodifluoromethane | 75-71-8 | 120.91 | | 15.1 | | year** | 184380480 | 16000 | | | 0.1738081 | YES | -- | -- | ASIL |
| Chloromethane (Methyl Chloride) | 74-87-3 | 50.49 | < | 0.217 | | 24-hr | 505152 | 90 | 6.7 | 0.33 | 0.0000068 | YES | YES | YES | ASIL/SQER/De Minimis |
| 1,2-Dichloro-1,1,2,2-tetrafluorethane(1,2-Dichlorotetrafluoroethane) | 76-14-2 | 170.92 | | 56.5 | | 24-hr | 505152 | 23000 | | | 0.0017818 | YES | -- | -- | ASIL |
| Vinyl Chloride | 75-01-4 | 62.5 | < | 3.96 | | year | 184380480 | 0.11 | 18 | 0.92 | 0.0455815 | NO | YES | YES | SQER/De Minimis |
| Chloroethane (Ethyl Chloride) | 75-00-3 | 64.51 | < | 4.78 | | 24-hr | 505152 | 30000 | 2200 | 110 | 0.0001507 | YES | YES | YES | ASIL/SQER/De Minimis |
| Trichlorofluoromethane | 75-69-4 | 137.38 | | 5.24 | | year** | 184380480 | 19000 | | | 0.0603149 | YES | -- | -- | ASIL |
| 1,1-Dichloroethene | 75-35-4 | 96.94 | < | 0.434 | | 24-hr | 505152 | 200 | 15 | 0.74 | 0.0000137 | YES | YES | YES | ASIL/SQER/De Minimis |
| Methylene Chloride (Dichloromethane) | 75-09-2 | 84.94 | < | 208 | | year | 184380480 | 60 | 9800 | 490 | 2.3941783 | NO | YES | YES | SQER/De Minimis |
| 1,1,2-Trichloro-1,2,2-trifluoroethane(Trichlorotrifluoroethane CFC-113) | 76-13-1 | 187.37 | < | 2.46 | | 24-hr | 505152 | 27000 | | | 0.0000776 | YES | -- | -- | ASIL |
| 1,1-Dichloroethane | 75-34-3 | 98.96 | < | 0.486 | | year | 184380480 | 0.63 | 100 | 5.1 | 0.0055941 | YES | YES | YES | ASIL/SQER/De Minimis |
| cis-1,2-Dichloroethene | 156-59-2 | 96.94 | < | 1.94 | | year** | 184380480 | 2600 | | | 0.0223303 | YES | -- | -- | ASIL |
| Chloroform | 67-66-3 | 119.39 | | 2.12 | | year | 184380480 | 0.043 | 7.1 | 0.35 | 0.0244022 | NO | YES | YES | SQER/De Minimis |
| 1,2-Dichloroethane | 107-06-2 | 98.96 | < | 0.231 | | year | 184380480 | 0.038 | 6.2 | 0.31 | 0.0026589 | NO | YES | YES | SQER/De Minimis |
| Benzene | 71-43-2 | 78.11 | | 2.46 | | year | 184380480 | 0.13 | 21 | 1 | 0.0283158 | NO | YES | YES | SQER/De Minimis |
| Toluene | 108-88-3 | 92.13 | < | 2.7 | | 24-hr | 505152 | 5000 | 370 | 19 | 0.0000851 | YES | YES | YES | ASIL/SQER/De Minimis |
| Tetrachloroethene | 127-18-4 | 165.83 | < | 1.51 | | year | 184380480 | 0.16 | 27 | 1.3 | 0.0173808 | NO | YES | YES | SQER/De Minimis |
| Chlorobenzene | 108-90-7 | 112.56 | | 5.3 | | 24-hr | 505152 | 1000 | 74 | 3.7 | 0.0001671 | YES | YES | YES | ASIL/SQER/De Minimis |
| Ethylbenzene | 100-41-4 | 106.07 | < | 9.01 | | year | 184380480 | 0.4 | 65 | 3.2 | 0.1037094 | NO | YES | YES | SQER/De Minimis |
| m,p-Xylene | 179601-23-1 | 106.16 | < | 7.08 | | 24-hr | 505152 | 220 | 16 | 0.82 | 0.0002233 | YES | YES | YES | ASIL/SQER/De Minimis |
| Styrene | 100-42-5 | 104.15 | < | 1.06 | | 24-hr | 505152 | 870 | 65 | 3.2 | 0.0000334 | YES | YES | YES | ASIL/SQER/De Minimis |
| o-Xylene | 95-47-6 | 106.16 | < | 10.9 | | 24-hr | 505152 | 220 | 16 | 0.82 | 0.0003437 | YES | YES | YES | ASIL/SQER/De Minimis |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 167.85 | < | 3.14 | | year | 184380480 | 0.017 | 2.8 | 0.14 | 0.0361429 | NO | YES | YES | SQER/De Minimis |
| 1,3,5-Trimethylbenzene | 108-67-8 | 120.19 | < | 5.28 | | 24-hr | 505152 | 60 | 4.4 | 0.22 | 0.0001665 | YES | YES | YES | ASIL/SQER/De Minimis |
| 1,2,4-Trimethylbenzene | 95-63-6 | 120.19 | | 30.8 | | 24-hr | 505152 | 60 | 4.4 | 0.22 | 0.0009713 | YES | YES | YES | ASIL/SQER/De Minimis |
| 1,3-Dichlorobenzene | 541-73-1 | 147 | < | 44.4 | | year | 184380480 | 0.091 | 15 | 0.74 | 0.5110650 | NO | YES | YES | SQER/De Minimis |
| 1,4-Dichlorobenzene | 106-46-7 | 147 | < | 57.9 | | year | 184380480 | 0.091 | 15 | 0.74 | 0.6664564 | NO | YES | YES | SQER/De Minimis |
| 1,2-Dichlorobenzene | 95-50-1 | 147 | < | 48.9 | | year** | 184380480 | 1000 | | | 0.5628621 | YES | -- | -- | ASIL |
| 1,2,4-Trichlorobenzene | 120-82-1 | 181.45 | < | 63.1 | | year | 184380480 | 120 | | | 0.7263108 | YES | -- | -- | ASIL |
| Hexachlorobutadiene | 87-68-3 | 260.76 | < | 7.83 | | year | 184380480 | 0.045 | 7.4 | 0.37 | 0.0901270 | NO | YES | YES | SQER/De Minimis |
| Methyl Ethyl Ketone (2-Butanone) | 78-93-3 | 72.11 | < | 16.9 | | 24-hr | 505152 | 5000 | 370 | 19 | 0.0005330 | YES | YES | YES | ASIL/SQER/De Minimis |
| Hydrogen Sulfide | 7783-06-4 | 34.08 | < | 348 | H | 24-hr | 505152 | 2 | 0.15 | 0.0074 | 0.0109744 | NO | YES | NO | SQER |

Notes:
Analytes included are those listed in Table 1 of the March 2001 Compliance Monitoring and Contingency Plan by Floyd&Snider.
Reported concentrations for TAPs are from TO-15 analysis.
ASIL, SQER and *De minimis* rate are from WAC-173-173-460-150 Table for ASIL, SQER, and *de minimis* values.
H qualifier indicates holding time for preparation or analysis was exceeded.
** averaging period assumed to be 1 year.
Highlighting indicates analyte is not included on the current WAC-173-460-150 Table for ASIL, SQER and *de minimis* emission values. ASIL values were pulled from the March 2001 Compliance Monitoring and Contingency Plan.
Analyte not included on the current or 2001 WAC List. ASIL, SQER, and *De Minimis* assumed to be the same as 1,4-Dichlorobenzene.
Where there are exceedances on the *De Minimis*, the EPA screening-level air dispersion model (AERSCREEN), must be ran to show diluted concentration levels at any public receptor are below the ASIL. If still above ASIL, treatment is required.
*** Reported value from September Reads provided by David Draszt, City of Everett
[a] The SQER is a level of emissions below which dispersion modeling is not required to demonstrate compliance.
[b] The *de minimus* rate does not pose a threat to human health or the environment.

ASIL = Acceptable Source Impact Level
SQER = Small Quantity Emission Rate

# Table 5: Everett Landfill: Closed Landfill Data Collection Analysis - North Blower Station

| Analyte | CAS Number | Molecular Weight (g/mol) | | Reported Concentration - October 1st, 2021 Sample | | Averaging Period | Flow Volume per Averaging Period | ASIL | Small Quantity Emission Rate (SQER)[a] | *De Minimis* Rate[b] | Loading Rates | Standard Comparison Check | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (µg/m3) | | | (scf) | (µg/m³) | (lbs/averaging period) | (lbs/averaging period) | (lbs/averaging period) | Concentration < ASIL? | Loading < SQER? | Loading < *De Minimis*? | Complies with |
| **TAPs** | | | | | | | | | | | | | | | |
| Dichlorodifluoromethane | 75-71-8 | 120.91 | | 146 | | year** | 64859040 | 16000 | | | 0.5911553 | YES | -- | -- | ASIL |
| Chloromethane (Methyl Chloride) | 74-87-3 | 50.49 | | 1.58 | | 24-hr | 177696 | 90 | 6.7 | 0.33 | 0.0000175 | YES | YES | YES | ASIL/SQER/De Minimis |
| 1,2-Dichloro-1,1,2,2-tetrafluorethane(1,2-Dichlorotetrafluoroethane) | 76-14-2 | 170.92 | | 85.1 | | 24-hr | 177696 | 23000 | | | 0.0009440 | YES | -- | -- | ASIL |
| Vinyl Chloride | 75-01-4 | 62.5 | | 3.14 | | year | 64859040 | 0.11 | 18 | 0.92 | 0.0127139 | NO | YES | YES | SQER/De Minimis |
| Chloroethane (Ethyl Chloride) | 75-00-3 | 64.51 | < | 2.39 | | 24-hr | 177696 | 30000 | 2200 | 110 | 0.0000265 | YES | YES | YES | ASIL/SQER/De Minimis |
| Trichlorofluoromethane | 75-69-4 | 137.38 | | 34.4 | | year** | 64859040 | 19000 | | | 0.1392859 | YES | -- | -- | ASIL |
| 1,1-Dichloroethene | 75-35-4 | 96.94 | < | 0.217 | | 24-hr | 177696 | 200 | 15 | 0.74 | 0.0000024 | YES | YES | YES | ASIL/SQER/De Minimis |
| Methylene Chloride (Dichloromethane) | 75-09-2 | 84.94 | < | 104 | | year | 64859040 | 60 | 9800 | 490 | 0.4210969 | NO | YES | YES | SQER/De Minimis |
| 1,1,2-Trichloro-1,2,2-trifluoroethane(Trichlorotrifluoroethane CFC-113) | 76-13-1 | 187.37 | < | 1.23 | | 24-hr | 177696 | 27000 | | | 0.0000136 | YES | -- | -- | ASIL |
| 1,1-Dichloroethane | 75-34-3 | 98.96 | < | 0.243 | | year | 64859040 | 0.63 | 100 | 5.1 | 0.0009839 | YES | YES | YES | ASIL/SQER/De Minimis |
| cis-1,2-Dichloroethene | 156-59-2 | 96.94 | < | 0.972 | | year** | 64859040 | 2600 | | | 0.0039356 | YES | -- | -- | ASIL |
| Chloroform | 67-66-3 | 119.39 | | 2.08 | | year | 64859040 | 0.043 | 7.1 | 0.35 | 0.0084219 | NO | YES | YES | SQER/De Minimis |
| 1,2-Dichloroethane | 107-06-2 | 98.96 | < | 0.116 | | year | 64859040 | 0.038 | 6.2 | 0.31 | 0.0004697 | NO | YES | YES | SQER/De Minimis |
| Benzene | 71-43-2 | 78.11 | | 2.42 | | year | 64859040 | 0.13 | 21 | 1 | 0.0097986 | NO | YES | YES | SQER/De Minimis |
| Toluene | 108-88-3 | 92.13 | | 3.85 | | 24-hr | 177696 | 5000 | 370 | 19 | 0.0000427 | YES | YES | YES | ASIL/SQER/De Minimis |
| Tetrachloroethene | 127-18-4 | 165.83 | | 2.67 | | year | 64859040 | 0.16 | 27 | 1.3 | 0.0108109 | NO | YES | YES | SQER/De Minimis |
| Chlorobenzene | 108-90-7 | 112.56 | < | 0.575 | | 24-hr | 177696 | 1000 | 74 | 3.7 | 0.0000064 | YES | YES | YES | ASIL/SQER/De Minimis |
| Ethylbenzene | 100-41-4 | 106.07 | < | 4.51 | | year | 64859040 | 0.4 | 65 | 3.2 | 0.0182610 | NO | YES | YES | SQER/De Minimis |
| m,p-Xylene | 179601-23-1 | 106.16 | < | 3.54 | | 24-hr | 177696 | 220 | 16 | 0.82 | 0.0000393 | YES | YES | YES | ASIL/SQER/De Minimis |
| Styrene | 100-42-5 | 104.15 | < | 0.532 | | 24-hr | 177696 | 870 | 65 | 3.2 | 0.0000059 | YES | YES | YES | ASIL/SQER/De Minimis |
| o-Xylene | 95-47-6 | 106.16 | < | 5.43 | | 24-hr | 177696 | 220 | 16 | 0.82 | 0.0000602 | YES | YES | YES | ASIL/SQER/De Minimis |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 167.85 | < | 1.57 | | year | 64859040 | 0.017 | 2.8 | 0.14 | 0.0063569 | NO | YES | YES | SQER/De Minimis |
| 1,3,5-Trimethylbenzene | 108-67-8 | 120.19 | | 6.11 | | 24-hr | 177696 | 60 | 4.4 | 0.22 | 0.0000678 | YES | YES | YES | ASIL/SQER/De Minimis |
| 1,2,4-Trimethylbenzene | 95-63-6 | 120.19 | | 18.9 | | 24-hr | 177696 | 60 | 4.4 | 0.22 | 0.0002097 | YES | YES | YES | ASIL/SQER/De Minimis |
| 1,3-Dichlorobenzene | 541-73-1 | 147 | < | 22.2 | | year | 64859040 | 0.091 | 15 | 0.74 | 0.0898880 | NO | YES | YES | SQER/De Minimis |
| 1,4-Dichlorobenzene | 106-46-7 | 147 | < | 29 | | year | 64859040 | 0.091 | 15 | 0.74 | 0.1174213 | NO | YES | YES | SQER/De Minimis |
| 1,2-Dichlorobenzene | 95-50-1 | 147 | < | 24.5 | | year** | 64859040 | 1000 | | | 0.0992007 | YES | -- | -- | ASIL |
| 1,2,4-Trichlorobenzene | 120-82-1 | 181.45 | < | 31.5 | | year | 64859040 | 120 | | | 0.1275438 | YES | -- | -- | ASIL |
| Hexachlorobutadiene | 87-68-3 | 260.76 | < | 3.92 | | year | 64859040 | 0.045 | 7.4 | 0.37 | 0.0158721 | NO | YES | YES | SQER/De Minimis |
| Methyl Ethyl Ketone (2-Butanone) | 78-93-3 | 72.11 | < | 8.45 | | 24-hr | 177696 | 5000 | 370 | 19 | 0.0000937 | YES | YES | YES | ASIL/SQER/De Minimis |
| Hydrogen Sulfide | 7783-06-4 | 34.08 | < | 348 | H | 24-hr | 177696 | 2 | 0.15 | 0.0074 | 0.0038604 | NO | YES | YES | SQER/De Minimis |

Notes:
Analytes included are those listed in Table 1 of the March 2001 Compliance Monitoring and Contingency Plan by Floyd&Snider.
Reported concentrations for TAPs are from TO-15 analysis.
ASIL, SQER and *De minimis* rate are from WAC-173-173-460-150 Table for ASIL, SQER, and *de minimis* values.
H qualifier indicates holding time for preparation or analysis was exceeded.
** averaging period assumed to be 1 year.
Highlighting indicates analyte is not included on the current WAC-173-460-150 Table for ASIL, SQER and *de minimis* emission values. ASIL values were pulled from the March 2001 Compliance Monitoring and Contingency Plan.
Analyte not included on the current or 2001 WAC List. ASIL, SQER, and *De Minimis* assumed to be the same as 1,4-Dichlorobenzene.
Where there are exceedances on the *De Minimis*, the EPA screening-level air dispersion model (AERSCREEN), must be ran to show diluted concentration levels at any public receptor are below the ASIL. If still above ASIL, treatment is required.
*** Reported value from September Reads provided by David Draszt, City of Everett.
[a] The SQER is a level of emissions below which dispersion modeling is not required to demonstrate compliance.
[b] The *de minimus* rate does not pose a threat to human health or the environment.

ASIL = Acceptable Source Impact Level
SQER = Small Quantity Emission Rate

# Table 6: Everett Landfill: Closed Landfill Data Collection Analysis – Comparison to ASILs

## South Blower

| Analyte | CAS Number | Molecular Weight (g/mol) | Reported Concentration - October 1st, 2021 Sample | | | Averaging Period | Flow Volume per Averaging Period | ASIL | Loading Rates | Standard Comparison Check | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (µg/m³) | | | (scf) | (µg/m³) | (lbs/averaging period) | Concentration < ASIL? | Complies with |
| **TAPs** | | | | | | | | | | | |
| Dichlorodifluoromethane | 75-71-8 | 120.91 | | 15.1 | | year** | 184380480 | 16000 | 0.1738081 | YES | ASIL |
| 1,2-Dichloro-1,1,2,2-tetrafluorethane(1,2-Dichlorotetrafluoroethane) | 76-14-2 | 170.92 | | 56.5 | | 24-hr | 505152 | 23000 | 0.0017818 | YES | ASIL |
| Trichlorofluoromethane | 75-69-4 | 137.38 | | 5.24 | | year** | 184380480 | 19000 | 0.0603149 | YES | ASIL |
| 1,1,2-Trichloro-1,2,2-trifluoroethane(Trichlorotrifluoroethane CFC-113) | 76-13-1 | 187.37 | < | 2.46 | | 24-hr | 505152 | 27000 | 0.0000776 | YES | ASIL |
| cis-1,2-Dichloroethene | 156-59-2 | 96.94 | < | 1.94 | | year** | 184380480 | 2600 | 0.0223303 | YES | ASIL |
| 1,2-Dichlorobenzene | 95-50-1 | 147 | < | 48.9 | | year** | 184380480 | 1000 | 0.5628621 | YES | ASIL |
| 1,2,4-Trichlorobenzene | 120-82-1 | 181.45 | < | 63.1 | | year | 184380480 | 120 | 0.7263108 | YES | ASIL |

## North Blower

| Analyte | CAS Number | Molecular Weight (g/mol) | Reported Concentration - October 1st, 2021 Sample | | | Averaging Period | Flow Volume per Averaging Period | ASIL | Loading Rates | Standard Comparison Check | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (µg/m³) | | | (scf) | (µg/m³) | (lbs/averaging period) | Concentration < ASIL? | Complies with |
| **TAPs** | | | | | | | | | | | |
| Dichlorodifluoromethane | 75-71-8 | 120.91 | | 146 | | year** | 64859040 | 16000 | 0.5911553 | YES | ASIL |
| 1,2-Dichloro-1,1,2,2-tetrafluorethane(1,2-Dichlorotetrafluoroethane) | 76-14-2 | 170.92 | | 85.1 | | 24-hr | 177696 | 23000 | 0.0009440 | YES | ASIL |
| Trichlorofluoromethane | 75-69-4 | 137.38 | | 34.4 | | year** | 64859040 | 19000 | 0.1392859 | YES | ASIL |
| 1,1,2-Trichloro-1,2,2-trifluoroethane(Trichlorotrifluoroethane CFC-113) | 76-13-1 | 187.37 | < | 1.23 | | 24-hr | 177696 | 27000 | 0.0000136 | YES | ASIL |
| cis-1,2-Dichloroethene | 156-59-2 | 96.94 | < | 0.972 | | year** | 64859040 | 2600 | 0.0039356 | YES | ASIL |
| 1,2-Dichlorobenzene | 95-50-1 | 147 | < | 24.5 | | year** | 64859040 | 1000 | 0.0992007 | YES | ASIL |
| 1,2,4-Trichlorobenzene | 120-82-1 | 181.45 | < | 31.5 | | year | 64859040 | 120 | 0.1275438 | YES | ASIL |

Notes:
Analytes included are those listed in Table 1 of the March 2001 Compliance Monitoring and Contingency Plan by Floyd&Snider but not WAC-173-460-150 Table for ASIL, SQER, and *de minimus* values.
Reported concentrations for TAPs are from TO-15 analysis.
** averaging period assumed to be 1 year.
Highlighting indicates analyte is not included on the current WAC-173-460-150 Table for ASIL, SQER and *de minimis* emission values. ASIL values were pulled from Table 1 of the March 2001 Compliance Monitoring and Contingency Plan.

ASIL = Acceptable Source Impact Level

## Table 7: Everett Landfill: Closed Landfill Data Collection Analysis – Combined Loading Comparison to SQER and *De Minimus*

| Analyte | North Blower Loading Rates (lbs/averaging period) | South Blower Loading Rates (lbs/averaging period) | Combined Loading Rates (lbs/averaging period) | Small Quantity Emission Rate (SQER)[a] (lbs/averaging period) | *De Minimis* Rate[b] (lbs/averaging period) | Standard Comparison Check: Loading < SQER? | Loading < *De Minimis*? | Complies with |
|---|---|---|---|---|---|---|---|---|
| **TAPs** | | | | | | | | |
| Chloromethane (Methyl Chloride) | 0.0000175 | 0.0000068 | 0.0000244 | 6.7 | 0.33 | YES | YES | SQER/De Minimis |
| Vinyl Chloride | 0.0127139 | 0.0455815 | 0.0582954 | 18 | 0.92 | YES | YES | SQER/De Minimis |
| Chloroethane (Ethyl Chloride) | 0.0000265 | 0.0001507 | 0.0001773 | 2200 | 110 | YES | YES | SQER/De Minimis |
| 1,1-Dichloroethene | 0.0000024 | 0.0000137 | 0.0000161 | 15 | 0.74 | YES | YES | SQER/De Minimis |
| Methylene Chloride (Dichloromethane) | 0.4210969 | 2.3941783 | 2.8152753 | 9800 | 490 | YES | YES | SQER/De Minimis |
| 1,1-Dichloroethane | 0.0009839 | 0.0055941 | 0.0065780 | 100 | 5.1 | YES | YES | SQER/De Minimis |
| Chloroform | 0.0084219 | 0.0244022 | 0.0328241 | 7.1 | 0.35 | YES | YES | SQER/De Minimis |
| 1,2-Dichloroethane | 0.0004697 | 0.0026589 | 0.0031286 | 6.2 | 0.31 | YES | YES | SQER/De Minimis |
| Benzene | 0.0097986 | 0.0283158 | 0.0381144 | 21 | 1 | YES | YES | SQER/De Minimis |
| Toluene | 0.0000427 | 0.0000851 | 0.0001279 | 370 | 19 | YES | YES | SQER/De Minimis |
| Tetrachloroethene | 0.0108109 | 0.0173808 | 0.0281917 | 27 | 1.3 | YES | YES | SQER/De Minimis |
| Chlorobenzene | 0.0000064 | 0.0001671 | 0.0001735 | 74 | 3.7 | YES | YES | SQER/De Minimis |
| Ethylbenzene | 0.0182610 | 0.1037094 | 0.1219704 | 65 | 3.2 | YES | YES | SQER/De Minimis |
| m,p-Xylene | 0.0000393 | 0.0002233 | 0.0002625 | 16 | 0.82 | YES | YES | SQER/De Minimis |
| Styrene | 0.0000059 | 0.0000334 | 0.0000393 | 65 | 3.2 | YES | YES | SQER/De Minimis |
| o-Xylene | 0.0000602 | 0.0003437 | 0.0004040 | 16 | 0.82 | YES | YES | SQER/De Minimis |
| 1,1,2,2-Tetrachloroethane | 0.0063569 | 0.0361429 | 0.0424998 | 2.8 | 0.14 | YES | YES | SQER/De Minimis |
| 1,3,5-Trimethylbenzene | 0.0000678 | 0.0001665 | 0.0002343 | 4.4 | 0.22 | YES | YES | SQER/De Minimis |
| 1,2,4-Trimethylbenzene | 0.0002097 | 0.0009713 | 0.0011810 | 4.4 | 0.22 | YES | YES | SQER/De Minimis |
| 1,3-Dichlorobenzene | 0.0898880 | 0.5110650 | 0.6009530 | 15 | 0.74 | YES | YES | SQER/De Minimis |
| 1,4-Dichlorobenzene | 0.1174213 | 0.6664564 | 0.7838776 | 15 | 0.74 | YES | NO | SQER |
| Hexachlorobutadiene | 0.0158721 | 0.0901270 | 0.1059991 | 7.4 | 0.37 | YES | YES | SQER/De Minimis |
| Methyl Ethyl Ketone (2-Butanone) | 0.0000937 | 0.0005330 | 0.0006267 | 370 | 19 | YES | YES | SQER/De Minimis |
| Hydrogen Sulfide | 0.0038604 | 0.0109744 | 0.0148348 | 0.15 | 0.0074 | YES | NO | SQER |

Notes:
Analytes included are those listed in Table 1 of the March 2001 Compliance Monitoring and Contingency Plan by Floyd&Snider and that are included in current WAC-173-460-150 Table for ASIL, SQER, and *de minimus* values.
Reported concentrations for TAPs are from TO-15 analysis.
SQER and De minimis rates are from WAC-173-173-460-150 Table for ASIL, SQER, and de minimis values.
Analyte not included on the current or 2001 WAC List. ASIL, SQER, and *De Minimis* assumed to be the same as 1,4-Dichlorobenzene.
Where there are exceedances on the *De Minimis*, the EPA screening-level air dispersion model (AERSCREEN), must be ran to show diluted concentration levels at any public receptor are below the ASIL. If still above ASIL, treatment is required.

[a] The SQER is a level of emissions below which dispersion modeling is not required to demonstrate compliance.
[b] The *de minimus* rate does not pose a threat to human health or the environment.

ASIL = Acceptable Source Impact Level
SQER = Small Quantity Emission Rate

# ATTACHMENT A

## Table 1 of the Compliance Monitoring and Contingency Plan

## Table 1
## Air Quality Modeling Results

| CAS | Compound | M.W. | Ambient Standards & Modeled Ambient Air Concentrations | | | | | | Undiluted Subsurface Landfill Gas Averages[1] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ASIL Type | ASIL ($ug/m^3$) | MTCA Cleanup Standard ($ug/m^3$) | Modeled Contribution for Developed Conditions[2] with H2S Treatment ($ug/m^3$) | Modeled Contribution for Developed Conditions[3] without H2S Treatment ($ug/m^3$) | Modeled Contribution for Existing Conditions[4] ($ug/m^3$) | Overall Average ($ug/m^3$) | FSI Average ($ug/m^3$) | B&V Average ($ug/m^3$) |
| 75-71-8 | Dichlorodifluoromethane | 121.0 | B | 16,000.0 | 80.0 | 0.017 | 0.006 | 0.007 | 402.6 | | 402.6 |
| 74-87-3 | Chloromethane | 50.5 | B | 340.0 | 1.7 | 0.001 | 0.000 | 0.000 | 25.8 | | 25.8 |
| 76-14-2 | 1,2-Dichloro-1,1,2,2-tetrafluoroethane | 171.0 | B | 23,000.0 | None | 0.052 | 0.019 | 0.020 | 1,205.9 | | 1,205.9 |
| 75-01-4 | Vinyl chloride | 62.5 | A | 0.012 | 1.0 | 0.001 | 0.000 | 0.001 | 189.5 | 219.4 | 159.7 |
| 75-00-3 | Chloroethane | 64.5 | B | 1,000.0 | 4,600.0 | 0.011 | 0.004 | 0.004 | 263.2 | 337.6 | 188.7 |
| 75-69-4 | Trichlorofluoromethane | 137.0 | B | 19,000.0 | 320.0 | 0.002 | 0.001 | 0.001 | 51.4 | 48.8 | 54.0 |
| 75-35-4 | 1,1-Dichloroethene | 97.0 | B | 67.0 | None | 0.002 | 0.001 | 0.001 | 35.7 | | 35.7 |
| 75-09-2 | Methylene chloride | 84.9 | A | 0.56 | 1.1 | 0.000 | 0.000 | 0.000 | 59.3 | | 59.3 |
| 76-13-1 | 1,1,2-Trichloro-1,2,2-trifluoroethane | 187.0 | B | 27,000.0 | 13,700.0 | 0.003 | 0.001 | 0.001 | 69.1 | | 69.1 |
| 75-34-3 | 1,1-Dichloroethane | 99.0 | B | 2,700.0 | 1.0 | 0.002 | 0.001 | 0.001 | 40.8 | 38.2 | 43.4 |
| 156-59-2 | cis-1,2-Dichloroethene | 96.0 | B | 2,600.0 | 1.0 | 0.002 | 0.001 | 0.001 | 39.4 | 37.6 | 41.1 |
| 67-66-3 | Chloroform | 119.0 | A | 0.043 | 1.0 | 0.000 | 0.000 | 0.000 | 44.1 | | 44.1 |
| 107-06-2 | 1,2-Dichloroethane | 99.0 | A | 0.038 | 1.0 | 0.000 | 0.000 | 0.000 | 37.3 | | 37.3 |
| 71-43-2 | Benzene | 78.1 | A | 0.12 | 5.9 | 0.003 | 0.001 | 0.007 | 865.3 | 854.0 | 876.5 |
| 108-88-3 | Toluene | 92.1 | B | 400.0 | 183.0 | 0.020 | 0.007 | 0.008 | 456.6 | 230.0 | 683.1 |
| 127-18-4 | Tetrachloroethene | 166.0 | A | 1.1 | 5.4 | 0.000 | 0.000 | 0.000 | 61.4 | | 61.4 |
| 108-90-7 | Chlorobenzene | 113.0 | B | 150.0 | 8.0 | 0.024 | 0.009 | 0.009 | 552.1 | 616.0 | 488.2 |
| 100-41-4 | Ethylbenzene | 106.0 | B | 1,000.0 | 457.0 | 0.042 | 0.016 | 0.016 | 982.5 | 731.0 | 1,234.0 |
| 1330-20-7 | m,p-Xylene | 106.0 | B | 1,500.0 | 320.0 | 0.093 | 0.034 | 0.036 | 2,160.7 | 1,156.0 | 3,165.4 |
| 100-42-5 | Styrene | 104.0 | B | 1,000.0 | 32.5 | 0.002 | 0.001 | 0.001 | 56.6 | | 56.6 |
| 95-47-6 | o-Xylene | 106.0 | B | 1,500.0 | 320.0 | 0.008 | 0.003 | 0.003 | 184.2 | 150.0 | 218.4 |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 167.9 | B | 23.0 | None | 0.003 | 0.001 | 0.001 | 72.8 | | 72.8 |
| 108-67-8 | 1,3,5-Trimethylbenzene | 120.0 | | None | None | 0.016 | 0.006 | 0.006 | 362.6 | | 362.6 |
| 95-63-6 | 1,2,4-Trimethylbenzene | 120.0 | | None | None | 0.053 | 0.020 | 0.021 | 1,244.4 | | 1,244.4 |
| 541-73-1 | 1,3-Dichlorobenzene | 147.0 | | None | None | 0.003 | 0.001 | 0.001 | 73.1 | | 73.1 |
| 106-46-7 | 1,4-Dichlorobenzene | 147.0 | A | 1.5 | 366.0 | 0.001 | 0.000 | 0.002 | 192.7 | 181.0 | 204.4 |
| 95-50-1 | 1,2-Dichlorobenzene | 147.0 | B | 1,000.0 | 64.0 | 0.005 | 0.002 | 0.002 | 112.6 | | 112.6 |
| 120-82-1 | 1,2,4-Trichlorobenzene | 181.0 | B | 120.0 | 4.8 | 0.010 | 0.004 | 0.004 | 233.8 | | 233.8 |
| 87-68-3 | Hexachlorobutadiene | 261.0 | B | 0.7 | 1.0 | 0.005 | 0.002 | 0.002 | 119.3 | | 119.3 |
| 78-93-3 | 2-Butanone | 72.1 | B | 1,000.0 | 460.0 | 0.002 | 0.001 | 0.001 | 42.0 | 84.0 | 0.0 |
| 78-93-3 | Hydrogen sulfide | 34.1 | B | 0.9 | 0.4 | 0.202 | 0.375 | 0.394 | 23,501.0 | | 23,501.0 |

Notes:

1 See Appendix H for data sheets used to calculate averages.

2 Developed conditions: three emission release stacks 35 feet high.

3 Developed conditions: one emission release stack 30 feet high.

4 Existing conditions: emissions are assumed to emanate uniformly from a series of area sources covering the entire surface of the landfill.

# ATTACHMENT B

## Laboratory Report

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

**Herrera Environmental**
Tyson Wright
2200 Sixth Ave, Ste 1100
Seattle, WA 98121

**RE: Everett Riverfront**
**Work Order Number: 2109541**

October 08, 2021

**Attention Tyson Wright:**

Fremont Analytical, Inc. received 2 sample(s) on 9/30/2021 for the analyses presented in the following report.

***Sulfur Compounds by EPA Method TO-15***
***Volatile Organic Compounds by EPA Method TO-15***

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

**Date:** *10/08/2021*

**CLIENT:** Herrera Environmental
**Project:** Everett Riverfront
**Work Order:** 2109541

# Work Order Sample Summary

| Lab Sample ID | Client Sample ID | Date/Time Collected | Date/Time Received |
|---|---|---|---|
| 2109541-001 | North Blower | 09/30/2021 8:16 AM | 09/30/2021 4:14 PM |
| 2109541-002 | South Blower | 09/30/2021 7:52 AM | 09/30/2021 4:14 PM |

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

# Case Narrative

WO#: **2109541**
Date: **10/8/2021**

**CLIENT:** Herrera Environmental
**Project:** Everett Riverfront

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Air samples are reported in ppbv and ug/m3.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Standard temperature and pressure assumes 24.45 = (25C and 1 atm).

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

**Client:** **Herrera Environmental**
**WorkOrder:** 2109541
**Project:** Everett Riverfront

**Client Sample ID:** North Blower
**Lab ID:** 2109541-001A
**Sample Type:** Summa Canister

**Date Sampled:** 9/30/2021
**Date Received:** 9/30/2021

| Analyte | Concentration | | Reporting Limit | | Qual | Method | Date/Analyst | |
|---|---|---|---|---|---|---|---|---|
| **Sulfur Compounds by EPA Method TO-15** | **(ppbv)** | **(ug/m³)** | **(ppbv)** | **(ug/m³)** | | | | |
| Hydrogen Sulfide | <250 | <348 | 250 | 348 | H | EPA-TO-15 | 10/02/2021 | MS |
| Surr: 4-Bromofluorobenzene | 114 %Rec | -- | 70-130 | -- | H | EPA-TO-15 | 10/02/2021 | MS |
| **Volatile Organic Compounds by EPA Method TO-15** | **(ppbv)** | **(ug/m³)** | **(ppbv)** | **(ug/m³)** | | | | |
| 1,1,2,2-Tetrachloroethane | <0.229 | <1.57 | 0.229 | 1.57 | | EPA-TO-15 | 10/07/2021 | MS |
| CFC-113 | <0.160 | <1.23 | 0.160 | 1.23 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,1-Dichloroethane | <0.0600 | <0.243 | 0.0600 | 0.243 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,1-Dichloroethene (DCE) | <0.0547 | <0.217 | 0.0547 | 0.217 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,2,4-Trichlorobenzene | <4.25 | <31.5 | 4.25 | 31.5 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,2,4-Trimethylbenzene | 3.84 | 18.9 | 2.08 | 10.2 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,2-Dichlorobenzene | <4.07 | <24.5 | 4.07 | 24.5 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,2-Dichloroethane | <0.0285 | <0.116 | 0.0285 | 0.116 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,3,5-Trimethylbenzene | 1.24 | 6.11 | 0.537 | 2.64 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,3-Dichlorobenzene | <3.69 | <22.2 | 3.69 | 22.2 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,4-Dichlorobenzene | <4.81 | <29.0 | 4.81 | 29.0 | | EPA-TO-15 | 10/07/2021 | MS |
| (MEK) 2-Butanone | <2.87 | <8.45 | 2.87 | 8.45 | | EPA-TO-15 | 10/07/2021 | MS |
| Benzene | 0.758 | 2.42 | 0.302 | 0.965 | | EPA-TO-15 | 10/07/2021 | MS |
| Chlorobenzene | <0.125 | <0.575 | 0.125 | 0.575 | | EPA-TO-15 | 10/07/2021 | MS |
| Chloroethane | <0.906 | <2.39 | 0.906 | 2.39 | | EPA-TO-15 | 10/07/2021 | MS |
| Chloroform | 0.427 | 2.08 | 0.0192 | 0.0937 | | EPA-TO-15 | 10/07/2021 | MS |
| Chloromethane | 0.768 | 1.58 | 0.0525 | 0.108 | | EPA-TO-15 | 10/07/2021 | MS |
| cis-1,2-Dichloroethene | <0.245 | <0.972 | 0.245 | 0.972 | | EPA-TO-15 | 10/07/2021 | MS |
| Dichlorodifluoromethane (CFC-12) | 29.5 | 146 | 0.125 | 0.618 | | EPA-TO-15 | 10/07/2021 | MS |
| Dichlorotetrafluoroethane (CFC-114) | 12.2 | 85.1 | 0.115 | 0.805 | | EPA-TO-15 | 10/07/2021 | MS |
| Ethylbenzene | <1.04 | <4.51 | 1.04 | 4.51 | | EPA-TO-15 | 10/07/2021 | MS |
| Hexachlorobutadiene | <0.367 | <3.92 | 0.367 | 3.92 | | EPA-TO-15 | 10/07/2021 | MS |
| m,p-Xylene | <0.815 | <3.54 | 0.815 | 3.54 | | EPA-TO-15 | 10/07/2021 | MS |
| Methylene chloride | <30.0 | <104 | 30.0 | 104 | | EPA-TO-15 | 10/07/2021 | MS |
| o-Xylene | <1.25 | <5.43 | 1.25 | 5.43 | | EPA-TO-15 | 10/07/2021 | MS |
| Styrene | <0.125 | <0.532 | 0.125 | 0.532 | | EPA-TO-15 | 10/07/2021 | MS |

**Client:** **Herrera Environmental**
**WorkOrder:** 2109541
**Project:** Everett Riverfront

**Client Sample ID:** North Blower
**Lab ID:** 2109541-001A
**Sample Type:** Summa Canister

**Date Sampled:** 9/30/2021
**Date Received:** 9/30/2021

| Analyte | Concentration | | Reporting Limit | | Qual | Method | Date/Analyst | |
|---|---|---|---|---|---|---|---|---|
| Volatile Organic Compounds by EPA Method TO-15 | | | | | | | | |
| | (ppbv) | (ug/m³) | (ppbv) | (ug/m³) | | | | |
| Tetrachloroethene (PCE) | 0.394 | 2.67 | 0.111 | 0.753 | | EPA-TO-15 | 10/07/2021 | MS |
| Toluene | 1.02 | 3.85 | 0.358 | 1.35 | | EPA-TO-15 | 10/07/2021 | MS |
| Trichlorofluoromethane (CFC-11) | 6.12 | 34.4 | 0.0919 | 0.517 | | EPA-TO-15 | 10/07/2021 | MS |
| Vinyl chloride | 1.23 | 3.14 | 0.774 | 1.98 | | EPA-TO-15 | 10/07/2021 | MS |
| Surr: 4-Bromofluorobenzene | 101 %Rec | -- | 70-130 | -- | | EPA-TO-15 | 10/07/2021 | MS |

**Client:** **Herrera Environmental**
**WorkOrder:** 2109541
**Project:** Everett Riverfront

**Client Sample ID:** South Blower
**Lab ID:** 2109541-002A
**Sample Type:** Summa Canister

**Date Sampled:** 9/30/2021
**Date Received:** 9/30/2021

| Analyte | Concentration | | Reporting Limit | | Qual | Method | Date/Analyst | |
|---|---|---|---|---|---|---|---|---|
| **Sulfur Compounds by EPA Method TO-15** | **(ppbv)** | **(ug/m³)** | **(ppbv)** | **(ug/m³)** | | | | |
| Hydrogen Sulfide | <250 | <348 | 250 | 348 | H | EPA-TO-15 | 10/02/2021 | MS |
| Surr: 4-Bromofluorobenzene | 93.2 %Rec | -- | 70-130 | -- | H | EPA-TO-15 | 10/02/2021 | MS |
| **Volatile Organic Compounds by EPA Method TO-15** | **(ppbv)** | **(ug/m³)** | **(ppbv)** | **(ug/m³)** | | | | |
| 1,1,2,2-Tetrachloroethane | <0.458 | <3.14 | 0.458 | 3.14 | | EPA-TO-15 | 10/07/2021 | MS |
| CFC-113 | <0.320 | <2.46 | 0.320 | 2.46 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,1-Dichloroethane | <0.120 | <0.486 | 0.120 | 0.486 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,1-Dichloroethene (DCE) | <0.109 | <0.434 | 0.109 | 0.434 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,2,4-Trichlorobenzene | <8.50 | <63.1 | 8.50 | 63.1 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,2,4-Trimethylbenzene | 6.26 | 30.8 | 4.16 | 20.4 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,2-Dichlorobenzene | <8.14 | <48.9 | 8.14 | 48.9 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,2-Dichloroethane | <0.0571 | <0.231 | 0.0571 | 0.231 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,3,5-Trimethylbenzene | <1.07 | <5.28 | 1.07 | 5.28 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,3-Dichlorobenzene | <7.38 | <44.4 | 7.38 | 44.4 | | EPA-TO-15 | 10/07/2021 | MS |
| 1,4-Dichlorobenzene | <9.63 | <57.9 | 9.63 | 57.9 | | EPA-TO-15 | 10/07/2021 | MS |
| (MEK) 2-Butanone | <5.73 | <16.9 | 5.73 | 16.9 | | EPA-TO-15 | 10/07/2021 | MS |
| Benzene | 0.771 | 2.46 | 0.604 | 1.93 | | EPA-TO-15 | 10/07/2021 | MS |
| Chlorobenzene | 1.15 | 5.30 | 0.250 | 1.15 | | EPA-TO-15 | 10/07/2021 | MS |
| Chloroethane | <1.81 | <4.78 | 1.81 | 4.78 | | EPA-TO-15 | 10/07/2021 | MS |
| Chloroform | 0.434 | 2.12 | 0.0384 | 0.187 | | EPA-TO-15 | 10/07/2021 | MS |
| Chloromethane | <0.105 | <0.217 | 0.105 | 0.217 | | EPA-TO-15 | 10/07/2021 | MS |
| cis-1,2-Dichloroethene | <0.490 | <1.94 | 0.490 | 1.94 | | EPA-TO-15 | 10/07/2021 | MS |
| Dichlorodifluoromethane (CFC-12) | 3.05 | 15.1 | 0.250 | 1.24 | | EPA-TO-15 | 10/07/2021 | MS |
| Dichlorotetrafluoroethane (CFC-114) | 8.09 | 56.5 | 0.230 | 1.61 | | EPA-TO-15 | 10/07/2021 | MS |
| Ethylbenzene | <2.08 | <9.01 | 2.08 | 9.01 | | EPA-TO-15 | 10/07/2021 | MS |
| Hexachlorobutadiene | <0.735 | <7.83 | 0.735 | 7.83 | | EPA-TO-15 | 10/07/2021 | MS |
| m,p-Xylene | <1.63 | <7.08 | 1.63 | 7.08 | | EPA-TO-15 | 10/07/2021 | MS |
| Methylene chloride | <60.0 | <208 | 60.0 | 208 | | EPA-TO-15 | 10/07/2021 | MS |
| o-Xylene | <2.50 | <10.9 | 2.50 | 10.9 | | EPA-TO-15 | 10/07/2021 | MS |
| Styrene | <0.250 | <1.06 | 0.250 | 1.06 | | EPA-TO-15 | 10/07/2021 | MS |

**Client:** **Herrera Environmental**
**WorkOrder:** 2109541
**Project:** Everett Riverfront

**Client Sample ID:** South Blower
**Lab ID:** 2109541-002A
**Sample Type:** Summa Canister

**Date Sampled:** 9/30/2021
**Date Received:** 9/30/2021

| Analyte | Concentration | | Reporting Limit | | Qual | Method | Date/Analyst | |
|---|---|---|---|---|---|---|---|---|
| Volatile Organic Compounds by EPA Method TO-15 | | | | | | | | |
| | (ppbv) | (ug/m³) | (ppbv) | (ug/m³) | | | | |
| Tetrachloroethene (PCE) | <0.222 | <1.51 | 0.222 | 1.51 | | EPA-TO-15 | 10/07/2021 | MS |
| Toluene | <0.716 | <2.70 | 0.716 | 2.70 | | EPA-TO-15 | 10/07/2021 | MS |
| Trichlorofluoromethane (CFC-11) | 0.933 | 5.24 | 0.184 | 1.03 | | EPA-TO-15 | 10/07/2021 | MS |
| Vinyl chloride | <1.55 | <3.96 | 1.55 | 3.96 | | EPA-TO-15 | 10/07/2021 | MS |
| Surr: 4-Bromofluorobenzene | 91.3 %Rec | -- | 70-130 | -- | | EPA-TO-15 | 10/07/2021 | MS |

**Work Order:** 2109541
**CLIENT:** Herrera Environmental
**Project:** Everett Riverfront

# QC SUMMARY REPORT

## Sulfur Compounds by EPA Method TO-15

| Sample ID: **LCS-R70317** | SampType: **LCS** | | | Units: **ppbv** | | Prep Date: **10/2/2021** | | RunNo: **70317** | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: **LCSW** | Batch ID: **R70317** | | | | | Analysis Date: **10/2/2021** | | SeqNo: **1427079** | | |
| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Hydrogen Sulfide | 96.4 | 25.0 | 100.0 | 0 | 96.4 | 70 | 130 | | | | |
| Surr: 4-Bromofluorobenzene | 3.95 | | 4.000 | | 98.6 | 70 | 130 | | | | |

| Sample ID: **MB-R70317** | SampType: **MBLK** | | | Units: **ppbv** | | Prep Date: **10/2/2021** | | RunNo: **70317** | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: **MBLKW** | Batch ID: **R70317** | | | | | Analysis Date: **10/2/2021** | | SeqNo: **1427080** | | |
| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Hydrogen Sulfide | ND | 25.0 | | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 3.33 | | 4.000 | | 83.3 | 70 | 130 | | | | |

| Sample ID: **2109541-002AREP** | SampType: **REP** | | | Units: **ppbv** | | Prep Date: **10/2/2021** | | RunNo: **70317** | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: **South Blower** | Batch ID: **R70317** | | | | | Analysis Date: **10/2/2021** | | SeqNo: **1427083** | | |
| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Hydrogen Sulfide | ND | 250 | | | | | | 0 | | 25 | H |
| Surr: 4-Bromofluorobenzene | 37.4 | | 40.00 | | 93.6 | 70 | 130 | | 0 | | H |

**Work Order:** 2109541
**CLIENT:** Herrera Environmental
**Project:** Everett Riverfront

# QC SUMMARY REPORT

## Volatile Organic Compounds by EPA Method TO-15

Sample ID: **LCS-R70432** SampType: **LCS** Units: **ppbv** Prep Date: **10/7/2021** RunNo: **70432**
Client ID: **LCSW** Batch ID: **R70432** Analysis Date: **10/7/2021** SeqNo: **1429077**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | 1.70 | 0.0125 | 2.000 | 0 | 85.2 | 70 | 130 | | | | |
| Chloromethane | 1.72 | 0.00525 | 2.000 | 0 | 85.8 | 70 | 130 | | | | |
| Dichlorotetrafluoroethane (CFC-114) | 1.77 | 0.0115 | 2.000 | 0 | 88.5 | 70 | 130 | | | | |
| Vinyl chloride | 1.60 | 0.0774 | 2.000 | 0 | 80.0 | 70 | 130 | | | | |
| Trichlorofluoromethane (CFC-11) | 1.83 | 0.00919 | 2.000 | 0 | 91.5 | 70 | 130 | | | | |
| Chloroethane | 1.74 | 0.0906 | 2.000 | 0 | 86.8 | 70 | 130 | | | | |
| 1,1-Dichloroethene (DCE) | 1.66 | 0.00547 | 2.000 | 0 | 83.1 | 70 | 130 | | | | |
| Methylene chloride | 1.73 | 3.00 | 2.000 | 0 | 86.5 | 70 | 130 | | | | |
| 1,1-Dichloroethane | 1.80 | 0.00600 | 2.000 | 0 | 89.9 | 70 | 130 | | | | |
| cis-1,2-Dichloroethene | 1.75 | 0.0245 | 2.000 | 0 | 87.4 | 70 | 130 | | | | |
| (MEK) 2-Butanone | 1.88 | 0.287 | 2.000 | 0 | 93.9 | 70 | 130 | | | | |
| Chloroform | 1.79 | 0.00192 | 2.000 | 0 | 89.6 | 70 | 130 | | | | |
| 1,2-Dichloroethane | 1.78 | 0.00285 | 2.000 | 0 | 89.1 | 70 | 130 | | | | |
| Benzene | 1.81 | 0.0302 | 2.000 | 0 | 90.6 | 70 | 130 | | | | |
| Toluene | 1.81 | 0.0358 | 2.000 | 0 | 90.5 | 70 | 130 | | | | |
| Tetrachloroethene (PCE) | 1.86 | 0.0111 | 2.000 | 0 | 93.1 | 70 | 130 | | | | |
| Chlorobenzene | 1.84 | 0.0125 | 2.000 | 0 | 91.9 | 70 | 130 | | | | |
| Ethylbenzene | 1.84 | 0.104 | 2.000 | 0 | 92.0 | 70 | 130 | | | | |
| m,p-Xylene | 3.95 | 0.0815 | 4.000 | 0 | 98.8 | 70 | 130 | | | | |
| o-Xylene | 2.01 | 0.125 | 2.000 | 0 | 101 | 70 | 130 | | | | |
| Styrene | 1.69 | 0.0125 | 2.000 | 0 | 84.3 | 70 | 130 | | | | |
| 1,1,2,2-Tetrachloroethane | 1.84 | 0.0229 | 2.000 | 0 | 91.8 | 70 | 130 | | | | |
| 1,3,5-Trimethylbenzene | 1.69 | 0.0537 | 2.000 | 0 | 84.5 | 70 | 130 | | | | |
| 1,2,4-Trimethylbenzene | 1.81 | 0.208 | 2.000 | 0 | 90.6 | 70 | 130 | | | | B |
| 1,3-Dichlorobenzene | 1.94 | 0.369 | 2.000 | 0 | 97.2 | 70 | 130 | | | | |
| 1,4-Dichlorobenzene | 2.05 | 0.481 | 2.000 | 0 | 103 | 70 | 130 | | | | |
| 1,2-Dichlorobenzene | 2.01 | 0.407 | 2.000 | 0 | 100 | 70 | 130 | | | | |
| 1,2,4-Trichlorobenzene | 2.25 | 0.425 | 2.000 | 0 | 113 | 70 | 130 | | | | |
| Hexachlorobutadiene | 1.72 | 0.0367 | 2.000 | 0 | 86.1 | 70 | 130 | | | | |
| CFC-113 | 1.79 | 0.0160 | 2.000 | 0 | 89.6 | 70 | 130 | | | | |

**Work Order:** 2109541
**CLIENT:** Herrera Environmental
**Project:** Everett Riverfront

# QC SUMMARY REPORT

## Volatile Organic Compounds by EPA Method TO-15

Sample ID: **LCS-R70432** SampType: **LCS** Units: **ppbv** Prep Date: **10/7/2021** RunNo: **70432**
Client ID: **LCSW** Batch ID: **R70432** Analysis Date: **10/7/2021** SeqNo: **1429077**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Surr: 4-Bromofluorobenzene | 4.18 | | 4.000 | | 105 | 70 | 130 | | | | |

Sample ID: **LCSD-70432** SampType: **LCSD** Units: **ppbv** Prep Date: **10/7/2021** RunNo: **70432**
Client ID: **LCSW02** Batch ID: **R70432** Analysis Date: **10/7/2021** SeqNo: **1429078**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | 1.80 | 0.0125 | 2.000 | 0 | 89.8 | 70 | 130 | 1.705 | 5.21 | 25 | |
| Chloromethane | 1.79 | 0.00525 | 2.000 | 0 | 89.5 | 70 | 130 | 1.715 | 4.29 | 25 | |
| Dichlorotetrafluoroethane (CFC-114) | 1.81 | 0.0115 | 2.000 | 0 | 90.4 | 70 | 130 | 1.769 | 2.13 | 25 | |
| Vinyl chloride | 1.71 | 0.0774 | 2.000 | 0 | 85.6 | 70 | 130 | 1.600 | 6.77 | 25 | |
| Trichlorofluoromethane (CFC-11) | 1.83 | 0.00919 | 2.000 | 0 | 91.3 | 70 | 130 | 1.829 | 0.212 | 25 | |
| Chloroethane | 1.74 | 0.0906 | 2.000 | 0 | 86.9 | 70 | 130 | 1.735 | 0.116 | 25 | |
| 1,1-Dichloroethene (DCE) | 1.73 | 0.00547 | 2.000 | 0 | 86.6 | 70 | 130 | 1.661 | 4.19 | 25 | |
| Methylene chloride | 1.80 | 3.00 | 2.000 | 0 | 90.2 | 70 | 130 | 0 | | 25 | |
| 1,1-Dichloroethane | 1.85 | 0.00600 | 2.000 | 0 | 92.7 | 70 | 130 | 1.799 | 3.03 | 25 | |
| cis-1,2-Dichloroethene | 1.82 | 0.0245 | 2.000 | 0 | 90.9 | 70 | 130 | 1.749 | 3.85 | 25 | |
| (MEK) 2-Butanone | 1.84 | 0.287 | 2.000 | 0 | 92.2 | 70 | 130 | 1.878 | 1.86 | 25 | |
| Chloroform | 1.81 | 0.00192 | 2.000 | 0 | 90.3 | 70 | 130 | 1.793 | 0.772 | 25 | |
| 1,2-Dichloroethane | 1.81 | 0.00285 | 2.000 | 0 | 90.5 | 70 | 130 | 1.783 | 1.52 | 25 | |
| Benzene | 1.85 | 0.0302 | 2.000 | 0 | 92.5 | 70 | 130 | 1.812 | 2.08 | 25 | |
| Toluene | 1.77 | 0.0358 | 2.000 | 0 | 88.5 | 70 | 130 | 1.811 | 2.25 | 25 | |
| Tetrachloroethene (PCE) | 1.79 | 0.0111 | 2.000 | 0 | 89.4 | 70 | 130 | 1.862 | 4.06 | 25 | |
| Chlorobenzene | 1.82 | 0.0125 | 2.000 | 0 | 91.2 | 70 | 130 | 1.839 | 0.749 | 25 | |
| Ethylbenzene | 1.84 | 0.104 | 2.000 | 0 | 92.2 | 70 | 130 | 1.841 | 0.133 | 25 | |
| m,p-Xylene | 3.91 | 0.0815 | 4.000 | 0 | 97.9 | 70 | 130 | 3.953 | 0.997 | 25 | |
| o-Xylene | 1.98 | 0.125 | 2.000 | 0 | 98.9 | 70 | 130 | 2.014 | 1.80 | 25 | |
| Styrene | 1.65 | 0.0125 | 2.000 | 0 | 82.5 | 70 | 130 | 1.686 | 2.07 | 25 | |
| 1,1,2,2-Tetrachloroethane | 1.79 | 0.0229 | 2.000 | 0 | 89.7 | 70 | 130 | 1.836 | 2.24 | 25 | |
| 1,3,5-Trimethylbenzene | 1.70 | 0.0537 | 2.000 | 0 | 85.1 | 70 | 130 | 1.690 | 0.675 | 25 | |
| 1,2,4-Trimethylbenzene | 1.69 | 0.208 | 2.000 | 0 | 84.5 | 70 | 130 | 1.812 | 6.95 | 25 | B |

**Work Order:** 2109541
**CLIENT:** Herrera Environmental
**Project:** Everett Riverfront

# QC SUMMARY REPORT

## Volatile Organic Compounds by EPA Method TO-15

Sample ID: **LCSD-70432** SampType: **LCSD** Units: **ppbv** Prep Date: **10/7/2021** RunNo: **70432**
Client ID: **LCSW02** Batch ID: **R70432** Analysis Date: **10/7/2021** SeqNo: **1429078**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,3-Dichlorobenzene | 1.80 | 0.369 | 2.000 | 0 | 90.2 | 70 | 130 | 1.945 | 7.54 | 25 | |
| 1,4-Dichlorobenzene | 1.96 | 0.481 | 2.000 | 0 | 97.8 | 70 | 130 | 2.053 | 4.87 | 25 | |
| 1,2-Dichlorobenzene | 1.93 | 0.407 | 2.000 | 0 | 96.3 | 70 | 130 | 2.009 | 4.18 | 25 | |
| 1,2,4-Trichlorobenzene | 1.92 | 0.425 | 2.000 | 0 | 96.2 | 70 | 130 | 2.255 | 15.9 | 25 | |
| Hexachlorobutadiene | 1.54 | 0.0367 | 2.000 | 0 | 77.1 | 70 | 130 | 1.723 | 11.1 | 25 | |
| CFC-113 | 1.85 | 0.0160 | 2.000 | 0 | 92.5 | 70 | 130 | 1.791 | 3.27 | 25 | |
| Surr: 4-Bromofluorobenzene | 4.20 | | 4.000 | | 105 | 70 | 130 | | 0 | | |

Sample ID: **MB-R70432** SampType: **MBLK** Units: **ppbv** Prep Date: **10/7/2021** RunNo: **70432**
Client ID: **MBLKW** Batch ID: **R70432** Analysis Date: **10/7/2021** SeqNo: **1429079**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | ND | 0.0125 | | | | | | | | | |
| Chloromethane | ND | 0.00525 | | | | | | | | | |
| Dichlorotetrafluoroethane (CFC-114) | ND | 0.0115 | | | | | | | | | |
| Vinyl chloride | ND | 0.0774 | | | | | | | | | |
| Trichlorofluoromethane (CFC-11) | ND | 0.00919 | | | | | | | | | |
| Chloroethane | ND | 0.0906 | | | | | | | | | |
| 1,1-Dichloroethene (DCE) | ND | 0.00547 | | | | | | | | | |
| Methylene chloride | ND | 3.00 | | | | | | | | | |
| 1,1-Dichloroethane | ND | 0.00600 | | | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0245 | | | | | | | | | |
| (MEK) 2-Butanone | ND | 0.287 | | | | | | | | | |
| Chloroform | ND | 0.00192 | | | | | | | | | |
| 1,2-Dichloroethane | ND | 0.00285 | | | | | | | | | |
| Benzene | ND | 0.0302 | | | | | | | | | |
| Toluene | ND | 0.0358 | | | | | | | | | |
| Tetrachloroethene (PCE) | ND | 0.0111 | | | | | | | | | |
| Chlorobenzene | ND | 0.0125 | | | | | | | | | |
| Ethylbenzene | ND | 0.104 | | | | | | | | | |

**Work Order:** 2109541
**CLIENT:** Herrera Environmental
**Project:** Everett Riverfront

# QC SUMMARY REPORT

## Volatile Organic Compounds by EPA Method TO-15

Sample ID: **MB-R70432** SampType: **MBLK** Units: **ppbv** Prep Date: **10/7/2021** RunNo: **70432**
Client ID: **MBLKW** Batch ID: **R70432** Analysis Date: **10/7/2021** SeqNo: **1429079**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| m,p-Xylene | ND | 0.0815 | | | | | | | | | |
| o-Xylene | ND | 0.125 | | | | | | | | | |
| Styrene | ND | 0.0125 | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0229 | | | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0537 | | | | | | | | | |
| 1,2,4-Trimethylbenzene | 0.308 | 0.208 | | | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.369 | | | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.481 | | | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.407 | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.425 | | | | | | | | | |
| Hexachlorobutadiene | ND | 0.0367 | | | | | | | | | |
| CFC-113 | ND | 0.0160 | | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 3.29 | | 4.000 | | 82.2 | 70 | 130 | | | | |

Sample ID: **2109541-002AREP** SampType: **REP** Units: **ppbv** Prep Date: **10/7/2021** RunNo: **70432**
Client ID: **South Blower** Batch ID: **R70432** Analysis Date: **10/7/2021** SeqNo: **1429082**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane (CFC-12) | 3.59 | 0.125 | | | | | | 4.150 | 14.5 | 25 | I |
| Chloromethane | ND | 0.0525 | | | | | | 0 | | 25 | I |
| Dichlorotetrafluoroethane (CFC-114) | 10.7 | 0.115 | | | | | | 10.67 | 0.400 | 25 | I |
| Vinyl chloride | ND | 0.774 | | | | | | 0 | | 25 | I |
| Trichlorofluoromethane (CFC-11) | 1.01 | 0.0919 | | | | | | 1.096 | 7.69 | 25 | I |
| Chloroethane | ND | 0.906 | | | | | | 0 | | 25 | I |
| 1,1-Dichloroethene (DCE) | ND | 0.0547 | | | | | | 0 | | 25 | I |
| Methylene chloride | ND | 30.0 | | | | | | 0 | | 25 | I |
| 1,1-Dichloroethane | ND | 0.0600 | | | | | | 0 | | 25 | I |
| cis-1,2-Dichloroethene | ND | 0.245 | | | | | | 0 | | 25 | I |
| (MEK) 2-Butanone | ND | 2.87 | | | | | | 0 | | 25 | I |
| Chloroform | 0.575 | 0.0192 | | | | | | 0.6226 | 7.97 | 25 | I |

**Work Order:** 2109541
**CLIENT:** Herrera Environmental
**Project:** Everett Riverfront

# QC SUMMARY REPORT

## Volatile Organic Compounds by EPA Method TO-15

Sample ID: **2109541-002AREP** SampType: **REP** Units: **ppbv** Prep Date: **10/7/2021** RunNo: **70432**
Client ID: **South Blower** Batch ID: **R70432** Analysis Date: **10/7/2021** SeqNo: **1429082**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | ND | 0.0285 | | | | | | 0 | | 25 | I |
| Benzene | 1.10 | 0.302 | | | | | | 1.158 | 5.16 | 25 | I |
| Toluene | 0.667 | 0.358 | | | | | | 0.7064 | 5.71 | 25 | I |
| Tetrachloroethene (PCE) | ND | 0.111 | | | | | | 0 | | 25 | I |
| Chlorobenzene | 1.90 | 0.125 | | | | | | 1.797 | 5.70 | 25 | I |
| Ethylbenzene | ND | 1.04 | | | | | | 0 | | 25 | I |
| m,p-Xylene | ND | 0.815 | | | | | | 0 | | 25 | I |
| o-Xylene | ND | 1.25 | | | | | | 0 | | 25 | I |
| Styrene | ND | 0.125 | | | | | | 0 | | 25 | I |
| 1,1,2,2-Tetrachloroethane | ND | 0.229 | | | | | | 0 | | 25 | I |
| 1,3,5-Trimethylbenzene | ND | 0.537 | | | | | | 0 | | 25 | I |
| 1,2,4-Trimethylbenzene | 3.23 | 2.08 | | | | | | 3.200 | 0.893 | 25 | I |
| 1,3-Dichlorobenzene | ND | 3.69 | | | | | | 0 | | 25 | I |
| 1,4-Dichlorobenzene | ND | 4.81 | | | | | | 0 | | 25 | I |
| 1,2-Dichlorobenzene | ND | 4.07 | | | | | | 0 | | 25 | I |
| 1,2,4-Trichlorobenzene | ND | 4.25 | | | | | | 0 | | 25 | I |
| Hexachlorobutadiene | ND | 0.367 | | | | | | 0 | | 25 | I |
| CFC-113 | ND | 0.160 | | | | | | 0 | | 25 | I |
| Surr: 4-Bromofluorobenzene | 38.3 | | 40.00 | | 95.7 | 70 | 130 | | 0 | | I |

**NOTES:**
R - High RPD observed.
I - Internal standards were outside of acceptance criteria. Re-analysis and/or matrix spike samples yielded the same result indicating a possible matrix effect.

# Sample Log-In Check List

| | | | |
|---|---|---|---|
| Client Name: | **HERRE** | Work Order Number: | **2109541** |
| Logged by: | **Gabrielle Coeuille** | Date Received: | **9/30/2021 4:14:54 PM** |

## Chain of Custody

| | | | | |
|---|---|---|---|---|
| 1. | Is Chain of Custody complete? | Yes ☑ | No ☐ | Not Present ☐ |
| 2. | How was the sample delivered? | Client | | |

## Log In

| | | | | |
|---|---|---|---|---|
| 3. | Coolers are present? | Yes ☐ | No ☑ | NA ☐ |
| | | **Air samples** | | |
| 4. | Shipping container/cooler in good condition? | Yes ☑ | No ☐ | |
| 5. | Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact) | Yes ☐ | No ☐ | Not Present ☑ |
| 6. | Was an attempt made to cool the samples? | Yes ☐ | No ☐ | NA ☑ |
| 7. | Were all items received at a temperature of >2°C to 6°C * | Yes ☐ | No ☐ | NA ☑ |
| 8. | Sample(s) in proper container(s)? | Yes ☑ | No ☐ | |
| 9. | Sufficient sample volume for indicated test(s)? | Yes ☑ | No ☐ | |
| 10. | Are samples properly preserved? | Yes ☑ | No ☐ | |
| 11. | Was preservative added to bottles? | Yes ☐ | No ☑ | NA ☐ |
| 12. | Is there headspace in the VOA vials? | Yes ☐ | No ☐ | NA ☑ |
| 13. | Did all samples containers arrive in good condition(unbroken)? | Yes ☑ | No ☐ | |
| 14. | Does paperwork match bottle labels? | Yes ☑ | No ☐ | |
| 15. | Are matrices correctly identified on Chain of Custody? | Yes ☑ | No ☐ | |
| 16. | Is it clear what analyses were requested? | Yes ☑ | No ☐ | |
| 17. | Were all holding times able to be met? | Yes ☐ | No ☑ | |

## Special Handling (if applicable)

| | | | | |
|---|---|---|---|---|
| 18. | Was client notified of all discrepancies with this order? | Yes ☐ | No ☐ | NA ☑ |

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

**Item Information**

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

# Air Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: Sept 30, 2021 Page: 1 of: 1

Laboratory Project No (Internal): 209854

Special Remarks:

Project Name: Everett Riverfront

Project No: 19-07136-001

Location: Everett

Client: Herrera

Address: 7200 Sixth Ave

City, State, Zip: Seattle Wa 98121

Telephone: 206 441-9080

Collected by: Camryn Steiner

Reports to (PM): Tyson Wright

Email (PM): twright@herrerainc.com, csteiner@herrerainc.com

Air samples are disposed of one week after report is submitted to client unless otherwise requested. ☐ OK to Dispose ☐ Hold (fees may apply)

Fax:

| | Sample Name | Canister / Flow Reg Serial # | Sample Type (Matrix) * | Container Type ** | Expected Fill Time / Flow Rate | Sample Start Date & Time | Field Initial Sample Pressure (" Hg) | Sample End Date & Time | Field Final Sample Pressure (" Hg) | Analysis: Full list VOCs TO15 | Select VOCs TO15 *** | APH TO15 | Siloxanes TO15 | Sulfur TO15 | Major Gases 3C | Helium 3C Mod | VOCs 8260 | GX/BTEX 8260 | Comments | Internal: Final Pressure ("Hg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | North Blower | 4692 | L | ~1L | 8:16am | 9/30 | -30 | 9/30 | -5 | | | | | | | | | | SEE Table provided to email | -5 |
| 2 | South Blower | 11019 | L | ~1L | | 9/30 1:52pm | -30 | 9/30 1:52pm | -4 | | | | | | | | | | SEE Table Provided To email | -4 |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | |

* Matrix Codes: AA = Ambient Air OA = Outdoor Air IA = Indoor Air S = Subslab / Soil Gas SVE = SVE L = Landfill D = Digester

** Container Codes: BV = 1 Liter Bottle Vac 6L = 6L Canister 1L = 1L Canister CYL = High Pressure Cylinder F = Filter S = Sorbent Tube TB = Tedlar Bag

*** Select one: ☐ BTEXN & APH ☐ PCE & Breakdown ☒ Other, specify in comments SEE Table Provided for Analysis

**Turn-Around Time:**
☒ Standard ☐ Next Day ☐ 3 Day ☐ Same Day ☐ 2 Day specify

**I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.**

| Relinquished (Signature) | Print Name | Date/Time | Received (Signature) | Print Name | Date/Time |
|---|---|---|---|---|---|
| x Camryn Steiner | Camryn Steiner | 9/30/21 4:00 pm | x | Oliver Kou | 9/30/21 1614 |
| Relinquished (Signature) | Print Name | Date/Time | Received (Signature) | Print Name | Date/Time |
| x | | | x | | |



COC Air 3.6 - 2.15.21