1514 Taylor Way Development

Interim Action Completion Report

Prepared for

Avenue 55, LLC
600 University Street, Suite 2305
Seattle, WA 98101

June 2020

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LIMITATIONS

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Interim Action Completion Report
1514 Taylor Way Development, Tacoma, Washington

This document was prepared for
Avenue 55 and the Port of Tacoma
under the supervision of:

State of Washington
605
Licensed Geologist
Thomas Henry Colligan

Name: Thomas H. Colligan, LHG
Date: 06/05/2020

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List of Acronyms and Abbreviations

Acronym/ Abbreviation	**Definition**
AO	Agreed Order
Avenue 55	Avenue 55, LLC
COC	Contaminant of concern
CSWGP	Construction Stormwater General Permit
DRO	Diesel-range organics
Ecology	Washington State Department of Ecology
FS	Feasibility Study
GRO	Gasoline-range organics
IA	Interim Action
mg/kg	Milligrams per kilogram
MTCA	Model Toxics Control Act
ORO	Oil-range organics
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PCP	Pentachlorophenol
Port	Port of Tacoma
Prologis	Prologis Inc.
RI	Remedial Investigation
SSL	Soil screening level
SVOC	Semivolatile organic compound
TPH	Total petroleum hydrocarbons
TWAAFA	Taylor Way and Alexander Avenue Fill Area
VI	Vapor intrusion
VOC	Volatile organic compound

1.0 Introduction

This document describes the completion of Interim Action cleanup activities that occurred at 1514 Taylor Way in Tacoma, Washington (Figure 1.1). The developer of the property, Avenue 55, LLC (Avenue 55), entered into an agreement with the Port of Tacoma (Port), the landowner, in 2016 to lease and develop this 10-acre property with two warehouse/distribution centers totaling 203,580 square feet with construction beginning in the summer of 2018. In addition, the agreement required Avenue 55 to be the performing party for implementing the scope of work requirements of Agreed Order (AO) DE13921 and the associated Interim Action Work Plan (Floyd|Snider 2017) between the Port and the Washington State Department of Ecology (Ecology) to implement an Interim Action (IA) cleanup at this property.

The IA that was performed is described in this report. The work performed is the culmination of work begun in 2006 by Prologis Inc. (Prologis), the landowner at that time. Prologis undertook a Remedial Investigation (RI) and Feasibility Study (FS) for the property in accordance with a prior AO with Ecology. The RI/FS defined the nature and extent of contamination related to the fill history at the property and identified a preferred remedy. Ecology concurred that the RI/FS was satisfactory, and the AO was terminated. Subsequently, in 2007, Prologis sold the property to the Port. Following this, Ecology designated the 1514 Taylor Way property part of a larger "Site" defined by presence of a variety of industrial fill types in the general area. This larger Site has been termed the "Taylor Way and Alexander Avenue Fill Area" (TWAAFA) Site and includes the 1514 Taylor Way property, the former CleanCare property, the Philip Services Corporation Hazardous Waste Facility (now Burlington Environmental), the Hylebos Marsh (1212 Taylor Way and 1229 Alexander Avenue properties), and the Potter property (refer to Figure 1.2).

Even though the work described in this report is identical to the preferred final remedy described in the 2006 FS (Floyd|Snider 2006), it was performed administratively as an interim cleanup action, as part of the larger TWAAFA Site to accommodate cleanup and allow redevelopment to proceed within a faster time frame. A separate Ecology AO is anticipated that will require the Potentially Liable Parties to jointly conduct a RI/FS for the entire TWAAFA Site. The final cleanup action for the TWAAFA Site is not expected to include additional substantive actions at the 1514 Taylor Way property other than the replacement of groundwater monitoring wells, groundwater monitoring, and the maintenance of institutional controls.

2.0 Site Conditions

A brief summary of pre-construction soil and groundwater conditions as taken from the 2006 RI report is as follows.

2.1 SOIL

The following surface fill types were noted during the RI:

- **Dredge fill consisting of sand, sandy silt, and silty sand.** Dredge soils are characterized by the presence of shell fragments, which were observed in multiple test pits.
- **Recent construction fill consisting of sandy gravel.** Construction fill was likely used to fill to grade certain parts of the property prior to construction and in places is underlain by a geotextile fabric. A large surcharge pile of fill soil was present along the western property boundary.
- **Debris found intermixed or in between soil-rich layers consisting of concrete rubble, waste lumber, glass, metal or brick fragments, plastic, etc.** The debris was probably generated during general property regrading and possibly past demolition of the pre-existing buildings.
- **Wood wastes (e.g., wood chips, sawdust, crushed or chipped lumber), such as those associated with log sort yards or wood-manufacturing facilities.** Several test pits contained appreciable thickness of wood waste.
- **Paste-like white semi-solid material.** A paste-like white semi-solid material was found at an RI test pit TP-4 just under the ground surface and occurring within an approximately 10,000-square-foot semi-circular area extending to the property line with the former CleanCare facility. It was attributed to degraded waste gypsum. No observations of auto fluff or lime solvent sludge were noted. There were also no observations of highly impacted soil (e.g., heavy petroleum sheens, or heavily stained or highly odorous soil).

Underlying the fill layers is a native silt layer, gray to brown in color, with varying amounts of clay, sand, and woody organic material (roots or wood fibers). The silt layer was observed to have a thickness of 1 to 5 feet.

A native sand layer underlies the marsh silt layer. The sand is generally fine to medium-grained with minor gravel, loose, and dark gray in color with red and white flecks. The soil borings or well and piezometer installations did not reach the bottom of the native sand layer.

Numerous soil samples were collected across the property during the RI via test pits and soil borings. Results at that time were compared to numerical soil screening levels (SSLs) developed by Phillip Services for the nearby PSC site, now Burlington Environmental (formerly Stericycle). The SSLs are considered protective of a variety of exposure pathways including worker exposure to soil and groundwater, ecological exposure, and soil leaching to groundwater at concentrations that would exceed ambient surface water quality criteria. The samples were tested for the following:

- **Polychlorinated Biphenyls (PCBs).** There were no detections of PCBs in any of the samples analyzed.
- **Volatile Organic Compounds (VOCs).** Of the 33 samples, only 1 showed detections; however, concentrations were less than SSLs.
- **Total Petroleum Hydrocarbons (TPH).** Several sample results showed detections of gasoline-range organics (GRO), diesel-range organics (DRO), and oil-range organics (ORO). The greatest ORO detections were found in the surcharge soil, which displayed a hydrocarbon odor in places. Of the 32 samples, 1 contained ORO at 2,300 milligrams per kilogram (mg/kg), a concentration that slightly exceeded the SSL of 2,000 mg/kg.
- **Semivolatile Organic Compounds (SVOCs).** Several sample results showed detections of various polycyclic aromatic hydrocarbon (PAH) compounds, including some carcinogenic polycyclic aromatic hydrocarbon compounds. None had concentrations that exceeded the SSLs. Pentachlorophenol (PCP) was the only other SVOC detected, but only in one sample from test pit TP-16 at a concentration that exceeded the SSL.
- **Metals.** A total of eight metals were detected at concentrations that exceeded natural background. Metals exceedances were[1] typically limited to the eastern and southeast portions of the property. The metals that exceeded natural background included: arsenic, barium, cadmium, chromium, copper, lead, mercury, and zinc.

The final list of the contaminants of concern (COCs) in soil along with IA remediation levels are in Table 2.1, reproduced from the Interim Action Work Plan. The purpose of the remediation level was to set an upper bound on soil contamination that could be left on-property under pavement if encountered during construction. The lowest of all the various cleanup levels for each COC was then chosen as the IA remediation level. The remediation levels were typically set at the highest detected soil concentrations for each individual soil COCs as these maximum concentrations are considered empirically protective of groundwater based on the lack of significant groundwater contamination at this property.

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[1] Soil background from the Washington State Department of Ecology's (Ecology's) *Natural Background Soil Metals Concentrations in Washington State* (October 1994).

2.2 GROUNDWATER

2.2.1 Hydrogeologic Units

The hydrogeologic conditions at the property are similar to those found throughout the Commencement Bay Nearshore/Tideflats. The near-surface hydrogeologic layers are identified as follows:

- Shallow fill aquifer
- Upper aquitard
- Intermediate aquifer

The shallow fill aquifer at the property is unconfined and exists solely in the fill soil. Its thickness varies between 1 to 5 feet and is shallower near the northwest side of the property. Water levels in the shallow fill aquifer fluctuate considerably in response to seasonal variations in precipitation and can be as shallow as 2 feet below grade. This aquifer is not tidally influenced. The shallow fill aquifer is equivalent to the designated A and B Zones at the CleanCare facility (PSC 2002). The shallow fill aquifer is separated from the intermediate aquifer by the fine-grained silty sediments from the original tidal marsh. This marsh layer forms an aquitard due to its high clay/silt content. The upper aquitard was found in all five exploration locations where intermediate wells were installed.

The intermediate aquifer exists in the native sand layer, which underlies the tidal marsh clay/silt layer, as described above, and is subject to tidal influence by the Hylebos and Blair Waterways. This aquifer is equivalent to the designated C Zone at the CleanCare facility.

2.2.2 Groundwater Flow

The shallow fill aquifer piezometric surfaces indicate a consistent northeasterly groundwater flow pattern. Groundwater elevations are highest in wells located along the western side of the property (i.e., those bordering CleanCare) and lowest in wells in the middle portion of the property. The flow direction is in accordance with the topographical gradient of the property. The lowest elevations occurred in Wells PMW-2A and PMW-3A. This caused the contours to form a “trough” in this area.

For the shallow fill aquifer, the CleanCare facility is upgradient of the Interim Action Area. Variations in the specific groundwater surface elevations due to seasonal fluctuations were observed during the three sampling events, but these fluctuations were not significant enough to alter the overall flow pattern for the shallow fill aquifer.

The flow direction of the intermediate aquifer across the property is generally to the south or southwest (i.e., toward the CleanCare facility). The piezometric gradient, however, is much flatter in the intermediate aquifer compared to the shallow fill aquifer, indicating slower groundwater flow velocities. The elevation of the groundwater surface in the shallow fill aquifer surface was always higher compared to the intermediate aquifer, typically in the range of 3 to 5 feet higher, indicating a downward vertical hydraulic gradient. Figure 2.1 is a reproduction of the March 2006 groundwater flow map produced during the RI for the shallow fill aquifer.

2.2.3 2016 Groundwater Sampling Update

The 10 monitoring wells consisting of 5 well pairs (shallow fill/intermediate aquifer) were sampled on December 28, 2016, at the request of Ecology. Results were provided to Ecology in the Interim Action Work Plan (Floyd|Snider 2017) and are summarized as follows:

- **VOCs.** Only two VOCs were detected: methyl-tert-butyl-ether and naphthalene. Concentrations were less than the Model Toxics Control Act (MTCA) Method A levels for groundwater.
- **TPH.** GRO and DRO concentrations were less than screening levels. Five locations (PMW-1A, -1B, -4B, -5A, and -5B) showed ORO exceeding screening levels. This result differs from the 2005/2006 RI results for DRO/ ORO. Silica gel cleanup was not used to remove polar organic compounds from the 2016 samples Review of the sample chromatograms for the DRO and ORO analysis suggests an unresolved chromatographic envelope that is not indicative of a commercial petroleum product; instead, the chromatograms suggest a highly weathered petroleum with what could be biogenic interferences due to either degraded hydrocarbons or naturally occurring organics found in woody debris. However, the ORO exceedances were all found in wells closest to CleanCare, and no exceedances were found in the downgradient wells PMW-2A/2B and PMW-3A/3B. ORO was added as a COC based on 2016 data.
- **SVOCs.** Concentrations of PAH compounds, including 1- and 2-methylnaphthalene, acenaphthene, fluorene, phenanthrene, and naphthalene, were found in monitoring well samples from the upper aquifer at concentrations less than screening levels. PCP and bis-2-ethylhexyl phthalate, which were detected at concentrations greater than screening levels in 2005/2006, were not detected in 2016.
- **Metals.** Metal concentrations were generally consistent with previous investigations with only arsenic detected at concentrations greater than screening levels and only in 2 of 10 samples. The greatest arsenic concentration was 25 parts per billion, found at location PMW-3B within the intermediate aquifer. This compares well to the maximum concentration detected in 2005/2006 of 27 micrograms per liter (µg/L).

3.0 Work Completed

The preferred remedy identified in the FS report approved by Ecology in 2006 is consistent with the Avenue 55 development. The remedy consists of covering existing soils with asphalt pavement or warehouse buildings. This action placed a protective cover between humans/wildlife and underlying contaminated soils. Subsequent to the FS, Ecology identified another potential exposure route involving VOCs or methane intruding into the indoor air spaces of proposed warehouse buildings. The scope of work for the IA, therefore, required Avenue 55 to assess and mitigate against risk of possible VOC and methane intrusion into the warehouse buildings. The following sections describe in more detail the work elements that were performed consistent with the requirements of the Interim Action Work Plan (Floyd|Snider 2017).

3.1 WELL ABANDONMENT

Ten groundwater monitoring wells and four piezometers were abandoned prior to construction. All 10 well locations were decommissioned on July 21, 2017, and all four piezometer locations were decommissioned on July 28, 2018. All locations were grouted in place, with the monuments left in place to be removed during construction. Wells and piezometers are shown on Figure 2.1. Well abandonment records are included in Appendix A.

3.2 IMPORT OF FILL SOIL AND SITE GRADING

To establish a firm subgrade, the first construction activity was soil compaction. This was done by importing 1 to 2 feet of fill that was laid out across the building footprints (Figure 3.1). This was followed by dynamic compaction of the underlying fill soils. Dynamic compaction uses a crane to lift and drop a heavy weight across the ground surface. This process created a series of small equally spaced depressions that consolidated the underlying fill soils. This was followed by the import of approximately 15,000 cubic yards of soil. This additional fill was placed in large piles to reach an elevation of 17 feet (average fill thickness of 7 feet) to surcharge soil (i.e., induce settlement) and raise grades to meet the building slabs design elevation. The settling caused by the surcharge piles took about 6 to 8 weeks and was monitored using settlement markers. Once adequate settling was achieved, the surcharge pile was re-graded from an elevation of 17 feet by removing the top 4 feet of material to meet the final grades necessary for the building finished floor elevation of 13 feet (Figure 3.2). The removed soil was spread out across the property where needed to meet pavement grades.

Following grading, approximately 10,000 cubic yards of crushed concrete were imported to the site to be used as all-weather work surface to allow construction of the building slabs. The crushed concrete was placed 4 feet above grade and formed the final subgrade surface upon which the warehouses were constructed, which involved construction of sub-grade foundations and pouring of column footings and floor slabs followed by construction of tilt-up walls and trussed roofing supported by a perimeter footing. Underground utilities were also installed, and surrounding hardscape and landscape were completed.

Four sources of fill soil were brought to the property. These offsite sources were all from construction activities occurring in the Seattle area and consisted of native soil excavated to build subsurface parking structures. All fill soil imported was first considered for acceptance by review of a Phase I Environmental Site Assessment or similar due diligence document regarding the likelihood of a “recognized environmental condition.” Soil could be imported only after this review determined that past or current use had not resulted in impacts to the soil at concentrations exceeding either MTCA Method A or B unrestricted land use concentrations. A property visit was performed at all import source locations, as well prior to importing soils. Ecology was notified of the sources of fill material once the due diligence review was conducted and received copies of all the due diligence reports for each source. Ecology subsequently approved of the use of each fill source (with required testing as described below) prior to the actual import of the soil, with the exception of fill brought in from established gravel and sand quarries.

The fill material from each source was brought to the site and then stockpiled and sampled prior to being used as fill. Approximately 1 sample was collected for every 150 cubic yards of soil stockpiled. The analytical results were submitted to Ecology prior to spreading the soil. A summary of the quantity and location of fill source is shown in Appendix A. Full laboratory reports are included in Appendix B. Results of this effort document that there was no soil imported to the property with concentrations greater than MTCA Method A or B cleanup levels.

3.3 EXPORT OF SOIL

Due to the need to import soil, there was no anticipated need to export any of the soil as part of construction. However, during excavation, approximately 2,000 tons of lumber-rich soil was encountered at the north end of the property and was stockpiled at the south end of the property (Figure 3.3). The lumber-rich soil was unsuitable as site sub-grade and was excavated and stockpiled onsite. Eventually, 2,500 cubic yards of this material was sent to the LRI Landfill in Tacoma, Washington, after approval for disposal was granted by the Pierce County Department of Public Health (Appendix C). Photographs are provided in Appendix D. The removal of lumber-rich fill soil did not extend into native soils, so there was no need to provide archeological oversight per the Unanticipated Discovery Plan.

3.4 CONSTRUCTION STORMWATER

Coverage under the Construction Stormwater General Permit (CSWGP) was obtained by the contractor, Sierra Construction. The CSWGP coverage application indicated that the construction occurred within a contaminated cleanup site. A requirement of that permit coverage was to prepare a Stormwater Pollution Prevention Plan, which contained details on how stormwater was to be managed at the property.

An Ecology inspection in December of 2017 indicated some corrective actions were needed for the covering of stockpiled soil during grading of the site. The Ecology inspection report is provided in Appendix A.

Stormwater was diverted to an engineered detention pond. Excess water was pumped to holding tanks that were in turn discharged to the sanitary sewer under Permit SAD 17-011 from the City of Tacoma. That permit had a flow limitation and required batch testing from the holding tanks for a wide variety of contaminants prior to discharge of the stormwater to the sewer. Appendix B contains analytical testing results for discharged stormwater. Initial testing of the first batch without treatment (and prior to discharge) indicated the presence of several metals associated with turbidity (e.g., chromium, copper). A sand filter was employed to reduce turbidity. Testing results in Appendix A indicate that no COCs were present in discharged stormwater at concentrations greater than the permit limitations.

The stormwater pond remained in place until final grading occurred to prepare the property for paving.

3.5 PRE-SLAB METHANE AND SOIL VAPOR SURVEY

The methane survey and preliminary vapor intrusion (VI) assessment was performed before and during the preloading phase of construction at Building A and Building B. Surveys occurred in December 2016 and in April and May of 2018. Soil gas samples were collected above the shallow groundwater table at locations within each building footprint and along the future drive aisle between the two buildings. The vapor samples were field analyzed for methane using a landfill gas detector. At a subset of the locations, soil gas samples were collected for laboratory analysis of VOCs. The locations of the methane and VOC samples are shown on Figure 3.3. The results of the methane survey and preliminary VI assessment were summarized in a memorandum (Floyd|Snider 2018; refer to Appendix A).

Methane was not detected in soil gas at either building at concentrations greater than action levels in the Interim Action Work Plan. The maximum detected soil methane concentration was 1.4 percent by volume, well less than the 5% threshold used by ASTM Standard E2993-16 to determine whether additional assessment of methane intrusion is warranted.

At Buildings A and B, the collection of samples for VI assessment was conducted during April and May of 2018 but sampling for VOCs was complicated by excessive moisture and perched wet lenses in the soil and pad backfill. Multiple attempts were made to acquire samples free of moisture but were mostly unsuccessful due to water in the sampling point. In the sample points that successfully produced soil gas, the laboratory reported excessive water vapor as well as excessive residual vacuum in the Summa canister. Chloroform, benzene, and other VOCs exceeded MTCA industrial screening levels at several locations; however, these data were not considered to be reliable due to the bias caused by the presence of water vapor. It was decided that future sampling of sub-slab vapors would be needed to obtain the representative samples required to assess the VI risk potential.

3.6 VAPOR BARRIER CONSTRUCTION

To mitigate costly construction delays that additional sampling would entail, a vapor intrusion mitigation system was installed under each of the two office locations in both buildings as a precautionary measure. The office nodes are shown on Figure 3.4. As described in Floyd|Snider's August 2018 memorandum (Appendix A), the mitigation system includes perforated PVC piping laid in trenches under the subgrade of the office areas. The piping is connected to an aboveground riser vent. After the piping was installed, it was overlain with a PVC membrane and the concrete floor slab was subsequently poured over the membrane. The system allows ventilation to occur by atmospheric pressure differentials (i.e., soil vapor at pressure exceeding atmospheric pressure vents via the riser so vapor pressure cannot build up below the floor slab and enter the office areas). The vertical riser may also be equipped with an inline blower to further reduce soil vapor pressure under the floor slab.

The plans for the vapor barriers that were constructed are in Appendix A, including field reports documenting installation.

3.7 SUB-SLAB SOIL VAPOR AND INDOOR AIR SURVEY

Following completion of the floor slabs for Buildings A and B, 12 sub-slab vapor pins were installed at Buildings A and B and sampled three times for the full suite of VOCs. Refer to Figure 3.4 for location of the pins. The third event was the most comprehensive and done following receipt of Ecology comments in a letter dated November 14, 2019, on the first two sampling events, which required preparation of a work plan addendum for the third sampling event (Floyd|Snider 2020). The third event also included sampling of indoor air at multiple locations within both buildings in January 2020, as well as measuring pressure differentials between the sub-slab and building interior. The purpose of these sampling events was to determine whether the concentrations of VOCs and methane measured beneath the buildings were reproducible or warranted further action.

Refer to Appendix A for the November 2018 and May 2020 memoranda describing the vapor sampling that was performed including a table of analytical results compared to MTCA Method C screening levels. Ecology reviewed the data and provided comments in a letter dated April 16, 2020. Ecology requested that the one comparatively wide expansion joint in Building A as well as the open penetrations around the fire supply line risers in both buildings be sealed in a manner to prevent vapor intrusion. This work was completed in April 2020 to Ecology's satisfaction as indicated in a letter from Ecology dated May 11, 2020. Copies of the letters from Ecology are included in Attachment E.

The results of the three rounds of sampling did not indicate the presence of any VOCs or methane at concentrations/pressures that would pose a potential risk of vapor intrusion into the warehouses. Consequently, an Operational and Maintenance and Sampling and Analysis Plan for the future operation of the vapor intrusion mitigation system is not necessary or warranted.

4.0 Institutional Controls

As detailed in the Interim Action Work Plan, institutional controls are required for the parcels within the Interim Action Area. Environmental (Restrictive) Covenants will be used to implement the institutional controls. In consultation with Ecology, the Port will prepare Environmental (Restrictive) Covenants consistent with WAC 173-340-440, RCW 64.70, and any policies or procedures specified by Ecology. The Environmental (Restrictive) Covenants shall restrict future activities and uses of the parcels within the Interim Action Area as agreed to by Ecology and the Port with specific details to emerge during the development of the final cleanup plan for the TWAAFA.

5.0 References

Floyd|Snider. 2006. *Prologis Taylor Way Property Feasibility Study*. Prepared for Prologis. December.

_____. 2017. *1514 Taylor Way Development Interim Action Work Plan*. Prepared for Avenue 55, LLC. June.

_____. 2018. *Sampling Plan Addendum for Vapor Intrusion Assessment, 1544 Taylor Way, Tacoma, Washington.* Memorandum from Tom Colligan and Kristin Anderson, Floyd|Snider, to Steve Teel, Washington State Department of Ecology. 10 August.

_____. 2020. *Sampling Plan Addendum for Post-Construction Vapor Intrusion Assessment, 1514 Taylor Way Development, Tacoma, Washington.* Memorandum from Tom Colligan and Kristin Anderson, Floyd|Snider, to Steve Teel, Washington State Department of Ecology. 7 January.

Philip Services Corporation (PSC). 2002. *Draft Comprehensive RI Report, Volume 1*. 3 July.

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Table

Table 2.1
Contaminants of Concern/Remediation Levels for Soil[1]

Primary Contaminants of Concern	Maximum Concentration[2]	Unrestricted Land Use Cleanup Level	Remediation Level: Modified MTCA Method C Direct Contact, Excavation Worker Scenario[3]	Cleanup Level: Protection of Groundwater	Cleanup Level: Ecological[4]	Interim Action Remediation Level	Basis of Site Cleanup Level
Arsenic III/V	130	203	2,244	203	20/260	130	Empirical soil protection of groundwater
Copper	150	3,200[5]	299,22[4]	36[6]	550	150	Empirical soil protection of groundwater
Lead	520	250[7]	1,000[8]	150[9]	220	520	Empirical soil protection of groundwater
DRO	1,400	2,000[10]	NA	2,000[5]	2,000 to 15,000[11]	3,300	Empirical soil protection of groundwater
ORO	2,300		NA				
Total carcinogenic PAH[12]	5.9	0.1	552	0.1	300[9]	5.9	Assumed soil protection of groundwater
Pentachlorophenol	11	2.5	14,026	0.0158	11	11	Empirical soil protection of groundwater

Notes:

1 Units in milligrams per kilogram.
2 Detections from the 2006 *Prologis Taylor Way Property Remedial Investigation* (Floyd|Snider 2006a).
3 Excavation worker scenario calculated using parameter values from Oregon Department of Environmental Quality's *Human Health Risk Assessment Guidance* (October 2010) and calculated using WAC 173-340-745 equations 745-4 and 745-5.
4 Based on the values in WAC 173-340-7492, Table 749-2 for Commercial/Industrial Sites. However, the terrestrial ecological pathway will be blocked following the interim action because all surfaces will be covered with either hardscape or buildings.
5 MTCA Method B, non-cancer direct contact.
6 Soil background from the Washington State Department of Ecology's (Ecology's) *Natural Background Soil Metals Concentrations in Washington State* (October 1994).
7 MTCA Method A, Unrestricted Land Uses.
8 Direct contact cleanup level from MTCA Method A, Industrial Land Use.
9 Obtained using the July 2015 CLARC database tables for Protection of Groundwater in the Saturated Zone.
10 MTCA Method A, Unrestricted Land Uses, combined DRO and ORO cleanup levels as per Ecology's *Implementation Memorandum #4: Determining Compliance with Method A Cleanup Levels for Diesel and Heavy Oil* (June 17, 2004).
11 Compliance with the cleanup level determined by DRO, which includes the sum of diesel fuels and heavy oils using the NWTPH-Dx method.
12 Levels based on the soil concentration for benzo(a)pyrene, toxic equivalent normalized per WAC 173-340-708(a).

Abbreviations:

ARAR	Applicable or Relevant and Appropriate Requirements
DRO	Diesel-range organics
GW	Groundwater
GRO	Gasoline-range organics
MTCA	Model Toxics Control Act
NA	Not applicable
PQL	Practical quantitation limit
PAH	Polycyclic aromatic hydrocarbon

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Figures

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Figure 1.1
Vicinity Map

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2/27/2019

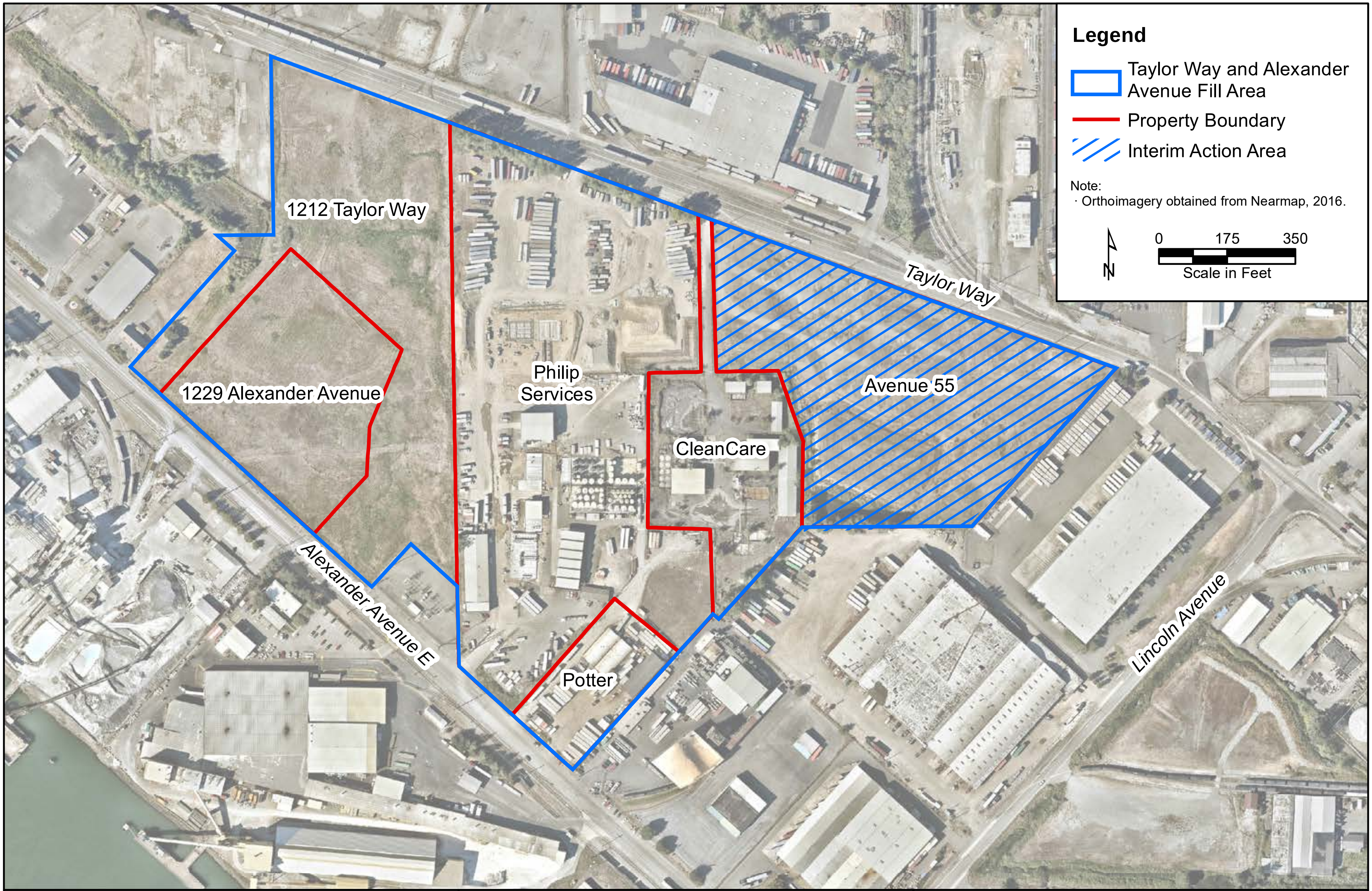

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Figure 1.2
Site Map

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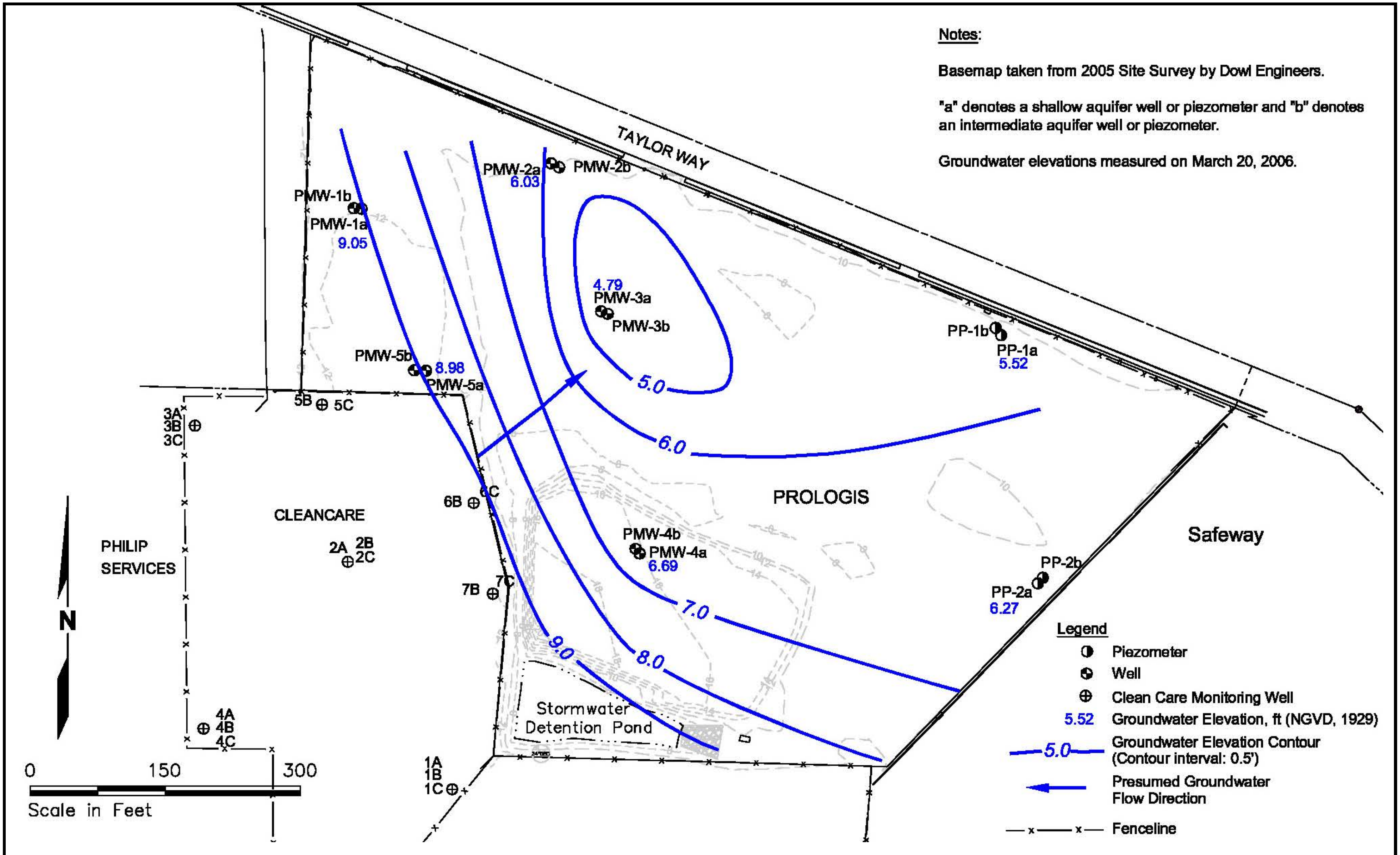
2/25/2019



Notes:

Basemap taken from 2005 Site Survey by Dowl Engineers.

"a" denotes a shallow aquifer well or piezometer and "b" denotes an intermediate aquifer well or piezometer.

Groundwater elevations measured on March 20, 2006.

Source: ProLogis Taylor Way Property Remedial Investigation, Floyd|Snider 2006.

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Figure 2.1
March 2006 Groundwater Flow Map
of the Shallow Aquifer

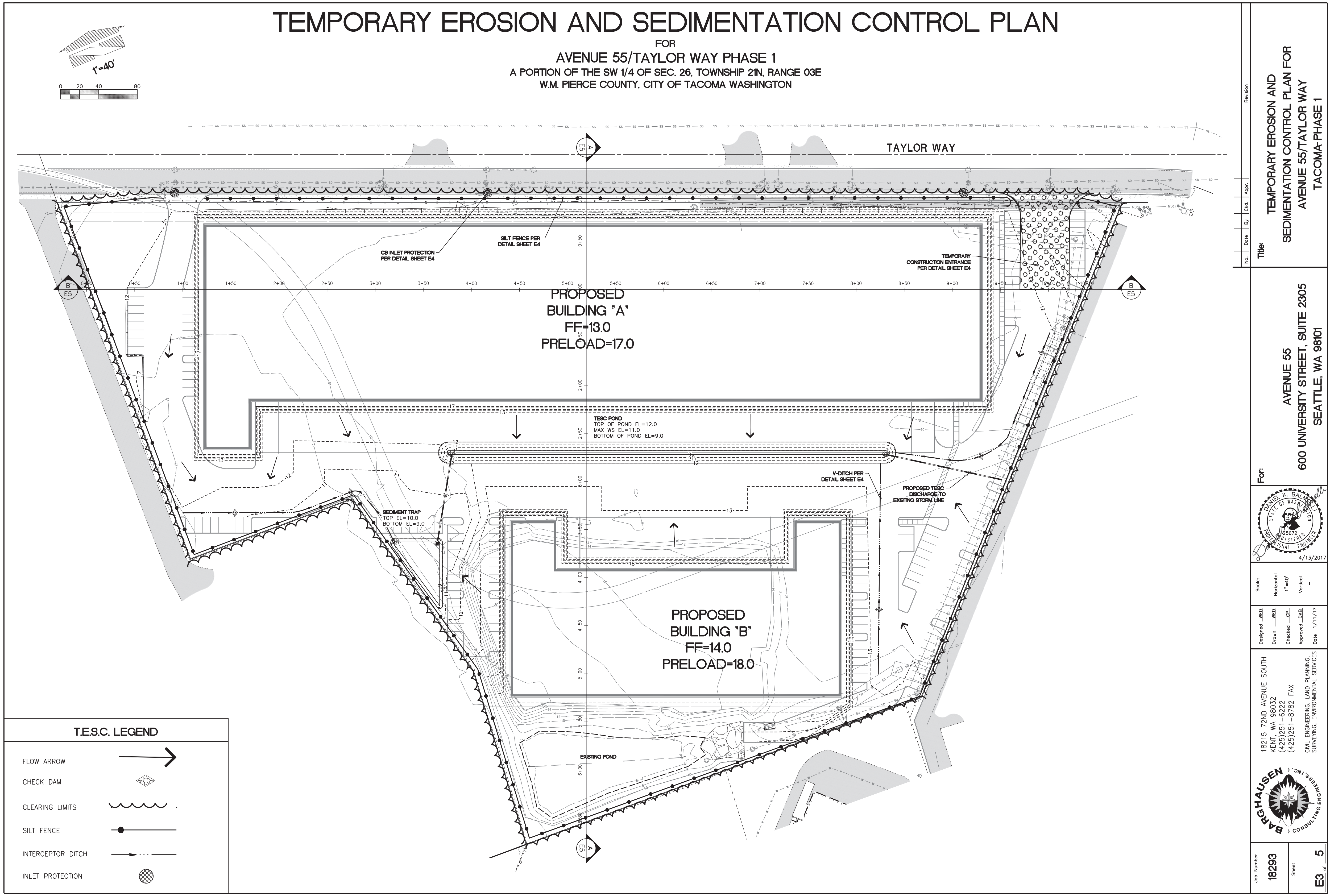

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Figure 3.1
Section Line Location Map

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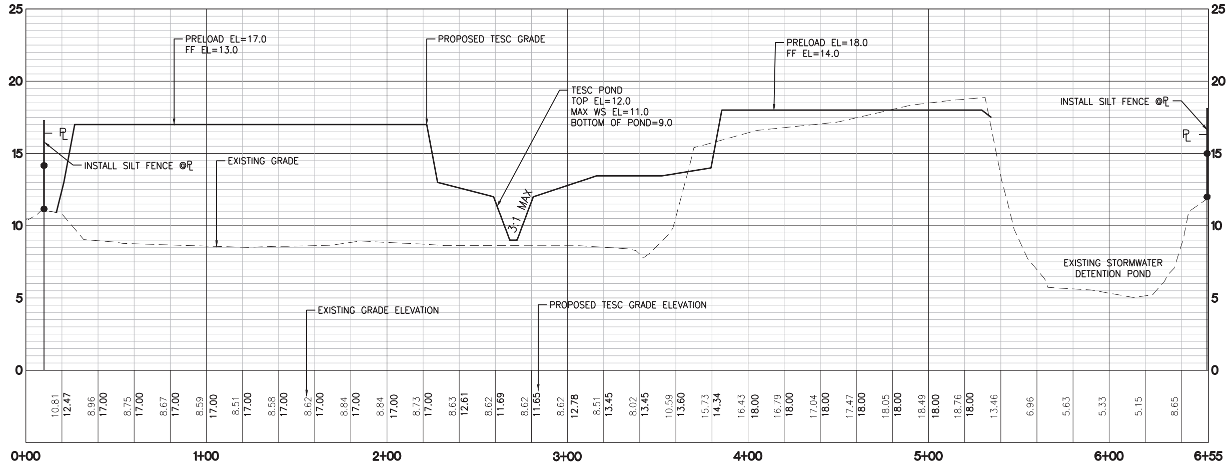
05/21/2019

TEMPORARY EROSION AND SEDIMENTATION CONTROL PROFILES

FOR

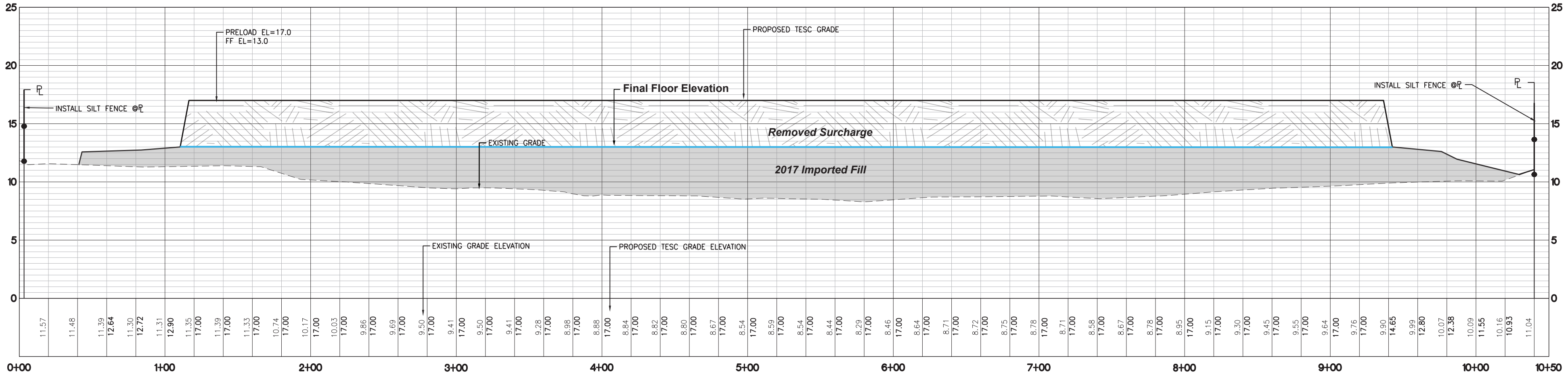
AVENUE 55/TAYLOR WAY PHASE 1

A PORTION OF THE SW 1/4 OF SEC. 26, TOWNSHIP 21N, RANGE 03E
W.M. PIERCE COUNTY, CITY OF TACOMA WASHINGTON



SECTION A

SCALE: H:1"=40' V:1"=5'



SECTION B

SCALE: H:1"=40' V:1"=5'

No.	Date	By	Ckd.	Appr.	Revision

Title:
TEMPORARY EROSION AND
SEDIMENTATION CONTROL PROFILES FOR
AVENUE 55/TAYLOR WAY
TACOMA-PHASE 1

For:
AVENUE 55
600 UNIVERSITY STREET, SUITE 2305
SEATTLE, WA 98101

DANIEL K. BALMELLI
25672
4/13/2017

Scale:
Horizontal 1"=40'
Vertical 1"=5'

Designed WED
Drawn WED
Checked CP
Approved DKB
Date 1/11/17

BARGHAUSEN CONSULTING ENGINEERS, INC.

18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
(425)251-8782 FAX

CIVIL ENGINEERING, LAND PLANNING,
SURVEYING, ENVIRONMENTAL SERVICES

Job Number 18293

Sheet E5 of 5

File:P:\18000s\18293\preliminary\18293-ep.dwg Date/Time:4/13/2017 9:54 AM Scale:1" = 1' WDUNLAP Xref: ----

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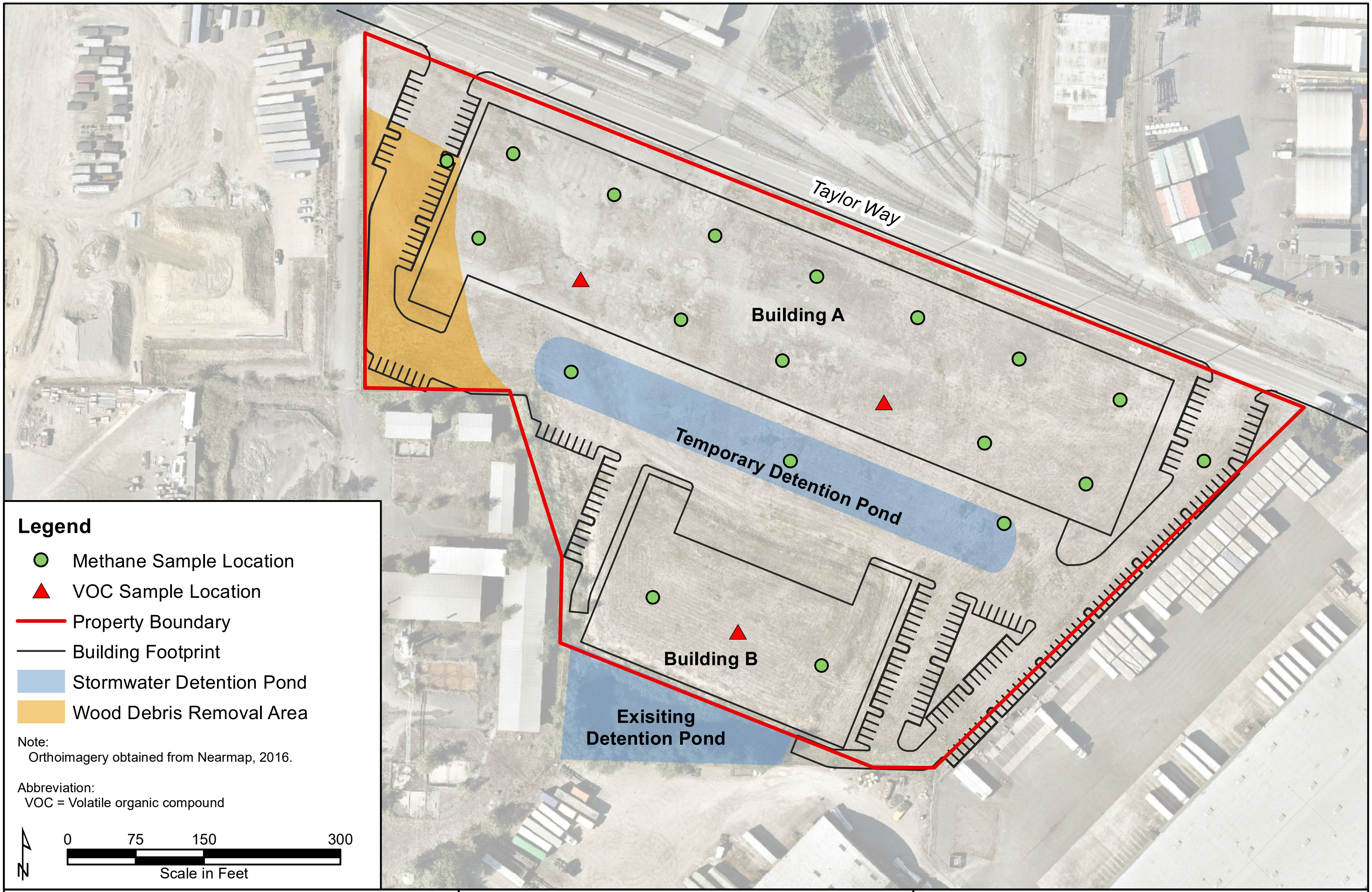
Interim Action Completion Report
1514 Taylor Way Development
Tacoma, Washington

Figure 3.2
Section Lines Showing Preload and Final Fill Elevations

I:\GIS\Projects\Ave55-TaylorWay\AI\IACR\Figure 3.2 Section Lines showing Preload and Final Fill Elevations.ai
05/21/2019



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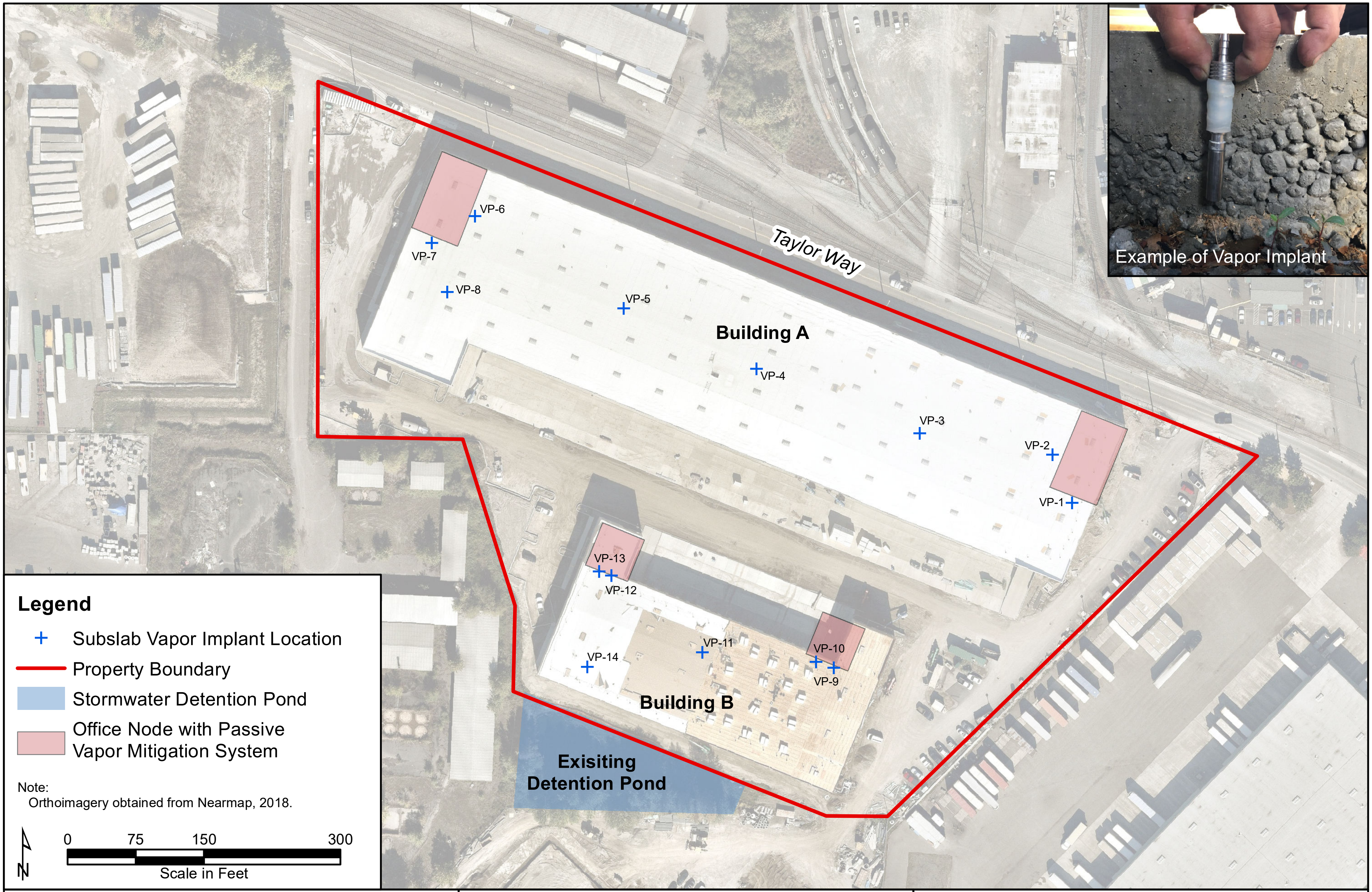
Interim Action Completion Report
1514 Taylor Way Development
Tacoma, Washington

Figure 3.3
Construction Features and
Soil Gas Survey Sample Locations

I:\GIS\Projects\Ave55-TaylorWay\MXD\Interim Action Completion Report\Figure 3.3 Construction Features and Soil Gas Survey Sample Locations.mxd
5/21/2019



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Interim Action Completion Report
1514 Taylor Way Development
Tacoma, Washington

Figure 3.4
Subslab Vapor Implants and Office Node Vapor Mitigation System Locations

I:\GIS\Projects\Ave55-TaylorWay\MXD\Interim Action Completion Report\Figure 3.4 Subslab Vapor Implants and Office Node Vapor Migration System Locations.mxd
5/21/2019

1514 Taylor Way Development

Interim Action Completion Report

Appendix A
Memoranda and Field Reports

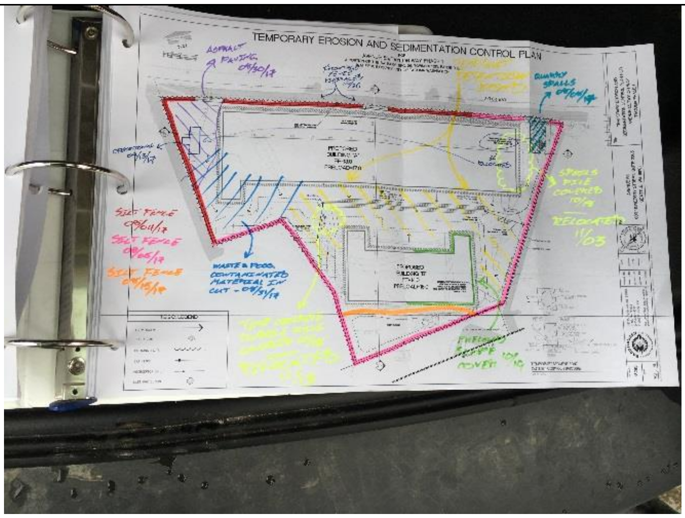
Water Quality Program
Corrections Required

Construction Stormwater General Permit (CSGP) ☒	**Industrial Stormwater General Permit (ISGP)** ☐	**Sand and Gravel General Permit (S&G)** ☐

Site name: Avenue 55 Lincoln Avenue Phase 2		Mailing address – 19900 144th Ave NE
Site address: 3401 Lincoln Ave		City, State, Zip: Woodinville, WA 980072
City, State, Zip: Tacoma, WA 98421		Phone: 206.406.7979
Site contact: Jason Nix		Permit #: WAR305398
Ecology inspector(s): Carol Serdar		Inspection date: 11/20/2017
Inspector phone: 360.407.6269	FAX: 360.407.6305	E-mail: cser461@ecy.wa.gov
Notice of Penalty issued ☐ Yes ☒ No	Field Citation #	Latitude and longitude *(if available):*

The Department of Ecology (Ecology) is responsible for overseeing environmental laws that protect human health and the environment in Washington. Ecology observed violations of Chapter 90.48 of the Revised Code of Washington (RCW), Chapter 173-226 of the Washington Administrative Code (WAC), Waste Discharge General Permit Program during this site visit. Violations observed are checked below.

Violation No.	Violation	Reason	Permit Condition
☐ 1	RCW 90.48.160	Operating or discharging without a permit (all)	Does not apply.
☐ 2	RCW 90.48.080	Polluting waters of the state (all)	
☐ 3	RCW 90.48.080	Polluting impaired waters, discharge exceeds 303(d) limit (CSGP and ISGP)	
☐ 4	WAC 173-201A or WAC 173-200	Violating Water Quality Standards *(List specific standard violated.)* (all)	
☐ 5	RCW 90.48.090	Denial or withdrawal of access (all)	
☐ 6	RCW 90.48.080, WAC 173-226-070	Process water discharge without treatment in lined impoundment (S&G)	
☐ 7	RCW 90.48.080, WAC 173-226-070	Failure to clean up oil spills or repair leaking equipment (S&G)	
☐ 8	RCW 90.48.080, WAC 173-226-070	Cover or containment not provided for chemical or petroleum products (all)	
☐ 9	RCW 90.48.080, WAC 173-226-070	Corrective Action not taken (ISGP)	
☐ 10	RCW 90.48.080, WAC 173-226-070	No Stormwater Pollution Prevention Plan (SWPPP) (all)	
☐ 11	RCW 90.48.080, WAC 173-226-070	SWPPP does not meet permit requirements (all)	
☒ 12	RCW 90.48.080, WAC 173-226-070	☒ Not maintaining best management practices (BMPs) (all) ☒ Not implementing BMPs (all) ☐ Failure to modify SWPPP per permit or Dept. of Ecology Notice (all)	
☐ 13	RCW 90.48.080, WAC 173-226-070	☐ BMPs not maintained per permit or Dept. of Ecology Notice (all) ☐ BMPs not implemented per permit or Dept. of Ecology Notice (all)	
☐ 14	RCW 90.48.080, WAC 173-226-070	☐ Inspections not completed as required by permit (CSGP and ISGP) ☐ Inspections do not comply with permit requirements (CSGP and ISGP)	
☒ 15	RCW 90.48.080, WAC 173-226-090	☐ Monitoring not conducted as required by permit (all) ☒ Sampling does not comply with permit requirements (all)	S4.B.2.
☐ 16	RCW 90.48.080, WAC 173-226-070	☐ Not keeping site log book (CSGP and ISGP) ☐ Not keeping inspection reports or checklists (CSGP)	
☐ 17	RCW 90.48.080, WAC 173-226-090	☐ Did not telephone report turbidity greater than 250 NTU (CSGP), or threshold exceeded (ISGP) ☐ No Discharge Monitoring Reports available (all) ☐ Failure to notify Dept. of Ecology of noncompliance with permit requirement (all)	
☒ 18	RCW 90.48.080	Discharging of polluting matter in waters of the state	S3.; S5.F; S9.D.9.; G11.
☐ 19			

Violation No.	**Observation(s) and action(s) required to achieve compliance.** (see permit conditions)	Complete or Submit Date
12	 Stockpile of concrete rubble inadequately covered to prevent potential migration of pH laden water from discharging or infiltrating on site. **This is a violation on CSWGP condition S9.D.9. Control Pollutants and S9.D.11. Maintain BMPs.** **TO DO:** Follow installation and maintenance Send photos of BMPs (C2123 and C235) installed as per Stormwater Management Manual as amended in 2014.	12/05/2017
15 18	 Contaminated stockpile inadequately covered, and turbid water is shown discharging to catch basin (waters of the state). Contaminated soil is from WAR305424 (Phase 1) and was observed on 10/16/2017 (see inspection by Honor Carpenter). Turbidity was not sampled at this location. **This is a violation on CSWGP condition S9.D.9. Control Pollutants and S9.D.11. Maintain BMPs.** **TO DO:** Follow installation and maintenance Send photos of BMPs (C2123 and C235) installed as per Stormwater Management Manual as amended in 2014.	12/05/2017
	 Haul route not shown, but was described by CESCL that the contaminated stockpile was moved on 11/3 to Phase 2 (south of Phase 1). This site now has contaminated stormwater from the inadequately covered stockpile of contaminated soil. Based on newly contaminated material onsite, documentation within the SWPPP must clearly state how contaminated soil is managed. **TO DO:** Provide Ecology with a detailed narrative for WAR305398 on how the contaminated stormwater and contaminated soil will be managed. Show on a map the movement of stormwater to all discharge locations. These must also be incorporated into the SWPPP.	12/05/2017

	Corrective actions accomplished: On the afternoon of 11/20/2017 Jason sent an email narrative, with photos, describing the repairs to the BMPs. Jason stated the discharge to sanitary has been unsuccessful. Ecology replied on 11/21/2017 that all discharges must be sampled. The above photo of stockpile adjacent to the catch basin was not sampled. Ecology requested that an ERTS be submitted for this turbid discharge with an estimate of +1000 NTU. Jason submitted an ERTS on 11/21/2017 and was assigned ERTS #677378. Jason stated that the turbid discharge was from the parking area. **There is no evidence that the turbid water did not also migrate from the inadequately covered stockpile of known contaminated soil** (moved from CSWGP WAR305424 to the north – Phase 1).	

Instructions:

- These corrective action requirements are not an enforcement order and are **not appealable.**
- If a penalty accompanies these corrective action requirements, **the penalty is appealable.**
- **Appeal directions are on the back of the penalty.**
- Failure to comply with these corrective action requirements may result in enforcement action.

1. To comply with the water quality regulations, complete the actions identified in the table above.
2. If you have questions, contact ____Carol Serdar____________________, Ecology inspector, at __360.407.6269______________.
3. To request an extension, **send a written request** to the Ecology inspector by _______________________.

   Ecology will notify you if an extension is granted. Please include all of the following:
   - Reason extension is needed.
   - Steps already taken.
   - Description of work that remains to be completed.
   - Anticipated completion date.

Send required document(s) to the appropriate Ecology office:

Bellingham Field Office
1440 10th St Ste 102
Bellingham WA 98225
360-715-5200

Vancouver Field Office
2108 Grand Blvd
Vancouver WA 98661
360-690-7171

Central Regional Office
15 W Yakima Ave Ste 200
Yakima WA 98902
509-575-2490

Northwest Regional Office
3190 160th Ave SE
Bellevue WA 98008-5452
425-649-7000

Southwest Regional Office
PO Box 47775
Olympia WA 98504-7775
360-407-6300

Eastern Regional Office
4601 N Monroe
Spokane WA 99205-1295
509-329-3400

Ecology Inspector (signature): ***Carol Serdar*** Date: ***28 November 2017***

Owner/Operator (signature): *sent via email* Date: *28 November 2017*

Owner/Operator (print name): *Jason Nix / Bryan Ploez* Date:

If you need this publication in an alternate format, call the Water Quality Program at 360-407-6722. Persons with hearing loss call 711 for the Washington Relay Service. Persons with a speech disability call 877-833-6341

Memorandum

To: Kurt Freeman & Mark Schuler- City of Tacoma

Copies: Jason Nix (Sierra Construction), Tom Colligan (Floyd Snider), Scott Hooton and Anita Fichthorn (Port of Tacoma)

From: Drew Zaborowski (Avenue 55)

Date: 12/07/2017

Project No: Ave 55 Portside Development-located at 1514 Taylor Way

Re: **Analytical Testing for City of Tacoma Sewer Discharge SAD 17-011**

The property located at 1514 Taylor Way has been thoroughly investigated for the presence of hazardous substances as required by the Model Toxics Control Act (MTCA), RCW 70.105D.050(1). That work was performed under the authority of legally binding administrative orders issued by the Washington Department of Ecology (Ecology) and under the direct supervision of Ecology staff from the Toxics Cleanup Program.

This memo compares the discharge limits in the above-referenced Sewer Authorization Discharge (SAD) to the extensive soil and groundwater chemical concentration data obtained as part of the MTCA investigation of this property. The comparison shows that the highest concentrations of hazardous substances detected in groundwater are significantly lower than the discharge limit criteria listed on the SAD. The memo also provides the basis for concluding that requirements to test each batch of water for the extensive list of hazardous substances o the SAD prior to discharge to the sanitary sewer is not necessary or warranted.

Background

In January 2005, a remedial investigation (RI) and feasibility study (FS) was required for the 1514 Taylor Way Property under the authority of Ecology Agreed Order DE 04TCPSR-1160. The RI investigated potential releases of hazardous substances that may have been caused by industrial and/or fill activities historically conducted on the 1514 Taylor Way property or on adjoining properties. This work involved the digging of 41 test pits, collection of temporary groundwater samples at 13 locations and installation of 10 permanent monitoring wells. Hundreds of samples were collected and analyzed,

Detected concentrations in groundwater were compared to potable drinking water standards or background concentrations (criteria) to identify contaminants of concern. For soil, conservative partition modeling was utilized to determine whether or not a detected chemical could dissolve into groundwater at a concentration exceeding potable water or background criteria. Metals (arsenic, barium, chromium and zinc), Total Petroleum Hydrocarbons (TPH) and semi-volatile organic compounds (SVOCs) were identified as contaminants of concern based on a comparison of detected concentrations to extremely conservative Ecology criteria. These criteria (e.g. MTCA Method A) are substantially lower in concentration than discharge limit criteria listed on the SAD.

Given that very little contamination was detected and at very low concentrations, the FS recommended capping of soils with pavement or buildings in conjunction with redevelopment as the preferred remedy. This preferred remedy was designed to maintain groundwater quality based on potable water or background criterion.

Implementation of the preferred remedy identified in the FS is required for the 1514 Taylor Way Property under the authority of Ecology Agreed Order DE13921 (July, 2017), as is described in the associated Interim Action Work Plan (IAWP). The IAWP included provisions for the testing and Ecology review and approval to ensure that all imported soil was free of contamination. The IAWP also incorporated a construction stormwater general permit (CSWGP) as well as a Stormwater Pollution Prevention Plan (SWPPP), which contains details on how stormwater will be managed to comply with permit conditions. Temporary erosion and sediment control (TESC) measures in the SWPPP included measures to prevent stormwater from running off-property, and the SAD was obtained as a contingency to enable SWPPP compliance as a contingency to manage significant accumulations of stormwater.

Clean soil has been imported to the site to preload the subgrade and establish elevations suitable for building construction. A significant volume of stormwater (estimated volume 1MG) has since accumulated upon the clean fill in a temporary detention pond on the center of the 1514 Taylor Way Property. The volume of stormwater present at the site is slowing construction required to complete the work under Ecology Agreed Order DE13921.

The following paragraphs summarize site conditions.

GROUNDWATER CONTAMINANTS-

All 11 site wells were tested in 2005, 2006 and again in December of 2106. None of the results exceeded or even came close to SAD criteria. The only result above Ecology-assumed state-wide background levels was arsenic (2 of 11 wells) or drinking water criteria for heavy oil TPH (5 of 11 wells). The arsenic is thought to be a consequence of elevated natural background in the Tacoma area. No SVOC or VOC compounds were detected and all other metals tested were at levels indicative of natural background. Data summary tables from the relevant reports are attached.

SOIL CONTAMINANTS

While some detected concentrations did exceed MTCA criteria for soil, the levels are too low to result in concentrations exceeding SAD discharge limits. A summary follows:

PCBs- none detected in 22 samples analyzed

Volatile Organics and BTEX- the only VOC detected was xylene in only one sample out of 22 analyzed. No other VOCs were detected. The xylene concentration was 1/300 of the MTCA cleanup level.

Petroleum Hydrocarbons - One sample of 37 contained TPH above the MTCA A heavy oil cleanup level. This sample location was subsequently excavated during recent construction.

Semi-Volatile Organic Compounds - 5 samples out of 22 contained primarily PAH compounds above the MTCA A cleanup level. Some of these locations were subsequently excavated during recent construction.

Metals- 3 samples out of 32 contained metals, primarily arsenic, cadmium, and lead above MTCA A cleanup levels. These sample locations were subsequently excavated during recent construction.

RECENT FILL TESTING

Beginning in the fall of 2017, nearly 15,000 cubic yards of fill has been imported to this site to raise site grade by several feet and to provide surcharge. Ecology-required testing for metals, TPH, VOCs and SVOCs on every 300 cubic yard stockpile of imported fill has shown no contamination in the nearly 50 samples that have been analyzed to date. This soil was spread out over the existing ground surface as noted earlier.

SAD PERMIT TESTING PARAMETERS

The City of Tacoma is requiring testing for a wide variety of contaminants as detailed below:

METALS - 11 various metals, and additionally hexavalent chromium. Of these metals, only arsenic has been detected in groundwater above MTCA A cleanup levels, but at a level far less than the SAD permit threshold. Extensive testing has shown very little heavy metal contamination and what was detected in soil above MTCA A has been subsequently removed.

CYANIDE- Both Free and Total- there is no reason to suspect that cyanide would have been used at this site.

Total Petroleum Hydrocarbons- the SAD limit is 30 times higher than the highest recorded concentration every detected in groundwater at this site.

Total Toxic Organics and BTEX- extensive prior testing has shown these contaminants are not present at the Site.

STORMWATER SAMPLES-

To date, 3 batch samples of stormwater have been collected from the two on-site tanks and no contaminants have been detected at levels even remotely close to the discharge limits. In fact the only analytes detected have been copper, chromium, nickel, and zinc, most likely due to the unfiltered nature of the samples, and phthalates, which are ubiquitous lab contaminants. The recent lab reports are attached.

The results to date conclusively demonstrate that the stormwater that is being collected prior to discharge flows off clean fill soils that have been placed at this site.

CONCLUSIONS-

The elimination of a requirement for batch testing is supported by the following lines of evidence:

- The extensive amount of groundwater data collected under the MTCA process shows that all concentrations are well below SAD discharge thresholds.
- The extensive amount of soil data shows that concentrations will not partition into water at concentrations above SAD discharge thresholds.
- Imported soil came from uncontaminated sources; water accumulating on 1514 Taylor originated as recent stormwater.
- Batch testing of stormwater shows that concentrations are below SAD discharge thresholds.

Attachments: Data Summary Tables; Laboratory Reports

References

FloydISnider. 2004. *Prologis Taylor Way Property, Remedial Investigation/Feasibility Study Work Plan*. Prepared for Prologis. December

FloydISnider. 2006a. *Prologis Taylor Way Property, Remedial Investigation.* Prepared for Prologis. 3 October

FloydISnider. 2006b. *Prologis Taylor Way Property, Feasibility Study Work Plan*. Prepared for Prologis. December

FloydISnider. 2017. *1514 Taylor Way Development Interim Action Work Plan*. Prepared for Avenue 55, LLC. June

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Two Union Square
601 Union Street, Suite 600
Seattle, WA 98101
tel: 206.292.2078 fax: 206.682.7867

Memorandum

To: Steve Teel, Washington State Department of Ecology
Copies: Drew Zaborowski, Avenue 55; Scott Hooton, Port of Tacoma
From: Tom Colligan and Kristin Anderson, Floyd|Snider
Date: June 8, 2018
Re: **Summary of Soil Vapor Survey Data and Vapor Mitigation Plan for the 1514 Taylor Way Site**

This memorandum summarizes the results of soil vapor sampling performed at the 1514 Taylor Way redevelopment site (the Site) in Tacoma, Washington, and recommends next steps for mitigation and further evaluation. The sampling was performed in accordance with the approved Sampling Plan presented in Appendix B to the Interim Action Work Plan for the Site. That plan called for a methane survey and vapor intrusion (VI) assessment at the above development location. The methane survey and soil vapor sample collection for volatile organic compound (VOC) analysis were completed during multiple field events between December 2016 and May 2018 due to wet weather conditions that hampered efforts to complete the survey during one mobilization. Soil vapor survey locations are shown on Figure 1.

VAPOR SURVEY FINDINGS

The vapor survey on the two building pads (location 1 and locations 4 through 18) was performed using direct-push drilling methodology. Location 18 was originally in a construction drive aisle but was moved east approximately 30 feet to the edge of building pad A due to traffic safety concerns.

Groundwater is generally shallow at the Site (i.e., less than 2 feet below grade). Groundwater levels were measured prior to sampling by advancing closed rods at intended survey location and measuring the depth to water in the resultant borehole. Sampling points were then set at a depth of 5 feet below grade or 6 inches to 1 foot above the measured water table if water was encountered above 5 feet. Methane survey samples were collected via post-run tubing methodology and allowed to equilibrate for a minimum of 2 hours prior to sampling. VOC samples were collected via 8-inch-long temporary stainless steel vapor sample implants. Implants were allowed to equilibrate for a minimum of 8 hours prior to sampling, per email approval from the Washington State Department of Ecology (Ecology). All survey sample points installed via drilling were sealed using hydrated bentonite at time of installation. At each location, a minimum of three volumes of the annular space and tubing were purged using a peristaltic pump prior to sample collection.

The vapor survey in the drive aisle between the two building pads (locations 19, 20, and 21) could not be completed via drilling because groundwater was encountered at a depth less than 2 feet below grade. Therefore, the survey in the drive aisle was performed by placing a bucket at the ground surface and sealing the base of the bucket and inlet for sample tubing with plumbers' putty. The concentration of accumulated methane was measured at 30-minute intervals for a minimum equilibration time of 2 hours. Location 19 in the drive aisle was moved northeast approximately 30 feet due to heavy vehicle and equipment traffic during construction on this portion of the Site.

The methane survey was performed using a Landtec GEM 2000 landfill gas meter. Methane concentrations were measured while purging with a peristaltic pump until the reading stabilized. Methane percentages measured in soil vapor ranged from 0.0% to 1.4%. The greatest methane detections were 0.6% and 1.4%, measured on building pad A at location 10 and location 3, respectively. Methane survey results are shown on Figure 1.

A helium leak detection test for the methane survey methodology was performed during the February 2018 event. No helium was detected at the sample outlet.

Soil vapor at the methane survey locations was also screened for VOCs using a photoionization detector (PID), and concentrations were low-level, ranging from 0.0 to 0.6 parts per million vapor (ppmv).

Samples for VOC analysis were collected at locations 9, 12, and 16 during two events, the first in mid-April 2018 (locations 9 and 12) and the second in mid-May 2018 (locations 9 and 16). In a deviation from the work plan, location 12 was targeted for VOC sampling instead of location 13 because a usable vapor implant was installed at the adjacent location 12 during the February 2018 event. In addition, a second sample from location 9 was collected during the May event to verify April results.

VOC samples were collected using laboratory-supplied 1-liter evacuated SUMMA canisters. Helium leak detection was performed on samples collected at location 9 and location 12 during the April 2018 event, and helium concentrations measured in the sample canisters did not exceed 10 percent of the helium shroud concentrations. PID readings at the VOC sample locations ranged from 0.0 to 1.3 ppmv (location 9). An ambient air sample was also collected using an evacuated SUMMA canister placed at building pad A during the May 2018 sampling event.

Vapor samples were analyzed for VOCs and air-phase hydrocarbons (APHs) in accordance with the Interim Action Work Plan. A summary of results is shown in Table 1. Lab reports and field collection forms are in Attachment 1. Detected concentrations are compared to the Model Toxics Control Act (MTCA) Method C industrial screening levels for sub-slab soil vapor. At location 9 on building pad A, the chloroform concentration in the May 2018 sample collected exceeded the MTCA Method C cancer screening level. None of the target analytes were detected at concentrations exceeding their screening levels at location 12 or in the ambient air sample. At location 16 on building pad B, concentrations of APHs, acetaldehyde, benzene, chloroform, and naphthalene exceeded their respective cancer or non-cancer screening levels. However, the sample at location 16 was delivered to the lab with excessive vacuum and therefore low sample volume as a consequence of the presence of excessive soil moisture within the pad B backfill; residual moisture in the vapor sample have caused a bias to high concentrations.

VAPOR MITIGATION CONSTRUCTION

As a consequence of the presence of multiple VOCs in the soil gas samples, some at concentrations exceeding appropriate screening levels, Avenue 55 elected to install a passive vapor mitigation system in Building A, specifically under each of the two office "node" locations of this large industrial warehouse currently under construction, as well as under each of the two office nodes planned for Building B. The office areas were selected for vapor mitigation because they are areas of higher occupancy and much more limited interior volume, so they have a higher potential for vapor intrusion exposure. The remaining warehouse spaces have extremely large interior volumes (Building A covers 3 acres and is 30 feet high; Building B is 1 acre and of a similar height) and so may or may not need to have a vapor mitigation system. A decision to implement either passive or active vapor mitigation in the warehouse interiors will be made after submittal of a supplement work plan to Ecology to collect additional indoor air and sub-slab vapor data to better evaluate the risk of vapor intrusion to the warehouse space of both buildings.

The passive system under the office nodes was designed by Herrera Environmental Consultants. The vapor mitigation plans for the passive system are included in Attachment 2. The system includes perforated PVC piping laid in trenches under the subgrade of the office area and covered with a 30 millimeter PVC membrane under the concrete floor. The PVC piping subgrade is tied to vertical vents to be run up the side of the building. The vertical vents allow the addition of an in-line blower if necessary based on future monitoring results and also allow the collection of samples to evaluate soil gas conditions under the membrane. The addition of an in-line blower would then convert the system from one relying on passive ventilation driven by atmospheric pressure differentials to an active system that maintains a negative pressure under the floor slab.

To date, Herrera has performed two inspections of the installation of the office node vapor mitigation system under construction in Building A. The first inspection was to observe the installation of the perforated piping, and the next to document the construction of the membrane prior to the floor slab being poured. Those field inspection reports are included in Attachment 2.

LIST OF ATTACHMENTS

Table 1	Summary of Soil Gas Data for Taylor Way Property
Figure 1	Vapor Survey Sample Locations and Methane Results
Attachment 1	Lab Report and Field Form
Attachment 2	Vapor Mitigation Plans and Field Inspection Reports

Table

Table 1
Summary of Soil Gas Data for Taylor Way Property

				Sample ID	Loc 9	Loc 12	Ambient	Loc 9	Loc 109[1]	Loc 16
				Sample Location	Building A	Building A	Ambient	Building A	Building A	Building B
				Sample Date	4/18/2018	4/18/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018
Analyte	**CAS No.**	**Units**	**Sub Slab Method C Non Cancer**	**Sub Slab Method C Cancer**						
Volatiles by MA-APH										
APH EC5-8 aliphatics	--	µg/m³	200,000	--	1,500	2,200	63	3,100 ve	3,500 ve	24,000 ve
APH EC9-12 aliphatics	--	µg/m³	10,000	--	510	380	35 U	1,600	2,600	**24,000 ve**
Volatiles by TO-15										
1,1,1-Trichloroethane	71-55-6	µg/m³	170,000	--	24	13	0.55 U	44	45	2.2 U
1,1,2,2-Tetrachloroethane	79-34-5	µg/m³	--	14	1.4 U	1.4 U	0.14 U	0.21 U	0.21 U	2.1
1,1-Dichloroethane	75-34-3	µg/m³	--	520	4 U	5	0.4 U	2.1	2.1	1.6 U
1,1-Dichloroethene	--	µg/m³	--	--	4 U	4 U	0.4 U	0.76	0.76	1.6 U
1,2,3-Trimethylbenzene	--	µg/m³	--	--	25 U	25 U	2.5 U	3.7 U	7.3	66
1,2,4-Trimethylbenzene	95-63-6	µg/m³	230	--	25 U	25 U	2.5 U	6.4	13	120
1,2-Dibromoethane (EDB)	--	µg/m³	--	--	0.77 U	0.77 U	0.077 U	0.12 U	0.12 U	0.77 fb
1,2-Dichloroethane (EDC)	107-06-2	µg/m³	230	32	0.73	0.97	0.097	2.3	2.3	0.79
1,2-Dichloropropane	78-87-5	µg/m³	130	83	2.3 U	2.3 U	0.23 U	2.9	2.8	0.92 U
1,3,5-Trimethylbenzene	--	µg/m³	--	--	25 U	25 U	2.5 U	5.4	9.2	69
1,3-Butadiene	106-99-0	µg/m³	67	28	0.22 U	0.22 U	0.046	0.033 U	0.033 U	0.088 U
1,3-Dichlorobenzene	541-73-1	µg/m³	--	--	25	6 U	0.6 U	2.6	1.2	11
1,4-Dichlorobenzene	106-46-7	µg/m³	27,000	76	2.4 U	2.4 U	0.24 U	0.36 U	0.36 U	1.6 fb
2-Butanone (MEK)	--	µg/m³	--	--	29 U	29 U	2.9 U	6.5	7.2	65
2-Propanol	--	µg/m³	--	--	86 U	86 U	8.6 U	13 U	13 U	290
Acetaldehyde	75-07-0	µg/m³	300	380	90 U	90 U	9 U	52	62	**330**
Acetone	67-64-1	µg/m³	--	--	48 U	190	8.9	110	110	290
Benzene	71-43-2	µg/m³	1,000	110	15	5.9	0.39	38	38	**270**
Bromomethane	74-83-9	µg/m³	170	--	3.9 U	3.9 U	0.98	1.2 U	1.2 U	3.2 U
Butanal	--	µg/m³	--	--	29 U	29 U	2.9 U	5.6	4.4 U	12 U
Carbon disulfide	75-15-0	µg/m³	23,000	--	62 U	62 U	6.2 U	24	23	970 ve
Chlorobenzene	108-90-7	µg/m³	1,700	--	4.6 U	4.6 U	0.46 U	0.69 U	0.69 U	2.2
Chlorodifluoromethane	75-45-6	µg/m³	1,700,000	--	3.5 U	3.5 U	1.0	0.53 U	0.53 U	1.4 U
Chloroethane	--	µg/m³	--	--	2.6 U	2.6 U	0.26 U	1.4	1.4	1.2
Chloroform	67-66-3	µg/m³	3,300	36	3.1	2.5	0.17	**340**	**310**	**2,700 ve**
Chloromethane	74-87-3	µg/m³	3,000	--	9.9	8.5	1.3	12	12	12
cis-1,2-Dichloroethene	--	µg/m³	--	--	4 U	4 U	0.4 U	0.59 U	0.59 U	7.5
Cyclohexane	--	µg/m³	--	--	69 U	69 U	6.9 U	24	22	380
Cyclopentane	287-92-3	µg/m³	--	--	15	61	0.29 U	14	15	110

Table 1
Summary of Soil Gas Data for Taylor Way Property

				Sample ID	Loc 9	Loc 12	Ambient	Loc 9	Loc 109[1]	Loc 16
				Sample Location	Building A	Building A	Ambient	Building A	Building A	Building B
				Sample Date	4/18/2018	4/18/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018
Analyte	CAS No.	Units	Sub Slab Method C Non Cancer	Sub Slab Method C Cancer						
Volatiles by TO-15 (cont.)										
Dibromochloromethane	124-48-1	µg/m³	--	31	0.85 U	0.85 U	0.085 U	0.13 U	0.13 U	0.99
Dichlorodifluoromethane	75-71-8	µg/m³	3,300	--	200	490	2.8	76	87	2.8
Ethanol	--	µg/m³	--	--	75 U	75 U	7.5 U	11 U	11 U	100
Ethylbenzene	100-41-4	µg/m³	33,000	--	4.3 U	4.3 U	0.43 U	12	15	62
Hexachlorobutadiene	87-68-3	µg/m³	--	38	2.1 U	2.1 U	0.21 U	0.32 U	0.32 U	2.9
Hexanal	--	µg/m³	--	--	41 U	41 U	4.1 U	6.6	6.2	76
Hexane	110-54-3	µg/m³	23,000	--	43	49	3.5 U	93	78	680
Isobutene	115-11-7	µg/m³	--	--	440	540	0.92 U	480 ve	520 ve	2,100 ve
Isoprene	78-79-5	µg/m³	--	--	2.8 U	7	0.28 U	11	11	69
m,p-Xylene	--	µg/m³	--	--	8.7 U	8.7 U	0.87 U	28	40	200
Naphthalene	91-20-3	µg/m³	100	25	1 U	1 U	0.16 fb	0.79	1.9	**65**
o-Xylene	95-47-6	µg/m³	3,300	--	4.3 U	4.3 U	0.43 U	11	15	84
Pentane	109-66-0	µg/m³	--	--	150	270	3 U	210	210	890 ve
Propene	115-07-1	µg/m³	--	--	770	1,700 ve	1.7 U	670 ve	870 ve	2,100 ve
Styrene	100-42-5	µg/m³	33,000	--	8.5 U	8.5 U	0.85 U	2.1	3.6	13
Tetrachloroethene	127-18-4	µg/m³	1,333	3,205	6.8 U	6.8 U	0.68 U	3.5	4.0	3.1
Toluene	108-88-3	µg/m³	170,000	--	14	5.2	1.0	43	45	510
trans-1,2-Dichloroethene	--	µg/m³	--	--	4 U	4 U	0.4 U	0.59 U	0.59 U	2.0
Trichloroethene	79-01-6	µg/m³	67	210	2.7 U	6.1	0.27 U	0.61	0.58	2.5
Trichlorofluoromethane	75-69-4	µg/m³	23,000	--	470	180	1.4	730 ve	710 ve	5.4
Vinyl chloride	75-01-4	µg/m³	3,300	93	2.6 U	2.6 U	0.26 U	0.38 U	0.38 U	8.9

Notes:

--	Not applicable.
RED	Detected concentration that exceeds criteria.
1	Loc 109 is a field duplicate of Loc 9 collected on 5/8/2018.

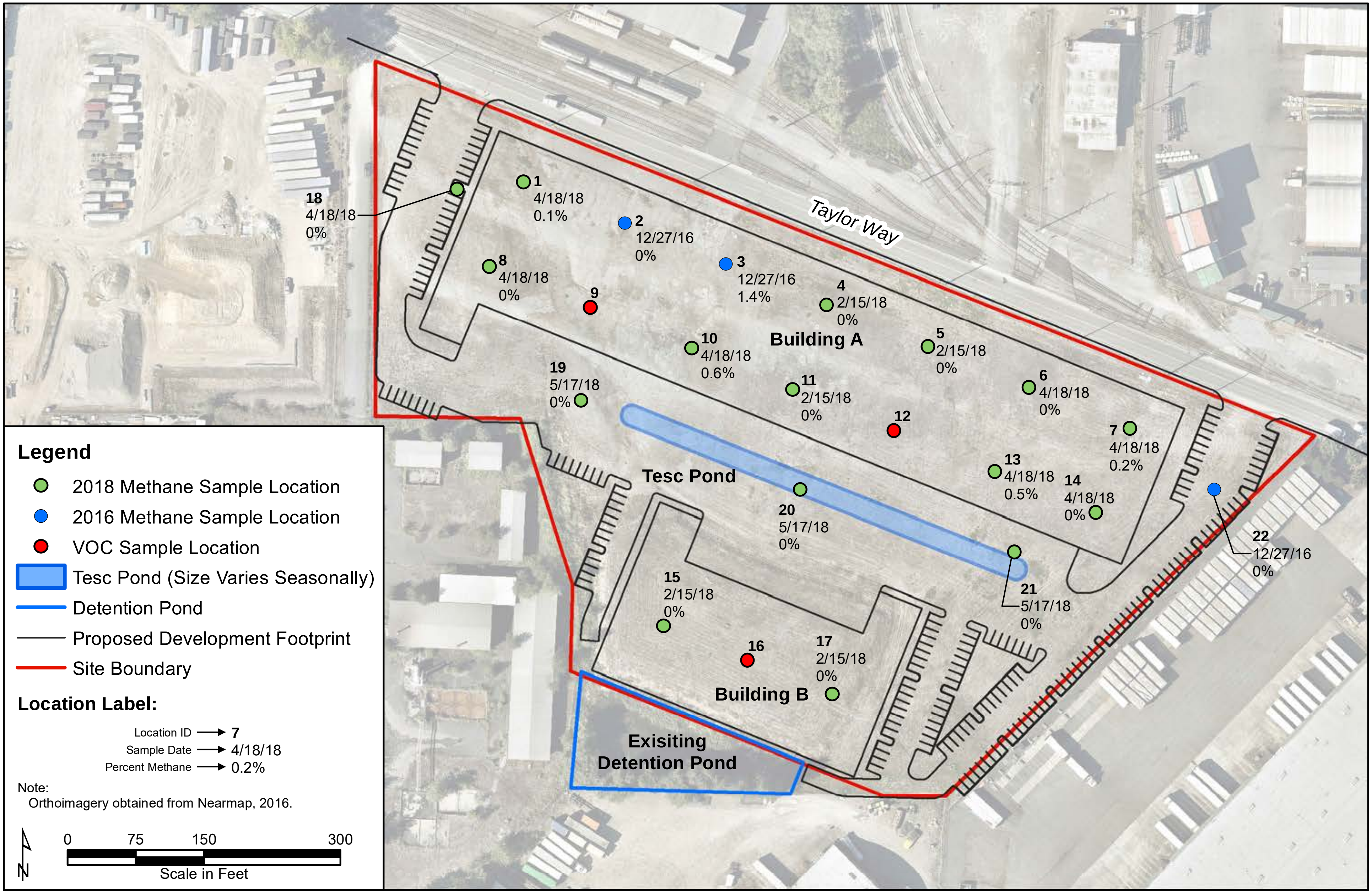
Abbreviations:

CAS	Chemical Abstracts Service
µg/m³	Micrograms per cubic meter

Qualifiers:

fb	The analyte was detected in the method blank.
U	The analyte was not detected at the given reporting limit.
ve	The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

Figure



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Summary of Soil Vapor Survey Data and Vapor Mitigation Plan for the 1514 Taylor Way Site
1514 Taylor Way Development
Tacoma, Washington

Figure 1
Vapor Survey Sample Locations and Methane Results

I:\GIS\Projects\Ave55-TaylorWay\MXD\Vapor Survey Results\Figure 1 Vapor Survey Sample Locations and Methane Results.mxd
6/7/2018

Attachment 1
Lab Report and Field Form

DRAFT

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Ambient	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-01
Date Analyzed:	05/14/18	Data File:	051416.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	79	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	63
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

DRAFT

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	LOC 09	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-02 1/1.5
Date Analyzed:	05/14/18	Data File:	051417.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,100 ve
APH EC9-12 aliphatics	1,600
APH EC9-10 aromatics	<37

DRAFT

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	LOC 109	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-03 1/1.5
Date Analyzed:	05/15/18	Data File:	051418.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	107	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,500 ve
APH EC9-12 aliphatics	2,600
APH EC9-10 aromatics	<37

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Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	LOC 16	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-04 1/4
Date Analyzed:	05/15/18	Data File:	051419.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	102	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	24,000 ve
APH EC9-12 aliphatics	24,000 ve
APH EC9-10 aromatics	<100

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Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/14/18	Lab ID:	08-1000 mb
Date Analyzed:	05/14/18	Data File:	051406.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	80	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<46
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

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Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Ambient	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-01
Date Analyzed:	05/14/18	Data File:	051416.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	1.0	0.29	1-Butanol	<6.1	<2
Propene	<1.7	<1	Carbon tetrachloride	<0.63	<0.1
Dichlorodifluoromethane	2.8	0.57	Benzene	0.39	0.12
Chloromethane	1.3	0.64	Cyclohexane	<6.9	<2
F-114	<0.7	<0.1	2-Pentanone	<3.5	<1
Isobutene	<0.92	<0.4	3-Pentanone	<3.5	<1
Acetaldehyde	<9	<5	Pentanal	<3.5	<1
Vinyl chloride	<0.26	<0.1	1,2-Dichloropropane	<0.23	<0.05
1,3-Butadiene	0.046	0.021	1,4-Dioxane	<0.36	<0.1
Bromomethane	0.98	0.25	Bromodichloromethane	<0.067	<0.01
Chloroethane	<0.26	<0.1	Trichloroethene	<0.27	<0.05
Ethanol	<7.5	<4	cis-1,3-Dichloropropene	<0.45	<0.1
Acetonitrile	<1.7	<1	4-Methyl-2-pentanone	<4.1	<1
Acrolein	<0.92	<0.4	trans-1,3-Dichloropropene	<0.45	<0.1
Acrylonitrile	<0.22	<0.1	Toluene	1.0	0.27
Pentane	<3	<1	1,1,2-Trichloroethane	<0.055	<0.01
Trichlorofluoromethane	1.4	0.25	3-Hexanone	<4.1	<1
Acetone	8.9	3.8	2-Hexanone	<4.1	<1
2-Propanol	<8.6	<3.5	Hexanal	<4.1	<1
Isoprene	<0.28	<0.1	Tetrachloroethene	<0.68	<0.1
Iodomethane	<0.58	<0.1	Dibromochloromethane	<0.085	<0.01
1,1-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methacrolein	<2.9	<1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Cyclopentane	<0.29	<0.1	1,1,2,2-Tetrachloroethane	<0.14	<0.02
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	<0.87	<0.2
Butanal	<2.9	<1	o-Xylene	<0.43	<0.1
Methylene chloride	<87 ca	<25 ca	Styrene	<0.85	<0.2
CFC-113	<0.77	<0.1	Bromoform	<2.1	<0.2
Carbon disulfide	<6.2	<2	Benzyl chloride	<0.052	<0.01
Methyl t-butyl ether (MTBE)	<1.8	<0.5	1,3,5-Trimethylbenzene	<2.5	<0.5
Vinyl acetate	<7	<2	1,2,4-Trimethylbenzene	<2.5	<0.5
1,1-Dichloroethane	<0.4	<0.1	1,3-Dichlorobenzene	<0.6	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	1,4-Dichlorobenzene	<0.24	<0.04
Hexane	<3.5	<1	1,2,3-Trimethylbenzene	<2.5	<0.5
Chloroform	0.17	0.034	1,2-Dichlorobenzene	<0.6	<0.1
2-Butanone (MEK)	<2.9	<1	1,2,4-Trichlorobenzene	<0.74	<0.1
1,2-Dichloroethane (EDC)	0.097	0.024	Naphthalene	0.16 fb	0.031 fb
1,1,1-Trichloroethane	<0.55	<0.1	Hexachlorobutadiene	<0.21	<0.02

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Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	LOC 09	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-02 1/1.5
Date Analyzed:	05/14/18	Data File:	051417.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	115	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<0.53	<0.15	1-Butanol	<9.1	<3
Propene	670 ve	390 ve	Carbon tetrachloride	<0.94	<0.15
Dichlorodifluoromethane	76	15	Benzene	38	12
Chloromethane	12	5.8	Cyclohexane	24	6.9
F-114	<1	<0.15	2-Pentanone	<5.3	<1.5
Isobutene	480 ve	210 ve	3-Pentanone	<5.3	<1.5
Acetaldehyde	52	29	Pentanal	<5.3	<1.5
Vinyl chloride	<0.38	<0.15	1,2-Dichloropropane	2.9	0.62
1,3-Butadiene	<0.033	<0.015	1,4-Dioxane	<0.54	<0.15
Bromomethane	<1.2	<0.3	Bromodichloromethane	<0.1	<0.015
Chloroethane	1.4	0.53	Trichloroethene	0.61	0.11
Ethanol	<11	<6	cis-1,3-Dichloropropene	<0.68	<0.15
Acetonitrile	<2.5	<1.5	4-Methyl-2-pentanone	<6.1	<1.5
Acrolein	<1.4	<0.6	trans-1,3-Dichloropropene	<0.68	<0.15
Acrylonitrile	<0.33	<0.15	Toluene	43	11
Pentane	210	71	1,1,2-Trichloroethane	<0.082	<0.015
Trichlorofluoromethane	730 ve	130 ve	3-Hexanone	<6.1	<1.5
Acetone	110	48	2-Hexanone	<6.1	<1.5
2-Propanol	<13	<5.2	Hexanal	6.6	1.6
Isoprene	11	3.8	Tetrachloroethene	3.5	0.51
Iodomethane	<0.87	<0.15	Dibromochloromethane	<0.13	<0.015
1,1-Dichloroethene	0.76	0.19	1,2-Dibromoethane (EDB)	<0.12	<0.015
Methacrolein	<4.3	<1.5	Chlorobenzene	<0.69	<0.15
trans-1,2-Dichloroethene	<0.59	<0.15	Ethylbenzene	12	2.7
Cyclopentane	14	5.0	1,1,2,2-Tetrachloroethane	<0.21	<0.03
Methyl vinyl ketone	<4.3	<1.5	m,p-Xylene	28	6.5
Butanal	5.6	1.9	o-Xylene	11	2.5
Methylene chloride	<130 ca	<37 ca	Styrene	2.1	0.49
CFC-113	<1.1	<0.15	Bromoform	<3.1	<0.3
Carbon disulfide	24	7.7	Benzyl chloride	<0.078	<0.015
Methyl t-butyl ether (MTBE)	<2.7	<0.75	1,3,5-Trimethylbenzene	5.4	1.1
Vinyl acetate	<11	<3	1,2,4-Trimethylbenzene	6.4	1.3
1,1-Dichloroethane	2.1	0.52	1,3-Dichlorobenzene	2.6	0.43
cis-1,2-Dichloroethene	<0.59	<0.15	1,4-Dichlorobenzene	<0.36	<0.06
Hexane	93	26	1,2,3-Trimethylbenzene	<3.7	<0.75
Chloroform	340	69	1,2-Dichlorobenzene	<0.9	<0.15
2-Butanone (MEK)	6.5	2.2	1,2,4-Trichlorobenzene	<1.1	<0.15
1,2-Dichloroethane (EDC)	2.3	0.58	Naphthalene	0.79	0.15
1,1,1-Trichloroethane	44	8.1	Hexachlorobutadiene	<0.32	<0.03

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	LOC 109	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-03 1/1.5
Date Analyzed:	05/15/18	Data File:	051418.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	127	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<0.53	<0.15	1-Butanol	<9.1	<3
Propene	870 ve	500 ve	Carbon tetrachloride	<0.94	<0.15
Dichlorodifluoromethane	87	18	Benzene	38	12
Chloromethane	12	5.8	Cyclohexane	22	6.5
F-114	<1	<0.15	2-Pentanone	<5.3	<1.5
Isobutene	520 ve	230 ve	3-Pentanone	<5.3	<1.5
Acetaldehyde	62	34	Pentanal	<5.3	<1.5
Vinyl chloride	<0.38	<0.15	1,2-Dichloropropane	2.8	0.60
1,3-Butadiene	<0.033	<0.015	1,4-Dioxane	<0.54	<0.15
Bromomethane	<1.2	<0.3	Bromodichloromethane	<0.1	<0.015
Chloroethane	1.4	0.53	Trichloroethene	0.58	0.11
Ethanol	<11	<6	cis-1,3-Dichloropropene	<0.68	<0.15
Acetonitrile	<2.5	<1.5	4-Methyl-2-pentanone	<6.1	<1.5
Acrolein	<1.4	<0.6	trans-1,3-Dichloropropene	<0.68	<0.15
Acrylonitrile	<0.33	<0.15	Toluene	45	12
Pentane	210	72	1,1,2-Trichloroethane	<0.082	<0.015
Trichlorofluoromethane	710 ve	130 ve	3-Hexanone	<6.1	<1.5
Acetone	110	46	2-Hexanone	<6.1	<1.5
2-Propanol	<13	<5.2	Hexanal	6.2	1.5
Isoprene	11	3.9	Tetrachloroethene	4.0	0.58
Iodomethane	<0.87	<0.15	Dibromochloromethane	<0.13	<0.015
1,1-Dichloroethene	0.76	0.19	1,2-Dibromoethane (EDB)	<0.12	<0.015
Methacrolein	<4.3	<1.5	Chlorobenzene	<0.69	<0.15
trans-1,2-Dichloroethene	<0.59	<0.15	Ethylbenzene	15	3.4
Cyclopentane	15	5.3	1,1,2,2-Tetrachloroethane	<0.21	<0.03
Methyl vinyl ketone	<4.3	<1.5	m,p-Xylene	40	9.2
Butanal	<4.4	<1.5	o-Xylene	15	3.4
Methylene chloride	<130 ca	<37 ca	Styrene	3.6	0.83
CFC-113	<1.1	<0.15	Bromoform	<3.1	<0.3
Carbon disulfide	23	7.5	Benzyl chloride	<0.078	<0.015
Methyl t-butyl ether (MTBE)	<2.7	<0.75	1,3,5-Trimethylbenzene	9.2	1.9
Vinyl acetate	<11	<3	1,2,4-Trimethylbenzene	13	2.7
1,1-Dichloroethane	2.1	0.51	1,3-Dichlorobenzene	1.2	0.19
cis-1,2-Dichloroethene	<0.59	<0.15	1,4-Dichlorobenzene	<0.36	<0.06
Hexane	78	22	1,2,3-Trimethylbenzene	7.3	1.5
Chloroform	310	64	1,2-Dichlorobenzene	<0.9	<0.15
2-Butanone (MEK)	7.2	2.4	1,2,4-Trichlorobenzene	<1.1	<0.15
1,2-Dichloroethane (EDC)	2.3	0.57	Naphthalene	1.9	0.37
1,1,1-Trichloroethane	45	8.2	Hexachlorobutadiene	<0.32	<0.03

DRAFT

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	LOC 16	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-04 1/4
Date Analyzed:	05/15/18	Data File:	051419.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	121	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	<1.4	<0.4	1-Butanol	<24	<8
Propene	3,100 ve	1,800 ve	Carbon tetrachloride	<2.5	<0.4
Dichlorodifluoromethane	2.8	0.56	Benzene	270	85
Chloromethane	12	5.6	Cyclohexane	380	110
F-114	<2.8	<0.4	2-Pentanone	<14	<4
Isobutene	2,100 ve	910 ve	3-Pentanone	<14	<4
Acetaldehyde	330	180	Pentanal	<14	<4
Vinyl chloride	8.9	3.5	1,2-Dichloropropane	<0.92	<0.2
1,3-Butadiene	<0.088	<0.04	1,4-Dioxane	<1.4	<0.4
Bromomethane	<3.2	<0.8	Bromodichloromethane	<0.27	<0.04
Chloroethane	1.2	0.44	Trichloroethene	2.5	0.47
Ethanol	100	53	cis-1,3-Dichloropropene	<1.8	<0.4
Acetonitrile	<6.7	<4	4-Methyl-2-pentanone	<16	<4
Acrolein	<3.7	<1.6	trans-1,3-Dichloropropene	<1.8	<0.4
Acrylonitrile	<0.87	<0.4	Toluene	510	140
Pentane	890 ve	300 ve	1,1,2-Trichloroethane	<0.22	<0.04
Trichlorofluoromethane	5.4	0.97	3-Hexanone	<16	<4
Acetone	290	120	2-Hexanone	<16	<4
2-Propanol	290	120	Hexanal	76	19
Isoprene	69	25	Tetrachloroethene	3.1	0.46
Iodomethane	<2.3	<0.4	Dibromochloromethane	0.99	0.12
1,1-Dichloroethene	<1.6	<0.4	1,2-Dibromoethane (EDB)	0.77 fb	0.10 fb
Methacrolein	<11	<4	Chlorobenzene	2.2	0.49
trans-1,2-Dichloroethene	2.0	0.49	Ethylbenzene	62	14
Cyclopentane	110	39	1,1,2,2-Tetrachloroethane	2.1	0.30
Methyl vinyl ketone	<11	<4	m,p-Xylene	200	46
Butanal	<12	<4	o-Xylene	84	19
Methylene chloride	<350 ca	<100 ca	Styrene	13	3.0
CFC-113	<3.1	<0.4	Bromoform	<8.3	<0.8
Carbon disulfide	970 ve	310 ve	Benzyl chloride	<0.21	<0.04
Methyl t-butyl ether (MTBE)	<7.2	<2	1,3,5-Trimethylbenzene	69	14
Vinyl acetate	<28	<8	1,2,4-Trimethylbenzene	120	25
1,1-Dichloroethane	<1.6	<0.4	1,3-Dichlorobenzene	11	1.8
cis-1,2-Dichloroethene	7.5	1.9	1,4-Dichlorobenzene	1.6 fb	0.26 fb
Hexane	680	190	1,2,3-Trimethylbenzene	66	13
Chloroform	2,700 ve	560 ve	1,2-Dichlorobenzene	<2.4	<0.4
2-Butanone (MEK)	65	22	1,2,4-Trichlorobenzene	<3	<0.4
1,2-Dichloroethane (EDC)	0.79	0.20	Naphthalene	65	12
1,1,1-Trichloroethane	<2.2	<0.4	Hexachlorobutadiene	2.9	0.28

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/14/18	Lab ID:	08-1000 mb
Date Analyzed:	05/14/18	Data File:	051406.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<0.35	<0.1	1-Butanol	<6.1	<2
Propene	<1.7	<1	Carbon tetrachloride	<0.63	<0.1
Dichlorodifluoromethane	<0.49	<0.1	Benzene	<0.32	<0.1
Chloromethane	<0.21	<0.1	Cyclohexane	<6.9	<2
F-114	<0.7	<0.1	2-Pentanone	<3.5	<1
Isobutene	<0.92	<0.4	3-Pentanone	<3.5	<1
Acetaldehyde	<9	<5	Pentanal	<3.5	<1
Vinyl chloride	<0.26	<0.1	1,2-Dichloropropane	<0.23	<0.05
1,3-Butadiene	<0.022	<0.01	1,4-Dioxane	<0.36	<0.1
Bromomethane	<0.78	<0.2	Bromodichloromethane	<0.067	<0.01
Chloroethane	<0.26	<0.1	Trichloroethene	<0.27	<0.05
Ethanol	<7.5	<4	cis-1,3-Dichloropropene	<0.45	<0.1
Acetonitrile	<1.7	<1	4-Methyl-2-pentanone	<4.1	<1
Acrolein	<0.92	<0.4	trans-1,3-Dichloropropene	<0.45	<0.1
Acrylonitrile	<0.22	<0.1	Toluene	<0.38	<0.1
Pentane	<3	<1	1,1,2-Trichloroethane	<0.055	<0.01
Trichlorofluoromethane	<0.56	<0.1	3-Hexanone	<4.1	<1
Acetone	<4.8	<2	2-Hexanone	<4.1	<1
2-Propanol	<8.6	<3.5	Hexanal	<4.1	<1
Isoprene	<0.28	<0.1	Tetrachloroethene	<0.68	<0.1
Iodomethane	<0.58	<0.1	Dibromochloromethane	<0.085	<0.01
1,1-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methacrolein	<2.9	<1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Cyclopentane	<0.29	<0.1	1,1,2,2-Tetrachloroethane	<0.14	<0.02
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	<0.87	<0.2
Butanal	<2.9	<1	o-Xylene	<0.43	<0.1
Methylene chloride	<87 ca	<25 ca	Styrene	<0.85	<0.2
CFC-113	<0.77	<0.1	Bromoform	<2.1	<0.2
Carbon disulfide	<6.2	<2	Benzyl chloride	<0.052	<0.01
Methyl t-butyl ether (MTBE)	<1.8	<0.5	1,3,5-Trimethylbenzene	<2.5	<0.5
Vinyl acetate	<7	<2	1,2,4-Trimethylbenzene	<2.5	<0.5
1,1-Dichloroethane	<0.4	<0.1	1,3-Dichlorobenzene	<0.6	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	1,4-Dichlorobenzene	<0.24	<0.04
Hexane	<3.5	<1	1,2,3-Trimethylbenzene	<2.5	<0.5
Chloroform	<0.049	<0.01	1,2-Dichlorobenzene	<0.6	<0.1
2-Butanone (MEK)	<2.9	<1	1,2,4-Trichlorobenzene	<0.74	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01	Naphthalene	0.13 lc	0.025 lc
1,1,1-Trichloroethane	<0.55	<0.1	Hexachlorobutadiene	<0.21	<0.02

805181

SAMPLE CHAIN OF CUSTODY

ME 05/10/18

Page # 1 of 1

Report To Tom Colligan
Company Floyd Snider
Address 601 Union St, Ste 600
City, State, ZIP Seattle ; WA 98101
Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*)

PROJECT NAME	PO #
Arc 55 - Taylor Way	

REPORTING LEVEL
☐ Indoor Air
☒ Sub Slab/Soil Gas
☐ Deep Soil Gas
☐ SVE/Grab

INVOICE TO

TURNAROUND TIME
☒ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	TO-15 BTEXN	TO-15 cVOCs	(4L GAPP)	Notes
AMBIENT	01	29229	4hr	5/8/18	30	0934	8	1254			X		no He detection
LOC 09	02	2436 ~~2435~~	109	↓	30	1133	3	1142			X		
LOC 109	03	3674	231		30	1202 ~~[illegible]~~	3	1209			X		
LOC 16	04	2435 ~~2436~~	111		30	1220	21	1235			X		
													Samples received at 17 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Kristin Anderson	FS	5/9/18	0930
Received by:	Elizabeth Webber-Bey	F&BI	5/10/18	1045
Relinquished by:				
Received by:				

FORMS\COC\COCTO-15.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 30, 2018

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on April 19, 2018 from the Ave 55 - Taylor Way, F&BI 804329 project. There are 13 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Kristin Anderson
FDS0430R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on April 19, 2018 by Friedman & Bruya, Inc. from the Floyd-Snider Ave 55 - Taylor Way, F&BI 804329 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
804329 -01	Loc 12
804329 -02	Loc 16
804329 -03	Loc 9

Water was present in sample Loc 16. The analysis was placed on hold.

The TO-15 propene concentration in sample Loc 12 exceeded the calibration range of the instrument. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 04/30/18
Date Received: 04/19/18
Project: Ave 55 - Taylor Way, F&BI 804329
Date Extracted: 04/27/18
Date Analyzed: 04/27/18

RESULTS FROM THE ANALYSIS OF AIR SAMPLES FOR HELIUM USING METHOD ASTM D1946

Results Reported as % Helium

Sample ID Laboratory ID	Helium
Loc 12 804329-01	<0.6
Loc 16 804329-03	1.1
Method Blank	<0.6

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Loc 12	Client:	Floyd-Snider
Date Received:	04/19/18	Project:	Ave 55 - Taylor Way, F&BI 804329
Date Collected:	04/18/18	Lab ID:	804329-01 1/10
Date Analyzed:	04/25/18	Data File:	042510.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,200
APH EC9-12 aliphatics	380
APH EC9-10 aromatics	<250

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Loc 9	Client:	Floyd-Snider
Date Received:	04/19/18	Project:	Ave 55 - Taylor Way, F&BI 804329
Date Collected:	04/18/18	Lab ID:	804329-03 1/10
Date Analyzed:	04/25/18	Data File:	042511.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,500
APH EC9-12 aliphatics	510
APH EC9-10 aromatics	<250

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55 - Taylor Way, F&BI 804329
Date Collected:	Not Applicable	Lab ID:	08-0846 mb
Date Analyzed:	04/25/18	Data File:	042509.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<46
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Loc 12	Client:	Floyd-Snider
Date Received:	04/19/18	Project:	Ave 55 - Taylor Way, F&BI 804329
Date Collected:	04/18/18	Lab ID:	804329-01 1/10
Date Analyzed:	04/25/18	Data File:	042510.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<3.5	<1	1-Butanol	<61	<20
Propene	1,700 ve	1,000 ve	Carbon tetrachloride	<6.3	<1
Dichlorodifluoromethane	490	100	Benzene	5.9	1.8
Chloromethane	8.5	4.1	Cyclohexane	<69	<20
F-114	<7	<1	2-Pentanone	<35	<10
Isobutene	540	240	3-Pentanone	<35	<10
Acetaldehyde	<90	<50	Pentanal	<35	<10
Vinyl chloride	<2.6	<1	1,2-Dichloropropane	<2.3	<0.5
1,3-Butadiene	<0.22	<0.1	1,4-Dioxane	<3.6	<1
Bromomethane	<3.9	<1	Bromodichloromethane	<0.67	<0.1
Chloroethane	<2.6	<1	Trichloroethene	6.1	1.1
Ethanol	<75	<40	cis-1,3-Dichloropropene	<4.5	<1
Acetonitrile	<17	<10	4-Methyl-2-pentanone	<41	<10
Acrolein	<9.2	<4	trans-1,3-Dichloropropene	<4.5	<1
Acrylonitrile	<2.2	<1	Toluene	5.2	1.4
Pentane	270	92	1,1,2-Trichloroethane	<0.55	<0.1
Trichlorofluoromethane	180	32	3-Hexanone	<41	<10
Acetone	190	79	2-Hexanone	<41	<10
2-Propanol	<86	<35	Hexanal	<41	<10
Isoprene	7.0	2.5	Tetrachloroethene	<6.8	<1
Iodomethane	<5.8	<1	Dibromochloromethane	<0.85	<0.1
1,1-Dichloroethene	<4	<1	1,2-Dibromoethane (EDB)	<0.77	<0.1
Methacrolein	<29	<10	Chlorobenzene	<4.6	<1
trans-1,2-Dichloroethene	<4	<1	Ethylbenzene	<4.3	<1
Cyclopentane	61	21	1,1,2,2-Tetrachloroethane	<1.4	<0.2
Methyl vinyl ketone	<29	<10	m,p-Xylene	<8.7	<2
Butanal	<29	<10	o-Xylene	<4.3	<1
Methylene chloride	<870	<250	Styrene	<8.5	<2
CFC-113	<7.7	<1	Bromoform	<21	<2
Carbon disulfide	<62	<20	Benzyl chloride	<0.52	<0.1
Methyl t-butyl ether (MTBE)	<18	<5	1,3,5-Trimethylbenzene	<25	<5
Vinyl acetate	<70	<20	1,2,4-Trimethylbenzene	<25	<5
1,1-Dichloroethane	5.0	1.2	1,3-Dichlorobenzene	<6	<1
cis-1,2-Dichloroethene	<4	<1	1,4-Dichlorobenzene	<2.4	<0.4
Hexane	49	14	1,2,3-Trimethylbenzene	<25	<5
Chloroform	2.5	0.52	1,2-Dichlorobenzene	<6	<1
2-Butanone (MEK)	<29	<10	1,2,4-Trichlorobenzene	<7.4	<1
1,2-Dichloroethane (EDC)	0.97	0.24	Naphthalene	<1	<0.2
1,1,1-Trichloroethane	13	2.4	Hexachlorobutadiene	<2.1	<0.2

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Loc 9	Client:	Floyd-Snider
Date Received:	04/19/18	Project:	Ave 55 - Taylor Way, F&BI 804329
Date Collected:	04/18/18	Lab ID:	804329-03 1/10
Date Analyzed:	04/25/18	Data File:	042511.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	<3.5	<1	1-Butanol	<61	<20
Propene	770	450	Carbon tetrachloride	<6.3	<1
Dichlorodifluoromethane	200	40	Benzene	15	4.8
Chloromethane	9.9	4.8	Cyclohexane	<69	<20
F-114	<7	<1	2-Pentanone	<35	<10
Isobutene	440	190	3-Pentanone	<35	<10
Acetaldehyde	<90	<50	Pentanal	<35	<10
Vinyl chloride	<2.6	<1	1,2-Dichloropropane	<2.3	<0.5
1,3-Butadiene	<0.22	<0.1	1,4-Dioxane	<3.6	<1
Bromomethane	<3.9	<1	Bromodichloromethane	<0.67	<0.1
Chloroethane	<2.6	<1	Trichloroethene	<2.7	<0.5
Ethanol	<75	<40	cis-1,3-Dichloropropene	<4.5	<1
Acetonitrile	<17	<10	4-Methyl-2-pentanone	<41	<10
Acrolein	<9.2	<4	trans-1,3-Dichloropropene	<4.5	<1
Acrylonitrile	<2.2	<1	Toluene	14	3.7
Pentane	150	50	1,1,2-Trichloroethane	<0.55	<0.1
Trichlorofluoromethane	470	83	3-Hexanone	<41	<10
Acetone	<48	<20	2-Hexanone	<41	<10
2-Propanol	<86	<35	Hexanal	<41	<10
Isoprene	<2.8	<1	Tetrachloroethene	<6.8	<1
Iodomethane	<5.8	<1	Dibromochloromethane	<0.85	<0.1
1,1-Dichloroethene	<4	<1	1,2-Dibromoethane (EDB)	<0.77	<0.1
Methacrolein	<29	<10	Chlorobenzene	<4.6	<1
trans-1,2-Dichloroethene	<4	<1	Ethylbenzene	<4.3	<1
Cyclopentane	15	5.4	1,1,2,2-Tetrachloroethane	<1.4	<0.2
Methyl vinyl ketone	<29	<10	m,p-Xylene	<8.7	<2
Butanal	<29	<10	o-Xylene	<4.3	<1
Methylene chloride	<870	<250	Styrene	<8.5	<2
CFC-113	<7.7	<1	Bromoform	<21	<2
Carbon disulfide	<62	<20	Benzyl chloride	<0.52	<0.1
Methyl t-butyl ether (MTBE)	<18	<5	1,3,5-Trimethylbenzene	<25	<5
Vinyl acetate	<70	<20	1,2,4-Trimethylbenzene	<25	<5
1,1-Dichloroethane	<4	<1	1,3-Dichlorobenzene	25	4.1
cis-1,2-Dichloroethene	<4	<1	1,4-Dichlorobenzene	<2.4	<0.4
Hexane	43	12	1,2,3-Trimethylbenzene	<25	<5
Chloroform	3.1	0.63	1,2-Dichlorobenzene	<6	<1
2-Butanone (MEK)	<29	<10	1,2,4-Trichlorobenzene	<7.4	<1
1,2-Dichloroethane (EDC)	0.73	0.18	Naphthalene	<1	<0.2
1,1,1-Trichloroethane	24	4.5	Hexachlorobutadiene	<2.1	<0.2

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55 - Taylor Way, F&BI 804329
Date Collected:	Not Applicable	Lab ID:	08-0846 mb
Date Analyzed:	04/25/18	Data File:	042509.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<0.35	<0.1	1-Butanol	<6.1	<2
Propene	<0.69	<0.4	Carbon tetrachloride	<0.63	<0.1
Dichlorodifluoromethane	<0.49	<0.1	Benzene	<0.32	<0.1
Chloromethane	<0.21	<0.1	Cyclohexane	<6.9	<2
F-114	<0.7	<0.1	2-Pentanone	<3.5	<1
Isobutene	<0.92	<0.4	3-Pentanone	<3.5	<1
Acetaldehyde	<9	<5	Pentanal	<3.5	<1
Vinyl chloride	<0.26	<0.1	1,2-Dichloropropane	<0.23	<0.05
1,3-Butadiene	<0.022	<0.01	1,4-Dioxane	<0.36	<0.1
Bromomethane	<0.39	<0.1	Bromodichloromethane	<0.067	<0.01
Chloroethane	<0.26	<0.1	Trichloroethene	<0.27	<0.05
Ethanol	<7.5	<4	cis-1,3-Dichloropropene	<0.45	<0.1
Acetonitrile	<1.7	<1	4-Methyl-2-pentanone	<4.1	<1
Acrolein	<0.92	<0.4	trans-1,3-Dichloropropene	<0.45	<0.1
Acrylonitrile	<0.22	<0.1	Toluene	<0.38	<0.1
Pentane	<3	<1	1,1,2-Trichloroethane	<0.055	<0.01
Trichlorofluoromethane	<0.56	<0.1	3-Hexanone	<4.1	<1
Acetone	<4.8	<2	2-Hexanone	<4.1	<1
2-Propanol	<8.6	<3.5	Hexanal	<4.1	<1
Isoprene	<0.28	<0.1	Tetrachloroethene	<0.68	<0.1
Iodomethane	<0.58	<0.1	Dibromochloromethane	<0.085	<0.01
1,1-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methacrolein	<2.9	<1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Cyclopentane	<0.29	<0.1	1,1,2,2-Tetrachloroethane	<0.14	<0.02
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	<0.87	<0.2
Butanal	<2.9	<1	o-Xylene	<0.43	<0.1
Methylene chloride	<87	<25	Styrene	<0.85	<0.2
CFC-113	<0.77	<0.1	Bromoform	<2.1	<0.2
Carbon disulfide	<6.2	<2	Benzyl chloride	<0.052	<0.01
Methyl t-butyl ether (MTBE)	<1.8	<0.5	1,3,5-Trimethylbenzene	<2.5	<0.5
Vinyl acetate	<7	<2	1,2,4-Trimethylbenzene	<2.5	<0.5
1,1-Dichloroethane	<0.4	<0.1	1,3-Dichlorobenzene	<0.6	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	1,4-Dichlorobenzene	<0.24	<0.04
Hexane	<3.5	<1	1,2,3-Trimethylbenzene	<2.5	<0.5
Chloroform	<0.049	<0.01	1,2-Dichlorobenzene	<0.6	<0.1
2-Butanone (MEK)	<2.9	<1	1,2,4-Trichlorobenzene	<0.74	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01	Naphthalene	<0.1	<0.02
1,1,1-Trichloroethane	<0.55	<0.1	Hexachlorobutadiene	<0.21	<0.02

Date of Report: 04/30/18
Date Received: 04/19/18
Project: Ave 55 - Taylor Way, F&BI 804329

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR HELIUM
USING METHOD ASTM D1946

Laboratory Code: 804329-03 (Duplicate)

Analyte	Sample Result (%)	Duplicate Result (%)	Relative Percent Difference	Acceptance Criteria
Helium	1.1	<0.6	nm	0-50

Date of Report: 04/30/18
Date Received: 04/19/18
Project: Ave 55 - Taylor Way, F&BI 804329

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD APH

Laboratory Code: 804329-03 1/10 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 25)
APH EC5-8 aliphatics	ug/m3	1,500	1,700	12
APH EC9-12 aliphatics	ug/m3	510	550	8
APH EC9-10 aromatics	ug/m3	<250	<250	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	230	74	70-130
APH EC9-12 aliphatics	ug/m3	350	97	70-130
APH EC9-10 aromatics	ug/m3	251	80	70-130

Date of Report: 04/30/18
Date Received: 04/19/18
Project: Ave 55 - Taylor Way, F&BI 804329

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chlorodifluoromethane	ppbv	10	98	70-130
Propene	ppbv	10	88	70-130
Dichlorodifluoromethane	ppbv	10	98	70-130
Chloromethane	ppbv	10	104	70-130
F-114	ppbv	10	103	70-130
Isobutene	ppbv	10	100	70-130
Acetaldehyde	ppbv	10	97	70-130
Vinyl chloride	ppbv	10	106	70-130
1,3-Butadiene	ppbv	10	104	70-130
Bromomethane	ppbv	10	129	70-130
Chloroethane	ppbv	10	105	70-130
Ethanol	ppbv	10	97	70-130
Acetonitrile	ppbv	10	106	70-130
Acrolein	ppbv	10	98	70-130
Acrylonitrile	ppbv	10	98	70-130
Pentane	ppbv	10	93	70-130
Trichlorofluoromethane	ppbv	10	90	70-130
Acetone	ppbv	10	93	70-130
2-Propanol	ppbv	10	82	70-130
Isoprene	ppbv	10	95	70-130
Iodomethane	ppbv	10	93	70-130
1,1-Dichloroethene	ppbv	10	100	70-130
Methacrolein	ppbv	10	95	70-130
trans-1,2-Dichloroethene	ppbv	10	100	70-130
Cyclopentane	ppbv	10	99	70-130
Methyl Vinyl Ketone	ppbv	10	99	70-130
Butanal	ppbv	10	96	70-130
Methylene chloride	ppbv	10	87	70-130
CFC-113	ppbv	10	96	70-130
Carbon disulfide	ppbv	10	93	70-130
Methyl t-butyl ether	ppbv	10	89	70-130
Vinyl acetate	ppbv	10	77	70-130
1,1-Dichloroethane	ppbv	10	101	70-130
cis-1,2-Dichloroethene	ppbv	10	101	70-130
Hexane	ppbv	10	93	70-130
Chloroform	ppbv	10	103	70-130
2-Butanone (MEK)	ppbv	10	96	70-130
1,2-Dichloroethane (EDC)	ppbv	10	100	70-130
1,1,1-Trichloroethane	ppbv	10	95	70-130
1-Butanol	ppbv	10	84	70-130
Carbon tetrachloride	ppbv	10	89	70-130

Date of Report: 04/30/18
Date Received: 04/19/18
Project: Ave 55 - Taylor Way, F&BI 804329

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample (Continued)

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ppbv	10	103	70-130
Cyclohexane	ppbv	10	95	70-130
2-Pentanone	ppbv	10	95	70-130
3-Pentanone	ppbv	10	106	70-130
Pentanal	ppbv	10	97	70-130
1,2-Dichloropropane	ppbv	10	105	70-130
1,4-Dioxane	ppbv	10	87	70-130
Bromodichloromethane	ppbv	10	104	70-130
Trichloroethene	ppbv	10	102	70-130
cis-1,3-Dichloropropene	ppbv	10	92	70-130
4-Methyl-2-pentanone	ppbv	10	86	70-130
trans-1,3-Dichloropropene	ppbv	10	88	70-130
Toluene	ppbv	10	99	70-130
1,1,2-Trichloroethane	ppbv	10	102	70-130
3-Hexanone	ppbv	10	90	70-130
2-Hexanone	ppbv	10	90	70-130
Hexanal	ppbv	10	93	70-130
Tetrachloroethene	ppbv	10	99	70-130
Dibromochloromethane	ppbv	10	105	70-130
1,2-Dibromoethane (EDB)	ppbv	10	103	70-130
Chlorobenzene	ppbv	10	98	70-130
Ethylbenzene	ppbv	10	100	70-130
1,1,2,2-Tetrachloroethane	ppbv	10	103	70-130
m,p-Xylene	ppbv	20	101	70-130
o-Xylene	ppbv	10	103	70-130
Styrene	ppbv	10	98	70-130
Bromoform	ppbv	10	104	70-130
Benzyl chloride	ppbv	10	81	70-130
1,3,5-Trimethylbenzene	ppbv	10	96	70-130
1,2,4-Trimethylbenzene	ppbv	10	94	70-130
1,3-Dichlorobenzene	ppbv	10	102	70-130
1,4-Dichlorobenzene	ppbv	10	103	70-130
1,2,3-Trimethylbenzene	ppbv	10	96	70-130
1,2-Dichlorobenzene	ppbv	10	102	70-130
1,2,4-Trichlorobenzene	ppbv	10	84	70-130
Naphthalene	ppbv	10	104	70-130
Hexachlorobutadiene	ppbv	10	97	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

804329

SAMPLE CHAIN OF CUSTODY

ME 04-19-18

Report To Tom Colligan
Company Floyd Snider
Address 601 Union St, Ste 600
City, State, ZIP Seattle, WA 98101
Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*)

PROJECT NAME Arc 55 - Taylor Way

PO #

REPORTING LEVEL
☐ Indoor Air
☒ Sub Slab/Soil Gas
☒ Deep Soil Gas
☐ SVE/Grab

INVOICE TO

Page # 1 of 1

TURNAROUND TIME
☐ Standard
☒ RUSH 5-day
Rush charges authorized by:

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	Helium ~~TO-15 BTEXN~~	Full List TO-15 ~~cVOCs~~	APH's	He detection for leaks Notes
LOC 12	01	2433	18	4/18/18	30	0924	2	0931		X	X	X	
LOC 16	02	3389	224	4/18/18	30	1621	15	1643		X	X	X	water in sample pt ~ likely bad sample
LOC 9	03	3672	01	4/18/18	30	1651	2	1659		X	X	X	
													Samples received at 20 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Kristin Andersen	FS	4/19/18	0830
Received by:		Eric [illegible]	F&B	4/19/18	0830
Relinquished by:					
Received by:					

FORMS\COC\COCTO-15.DOC

SOIL VAPOR SAMPLING SHEET

Site Reference: Are 55 - Taylor Way

Address: 1514 Taylor Way, Tacoma

Date: 4/18/2018 + 5/8/2018

Personnel: K Anderson

		Vacuum Test		Purging				Helium		Sampling				PID		
	Soil Vapor Sampling Point ID	Time Start Vacuum Testing	Time Stop Vacuum Testing	Time Start Purging	Time Stop Purging	Purging Rate (ml/min)	Total Volume Purged (ml)	Time of Helium Reading	Helium Reading (%)	Time Start Sampling	Time Stop Sampling	Canister Vacuum Before Sampling (in Hg)	Canister Vacuum After Sampling (in Hg)	Time of PID Reading	PID Reading	Lab canister # ~~Notes~~
4/18	LOC 12	4/17@2212	2222	0921	0924	167	500	0924	11.9%	0924	0934	30	2	1042	0.0	#2433
	LOC 16	4/17@2214	2224	1618	1621	167	500	1621	11.0%	1621	1643	30	15	1618	0.1	#3389
	LOC9	4/17@2225	2235	1648	1651	167	500	1651	10.8%	1651	1659	30	2	1649	0.5	# 3672
5/8	LOC 9	1100	1110	1129	1132	167	500	—	—	1133	1142	30	3	1132	1.2	# 2436
	LOC 9dup	1101	1111	1159	1202	167	500	—	—	1202	1209	30	3	1202	1.3	#3674
	LOC 16	1059	1109	1217	1220	167	500	—	—	1220	1235	30	21	1220	0.4	# 2435

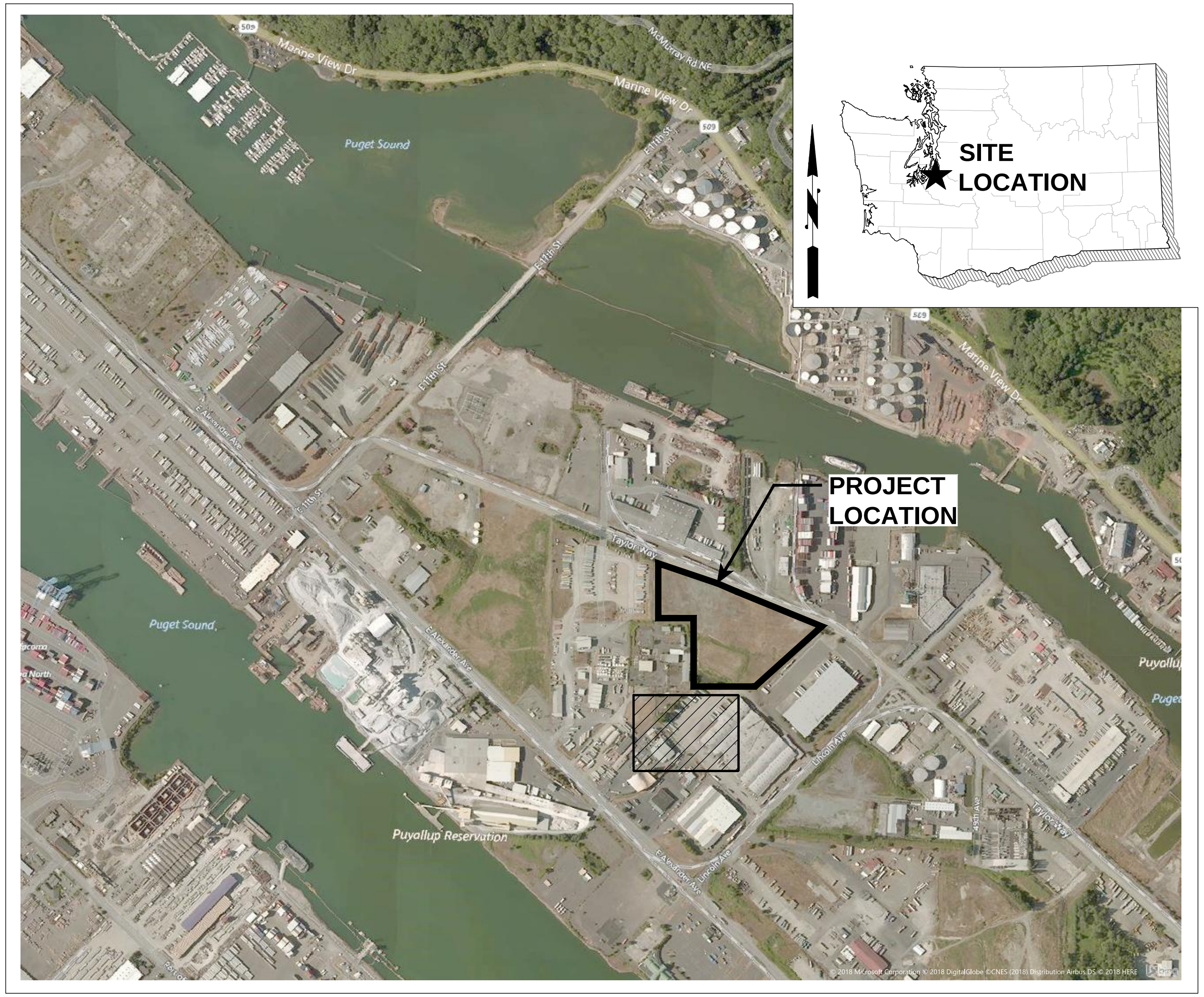
Notes:
1) purge time for 3x volumes 1-2 min. ~~purged 3 min~~ based on 5-10 ft tubing. purged total 3 min
2) encountered water at loc 16 on 4/18. excessive vacuum @ sample loc + likely water in canister
3) He leak detection test passed on all samples coll. 4/18. per WP no leak test 5/8
4) excessive vacuum at LOC 16 on 5/8. low sample volume.
5) LOC 9 dup labeled LOC 109

Attachment 2

Vapor Mitigation Plans and Field Inspection Reports

AVE 55 TAYLOR AVE METHANE MITIGATION PROJECT

TACOMA, WASHINGTON



VICINITY MAP

SCALE: N.T.S.

SHEET INDEX		
SHEET NO.	DRAWING NO.	DESCRIPTION
1	G-1	COVER SHEET
2	G-2	GENERAL NOTES
3	C-1	BUILDING A
4	C-2	NORTH WEST OFFICE AREA OF BUILDING A
5	C-3	NORTH EAST OFFICE AREA OF BUILDING A
6	C-4	TYPICAL DETAILS
7	C-5	PENETRATION DETAILS

CLIENT:

AVENUE 55
600 UNIVERSITY ST.
SUITE 2305
SEATTLE, WA, 98101
PHONE: 206.707.9696
CONTACT: DREW ZABOROWSKI

GENERAL CONTRACTOR:

SIERRA CONSTRUCTION
19900 144TH AVE NE
WOODENVILLE, WA 98072
PHONE: 425.487.5200
CONTACT: BRYAN PLOETZ

ENGINEER:

MICHAEL SPILLANE
HERRERA ENVIRONMENTAL CONSULTANTS
2200 SIXTH AVENUE
SUITE 1100
SEATTLE, WA 98121
PHONE: 206.441.9080
CONTACT: MICHAEL SPILLANE

1 / C-1 ← DETAIL REFERENCE NUMBER
← DRAWING ON WHICH DETAIL IS SHOWN

DETAIL
SCALE: NTS
1 / C-1 ← DETAIL REFERENCE NUMBER
← DRAWING FROM WHICH DETAIL WAS TAKEN

A / C-4 ← SECTION REFERENCE LETTER
← DRAWING ON WHICH SECTION IS SHOWN

SECTION/PROFILE
SCALE: NTS
A / C-2 ← SECTION/PROFILE REFERENCE LETTER
← DRAWING FROM WHICH SECTION/PROFILE WAS TAKEN

"-" INDICATES THAT THE DETAIL/SECTION IS SHOWN ON THE SAME SHEET

"TYP" INDICATES THAT THE DETAIL/SECTION IS UNIFORMLY TYPICAL THROUGHOUT PROJECT EXCEPT WHERE OTHERWISE NOTED

"VAR" SPECIFIES THAT DETAIL/SECTION WAS TAKEN FROM VARIOUS DRAWINGS

NOTE AND DETAIL/SECTION REFERENCING

ORIGINATED BY: / DATE: ______ / ______
CHECKED BY: / DATE: ______ / ______
BACK-CHECKED BY: / DATE: ______ / ______
CORRECTED BY: / DATE: ______ / ______
VERIFIED BY: / DATE: ______ / ______

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BID SET

No.	REVISION	BY	APP'D	DATE

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

811 Know what's below. Call before you dig.

HERRERA

MICHAEL M. SPILLANE
30780

DESIGNED: K. JOHNSON	DRAWN: T. PRESCOTT
DESIGNED: M. SPILLANE	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

AVE 55
TAYLOR WAY METHANE MITIGATION

COVER SHEET

DATE: JUNE 2018
PROJECT NO: 16-06475-000
DRAWING NO: G-1
SHEET NO: 1 OF 7

METHANE MITIGATION SYSTEM NOTES:

GENERAL:

1. A PASSIVE SUBSLAB METHANE BARRIER AND VENTING SYSTEM IS TO BE INSTALLED IN OFFICE LOCATIONS.
2. A FLEXIBLE, IMPERMEABLE, GEOMEMBRANE LINER SHALL BE PLACED BENEATH THE NEW SLAB-ON-GRADE. THE GEOMEMBRANE WILL BE SOLVENT WELDED TO PROVIDE A CONTINUOUS MEMBRANE BARRIER.
3. WHERE GRADE BEAMS OR FOOTINGS PENETRATE THE MEMBRANE, THE MEMBRANE WILL BE PHYSICALLY ATTACHED TO GRADE BEAMS, FOOTINGS, OR WALLS TO SEAL THE LINER TO THE BUILDING USING BATTEN STRIPS.
4. A 2" PVC COLLECTION PIPING WILL BE INSTALLED WITHIN THE DRAINAGE LAYER BELOW THE SLAB.
5. THE COLLECTION PIPING WILL BE ROUTED TO A VENT PIPE DISCHARGING A MINIMUM OF THREE FEET ABOVE THE BUILDING ROOFLINE AS SHOWN ON THE DRAWINGS.
6. PRIOR TO PLACEMENT OF REINFORCING STEEL AND CONCRETE, A NON-WOVEN GEOTEXTILE OR SAND SHALL BE PLACED OVER THE GEOMEMBRANE TO PREVENT PUNCTURE.

COLLECTION GRAVEL LAYER:

1. THE COLLECTION GRAVEL LAYER SHALL CONSIST OF CLEAN, FREE DRAINING GRAVEL OR CRUSHED ROCK WITH LESS THAN 2 PERCENT BY WEIGHT PASSING THE U.S. NO. 200 MESH SIEVE (FINES) BASED ON THE 3/4-INCH MINUS FRACTION.
2. PLACE THE DRAINAGE MATERIAL IN LEVEL LIFTS AND COMPACT TO A DENSE AND UNYIELDING CONDITIONING. SYSTEM DESIGNER SHOULD EVALUATE THE COMPACTION OF THE DRAINAGE MATERIAL PRIOR TO THE PLACEMENT OF VAPOR BARRIERS, REINFORCING STEEL, OR OTHER OBSTRUCTIONS.
3. SUBMIT A SAMPLE OF AND/OR SAMPLE SPECIFICATIONS FOR THE PROPOSED DRAINAGE MATERIAL FOR APPROVAL AT LEAST 1 WEEK BEFORE ANY USE ON SITE.

PERFORATED COLLECTOR PIPES:

1. A SERIES OF PERFORATED PIPES SHALL BE INSTALLED WITHIN THE DRAINAGE LAYER TO COLLECT AND ROUTE METHANE GAS AWAY FROM THE SLAB.
2. EMBED MINIMUM 2" PVC PIPES WITH THE GRAVEL DRAINAGE LAYER BENEATH THE FLOOR SLAB.
3. PLACE THE PERFORATED PIPES FLAT WITH THEIR CROWN LOCATED WITHIN 2 INCHES OF THE BASE OF THE GEOMEMBRANE.
4. THE PIPES SHOULD CONTAIN PERFORATIONS AROUND THE ENTIRE PIPE DIAMETER, OR IF ONLY PARTIALLY PERFORATED, THE PERFORATIONS SHOULD BE ALIGNED TOWARDS THE CRESTS OF THE PIPES FOR METHANE COLLECTION.
5. THE PIPES SHOULD BE LAID OUT SUCH THAT THE LONGEST METHANE GAS TRAVEL PATH IS LESS THAN APPROXIMATELY 75 FEET.
6. PIPING SYSTEMS MUST BE FLAT (NO SLOPE). THE VENT PIPE CONNECTION TO THE HEADER SHALL NOT CONTAIN ANY SAGS (LOW POINTS)

SAND:

1. SAND SHALL BE BUILDING SAND, MINERAL AGGREGATE TYPE 7, PER 9-03-12 (6) CITY OF SEATTLE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION 2014 EDITION.

GEOMEMBRANE:

1. THE GEOMEMBRANE SHALL BE 30 MIL PVC MEETING THE REQUIREMENTS OF ASTM D-7176 AND THE FOLLOWING:

   FACTORY FABRICATED SEAMS:

   PEEL STRENGTH (LBS/IN, MIN) ASTM D-882,15

   SHEAR STRENGTH (LBS/IN, MIN) ASTM D-882,58.4

   THICKNESS ± 5% ASTM D-5199.030"

   SPECIFIC GRAVITY (MIN) ASTM D-792,1.20

   TENSILE (LB/IN-WIDTH, MIN) ASTM D-882,73
2. THE PVC GEOMEMBRANE MUST EXTEND THE FULL LENGTH (AND WIDTH) OF THE SLAB. THE PVC GEOMEMBRANE SHOULD TIE INTO AN INTERIOR CONCRETE GRADE BEAM OR EXTERIOR FOOTING OR EDGE OF THE SLAB AS SHOWN ON DRAWINGS.
3. THE PVC GEOMEMBRANE SHOULD BE FACTORY SEAMED TO MINIMIZE FIELD SEAMS.
4. ALL FIELD SEAMS MUST BE SOLVENT-WELDED WITH OVERLAPS AS SPECIFIED BY THE PVC MANUFACTURER.
5. ALL SERVICES/UTILITIES THAT NEED TO PENETRATE THE PVC GEOMEMBRANE SHALL BE BOOTED THROUGH THE MEMBRANE TO ENSURE A COMPLETE SEAL AROUND THE SERVICE. SEE DRAWINGS.
6. EACH BOOT WILL BE SOLVENT WELDED.
7. SERVICES PENETRATING THE PVC GEOMEMBRANE MUST BE A MINIMUM OF 6" APART TO PROVIDE ADEQUATE ROOM TO CONSTRUCT THE PIPE BOOT.
8. IT IS PREFERRED THAT ALL ELECTRICAL CONDUITS RUN ON TOP OF THE PVC GEOMEMBRANE. IF SOME ELECTRICAL CONDUITS ARE BELOW THE GEOMEMBRANE, IT IS RECOMMENDED THAT THEY RUN TO THE PERIMETER OF THE SLAB AND ENTER THE BUILDING FROM THE OUTSIDE WALL TO MINIMIZE THE NUMBER OF BOOTS THROUGH THE LINER.
9. FOR PROTECTION AGAINST PUNCTURES OR DAMAGE FROM ABOVE THE LINER, A MINIMUM OF 2 INCHES OF SAND OR NONWOVEN SEPARATION GEOTEXTILE SHALL BE PLACED PRIOR TO INSTALLATION OF UTILITIES OR REBAR REINFORCEMENT FOR THE CONCRETE SLAB. THE GEOMEMBRANE MAY BE PLACED UNDER UTILITIES IN A UTILITY TRENCH WITH A MINIMUM OF 2-INCHES OF SAND ABOVE THE GEOMEMBRANE.

GEOTEXTILE:

1. THE MATERIAL SHALL BE A GEOTEXTILE CONSISTING ONLY OF LONG CHAIN POLYMERIC FIBERS OR YARNS FORMED INTO A STABLE NETWORK SUCH THAT THE FIBERS OR YARNS RETAIN THEIR POSITION RELATIVE TO EACH OTHER DURING HANDLING, PLACEMENT, AND DESIGN SERVICE LIFE. AT LEAST 95 PERCENT BY WEIGHT OF THE MATERIAL SHALL BE POLYOLEFINS OR POLYESTERS.
2. THE MATERIAL SHALL BE FREE FROM DEFECTS OR TEARS. THE GEOTEXTILE SHALL ALSO BE FREE OF ANY TREATMENT OR COATING WHICH MIGHT ADVERSELY ALTER ITS HYDRAULIC OR PHYSICAL PROPERTIES AFTER INSTALLATION.
3. THE GEOTEXTILE SHALL CONFORM TO THE PROPERTIES AS INDICATED IN TABLE 3 FOR SEPARATION - NONWOVEN. PER 9-37.1 GEOTEXTILE AND THREAD FOR SEWING OF THE CITY OF SEATTLE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION 2014 EDITION.
4. OVERLAP GEOTEXTILE PANELS A MINIMUM OF 12 INCHES.

VENT RISERS:

1. THE PERFORATED COLLECTOR PIPES SHALL BE TIED TO ONE ANOTHER AND CONNECTED TO ONE OR MORE VERTICAL VENT RISERS. VENT RISERS SHALL BE PVC AND NOT BE LARGER IN DIAMETER THAN THE HORIZONTAL COLLECTOR PIPES.
2. 3-INCH DIAMETER RISER REQUIRES 1 RISER FOR EVERY 7,500 SF OF FOOTPRINT (MINIMUM OF 2 RISERS PER OFFICE AREA).
3. RISER PIPES SHALL HAVE A MAXIMUM SPACING AND LENGTH OF 100 FEET.
4. PROVIDE A RAIN GUARD AT THE TOP TERMINUS OF THE VENT RISER THAT DOES NOT RESTRICT THE UPWARD FLOW OF AIR OR METHANE FROM THE PIPE.
5. TERMINATE VENT RISERS AS FOLLOWS:

   10 FEET OR MORE ABOVE GRADE;

   10 FEET OR MORE AWAY FROM ANY WINDOW, DOOR, ROOF HATCH, OPENING, OR AIR INTAKE INTO THE BUILDING;

   3 FEET OR MORE ABOVE HIGHEST POINT IN ROOF WITHIN 10 FEET;

   3 FEET OR MORE AWAY FROM ANY PARAPET;

   4 FEET OR MORE AWAY FROM PROPERTY LINE; AND

   5 FEET OR MORE AWAY FROM ELECTRICAL DEVICES.
6. RISERS SHALL BE LOCATED AWAY FROM ANY LOCATIONS WITH SPARKS OR OPEN FLAME.
7. THE PIPES WILL BE SECURED TO THE BUILDING WALL AND VENTED A MINIMUM OF 3 FEET ABOVE THE EAVE AND A MINIMUM OF 10 FEET AWAY FROM ANY POTENTIAL AIR INTAKE.
8. PIPE USED FOR VENTING SHALL BE SECURED AS SHOWN ON DRAWINGS WITH GALVANIZED UNISTRUT PIPE SUPPORTS AND PIPE CLAMPS.
9. VENT PIPE SHALL BE BOOTED THROUGH EAVE AND ROOF WITH COMPATIBLE ROOFING SYSTEM WATERTIGHT MANUFACTURED BOOT OR ROUTED UP AND OVER THE PARAPET WITHOUT AND POSITIVELY DRAIN WITH A MINIMUM OF 2 PERCENT SLOPE.
10. VENT PIPES SHALL HAVE ISOLATION VALVES INSTALLED TO ALLOW FOR HYDROSTATIC OR PNEUMATIC LEAK TESTING.
11. ALL LEAK TESTING SHALL BE PERFORMED IN THE PRESENCE OF A REPRESENTATIVE OF THE LFG MITIGATION DESIGNER.

UTILITIES:

1. PENETRATIONS THROUGH THE FLOOR SLAB SHALL BE SEALED WITH PIPE COLLARS IN THE SLAB, SO THAT METHANE CANNOT DIRECTLY FLOW FROM THE SUBSLAB GRAVEL LAYER INTO THE INTERIOR OF THE BUILDING.
2. CONDUIT SHALL BE SEALED BETWEEN THE FLOOR SLAB AND THE FIRST JOINT ABOVE THE FLOOR SLAB TO PREVENT TRANSMISSION OF GAS THROUGH THE CONDUIT.

ORIGINATED BY: / DATE: ______ / ______

CHECKED BY: / DATE: ______ / ______

BACK-CHECKED BY: / DATE: ______ / ______

CORRECTED BY: / DATE: ______ / ______

VERIFIED BY: / DATE: ______ / ______

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BID SET

No.	REVISION	BY	APP'D	DATE

ONE INCH

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811 Know what's below. Call before you dig.

HERRERA

MICHAEL M. SPILLANE 30780

DESIGNED: K. JOHNSON	DRAWN: T. PRESCOTT
DESIGNED: M. SPILLANE	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

AVE 55

TAYLOR WAY METHANE MITIGATION

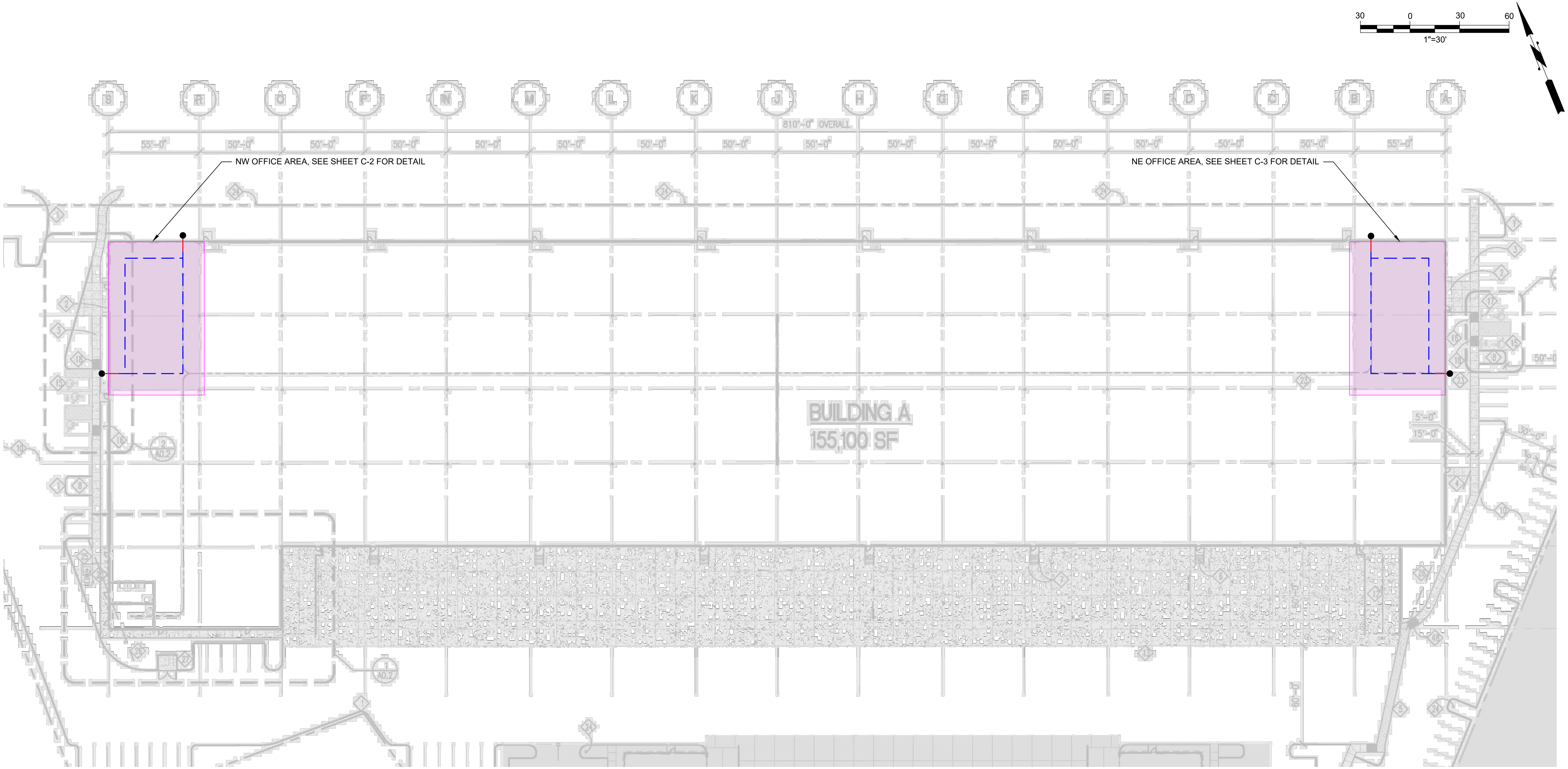
GENERAL NOTES

DATE: JUNE 2018

PROJECT NO: 16-06475-000

DRAWING NO: G-2

SHEET NO: 2 OF 7



NOTES:

1. 30mil GEOMEMBRANE SHALL BE A CONTINUOUS SHEET UNDER BUILDING SLAB AND SHALL EXTEND TO EXTERIOR EDGE OF PERIMETER FOOTING OR BE SEALED TO FOOTINGS BY BATTEN STRIP.
2. ALL PENETRATIONS THROUGH MEMBRANE SHALL BE BOOTED AND SEALED. SEE DETAILS 1 AND 2/C-5.
3. ALL INTERIOR VENT PIPING MUST BE PRESSURE TESTED USING HYDRO STATIC OR PNEUMATIC METHOD.
4. GRANULAR MATERIAL UNDER SLAB IN PIPE TRENCH SIZED LARGER THAN PERFORATIONS IN PIPE OR ADD GEOTEXTILE WRAP AROUND PERFORATED PIPE.
5. ALL SLAB PENETRATIONS SHALL BE SEALED WITH ELASTOMERIC POLYURETHANE SEALANT.

LEGEND:

●	4" RISER VENT
— — —	2" DIA SCH 40 PERFORATED PVC COLLECTION PIPE
———	4" DIA SCH 80 OR GALVANIZED SOLID WALL PIPE
▨	30mil PVC MEMBRANE EXTENTS

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BID SET

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ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

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HERRERA

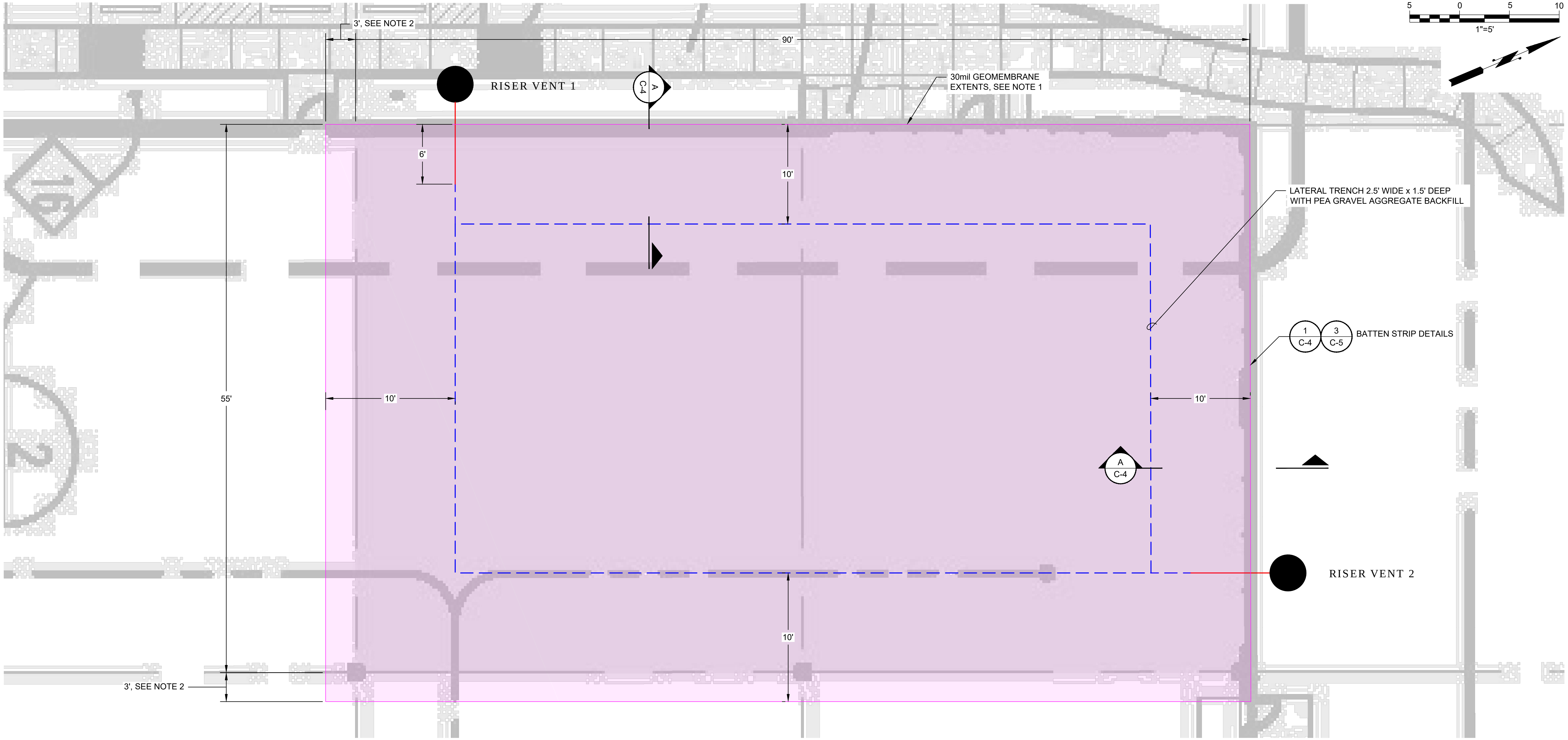
MICHAEL M. SPILLANE
30780

DESIGNED: K. JOHNSON	DRAWN: T. PRESCOTT
DESIGNED: M. SPILLANE	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

AVE 55
TAYLOR WAY METHANE MITIGATION

BUILDING A

DATE: JUNE 2018
PROJECT NO: 16-06475-000
DRAWING NO: C-1
SHEET NO: 3 OF 7



NOTES:

1. 30mil GEOMEMBRANE SHALL BE A CONTINUOUS SHEET UNDER BUILDING SLAB AND SHALL EXTEND TO EXTERIOR EDGE OF PERIMETER FOOTING OR BE SEALED TO FOOTINGS BY BATTEN STRIP.
2. EXTEND LINER 3' BEYOND OFFICE FOOTPRINT OR BATTEN STRIP TO FOOTING OR GRADE BEAM.
3. ALL PENETRATIONS THROUGH MEMBRANE SHALL BE BOOTED AND SEALED. SEE DETAILS 1 AND 2/C-5.
4. ALL INTERIOR VENT PIPING MUST BE PRESSURE TESTED USING HYDRO STATIC OR PNEUMATIC METHOD.
5. GRANULAR MATERIAL UNDER SLAB IN PIPE TRENCH SIZED LARGER THAN PERFORATIONS IN PIPE OR ADD GEOTEXTILE WRAP AROUND PERFORATED PIPE.
6. ALL SLAB PENETRATIONS SHALL BE SEALED WITH ELASTOMERIC POLYURETHANE SEALANT.

LEGEND:

●	2" RISER VENT
— — —	2" DIA SCH 40 PERFORATED PVC COLLECTION PIPE
———	2" DIA SCH 80 OR GALVANIZED SOLID WALL PIPE
▨	30mil PVC MEMBRANE EXTENTS

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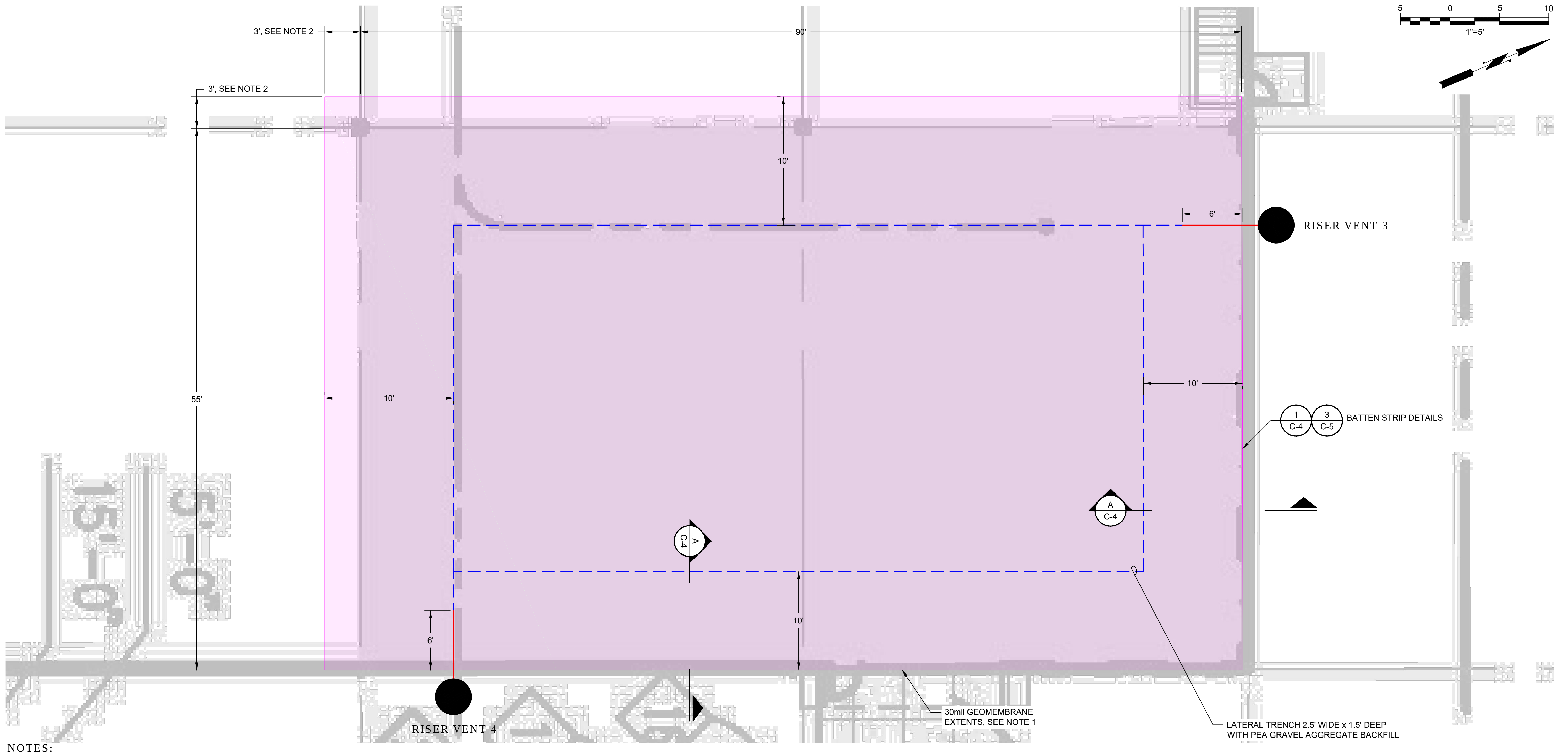
DESIGNED: M. SPILLANE	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

AVE 55
TAYLOR WAY METHANE MITIGATION

NORTH WEST OFFICE AREA OF BUILDING A

DATE: JUNE 2018
PROJECT NO: 16-06475-000
DRAWING NO: C-2
SHEET NO: 4 OF 7



NOTES:

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2. EXTEND LINER 3' BEYOND OFFICE FOOTPRINT OR BATTEN STRIP TO FOOTING OR GRADE BEAM.
3. ALL PENETRATIONS THROUGH MEMBRANE SHALL BE BOOTED AND SEALED. SEE DETAILS 1 AND 2/C-5.
4. ALL INTERIOR VENT PIPING MUST BE PRESSURE TESTED USING HYDRO STATIC OR PNEUMATIC METHOD.
5. GRANULAR MATERIAL UNDER SLAB IN PIPE TRENCH SIZED LARGER THAN PERFORATIONS IN PIPE OR ADD GEOTEXTILE WRAP AROUND PERFORATED PIPE.
6. ALL SLAB PENETRATIONS SHALL BE SEALED WITH ELASTOMERIC POLYURETHANE SEALANT.

LEGEND:

●	2" RISER VENT
— — —	2" DIA SCH 40 PERFORATED PVC COLLECTION PIPE
———	2" DIA SCH 80 OR GALVANIZED SOLID WALL PIPE
▭	30mil PVC MEMBRANE EXTENTS

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DESIGNED: M. SPILLANE	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

AVE 55
TAYLOR WAY METHANE MITIGATION

NORTH EAST OFFICE AREA OF BUILDING A

DATE: JUNE 2018
PROJECT NO: 16-06475-000
DRAWING NO: C-3
SHEET NO: 5 OF 7

TYPICAL BATTEN STRIP SEAL PHOTO

SCALE: NTS

1 / -

TYPICAL PERFORATED COLLECTION PIPE PHOTO

SCALE: NTS

2 / -

TYPICAL COLLECTION PIPE TROUGH GRADE BEAM PHOTO

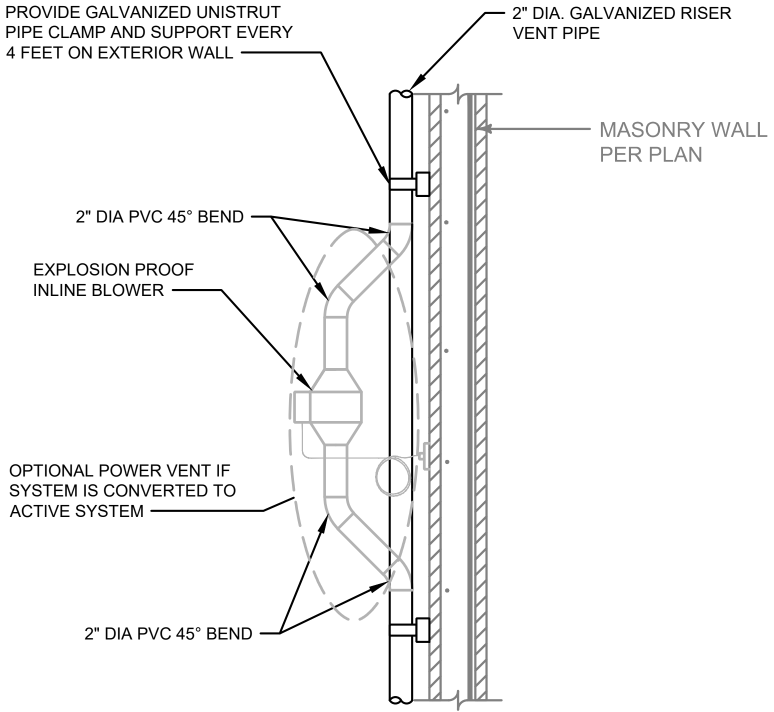
SCALE: NTS

3 / -

TYPICAL VENT PIPE AROUND EVE PHOTO

SCALE: NTS

4 / -



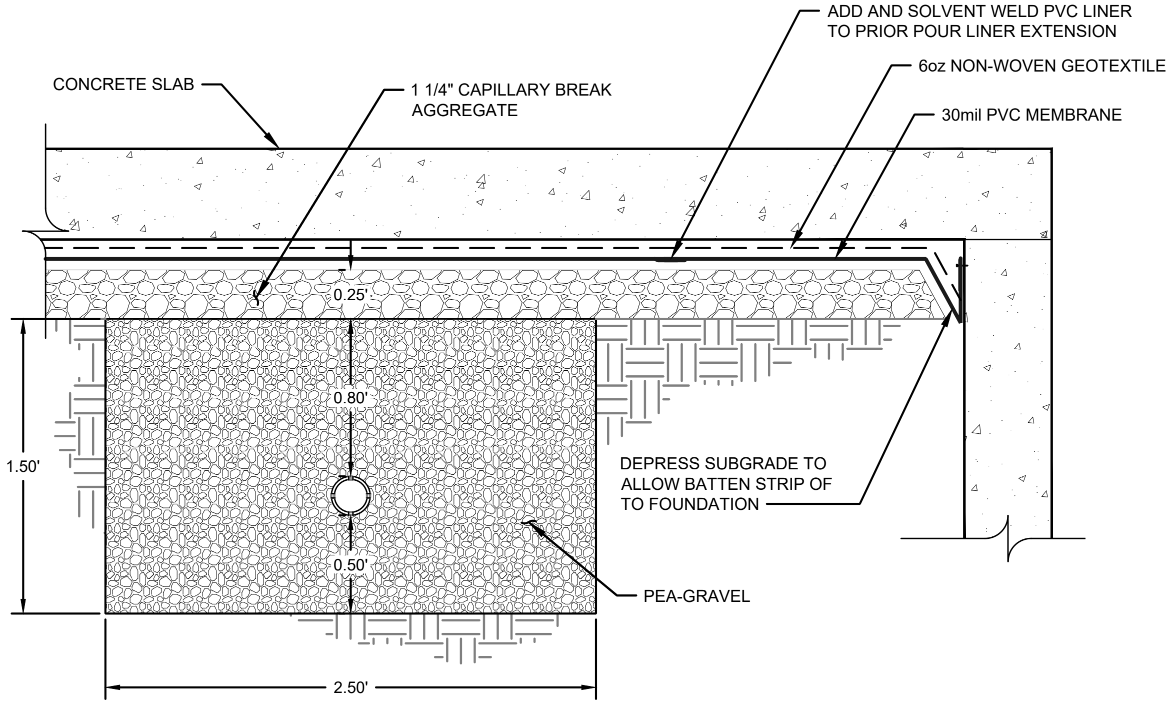
VENT NOTES:

1. 10 FEET OR MORE AWAY FROM ANY WINDOW, DOOR, ROOF HATCH, OPENING, OR AIR INTAKE INTO THE BUILDING.
2. 3 FEET OR MORE ABOVE HIGHEST POINT IN ROOF WITHIN 10 FEET.
3. 3 FEET OR MORE AWAY FROM ANY PARAPET.
4. 4 FEET OR MORE AWAY FROM PROPERTY LINE AND 10 FEET OR MORE AWAY FROM ELECTRICAL DEVICES.

TYPICAL INLINE BLOWER ON VENT PIPE DETAIL

SCALE: NTS

5 / -



TYPICAL COLLECTOR PIPE TRENCH SECTION

SCALE: NTS

A / C-2

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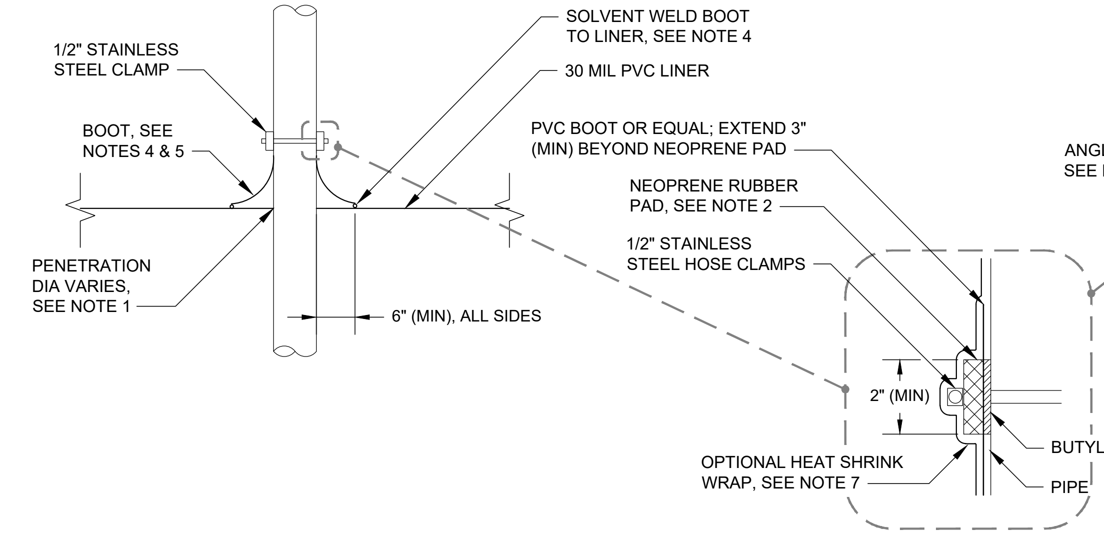
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

AVE 55

TAYLOR WAY METHANE MITIGATION

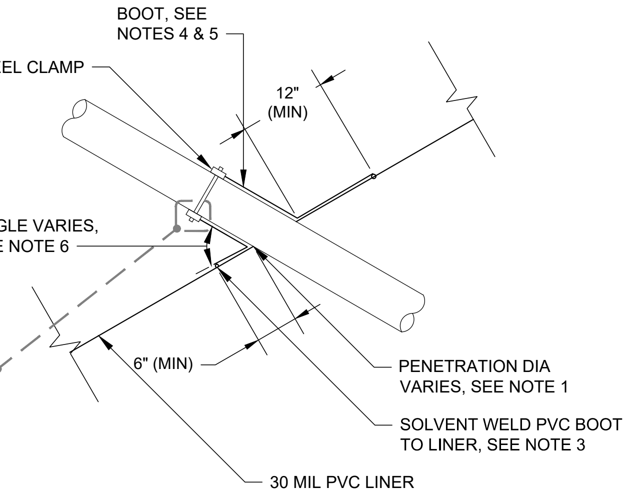
TYPICAL DETAILS

DATE: JUNE 2018
PROJECT NO: 16-06475-000
DRAWING NO: C-4
SHEET NO: 6 OF 7



DETAIL - PERPENDICULAR PENETRATION WITH LINER 1/-

SCALE: NTS



DETAIL - ANGLED PENETRATION WITH LINER 2/-

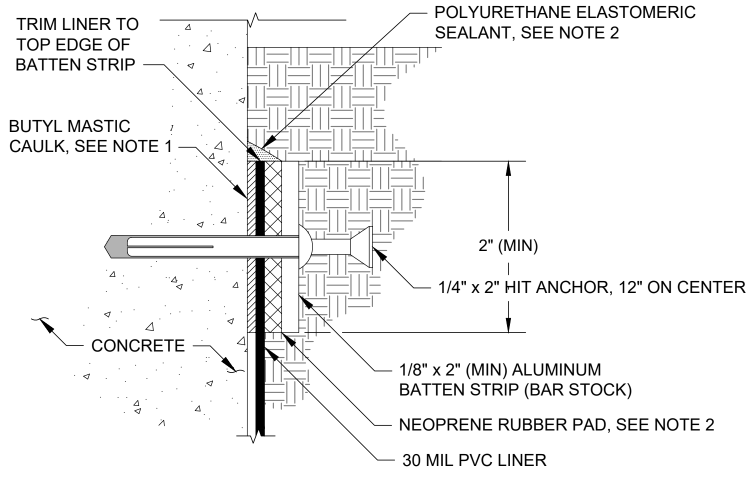
SCALE: NTS

GENERAL NOTES:

1. CONTRACTOR MAY USE PREFABRICATED PIPE BOOTS IN LIEU OF FIELD-FABRICATED BOOTS. CONNECT PREFABRICATED BOOT TO LINER AND PIPE PER MANUFACTURER'S RECOMMENDATIONS.

CONSTRUCTION NOTES:

1. CUT OPENING IN LINER FOR PIPE TO WITHIN 1/2" OF PIPE OUTSIDE DIAMETER.
2. APPLY BUTYL MASTIC CAULK AND NEOPRENE RUBBER PAD CONTINUOUSLY AROUND PIPE.
3. PROVIDE CONTINUOUS WELD AT PIPE BOOT/LINER INTERFACE.
4. FORM BOOT WITH SUFFICIENT MATERIAL TO PREVENT OVERSTRESSING DURING BACKFILLING, BUT WITHOUT FOLDS OR WRINKLES.
5. CONSTRUCT BOOT FROM SAME MATERIAL AS THE LINER.
6. ANGLE SHOULD NOT BE LESS THAN 30°. IF ANGLE IS LESS THAN 30° ADD SOIL AROUND THE PIPE TO INCREASE THE ANGLE AND PREVENT STRESSING AND CRACKING.
7. SEAL CLAMP AND END OF BOOT WITH HEAT SHRINK WRAP. EXTEND HEAT SHRINK WRAP ONE PIPE DIAMETER (MINIMUM) BEYOND CLAMP.



CONSTRUCTION NOTES:

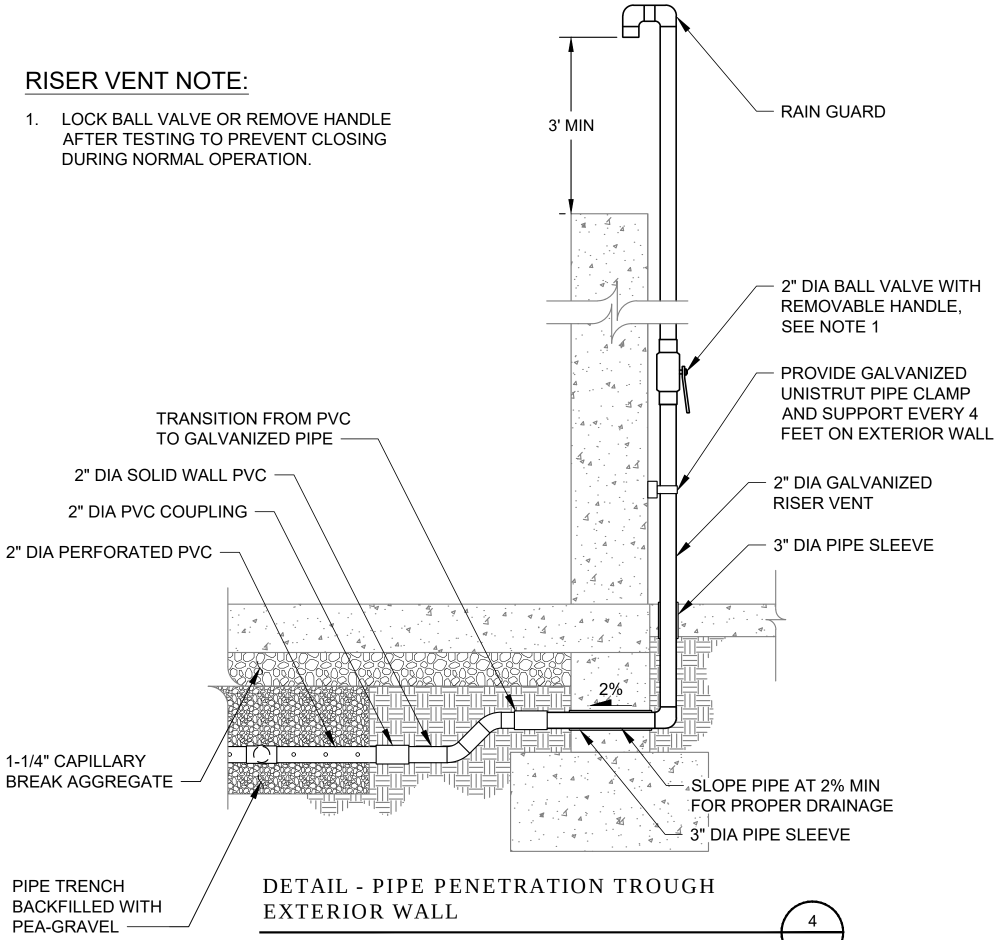
1. APPLY BUTYL MASTIC CAULK, BATTEN STRIP, AND NEOPRENE RUBBER PAD CONTINUOUSLY ALONG TOP EDGE OF LINER.
2. APPLY BEAD OF POLYURETHANE ELASTOMERIC SEALANT CONTINUOUSLY ALONG TOP EDGE OF BATTEN STRIP ASSEMBLY.

DETAIL - TYPICAL BATTEN STRIP 3/-

SCALE: NTS

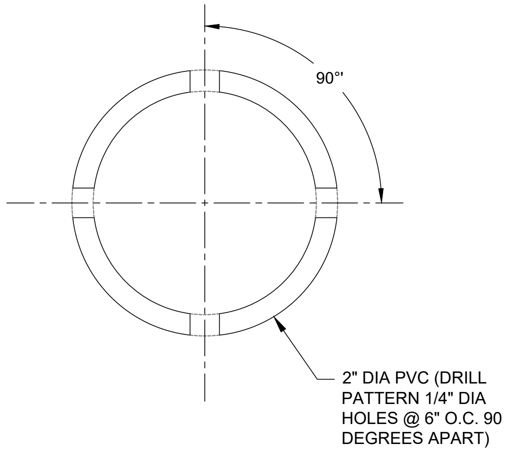
RISER VENT NOTE:

1. LOCK BALL VALVE OR REMOVE HANDLE AFTER TESTING TO PREVENT CLOSING DURING NORMAL OPERATION.



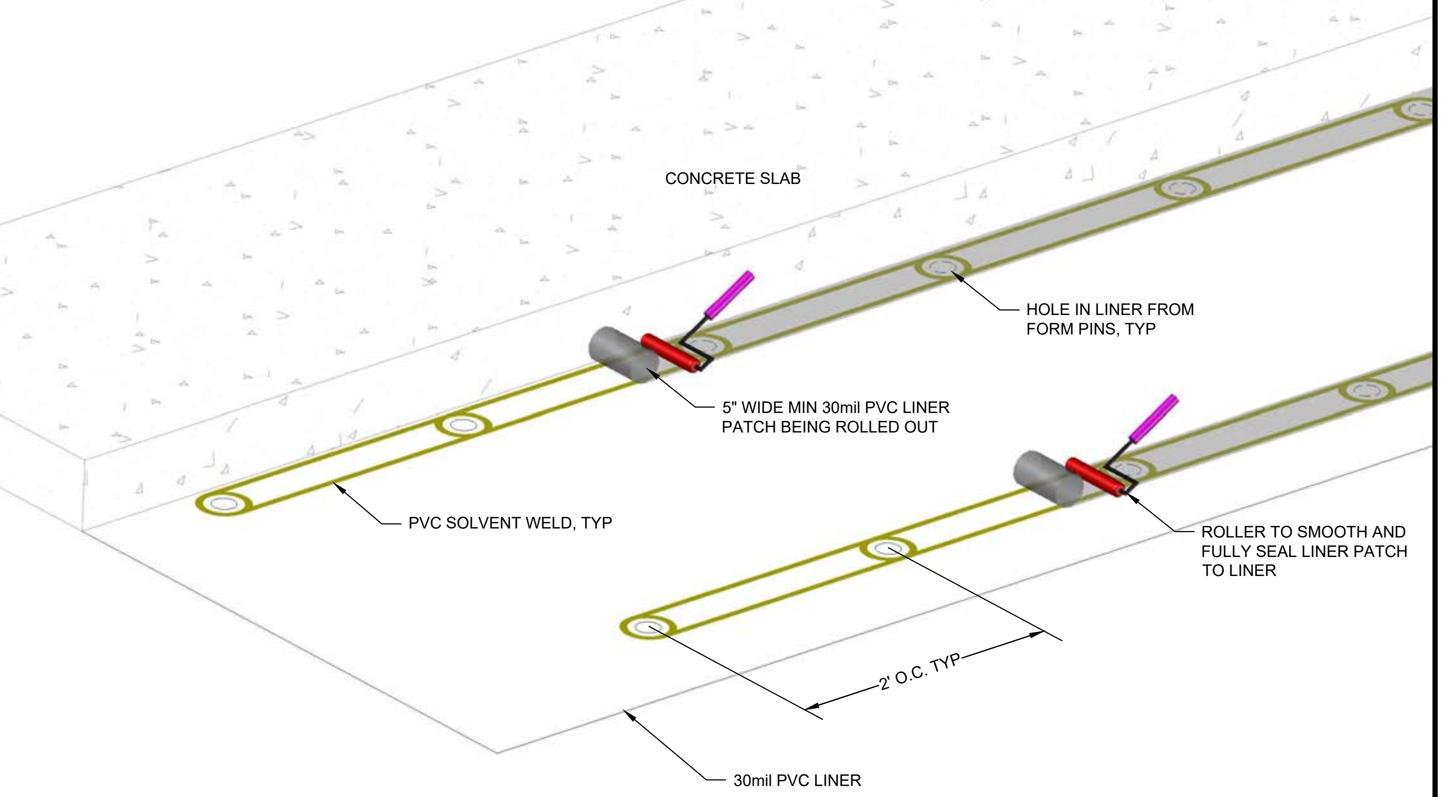
DETAIL - PIPE PENETRATION TROUGH EXTERIOR WALL 4/-

SCALE: NTS



DETAIL - PIPE PERFORATION DETAIL 5/-

SCALE: NTS



DETAIL - 30mil PVC LINER PATCHING 6/-

SCALE: NTS

BID SET

No.	REVISION	BY	APP'D	DATE

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

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30780

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DESIGNED: M. SPILLANE	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

AVE 55
TAYLOR WAY METHANE MITIGATION

PENETRATION DETAILS

DATE: JUNE 2018
PROJECT NO: 16-06475-000
DRAWING NO: C-5
SHEET NO: 7 OF 7

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Daily Field Report

Project No. **16-06475-000**

(1) **Day** **Thursday** **Date** 0 5 3 1 1 8 **Work Period** 7:00 **AM** **to** 9 **AM** **Report No.** 1

Weather overcast **Temp. Max.** 48 **°F** **Min.** 45 **°F** **Precipitation** no

(2) **Personnel On Site**

Todd Prescott - Herrera

Sam - Sierra

Drew – Ave 55

(3) **Major Equipment on Project and Amount of Use**

No.	Description	Size/Capacity	Hrs. Oper.
1	CAT excavator 336E	large	
1	Grading machine		

(4) **Work Accomplished Today**

Inspected and approved 2-inch diameter perforated Sch 40 PVC for the north west office area.

Backfilled pipe trench with pea-gravel and graded with 1-1/4” capillary break aggregate.

30 mil PVC liner was delivered, and non-woven geotextile was ordered.

See Field notes.

(5) **Action Items:**

Todd and Michael to discuss exact liner/batten strip connection to foundation and update plans.

(6) Todd Prescott 5-31-2018

Signature Date

16-06475-000 Taylor Way Methane Weather: overcast Temp low of 45 - high of 48

Tuesday 5/31/2018

7:00 I arrived on-site, met with Sam from Sierra and Drew from Ave 55. After a brief discussion they showed me the north west office area site of building A. Pipe trenches were 2.5-feet wide and bedded with pea-gravel. The 2-inch diameter perforated schedule 40 had already been drilled and laid out per the plains. The 0.25-inch perforations were drilled at 6-inches on center 90 degrees apart. The Perforated pipes covered a 70-foot by 35-foot rectangle with two stubs extending out 11.5-feet for the future vertical riser vents.

7:45 1-foot of pea-gravel is being backfilled over perforated pipe.

8:15 Perforated pipe trench is fully backfilled.

8:30 Large CAT grading machine began grading the 1-1/4-inch capillary break aggregate.

8:45 Leaving site.

Todd Prescott 6/4/2018

Daily Field Report

Project No. **16-06475-000**

(1) **Day** **Wednesday** **Date** 0 6 0 6 1 8 **Work Period** 7:00 **AM** **to** 10:30 **AM** **Report No.** 2

Weather Sunny **Temp. Max.** 60 **°F** **Min.** 58 **°F** **Precipitation** no

(2) **Personnel On Site**

Todd Prescott - Herrera
Sam - Sierra
Wade – Sierra

(3) **Major Equipment on Project and Amount of Use**

No.	Description	Size/Capacity	Hrs. Oper.
	N/A		

(4) **Work Accomplished Today**

NW office area of Building A - I inspected and approved 2 vertical pipe penetrations. Inspected and approved the geotextile over the liner.

See Field notes.

(5) **Action Items:**

When forms on the north and west side of the office area are removed, all of the 2-foot on center pin holes for the forms will need to be patched using 30mil PVC liner and solvent welded.

(6) Todd Prescott 6-6-2018

Signature Date

16-06475-000 Taylor Way Methane Weather: sunny Temp low of 58 - high of 60

Wednesday 6/6/2018

7:00 I arrived on-site, met with Wade from Sierra. I observed Sierra installing two vertical pipe penetrations using two pre-fabricated pipe penetration boots, butyl mastic strip, and polyurethane elastomeric sealant at both penetrations. Penetration zones were then covered with 6oz non-woven geotextile.

30mil PVC liner and geotextile extended over 3-feet past office area extents on the South and East side of the Office area. The North and West sides of the office area will be secured and sealed using batten strips.

When the concrete forms on the North and West sides of the office area are removed, all of the holes from the pins holding the forms at 2-feet on center will need to be patched, using 30mil PVC liner and solvent welded for a continuous seal.

Batten strip connection and pin hole patching will need to be inspected before final concrete pour.

10:30 I am leaving the site.

Todd Prescott   6/6/2018

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strategy ▪ science ▪ engineering

Two Union Square
601 Union Street, Suite 600
Seattle, WA 98101
tel: 206.292.2078 fax: 206.682.7867

Memorandum

To: Steve Teel, Washington State Department of Ecology
Copies: Dave Zabrowski, Avenue 55; Scott Hooton, Port of Tacoma
From: Tom Colligan and Kristin Anderson, Floyd|Snider
Date: August 10, 2018
Project No: Ave 55-Taylor Way
Re: **Sampling Plan Addendum for Vapor Intrusion Assessment**
1544 Taylor Way, Tacoma, Washington

This sampling plan is an addendum to Appendix B of the Interim Action Work Plan (IAWP; Floyd|Snider 2017) for the Taylor Way property, which is part of the larger Taylor Way and Alexander Avenue Fill Area Site. Appendix B of the IAWP presented procedures for a methane survey and preliminary vapor intrusion (VI) assessment at the Taylor Way property. This addendum presents procedures for supplemental VI assessment based on the results from the preliminary VI assessment that was performed as described below.

BACKGROUND

The methane survey and preliminary VI assessments were performed before and during the preloading phase of construction of two above-grade warehouse buildings (Building A and Building B) at the property, between December 2016 and May 2018. Soil gas samples were collected from above the shallow groundwater table at several locations within each building footprint and along the future drive aisle between the two buildings. The vapor samples were field analyzed for methane using a landfill gas detector. At a subset of the locations, soil gas samples were collected for laboratory analysis of volatile organic compounds (VOCs). The locations of the methane and VOC samples are shown on Figure 1. The results of the methane survey and preliminary VI assessment were summarized in a memorandum (Floyd|Snider 2018). The memorandum also described the plans for the installation of a vapor mitigation system, which was installed under the future offices of each warehouse.

Methane was not detected in soil gas at either building at concentrations that necessitated further action per the IAWP. The maximum detected soil methane concentration was 1.4 percent by volume.

On the western portion of Building A, however, VOC analysis detected chloroform at a concentration exceeding the Model Toxics Control Act (MTCA) screening level for industrial worker exposure. Benzene was also detected at a concentration less than its industrial screening level but greater than the residential screening level. A number of additional VOCs were detected but at concentrations less than residential MTCA screening levels.

At Building B, VOC sampling conducted during construction was complicated by excessive moisture and perched wet lenses in the soil and pad backfill. Multiple attempts were made to acquire samples free of moisture, but were abandoned due to water in the sampling point. In the sample that was able to be collected, the laboratory reported excessive water vapor as well as excessive residual vacuum in the Summa canister that was used for sample collection. Chloroform, benzene, and other VOCs exceeded their MTCA industrial screening levels at this location; however, these data are not considered be completely reliable due to the bias caused by the presence of water vapor.

Based on the results of the preliminary assessment, which indicated a potential excessive VI risk under the future buildings, a passive vapor mitigation system was installed under each of the two office "node" locations in both buildings. The office nodes are shown on Figure 1. As described in Floyd|Snider's 2018 memorandum, the passive mitigation system includes perforated PVC piping laid in trenches under the subgrade of the office areas. The piping is connected to an above-ground riser vent. After the piping was installed, it was overlain with a PVC membrane and the concrete floor slab was subsequently poured over the membrane. The passive system allows ventilation driven by atmospheric pressure differentials (i.e., soil vapor at pressure exceeding atmospheric pressure vents via the riser so vapor pressure cannot build up below the floor slab). The vertical riser allows for the installation of an inline blower. The addition of a blower would convert the system from passive ventilation to an active system that would maintain a negative pressure under the floor slab, if needed.

PROPOSED SUPPLEMENTAL VAPOR INTRUSION ASSESSMENT

Additional VI assessment is necessary to better quantify the VI risk at the two warehouse buildings to determine if any additional mitigation actions are needed. The additional VI assessment will include the following scope of work:

- Sub-slab soil vapor sampling
- Passive ventilation system evaluation
- Data evaluation and indoor air sampling

Sampling will be conducted in accordance with VI protocols already described in the IAWP, which presents standard VI field sampling standard procedures, laboratory analytical methods, quantitation limits, and data quality objectives.

Sub-Slab Soil Vapor Sampling

Sub-slab soil vapor samples will be collected from representative locations at Building A and Building B, including in the vicinity of the prior VOC detections in soil gas and at locations immediately adjacent to the office nodes. A total of 10 permanent vapor monitoring points will be installed as shown on Figures 2 and 3. Permanent sub-slab vapor sample points will extend 6 inches below the concrete floor slab in order to collect soil vapors directly in contact with the slab; sub-slab monitoring point installation details are presented in Figure 4. Field procedures for vapor point installation and sampling that were presented in the IAWP are provided as Attachment 1 to this sampling plan addendum.

The sub-slab monitoring points will initially be sampled twice. The first event will be completed 48 hours after the monitoring points are installed. The second event will be completed after the roof has been installed and the building ventilation systems have been commissioned, which is anticipated to occur by November 2018. Samples will be analyzed by USEPA Method TO-15/TO-15 SIM for the analytes specified in IAWP.

Passive Ventilation System Evaluation

The passive mitigation system includes sub-slab perforated PVC piping designed to vent soil vapor, combined with a PVC membrane to seal the system below the concrete floor slab. Performance monitoring will be performed to assess the efficacy of the passive ventilation driven by atmospheric differentials and the PVC membrane seal.

The passive vapor mitigation systems installed under the two office “node” locations in both buildings will be evaluated by:

1. Collecting sub-slab vapor samples at the perimeter of the lining system at each office node and monitoring initial differential pressure prior to sample collection
2. Collecting a vapor sample from one vent riser at each office node
3. Collecting indoor air samples as discussed below

Passive vapor mitigation system evaluation will be performed during the second sub-slab soil vapor sampling event. During sub-slab sample collection at the locations along the perimeter of the lining system (i.e., adjacent to the office nodes), the differential pressure below the slab will be measured by connecting a handheld manometer to the sample port prior to sample collection. If sub-slab differential pressures greater than 500 Pascals (approximately 2 inches of water column pressure) are detected below the membrane, a photoionization detector (PID) will be used to perform a detailed inspection of office node areas including slab penetrations, floor drains, and any visible expansion or contraction joints or cracks in the concrete to determine if the membrane is functioning as an effective barrier.

Vent riser sampling will be performed to assess whether vapors are being vented through the risers. Samples will be collected from the sample port attached to each vent riser after purging the equivalent air volume of the riser pipe. Samples will be collected using an evacuated Summa canister and analyzed by USEPA Method TO-15/TO-15 SIM for targeted analytes that were detected in sub-slab soil vapor during the first monitoring event.

If office node indoor air sampling concentrations exceeding MTCA industrial screening levels are detected or supplemental PID inspections indicate a breach in the membrane barrier, corrective actions will be performed.

Data Evaluation and Indoor Air Sampling

Indoor air samples will be collected during the second sub-slab monitoring event described above. Indoor air samples will be collected following Washington State Department of Ecology (Ecology) VI assessment guidance (Ecology 2018) and the field procedures are presented in the IAWP. Samples collected during the second monitoring event will be analyzed by USEPA Method TO-15/TO-15 SIM for the targeted list of analytes detected in soil vapor during the first round of sub-slab sampling. Within each building, one air sample will be collected from within each office node and from within each warehouse space. A survey of materials stored and chemicals used in each building will be conducted concurrent with indoor air sample collection. An ambient air background sample will also be collected in the drive aisle between the buildings. The samples will be collected when the HVAC is not operational and all doors are closed to obtain worst-case sample results.

REPORTING

The results of additional VI assessment will be presented to Ecology in a summary memorandum, which will include the results of analytical data and concentrations predicted by modeling, compared to the applicable MTCA industrial screening levels and cleanup levels. Recommendations for additional mitigation, if determined to be necessary by the VI assessment, will also be presented in the summary memorandum.

REFERENCES

Floyd|Snider. 2017. *Interim Action Work Plan, 1514 Taylor Way Development*. Prepared for Avenue 55, LLC. June.

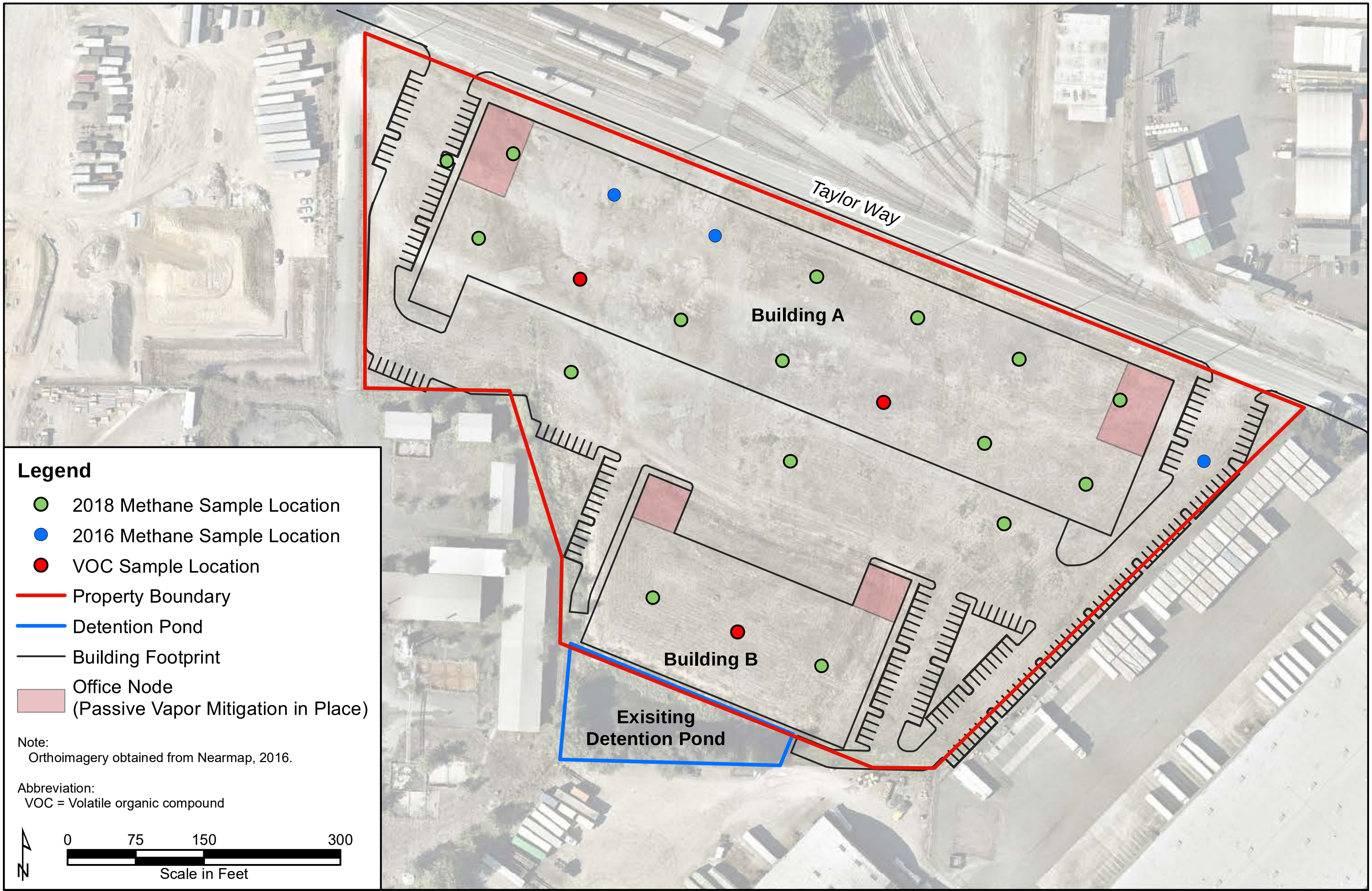
_____. 2018. *Summary of Soil Vapor Survey Data and Vapor Mitigation Plan for the 1514 Taylor Way Site*. Memorandum from Tom Colligan and Kristin Anderson, Floyd|Snider, to Steve Teel, Washington State Department of Ecology. 8 June.

Washington State Department of Ecology (Ecology). 2018. *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action*. April.

ATTACHMENTS

Figure 1	Property Features and Previous Soil Gas Sample Locations
Figure 2	Taylor Way Methane Mitigation, Pad A
Figure 3	Taylor Way Methane Mitigation, Pad B
Figure 4	Taylor Way Methane Mitigation, Installation Detail
Attachment 1	Vapor Intrusion Field Sampling Standard Guideline

Figures



Note:
Orthoimagery obtained from Nearmap, 2016.

Abbreviation:
VOC = Volatile organic compound

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Sampling Plan Addendum
for Vapor Intrusion Assessment
1514 Taylor Way Development
Tacoma, Washington

Figure 1
Property Features and
Previous Soil Gas Sample Locations

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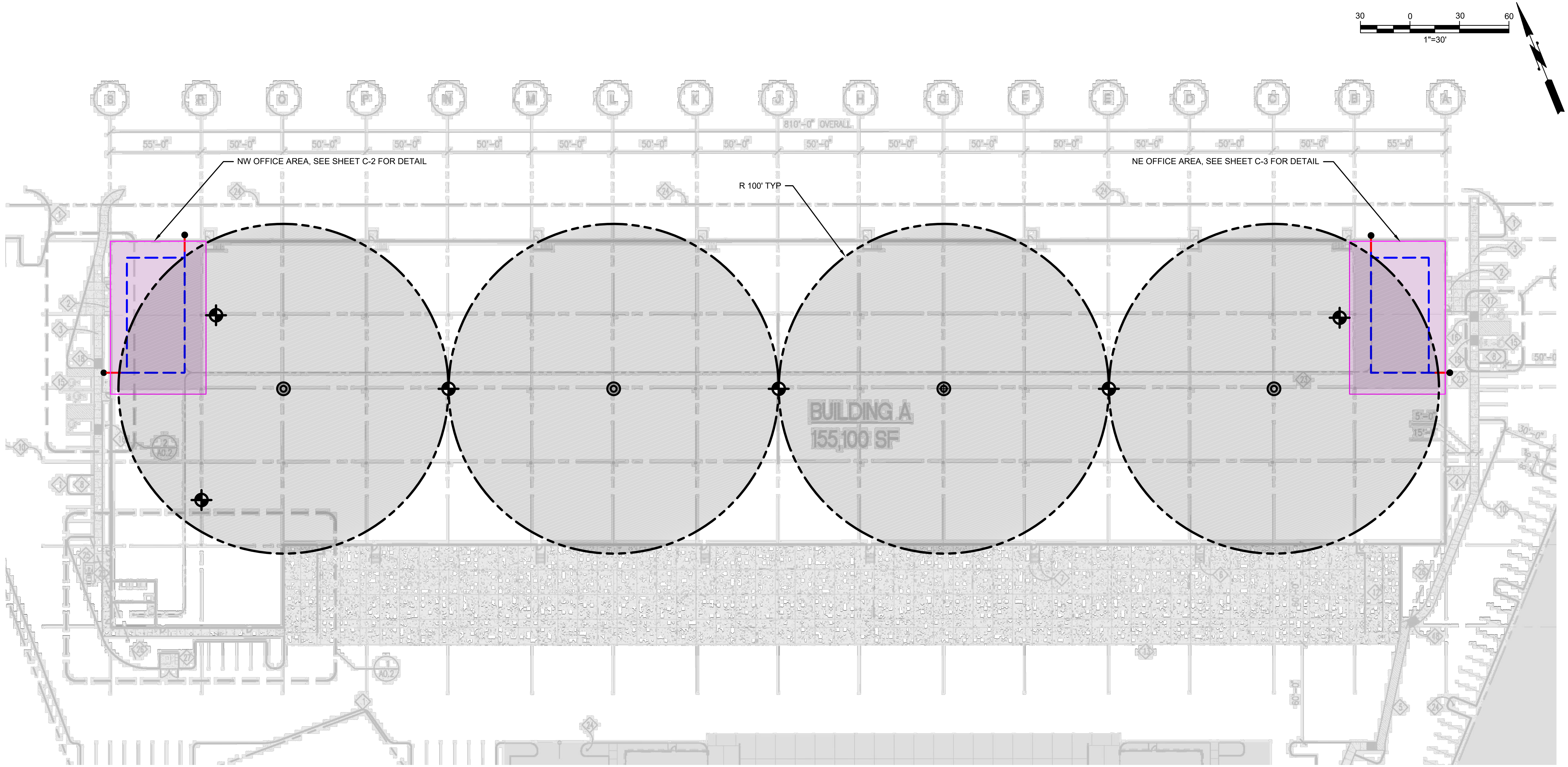
8/10/2018



NOTES:

1. 30mil GEOMEMBRANE SHALL BE A CONTINUOUS SHEET UNDER BUILDING SLAB AND SHALL EXTEND TO EXTERIOR EDGE OF PERIMETER FOOTING OR BE SEALED TO FOOTINGS BY BATTEN STRIP.
2. ALL PENETRATIONS THROUGH MEMBRANE SHALL BE BOOTED AND SEALED. SEE DETAILS 1 AND 2/C-8.
3. ALL INTERIOR VENT PIPING MUST BE PRESSURE TESTED USING HYDRO STATIC OR PNEUMATIC METHOD.
4. GRANULAR MATERIAL UNDER SLAB IN PIPE TRENCH SIZED LARGER THAN PERFORATIONS IN PIPE OR ADD GEOTEXTILE WRAP AROUND PERFORATED PIPE.
5. ALL SLAB PENETRATIONS SHALL BE SEALED WITH ELASTOMERIC POLYURETHANE SEALANT.

LEGEND:

●	4" RISER VENT
◎	RISER VENT WITH BLOWER
⌖	MONITORING LOCATION
– – –	2" DIA SCH 40 PERFORATED PVC COLLECTION PIPE
──	4" DIA SCH 80 OR GALVANIZED SOLID WALL PIPE
▨	VAPOR MONITORING ZONE
🟪	30mil PVC MEMBRANE EXTENTS

WORK PLAN MEMO

No.	REVISION	BY	APP'D	DATE

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

811 Know what's below. Call before you dig.

HERRERA

DESIGNED: K. JOHNSON	DRAWN: T. PRESCOTT
DESIGNED: M. SPILLANE	DRAWN: -
DESIGNED: -	CHECKED: -
SCALE: AS NOTED	APPROVED: M. SPILLANE

AVE 55
TAYLOR WAY METHANE MITIGATION

PAD A

DATE: AUGUST 2018
PROJECT NO: 16-06475-000
DRAWING NO: Figure 2
SHEET NO: 2 OF 4

ORIGINATED BY: / DATE: /
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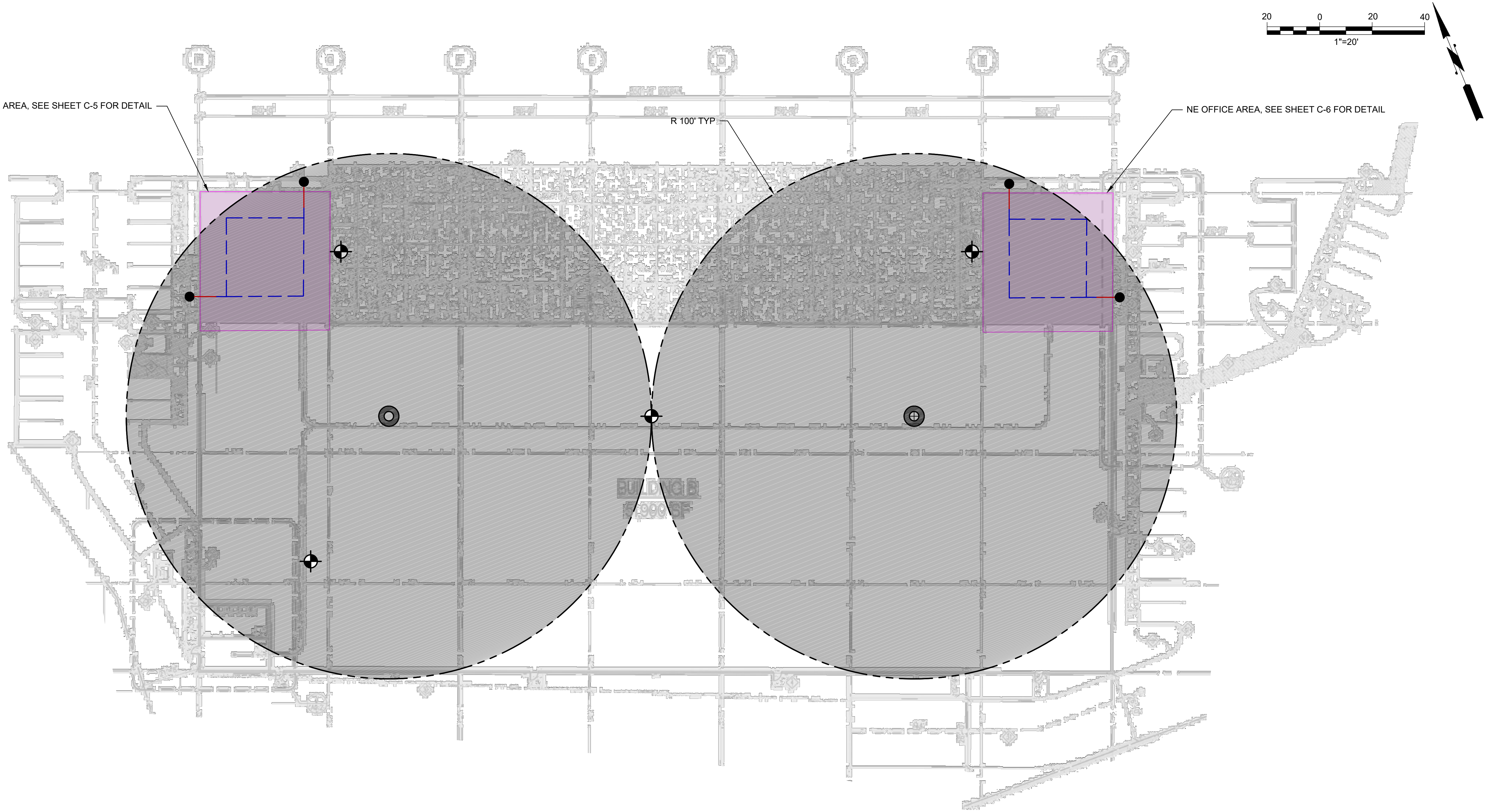

NOTES:

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LEGEND:

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◎	RISER VENT WITH BLOWER
⌖	MONITORING LOCATION
— — —	2" DIA SCH 40 PERFORATED PVC COLLECTION PIPE
——	4" DIA SCH 80 OR GALVANIZED SOLID WALL PIPE
▨	VAPOR MONITORING ZONE
▭	30mil PVC MEMBRANE EXTENTS

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WORK PLAN MEMO

No.	REVISION	BY	APP'D	DATE

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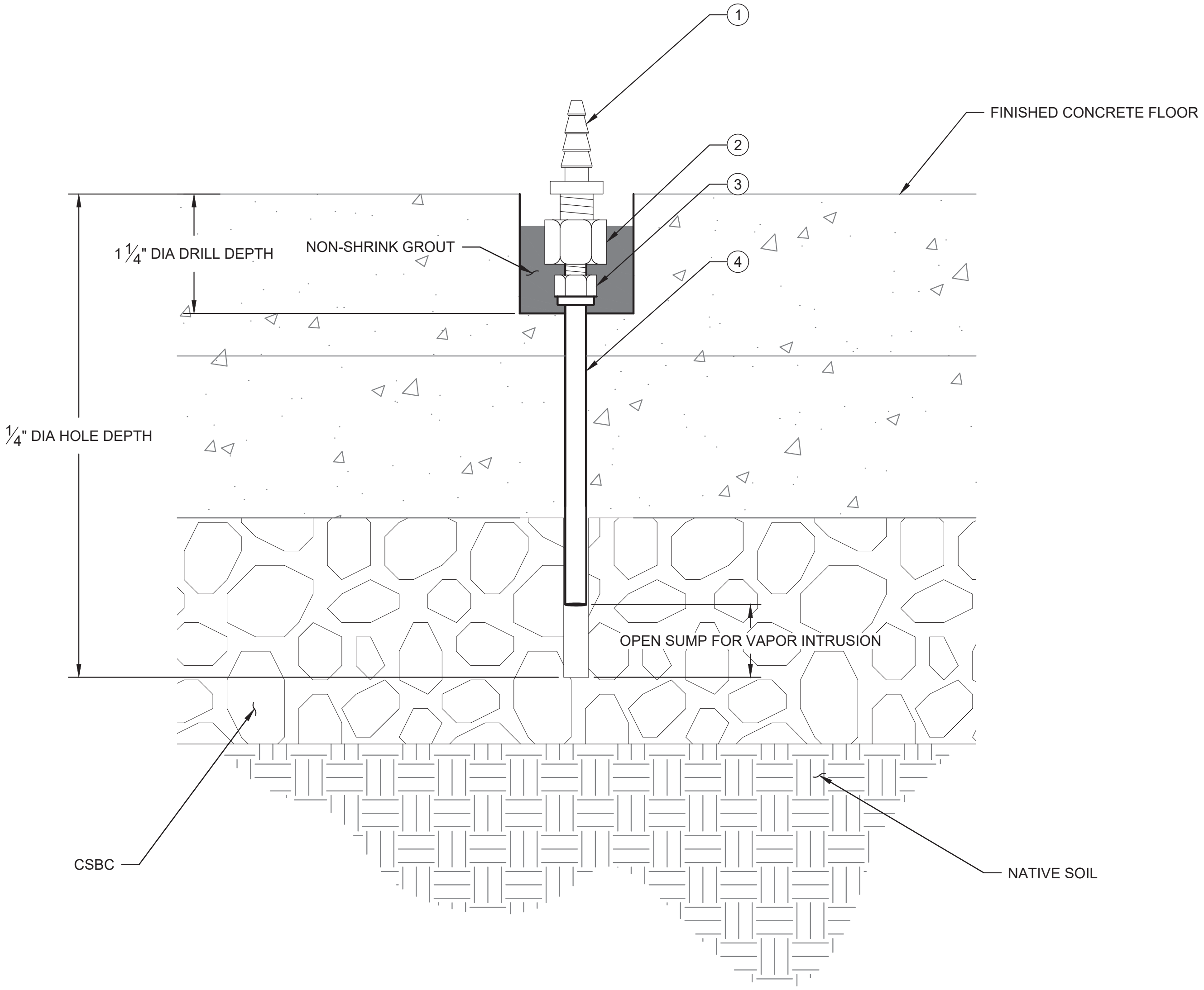
DRAWN: T. PRESCOTT
DESIGNED: M. SPILLANE
DRAWN: -
DESIGNED: -
CHECKED: -
SCALE: AS NOTED
APPROVED: M. SPILLANE

AVE 55
TAYLOR WAY METHANE MITIGATION

PAD B

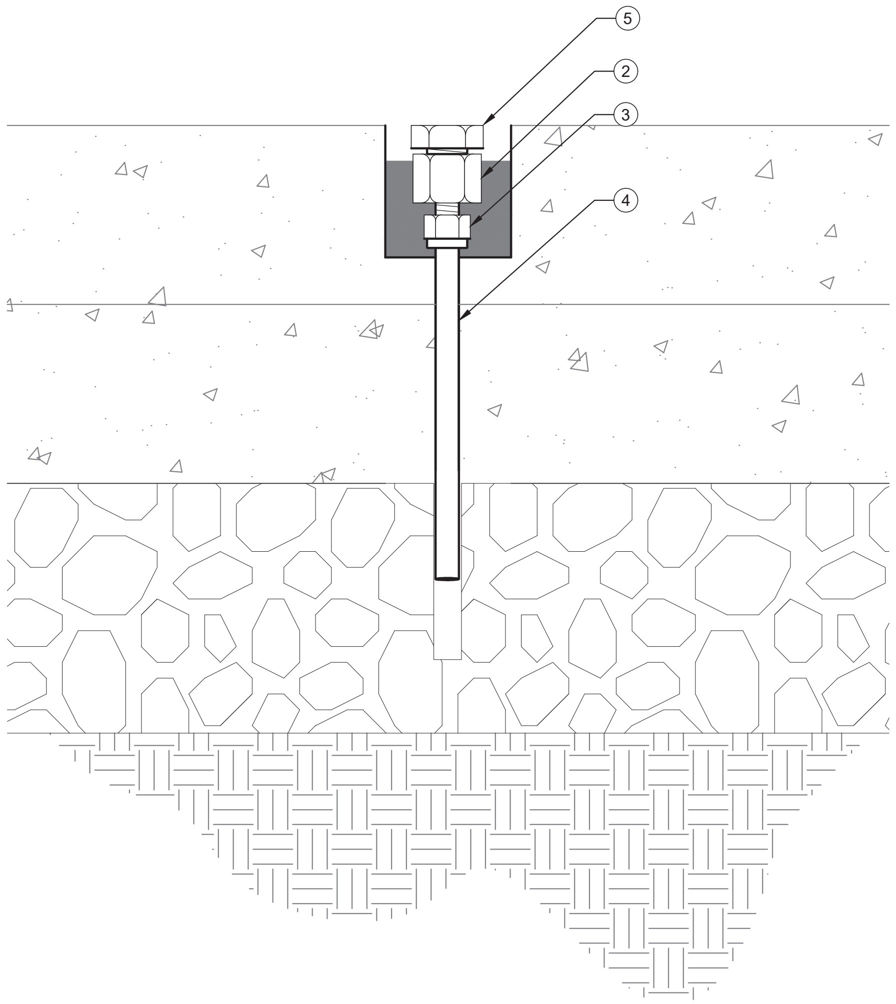
DATE: AUGUST 2018
PROJECT NO: 16-06475-000
DRAWING NO: Figure 3
SHEET NO: 3 OF 4



DETAIL - SUB-SLAB VAPOR PROBE DURING MONITORING

SCALE: NTS

1 / C-1



DETAIL - SUB-SLAB VAPOR PROBE CAPPED

SCALE: NTS

2 / -

ITEMIZED NOTES:

① STAINLESS STEEL HOSE BARB ADAPTER

② SWAGELOK® MODEL # 400-7-4 STAINLESS STEEL, FEMALE CONNECTOR (TAPERED THREAD) 1/4" TUBE x 1/4" NPT

③ SWAGELOK® MODEL # 401-PC STAINLESS STEEL, 1/4" TUBE FITTING PORT CONNECTOR.

④ 1/4" INERT VAPOR TUBING

⑤ McMASTER-CARR MODEL # 4534K12 FLUSH MOUNT-HIGH PRESSURE STEEL HEX SOCKET PLUG, 1/4" PIPE, PTFE COATED, 1/4" HEX, 13/32" LENGTH

INSTALLATION NOTES:

1. SELECT LOCATION FOR THE PERMANENT SUB-SLAB PROBE BASED ON THE OBJECTIVES OF THE PHASE OF WORK, PRESENCE OR POTENTIAL PRESENCE OF OBSTRUCTIONS AND INPUT FROM THE BUILDING OWNER.
2. USING A HAMMER OR CHISEL, CHIP AN "X" IN THE CONCRETE AS A STARTING POINT FOR DRILLING TO PREVENT THE BIT FROM WANDERING OFF THE DESIRED TARGET LOCATION.
3. DETERMINE THE DEPTH OF THE PROBE BODY AND MARK THIS LENGTH ON THE 1-1/4" MASONRY BIT WRAPPED WITH DUCT TAPED FLAP. THE FLAP WILL ACT AS A DEPTH GAUGE. WHEN THE DUCT TAPE FLAP HITS THE SLAB, THE BIT IS AT THE APPROPRIATE DEPTH. THE DESIRED DEPTH OF THE HOLE WILL BE DEPENDANT IF THE PROBE IS TO BE FLUSH WITH THE FLOOR OR SLIGHTLY COUNTERSUNK TO THE FLOOR.
4. USE THE ROTARY HAMMER DRILL WITH THE 1-1/4" BIT TO ADVANCE THE OUTER HOLE TO THE PROPER DEPTH AND VACUUM OUT THE CUTTINGS.
5. USING THE HAMMER DRILL WITH A 1/4" BIT, PLACE THE BIT IN THE CENTER OF THE 1-1/4" HOLE AND DRILL THROUGH THE SLAB INTO THE CSBC SUBSURFACE MATERIAL BY 3" to 6". A SIGNIFICANT INCREASE IN THE RATE OF PENETRATION BY THE DRILL WILL INDICATE THE BOTTOM OF SLAB HAS BEEN PASSED THROUGH.
6. VACUUM OUT THE DRILL CUTTINGS FROM IN AND AROUND THE HOLE. TEST FIT THE PROBE IN THE HOLE SO IT IS AT THE DESIRED LOCATION. ALTER THE HOLE DEPTH IF REQUIRED.
7. DAMPEN A PAPER TOWEL WITH DISTILLED WATER AND WIPE AWAY THE DUST FROM 1-1/4" HOLE AND WET THE SIDEWALLS. DO NOT ALLOW EXCESS WATER ON THE TOWEL GO INTO THE SUBSURFACE.
8. MIX A SMALL AMOUNT NON-SHRINK GROUT OR QUICK DRYING CEMENT AND POUR INTO THE ANNULAR SPACE AROUND THE PROBE. ALLOW THE CEMENT TO CURE FOR THE RECOMMENDED TIME FOR CURING BY THE MANUFACTURER OF THE CEMENT OR GROUT.
9. DETAIL 1 IS A TYPICAL CROSS SECTION OF THE PERMANENT SUB-SLAB PROBE DURING THE MONITORING PROCESS.
10. DETAIL 2 IS A TYPICAL CROSS SECTION OF THE PERMANENT SUB-SLAB PROBE CAPPED FLUSH WITH THE FINISH GRADE.

ORIGINATED BY: / DATE: ______ / ______
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WORK PLAN MEMO

No.	REVISION	BY	APP'D	DATE

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AVE 55

TAYLOR WAY METHANE MITIGATION

INSTALLATION DETAIL

DATE: AUGUST 2018

PROJECT NO: 16-06475-000

DRAWING NO: Figure 4

SHEET NO: 4 OF 4

Attachment 1
Vapor Intrusion Field Sampling Standard Guideline

FLOYD | SNIDER
strategy ▪ science ▪ engineering

Two Union Square
601 Union Street, Suite 600
Seattle, WA 98101
tel: 206.292.2078 fax: 206.682.7867

F|S STANDARD GUIDELINE

Vapor Intrusion

DATE/LAST UPDATE: December 2016

These procedures should be considered standard guidelines and are intended to provide useful guidance when in the field, but are not intended to be step-by-step procedures, as some steps may not be applicable to all projects.

All field staff should be sufficiently trained in the standard guidelines for the sampling method they intend to use and should review and understand these procedures prior to going into the field. It is the responsibility of the field staff to review the standard guidelines with the field manager or project manager and identify any deviations from these guidelines prior to field work. When possible, the project-specific Sampling and Analysis Plan should contain any expected deviations and should be referenced in conjunction with these standard guidelines.

1.0 Scope and Purpose

This standard guideline provides details necessary to complete vapor intrusion monitoring, which may include soil vapor point and sub-slab installation, soil vapor point monitoring and/or sampling, indoor air sampling, and remediation system compliance monitoring. Field screening for volatile organic compounds (VOCs) is most often conducted with a photoionization detector (PID) and confirmed via analytical sample collection. The most common sampling methods are included herein. These guidelines are designed to meet or exceed guidelines set forth by the Draft Washington State Department of Ecology's (Ecology's), *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action* (Ecology 2015 and 2016a). In addition, refer to Ecology's *Updated Process for Initially Assessing the Potential for Petroleum Vapor Intrusion: Implementation Memorandum No. 14* (Ecology 2016b) and the U.S. Environmental Protection Agency's (USEPA's) *Technical Guide For Addressing Petroleum Vapor Intrusion At Leaking Underground Storage Tank Sites* (USEPA 2015). Defining the lateral and vertical inclusion zones will determine if soil vapor sampling is required. The Interstate Technology and Regulatory Council (ITRC) online guidance for soil vapor intrusion (ITRC 2014) is another good source of information.

2.0 Equipment and Supplies

The following is a list of typical equipment and supplies necessary to complete vapor intrusion monitoring. It is important to note that this list is for a typical project; site-specific conditions may warrant additional or different equipment for completion of the work.

Sub-Slab and Soil Vapor Point Installation:

- Rotary hammer drill
- Drill bit
- Vapor point (AMS or similar)
- Stainless steel (SST) dummy tip (optional)
- Teflon™, nylon, or stainless steel tubing
- Sand pack
- Bentonite chips
- Protective cover for permanent point
- Swagelok® on/off valve (optional)
- Caps or compression fittings
- Quick set (concrete) or hydraulic cement
- Paper towels
- Nylon ferrules
- Shop vac

Soil Vapor Point or Remediation System Screening and/or Sampling:

- PID
- Connector
- Teflon™ or nylon tubing
- SKC air sampling pump or peristaltic pump
- Tedlar® bag or SUMMA® canisters
- Two adjustable wrenches (to tighten SUMMA® canister connections)
- Duplicate sampling (as necessary if duplicate sample collection is required)
- Soil gas manifolds
- Ferrules/fittings
- Helium (or other detection gas if leak detection is necessary)

- Helium detector (if leak detection is necessary with helium)
- Soil vapor sampling sheet (enclosed)

Indoor Air Sampling:

- PID
- Regulator
- SUMMA® canisters (6-liter, lab certified)
- Sampling cane (optional)
- At least two adjustable wrenches
- Indoor air building survey form (enclosed)

3.0 Standard Procedures

Soil vapor samples and/or indoor air samples should be collected from a sufficient number of locations to assess the presence of VOCs and potential exposure to workers or occupants of potentially impacted buildings or future building locations.

3.1 PRE-SCREENING ASSESSMENT

When completing a vapor intrusion survey or indoor air sampling, it is important to complete a pre-sampling survey to document potential activities or storage items that may cause interference with sample results. Some important things to note (list is not comprehensive):

- If smoking has occurred in the building
- Storage of potential contaminants (cleaners, fuels, paints, or paint thinners, etc.)
- HVAC system operation (on or off)
- Temperature and weather (wind direction, barometric pressure, etc.)
- Vehicle maintenance or industrial activities on the property or in the immediate vicinity (especially upwind)
- If new carpet or furniture is present

A pre-sampling soil vapor building survey form can be found at the end of this document. Be mindful of your surroundings and make a comprehensive list of potential factors that may influence sample results.

3.2 SOIL VAPOR POINT INSTALLATION

Soil vapor points can be installed along the outside perimeter of a building or in the lowest level of a building directly through the slab (or beneath the floor into the subsurface if there is not a slab). It is important to evaluate the presence of utilities prior to drilling into the subsurface or through a concrete slab.

If the sampling point is for one time use, tubing inserted into a hole drilled in the slab is sufficient. However, if the sampling is to be part of a long-term monitoring program, a more robust sampler, such as a Geoprobe or AMS probe for permanent soil gas point is recommended. Four different methods for installing soil vapor installation points are described here.

1. For temporary sub-slab points:
   a. Drill a hole into the subsurface. Using a rotary hammer drill and a 3/8-inch drill bit (typical diameter size but not necessary), drill a hole through the concrete floor slab of the building and into the sub-slab material to some depth (e.g., 7 to 8 centimeters [cm] or 3 inches). Drilling into the sub-slab material will create an open cavity, which will prevent obstruction of the tubing intake by small pieces of gravel. Once the thickness of the slab is known, the tubing will be cut to ensure that the probe tubing does not reach the bottom of the hole in order to avoid obstruction with sub-slab material. Sample tubing can be placed directly into the sub-slab. Evaluate and note the sub-slab conditions.
   b. Care should be taken to reduce cross-contaminating sub-slab vapor and indoor air vapor. This may be done by sealing the sample point with VOC-free hydraulic cement, hydrated bentonite, or with VOC-free putty to the top of the slab. Once sealed, wait 15 to 30 minutes before sampling.
2. Suggested installation guidelines for temporary outdoor soil gas points using a rotary hammer and drill bit:
   a. Manufacturers, such as Geoprobe or AMS, make soil gas implant systems designed for use with their equipment. Stainless steel or polyvinyl chloride (PVC) screen can also be used to construct an appropriate soil gas point. The probe screen will be fitted with a Swagelok® or similar fitting and connected to a length of 0.25-inch outer diameter, rigid wall nylon or Teflon™ tubing that will be above grade. Refer to the manufacturer or driller's instructions for specific details regarding assembly and deployment.
   b. To seal the point, the implant should be surrounded with a clean sand pack. Concrete (VOC-free hydraulic cement preferred) should be used above the seal to the top of the slab. Placement of some sort of cap or protective device is recommended if the sampling point will remain in place for some time after the soil gas sample is collected. Once sealed, wait 15 to 30 minutes before sampling.
3. Suggested installation guidelines for outside permanent points installed with a Geoprobe rig or hand auger:
   a. Advance the boring using a geoprobe or hand auger to the required maximum depth. Install a 6-inch long by 0.75-inch diameter stainless steel screen that is capped on the bottom end and fitted with a Swagelok® fitting connected on the

other end (or similar approved screen or soil vapor point). Attach a length of 0.25-inch outer diameter rigid wall nylon or Teflon™ tubing to the probe screen that will be above grade. The above grade end of the probe should be fitted with a stainless steel Swagelok® on/off control valve or similar valve (optional), which is used to prevent short-circuiting of ambient air into the probes and to conduct closed-valve tests. Teflon™ tape should be used on threaded joints to ensure a good seal. Depending on the work plan, it might be necessary to collect an air equipment blank sample through the vapor probe components prior to installation.

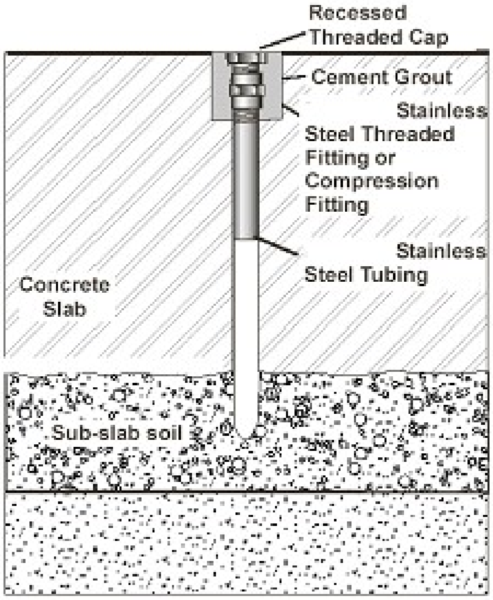
   b. The 6-inch screen tip should be vertically centered in a 1-foot long interval containing standard sand pack, resulting in 3 inches of sand above and below the screen. The sand pack will be covered with a 1-foot interval of dry granular bentonite, which should be covered with at least 2 feet of pre-hydrated granular bentonite. The dry granular bentonite is emplaced immediately above the sand pack to ensure that pre-hydrated granular bentonite slurry does not flow down to the probe screen and seal it. The remainder of the borehole will be filled with pre-hydrated granular bentonite slurry (mixed at the surface and poured in) to approximately 12 inches below ground surface (bgs). The top portion should be completed with a 1-foot thick cement cap. A flush-mounted well box or other suitable protective cover should be installed to protect the nylon/Teflon™ tubing and on/off control valve.

4. The following contains suggested equipment and installation guidelines for permanent sub-slab vapor points within a building; however, site-specific conditions may warrant additional or different equipment for completion of the work:

   a. To install the sub-slab vapor probes, a rotary hammer drill will be used to create a “shallow” hole (e.g., ¼-inch deep) that partially penetrates the slab (do not completely penetrate the slab). A portable vacuum can be used to remove the drill cuttings from the hole without compromising the soil vapor samples. Next, a smaller diameter “inner” hole (e.g., 0.8 cm or 5/16 inch diameter) will be drilled through the remainder of the slab and into the sub-slab material to some depth (e.g., 7 to 8 cm or 3 inches). Drilling into the sub-slab material will create an open cavity which will prevent obstruction of the probes by small pieces of gravel. Once the thickness of the slab is known, the tubing will be cut to ensure that the probe tubing does not reach the bottom of the hole and in order to avoid obstruction with sub-slab material.

   b. Each sub-slab vapor point should consist of vacuum-rated Nylon, Teflon™, or stainless steel tubing with ¼-inch outer diameter by 0.15-inch inner diameter, and stainless-steel compression to thread fittings (e.g., ¼-inch outer diameter Swagelok® (SS-400-7-4) NPT female thread connectors or similar equipment). This will be capped with sub-slab tamper resistant cap or other similar protective caps that will be inset into the floor to avoid trip hazards. When time to sample, the sub-slab tamper resistant cap will be removed and Nylon tubing will be attached to the sub-slab vapor point with a ¼-inch out diameter (SS-400-1-4) male NPT. Prior to the installation of one of the sub-slab vapor probes, an air equipment blank sample will be collected if required by the work plan (See Section 3.4.3).

c. Teflon™ tape should be used with all stainless steel treads. All fittings should be attached prior to installing the probe in the sub-slab. A sub-slab tamper resistant cap will be used to ensure that the top of the probe is flush with the surface so as not to interfere with day-to-day use of the building. Portland cement can be used as a surface seal and allowed to cure for at least 24 hours prior to sampling. Hydraulic cement may also be used if free of VOCs, and requires less cure time (typically less than one hour) prior to sample collection. A typical soil gas probe schematic is provided here for reference.



Sub-slab soil gas probe schematic (Source: Ecology 2016a)

3.3 SOIL VAPOR POINT SAMPLING USING TEDLAR® BAGS

The objective of the vapor sampling procedures is to collect representative samples of the targeted media and analyze the gas for the presence of VOCs. Typically, a low volume air pump is used to pull a sample through the sampling train.

1. Connect proper tubing to your sampling point and to your low volume air pump.
2. Purge for 3 to 5 minutes to ensure that you are collecting a representative sample.
3. After purging, connect your Tedlar® bag to your air pump and collect your sample (Note: Tedlar® bags should be filled at a rate of approximately 5 liters per minute).
4. A PID is typically used in conjunction with sample collection in a Tedlar® bag.
   a. Connect the PID probe to the sample container using a section of tubing
   b. Use the PID to read the organic vapor level present in the sample.

Soil Vapor samples are typically collected into 1-liter Tedlar® bags and have a short (typically less than 72-hours) holding time. Samples collected into Tedlar® bags should be transported to the laboratory immediately under chain-of-custody protocol and stored in a dark container at ambient temperature during transport out of direct UV-light. Do not ship Tedlar® bags to the laboratory using an air transportation method as the pressure could compromise the sample or the bag. If air transport is necessary, do not completely fill the Tedlar® to avoid bursting. Soil vapor grab samples can also be collected into 1-liter SUMMA® canisters to provide additional holding time, lower laboratory method detection limits for some analytes, or sample delivery alternatives.

3.4 SOIL VAPOR AND SUB-SLAB SAMPLING WITH SUMMA® CANISTERS

Prior to soil vapor sampling, check all soil vapor sampling supplies to ensure the right sampling equipment arrived from the lab including duplicate Tees, if duplicate sample collection is necessary, and purging canisters. Conduct the following:

- Confirm that all SUMMA® canisters have at least 27 to 30 inches of mercury (in. Hg) prior to going out in the field to sample.
- Check and record all manifold and SUMMA® canister tags and numbers.
- Make sure all connections on the SUMMA® canisters and manifolds are tight.
- Order Helium (or other tracer gas) if needed and rent a helium detector.

Once the sub-slab or soil vapor probes are installed and the concrete well seal at each vapor point has fully cured, vapor sampling activities may commence (ideally a minimum of 2 hours is necessary for probe equilibration, depending on surface seal cure time). Alternatively, existing monitoring wells that are appropriately screened for a vapor intrusion assessment may be used. If indoor air samples will be collected, they may be collected simultaneously during the sub-slab sampling activities (details found in Section 3.6) if required by the work plan. If feasible, vapor sampling should not be conducted during or immediately after a significant rain event (i.e., greater than an inch of rainfall) due to the reduced effective diffusion coefficient and decrease in relative vapor saturation in the unsaturated zone. For sub-slab or soil vapor probe sampling, 1-liter lab certified SUMMA® canisters should be used in order to minimize the volume of soil vapor collected.

A closed-valve test should be conducted prior to soil vapor sample collection to check for leaks in the sampling train. A closed-valve test is conducted by capping the ends with proper Swagelok caps and/or closing any valves at the sampling point and purge canister. Once all ends are closed tight, turn the sampling canister valve on for 5 minutes. If the sampling train maintains its original vacuum for 5 minutes, the equipment will be assumed to be functional and there are no leaks. If the vacuum reading starts to drop, turn off the valves right away, check all connections, tighten if necessary, and re-test. If this passes, the only location that a leak can occur is from the soil ground seal around the vapor probe, which will be tested using helium or another tracer gas during sampling (See Section 3.4.1).

After the close-valve test, a minimum of three tubing volumes should be purged. Purging can be completed using a non-certified 6-Liter SUMMA® canister or a vacuum pump. The maximum flow rate during purging will not exceed the flow rate limit used for subsequent sampling and care will be taken not to over purge. An excel spreadsheet to help calculate tubing volume and purging time can be found at the end of this document.

After the sampling train has been purged, sub-slab soil vapor samples will be collected over a 10 minute period at a flow rate of less than 167 milliliters per minute (ml/min). The flow rate will be controlled by a flow regulator, which is set by the lab. Sub-slab soil vapor samples will be collected in laboratory-certified and pre-evacuated 1-liter SUMMA® canisters. Each SUMMA® canister will be supplied with an analytical test report certifying that the canister is “clean” to concentrations less than the respective method detection limits (MDLs). Each canister will be equipped with a pre-calibrated flow controller sampling train to allow collection of the desired sample. Prior to collecting the samples, the SUMMA® canister ID numbers will be recorded in the field notebook along with the initial canister vacuums, prior to sampling.

Soil vapor samples will be collected per the following steps:

1. Opening the valve on the top of the SUMMA® canister and recording the time in the log book;
2. Observing the vacuum gauge on the sampling train to ensure that the vacuum in the canister is decreasing over time;
3. Shutting off the valve once the vacuum gage reads between 4.0 and 5.0 inches of mercury (in. Hg).

3.4.1 Leak Testing

In addition to soil gas sampling activities, leak testing may be required at sampling locations and should be conducted using the following soil gas sampling set-up procedures:

- Place a large plastic bag (or other acceptable shroud) around the SUMMA® canister, sampling apparatus, and vapor probe.
- Cut a small hole in the bag to allow tubing to be inserted to introduce tracer gas, such as helium, and to subsequently fill the plastic bag.
- Keep the tracer gas (i.e., helium) concentration in the bag at 10 percent by volume or higher.

Detections of the tracer gas in the soil gas samples would indicate that the canister, valves, or ground surface seal to the sample probe have potentially leaked ambient air into the sample. Small amounts of sample train leakage is permissible, however, the leak percentage should not exceed 10 percent of the soil gas results. If the leak percentage exceeds 10 percent, the sampling point may have to be resampled. The integrity of the soil vapor samples can be assessed by estimating the percent leakage as shown here in micrograms per square meter ($\mu g/m^3$):

$$\% \text{ leakage} = 100 \times \frac{\text{helium concentration in soil vapor sample } [\mu g/m^3]}{\text{average helium concentration measured inside the shroud } [\mu g/m^3]}$$

Tracer gas leaks should not occur if the sampling train passes a properly performed closed-valve test and given the low flow rate of 167 ml/min.

3.4.2 Final Readings

Once the sampling is completed and the final vacuum is recorded, the sampling train will be removed from the canister and a Swagelok® cap will be tightly fitted to the inlet port of the canister. A PID can be used to record vapor readings from the manifold connection and logged in the notebook and/or soil vapor sampling sheet (enclosed). In addition, the initial canister vacuums, vacuum testing times, purging times, purged volumes, helium readings, sampling starts and times, final vacuum readings, and PID readings should be recorded on a vapor sampling sheet. Some of this information will also be required on the chain-of-custody.

3.4.3 Equipment Blank

Occasionally, the work plan requires an equipment blank to be collected. An equipment blank can be conducted by collecting a sample of clean air or nitrogen through the probe materials before installation in the ground. Analysis of the equipment blank can provide information on the cleanliness of new materials. Clean stainless steel, Nylon or Teflon® tubing and a certified regulator should be used. Lab-certified canisters (the sample canister and the source canister/cylinder, if applicable) or Tedlar® bags can be used to collect an equipment blank.

3.5 USE OF MONITORING WELLS FOR SOIL GAS SAMPLING

While dedicated soil gas probes are typically used to collect soil gas samples, existing monitoring wells that are appropriately located and screened can also be used for this purpose, with limitations. This is an advantage when evaluating the risk of vapor intrusion solely from contaminated aquifers (as compared to contaminated vadose zone soil) as the soil gas that will be sampled can reflect a soil gas sample that lies close to the zone of saturation and represents a worse case condition for equilibrium partitioning of contamination in groundwater to the gas phase. Also, monitoring wells are typically constructed at a deeper depth than soil vapor probes and are less influenced by changes in barometric pressure. They are also inherently constructed to be well sealed against breakthrough from atmospheric air (while purging and sampling). For an existing well to be used for soil gas sampling, it must have at least 2 to 3 feet of open screen above the water table during sample collection.

The main disadvantage of using existing monitoring wells is that the required purge volume would be much greater because of the significantly larger diameter of the well screen as compared to probes. This requires the use of a larger air pump or small blower instead of the SKC hand pump or peristaltic pump. While purging, care must be taken to minimize the vacuum in the well casing which may be large enough to raise the water column high enough to cover the exposed well screen and invalidate the use of the well for sampling soil gas. Appropriate temporary fittings will need to be installed to allow the reduction of the well casing sufficient to allow connection to the collection tubing.

3.6 INDOOR AIR SAMPLE COLLECTION

Indoor air samples are typically collected into 6-liter SUMMA® canisters, and can either be a grab (not often recommended) or time weighted samples. For time weighted samples, the laboratory will provide preprogrammed flow controllers for the samples for your desired sample duration. An 8-hour flow controller is the most common to assess typical working conditions or to provide a time-weighted average (TWA) to assess residential risk (a 24-hour flow controller may also be used for residential assessments). SUMMA® canisters should be placed in an area that is close to the breathing zone (i.e., 3 to 4 feet above the floor level), a sampling cane can be connected to the SUMMA® canister to sample indoor air at breathing zone height. As a basic guideline and starting point, indoor air samples should at a minimum be collected from the basement (if applicable), first floor living or work area, and from outdoors (ambient/upwind). Other site-specific factors will influence the specific placement location of the SUMMA® canisters, such as proximity to subsurface source area(s) or penetrations through the slab or foundation.

3.6.1 Connection Guidelines

Refer to specific guidelines provided by the laboratory, as equipment can be slightly different from lab to lab. It is important to note the initial vacuum reading on the gauge as well as the post-sampling vacuum. For reference, initial vacuum should be between 27 and 30 inches of mercury, while post-sample vacuum should be between 4 and 5 inches of mercury. Sample collection start and finish times should also be recorded. After sample collection, the SUMMA® canister valve should be shut and the flow controllers should be disconnected from the SUMMA® canisters. Both the controller and the canister ID (unique laboratory tracking ID) should be recorded on the chain-of-custody and the samples should be packed appropriately for delivery to the laboratory following chain-of-custody protocol.

3.7 REMEDIATION SYSTEM VAPOR SAMPLE COLLECTION

Remediation systems that have a soil vapor extraction (SVE) component often require compliance monitoring to evaluate mass removal and effluent discharge limits. Both screening (with a PID) and sampling are routinely conducted during active operation. Tedlar® bags are often used to simplify SVE system screening. Fill a bag following the procedures described in this section and use a PID to measure the VOCs in the sample. Record the maximum observed concentration. Vapor samples for laboratory analysis are most often collected in 1-liter Tedlar® bags, but SUMMA® canisters can also be used. It is a good idea to fill out the label on the Tedlar® bag prior to sample collection.

If the sample port is under vacuum (i.e., SVE manifold or wellhead), it is often necessary to reduce the flow somewhat and to use a hand or mechanical pump to extract the vapor from the line. If the sample port is under a high vacuum, it may be necessary to step down the flow (i.e., close the flow valve) in order to collect a sample. Follow steps in Section 3.3 for sample collection and delivery.

If the sample port is under pressure (i.e., SVE system discharge), the sample can be collected without the use of a pump. Simply attach a clean piece of tubing securely to the sample port, connect the Tedlar® bag to the tubing, open the Tedlar® bag, slowly open the sample port valve, and be careful not to overfill the bag. Remove the Tedlar® bag when full, close the Tedlar® bag (do not over-tighten), and close the sample port valve. Follow steps in Section 3.3 for sample delivery.

4.0 Field Documentation

Soil vapor probe and monitoring point installation field activities should be documented in field notebooks and completion diagrams or boring logs should be completed to document construction. Information recorded will include personnel present, total depth, type and length of implant or screen, screen and filter pack intervals, bentonite seal intervals and surface completion details. Photographs of construction activities should be taken. After probe and monitoring point installation is complete, location coordinates should be recorded with a global positioning system (GPS). If GPS cannot be used (i.e., location within a building), it is important to document the location by recording representative measurements to fixed points.

All sampling activities must be documented in a field notebook and/or on field forms appropriate for the sampling activity. Information recorded will include at a minimum personnel present, weather conditions, date, and time of sample collection, length of sample purge time, and any deviations from the project’s work plan or sampling and analysis plan.

5.0 References

Interstate Technology Regulatory Council (ITRC). 2014. Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management. <http://www.itrcweb.org/PetroleumVI-Guidance/>. October.

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Enclosures: Indoor Air Building Survey Form
Purge Volume Calculations during Soil Vapor Sampling
Soil Vapor Sampling Sheet

INDOOR AIR BUILDING SURVEY FORM

Date:

Site Name:

Title:

Building Use:

Occupants: ____________________

Building Address: ____________________

Property Owner: ____________________

Contact's Phone: ____________________

Number of Occupants: ____________________

Business or Residential: ____________________

Building Characteristics

Building Type: ☐ Residential ☐ Multifamily ☐ Office

☐ Commercial ☐ Industrial ☐ Mall

Describe Building:____

____

Number of Floors Below Grade: _____________ ☐ Basement ☐ Slab-On-Grade ☐ Crawl Space

Bldg Dimensions: Width:______ Length: ________ Height: _________

Basement Floor: Dirt / Concrete / Painted? Foundation Walls: Concrete / Cinder Blocks / Stone

VENTILATION SYSTEM

☐ Central Air Conditioning
☐ Conditioning Units
☐ Mechanical Fans
☐ Kitchen Range Hood
☐ Bathroom Vans
☐ Outside Air Intake

Other:________________________

HEATING SYSTEM

☐ Hot Air Circulation
☐ Heat Pump
☐ Hot Air Radiation
☐ Hot Water Radiation
☐ Wood
☐ Kerosene Heater
☐ Steam Radiation
☐ Electric Baseboard

Other:_____________

Outside Contaminant Sources

Nearby surrounding property sources: Gas Stations / Emission Stacks

Soil Contamination: Petroleum Hydrocarbons / Solvents

Heavy Vehicle Traffic: Yes / No

Indoor Contaminant Sources

Identify all potential sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hrs prior to indoor sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

Potential Sources	Location(s)	Removed (Yes / No / NA)
Gasoline storage cans		
Gas powered equipment		
Kerosene storage cans		
Paints / Thinners / Strippers		
Cleaning solvents / Dry cleaners		
Oven cleaners		
Carpet / upholstery cleaners		

Other house cleaning products		
Moth Balls		
Potential Sources	**Location(s)**	**Removed (Yes / No / NA)**
Polishes / waxes		
Insecticides		
Furniture / floor polish		
Nail polish / polish remover		
Hairspray		
Cologne / perfume		
Air fresheners		
Fuel tank (inside building)		
Wood stove or fireplace		
New furniture		
New carpeting / New flooring		
Hobbies – glues, paints		
Other: __________________		
Other: __________________		
Other: __________________		

SAMPLING INFORMATION

Sampler(s) ____

☐ Indoor Air / Outdoor Air ☐ Sub-slab ☐ Soil Vapor Point ☐ Exterior Soil Gas

☐ Tedlar® Bag ☐ Sorbent ☐ SUMMA® ☐ Other _________

Analytical Method: TO-15 / TO-17 / Other: _________________

WEATHER CONDITIONS

Was there a significant rain event in the last 24 hours? Yes / No

Temperature: _________ Atmospheric Pressure: _______________ Pressure: Rising or Falling?

Describe the general weather conditions: ____

Wind Speed and Direction: ____

PURGE VOLUME CALCULATIONS DURING SOIL VAPOR SAMPLING

Sample Tubing Purge												
Tubing Length (feet)	Pi	Casing Radius (inches)	Area of Casing Radius (Pi(R^2)) (inches)	Length of casing (feet)	Conversion of feet to inches	Number of Casing Volumes to Purge	Conversion of cubic inches to ml	Purge Volume (ml)	Purge Volume (l)	Purge rate (ml/min)	Purge Time (min)	
5	3.141593	0.125	0.049087	5	60	1	16.387064	48.263888	0.048264	167	0.29	
5	3.141593	0.125	0.049087	5	60	3	16.387064	144.79166	0.144792	167	0.87	
5	3.141593	0.125	0.049087	5	60	7	16.387064	337.84721	0.337847	167	2.02	

Annular Space Purge												
Annular Space Length (inches)	Pi	Boring Radius (inches)	Area of Boring Radius (radius^2)	Volume of Annular Space (inches)	Assumed Porosity of Sand Pack*	Air Filled Volume of Annular Space (cubic inches)	Number of Casing Volumes to Purge	Conversion of cubic inches to ml	Purge Volume (ml)	Purge Volume (l)	Purge rate (ml/min)	Purge Time (min)
12	3.141593	2	12.56637	150.7964	0.3	45.23893	1	16.387064	741.3333	0.741333	167	4.44
12	3.141593	2	12.56637	150.7964	0.3	45.23893	3	16.387064	2224	2.224	167	13.32
12	3.141593	2	12.56637	150.7964	0.3	45.23893	7	16.387064	5189.333	5.189333	167	31.07

Summary of Purge Durations	
One Purge Volume	4.73
Three Purge Volumes	14.18
Seven Volumes	33.10

SOIL VAPOR SAMPLING SHEET

Site Reference: ____________________________________

Date: ____________________________________

Address: _____________________________________

Personnel: ____

	Vacuum Test		Purging				Helium		Sampling				PID		
Soil Vapor Sampling Point ID	Time Start Vacuum Testing	Time Stop Vacuum Testing	Time Start Purging	Time Stop Purging	Purging Rate (ml/min)	Total Volume Purged (ml)	Time of Helium Reading	Helium Reading (%)	Time Start Sampling	Time Stop Sampling	Canister Vacuum Before Sampling (in Hg)	Canister Vacuum After Sampling (in Hg)	Time of PID Reading	PID Reading	Notes
					167										
					167										

Notes:

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Memorandum

To: Nick Acklam, Washington State Department of Ecology

Copies: Drew Zaborowski, Avenue 55; Scott Hooton, Port of Tacoma

From: Tom Colligan and Gabriel Cisneros, Floyd|Snider

Date: December 4, 2018

Re: **Summary of Sub-Slab Soil Vapor Assessment**
1514 Taylor Way, Tacoma, Washington

This memorandum summarizes the results of sub-sab soil vapor sampling performed in Buildings A and B at the 1514 Taylor Way redevelopment site (the Site) in Tacoma, Washington. The Taylor Way redevelopment site (Portside) is part of the larger Taylor Way and Alexander Avenue Fill Area Site. Redevelopment activities at Portside were performed consistent with the Interim Action Work Plan (Floyd|Snider 2017). The sub-slab vapor assessment sampling was performed in accordance with the approved Sampling Plan Addendum for Vapor Intrusion Assessment (Floyd|Snider 2018) submitted to Mr. Steve Teel of the Washington State Department of Ecology (Ecology) in August 2018. As described in that addendum, sub-slab assessment was determined to be needed based on results from soil gas samples collected prior to building construction. The addendum also described the installation of passive vapor barriers in the four office nodes of the two redevelopment warehouses. The results from the sub-slab sampling will be used to determine if further evaluation of indoor air quality is needed.

SUB-SLAB SOIL VAPOR INSTALLATION AND SAMPLING

On September 10, 2018, Environmental Services Network Northwest, Inc., installed a total of 14 permanent sub-slab vapor sampling points in Buildings A and B after the slab foundations were poured in place. Eight sub-slab locations were installed in Building A and six locations were installed in Building B (Figures 1 and 2). The August 2018 sampling plan addendum proposed a total of 10 locations; however, the final number and locations of sub-slab points were adjusted based on recommendations provided by Ecology via email (Attachment 1). In general, the locations were selected to be representative of the prior volatile organic compound (VOC) detections in soil gas and at locations immediately adjacent to the office nodes, as well as general coverage. All vapor pin locations were placed outside the polyvinyl chloride (PVC) membrane and PVC piping installed under the office nodes.

Cox-Calvin & Associates, Inc., VAPOR PIN® points were used, and each point was constructed with a 1.5-inch extension and a flush mount, stainless-steel secure cover. The vapor pins extend

6 inches below the concrete floor slab in order to collect soil vapors accumulating directly under the slabs (Photograph 1 of Attachment 2). The standard operating procedure was followed during installation of the vapor pins (Attachment 3).

Prior to collecting soil vapor samples, the vapor pins were allowed 48 hours to equilibrate. Two sampling events were performed. The first event occurred on September 12, 2018, and the second sampling event occurred on October 24, 2018. All 14 locations were sampled during both events. Soil vapor samples were collected in accordance with Floyd|Snider's Standard Guideline for Vapor Intrusion.

Prior to collecting the samples, the soil gas sampling equipment was set up at each location and a closed valve test was performed. The sampling train was checked for leaks by capping the ends and closing the control valve at the vapor point, then opening the SUMMA® canister for a period of 5 minutes to see if vacuum was maintained. All sampling trains maintained their initial vacuum for at least 5 minutes during each sampling event.

After conducting closed-valve tests, at least three volumes were purged. Purging was completed using a 6-liter SUMMA canister with a flow rate less than 200 milliliters per minute (mL/min). After the sampling train was purged, soil gas samples were collected over a 5-minute period at a flow rate of less than 150 mL/min. Soil vapor samples were collected in 100-percent certified and pre-evacuated 1-liter SUMMA canisters supplied by Friedman & Bruya, Inc. (FBI) laboratory.

Soil vapor samples were collected per the following steps:

1. Open the valve on the top of the SUMMA canister and record the time in the logbook.
2. Observe the vacuum gauge on the sampling train to ensure that the vacuum in the canister is decreasing over time.
3. Shut off the valve once the vacuum gauge reads between 4.5 and 5.0 inches of mercury (inches Hg).

During the September 2018 sampling event, leak testing was performed at all sampling locations using the following soil gas sampling setup procedures:

1. A large plastic shroud was sealed around the sampling point.
2. A small hole was cut in the shroud to allow tubing to be inserted through it to introduce helium and to subsequently fill the shroud.
3. Helium was maintained at a concentration of 10 percent or greater within the plastic shroud. Detections of helium in the soil gas samples would indicate that the valve at the sampling point or sub-slab seal had potentially leaked ambient air into the sample. Helium was not detected in any location at the sample outlet during the September event, indicating that all vapor pin seals were tight and short circuits were not present; therefore, a helium leak test was not necessary during the second event in October 2018.

Once the sampling period was completed and the final vacuum was recorded, the sampling train was removed from the canister, and a Swagelok Company cap was tightly fitted to the inlet port of the canister. A photoionization detector (PID) was used to record vapor readings from the manifold connection, and the readings were logged in the notebook and soil vapor sampling sheet. The initial canister vacuums, vacuum testing times, purging times, purged volumes, helium readings, sampling starts and times, final vacuum readings, and PID readings were recorded on soil vapor sampling sheets, which are included in Attachment 4.

Soil gas samples were analyzed for the following:

- VOCs using U.S. Environmental Protection Agency (USEPA) Modified Method TO-15
- Volatile compounds by Method MA Air-Phase Hydrocarbons (APHs)

Additionally, during the September 2018 sampling event, helium was analyzed using ASTM D1946. Helium was not analyzed during the October 2018 event.

SOIL VAPOR SURVEY FINDINGS

The initial September 2018 sampling event detected the following VOCs at concentrations exceeding the Model Toxics Control Act (MTCA) Method C sub-slab soil gas screening levels listed on Ecology's Cleanup Levels and Risk Calculation (CLARC) website (Ecology 2015):

- 1,2,4-Trimethylbenzene (Building A in VP-1)
- 1,3-Butadiene (Building A in VP-8)
- Acetaldehyde (Building B in VP-11)
- Acrylonitrile (Buildings A and B in VP-8 and VP-14, respectively)
- APH EC9-12 aliphatics (Building A in VP-1)
- Naphthalene (Building A in VP-1)
- Trichloroethene (Building B in VP-14)

The greatest APH concentrations in soil gas were detected in Building A within the vicinity of VP-1, located adjacent to the eastern office location. APH EC9-12 aliphatics were detected in VP-1 at a soil gas concentration of 21,000 micrograms per cubic meter ($\mu g/m^3$), which exceeds the MTCA Method C sub-slab soil gas screening level of 10,000 $\mu g/m^3$.

However, upon resampling in October 2018, the sub-slab soil gas results indicated substantially lower concentrations of all detected analytes; none were at concentrations that exceeded their respective MTCA Method C sub-slab soil gas screening levels. As in the September 2018 soil gas results, the reporting limits for acrolein were greater than the screening level.

During the October 2018 sampling event, a lab air blank was collected at FBI. The following compounds were detected in the lab air blank:

- 1,3-Butadiene
- Acetone
- Chlorodifluoromethane
- Ethanol
- Hexane
- Isoprene
- Methylene chloride
- Toluene

Methylene chloride, ethanol, and acetone are used in the lab, and all soil gas samples were likely to have had minimal exposure to laboratory air during pressure checking requirements and processing activities. None of the compounds detected in the lab sample were detected in the soil gas samples at concentrations exceeding their respective MTCA Method C sub-slab soil gas screening levels.

All soil gas data are presented in Table 1, and laboratory reports are included as Attachment 5.

JEM INPUTS AND RESULTS

Per the Ecology vapor intrusion guidance (Ecology 2018), if concentrations are greater than the sub-slab screening levels during the Tier I vapor intrusion assessment, the reviewer will proceed to the Tier II assessment, which includes using the Johnson and Ettinger Model (JEM) to predict indoor air concentrations and risk. USEPA's online JEM worksheet (USEPA 2018) was used to predict a range of minimum to maximum concentrations in indoor air for each compound with concentrations that exceeded the MTCA Method C sub-slab soil gas screening level. Model results were then compared to indoor air cleanup levels, presented in the updated Table B-1 of the Ecology vapor intrusion guidance. Specific recommendations regarding the use of the JEM in this capacity are presented in Appendix D of the Ecology vapor intrusion guidance.

The highest concentration for each compound detected, including acrolein, was input in USEPA's online JEM worksheet. In addition, a conservative approach was taken by using default residential inputs for slab-on-grade floor thickness, crack width, average vapor flow rate into the building, average time for carcinogens and noncarcinogens, exposure duration, and exposure frequency. The property is zoned for Industrial Use under Pierce County Assessor's Building and Land Use records, and an indoor air exchange rate of 0.45 per hour was used to yield a conservative result. The actual dimensions for each Portside warehouse building were used as inputs.

The JEM results indicate that the highest predicted concentrations to indoor air for all compounds detected during the September 2018 sampling event are less than their respective MTCA Method C cleanup levels for indoor air. Additionally, all predicted cancer risks and hazard quotients are less than the target cancer risk of 1.0E-6 and 1.0, respectively, which indicate that adverse effects from vapors to indoor air are not likely to occur. JEM modeling results, using the above conservative approach and greatest concentrations, are shown in Table 2, and JEM inputs and modeling results are included as Attachment 6.

SOIL GAS AND JEM RESULTS DISCUSSION

The September 2018 sampling results indicate that several compounds, including APH EC9-12 aliphatics, were detected in soil gas at concentrations exceeding their respective MTCA Method C sub-slab soil gas screening levels. However, using conservative residential inputs, the JEM results for each compound indicate that there is not a risk to indoor air to occupants for either building. The October 2018 sub-slab sampling results indicate that all soil gas concentrations, including APH EC9-12 aliphatics, were less than their respective screening levels.

In August of 2018, Avenue 55 elected to install a passive vapor mitigation system in Buildings A and B, specifically under each of the office node locations of these large industrial warehouses. Based on the conservative JEM results and the October 2018 soil gas results, in conjunction with the passive vapor mitigation system installed beneath the office nodes, there is not a vapor risk to indoor air for occupants of the office nodes. Therefore, there is no need to monitor the performance (i.e., differential pressures) of the passive system, nor is there a need to collect indoor air vapor data to evaluate vapor intrusion risk to either building. If future sub-slab soil gas or indoor air sampling events are required, a reduced compound list should be used that will include only compounds that were detected at concentrations exceeding the laboratory detection limits. The reduced list is included as Table 3.

REFERENCES

Floyd|Snider. 2017. *Interim Action Work Plan, 1514 Taylor Way Development*. Prepared for Avenue 55, LLC. June.

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U.S. Environmental Protection Agency (USEPA). 2016. EPA On-line Tools for Site Assessment Calculation, Screening Level Implementation of the Johnson and Ettinger Vapor Intrusion Model. <https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/JnE_lite_forward.html>. Last accessed 11/28/2018. 23 February.

LIST OF ATTACHMENTS

Table 1	Soil Gas Data
Table 2	JEM Results
Table 3	Reduced Analytes List
Figure 1	Sub-Slab Vapor Pin Locations in Building A (Herrera Environmental Consultants Figure)
Figure 2	Sub-Slab Vapor Pin Locations in Building B (Herrera Environmental Consultants Figure)
Attachment 1	Ecology Correspondence
Attachment 2	Photographs
Attachment 3	Vapor Pin Standard Operating Procedure
Attachment 4	Soil Vapor Sampling Sheets
Attachment 5	Laboratory Reports
Attachment 6	Johnson and Ettinger Model Inputs and Results

Tables

Table 1
Soil Gas Data

				Building A East Office Node							**Building A Center**					
			Location	**VP-01**			**VP-02**				**VP-03**		**VP-04**		**VP-05**	
			Sample ID	**VP-01-091218**	**VP-01-102418**	**VP-01-102418 Dup**	**VP-02-091218**	**VP-02-091218 Dup**	**VP-02B-091218**	**VP-02-102418**	**VP-03-091218**	**VP-03-102418**	**VP-04-091218**	**VP-04-102418**	**VP-05-091218**	**VP-05-102418**
			Sample Date	**09/12/2018**	**10/24/2018**	**10/24/2018**	**09/12/2018**	**09/12/2018**	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**
Analyte	**CAS No.**	**Sub-Slab MTCA Method C Soil Gas Screening Level**	**Units**													
APH EC5-8 aliphatics	NA	200,000	µg/m³	11,000	3,600	3,200	2,800	2,000	3,300	2,200 J	1,100	790	820	480 J	1,400	750 J
APH EC9-10 aromatics	NA	--	µg/m³	2,700	170	160	82 U	82 U	82 U	82 UJ	82 U	82 U	82 U	82 UJ	82 U	82 UJ
APH EC9-12 aliphatics	NA	10,000	µg/m³	**21,000 J**	2,000	1,700	330	310	420	340 J	180	370	130	140 J	360	370 J
Benzene	71-43-2	110	µg/m³	28	5	4.9	7	5.2	--	8.4	1.1 U	2 U	1.1	1.1 U	1.1 U	1.1 U
Ethylbenzene	100-41-4	33,000	µg/m³	75	6.7	6.7	2.8	1.8	--	2.2	1.4 U	2.7 U	1.4 U	1.4 U	1.7	1.4 U
m,p-Xylene	179601-23-1	--	µg/m³	270	19	18	8.4	5.3	--	4.6	2.9 U	5.4 U	2.9 U	2.9 U	7.4	3.3
Naphthalene	91-20-3	25	µg/m³	**33**	5.5	3.6	1.2	0.59 JB	--	0.35 JB	0.57 JB	0.75 JB	0.71 JB	0.43 JB	1 JB	0.5 JB
o-Xylene	95-47-6	3,300	µg/m³	120	8.1	8	3	1.8	--	1.4 U	1.4 U	2.7 U	1.4 U	1.4 U	2.4	1.4 U
Toluene	108-88-3	170,000	µg/m³	62	11	12	11	7.9	--	7.1	1.8	4	1.7 JB	2.1	4.9	4
1,1,1-Trichloroethane	71-55-6	170,000	µg/m³	15	9.2	8.8	16	11	--	9.2	5	3.7	4	2	8.5	6.4
1,1,2,2-Tetrachloroethane	79-34-5	14	µg/m³	1.4 U	0.45 U	0.45 U	0.45 U	0.45 U	--	0.45 U	0.45 U	0.86 U	0.45 U	0.45 U	0.45 U	0.45 U
1,1,2-Trichloroethane	79-00-5	6.7	µg/m³	1	0.18 U	0.18 U	0.65	0.18 U	--	0.18 U	0.18 U	0.34 U	0.18 U	0.18 U	0.18 U	0.18 U
1,1-Dichloroethane	75-34-3	520	µg/m³	6	5	5.1	2.6	1.9	--	3.1	1.3 U	2.5 U	1.3 U	1.3 U	1.3 U	1.3 U
1,1-Dichloroethene	75-35-4	6,700	µg/m³	4 U	1.8	1.8	1.3 JB	1.3 U	--	1.3 U	1.3 U	2.5 U	1.3 U	1.3 U	1.3 U	1.3 U
1,2,3-Trimethylbenzene	526-73-8	--	µg/m³	130	8.5	9	8.1 U	8.1 U	--	8.1 U	8.1 U	15 U	8.1 U	8.1 U	8.1 U	8.1 U
1,2,4-Trichlorobenzene	120-82-1	67	µg/m³	7.4 U	2.4 U	2.4 U	2.4 U	2.4 U	--	2.4 U	2.4 U	4.6 U	2.4 U	2.4 U	2.4 U	2.4 U
1,2,4-Trimethylbenzene	95-63-6	230	µg/m³	**420**	23	24	8.1 U	8.1 U	--	8.1 U	8.1 U	15 U	8.1 U	8.1 U	8.1 U	8.1 U
1,2-Dibromoethane (EDB)	106-93-4	1.4	µg/m³	0.77 U	0.25 U	0.25 U	0.25 U	0.25 U	--	0.25 U	0.25 U	0.48 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichlorobenzene	95-50-1	6,700	µg/m³	6 U	2 U	2 U	2 U	2 U	--	2 U	2 U	3.8 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane (EDC)	107-06-2	32	µg/m³	5.8	3.2	2.9	0.59	0.39	--	0.52	0.13 U	0.25 U	0.13 U	0.13 U	0.16	0.13 U
1,2-Dichloropropane	78-87-5	83	µg/m³	3.3	2.5	2.5	1.1	0.79	--	1.3	0.76 U	1.4 U	0.76 U	0.76 U	1.5	1.2
1,3,5-Trimethylbenzene	108-67-8	--	µg/m³	130	8.1 U	8.1 U	8.1 U	8.1 U	--	8.1 U	8.1 U	15 U	8.1 U	8.1 U	8.1 U	8.1 U
1,3-Butadiene	106-99-0	28	µg/m³	4.7	0.073 U	0.073 U	11	6.3	--	0.073 U	1.6	0.14 U	0.073 U	0.073 U	2.4	0.073 U
1,3-Dichlorobenzene	541-73-1	--	µg/m³	6 U	2 U	2 U	2 U	2 U	--	2 U	2 U	3.8 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene	106-46-7	76	µg/m³	2.4 U	0.79 U	0.79 U	0.79 U	0.79 U	--	0.79 U	0.79 U	1.5 U	0.79 U	0.79 U	0.79 U	0.79 U
1,4-Dioxane	123-91-1	--	µg/m³	3.6 U	1.2 U	1.2 U	1.2 U	1.2 U	--	1.2 U	1.2 U	2.3 U	1.2 U	1.2 U	1.2 U	1.2 U
1-Butanol	71-36-3	--	µg/m³	61 U	20 U	20 U	53	20 U	--	20 U	20 U	38 U	54	20 U	20 U	20 U
2-Butanone (MEK)	78-93-3	170,000	µg/m³	94	9.7 U	9.7 U	9.7 U	9.7 U	--	9.7 U	9.7 U	18 U	9.7 U	9.7 U	9.7 U	9.7 U
2-Hexanone	591-78-6	--	µg/m³	41 U	14 U	14 U	14 U	14 U	--	14 U	14 U	26 U	14 U	14 U	14 U	14 U
2-Pentanone	107-87-9	--	µg/m³	35 U	12 U	12 U	12 U	12 U	--	12 U	12 U	22 U	12 U	12 U	12 U	12 U
2-Propanol	67-63-0	--	µg/m³	86 U	28 U	28 U	300	28 U	--	28 U	28 U	54 U	28 U	28 U	130	28 U
3-Hexanone	589-38-8	--	µg/m³	41 U	14 U	14 U	14 U	14 U	--	14 U	14 U	26 U	14 U	14 U	14 U	14 U
3-Pentanone	96-22-0	--	µg/m³	35 U	12 U	12 U	12 U	12 U	--	12 U	12 U	22 U	12 U	12 U	12 U	12 U
4-Methyl-2-pentanone	108-10-1	100,000	µg/m³	41 U	14 U	14 U	26	14 U	--	14 U	14 U	26 U	14 U	14 U	14 U	14 U
Acetaldehyde	75-07-0	300	µg/m³	90 U	110	30 U	80	66	--	270 U	49	56 U	34	30 U	45	30 U
Acetone	67-64-1	--	µg/m³	1,300 J	500 J	490 J	91	160	--	16 U	28	30 U	130	43	100	35
Acetonitrile	75-05-8	2,000	µg/m³	27	5.5 U	5.5 U	6.9	5.5 U	--	5.5 U	5.5 U	10 U	5.5 U	5.5 U	5.5 U	5.5 U
Acrolein	107-02-8	0.67	µg/m³	***9.2 U***	***3 U***	***3 U***	***3 U***	***3 U***	--	***3 U***	***3 U***	***5.7 U***	***3 U***	***3 U***	***3 U***	***3 U***
Acrylonitrile	107-13-1	12	µg/m³	2.2 U	0.72 U	0.72 U	5.8	4	--	0.72 U	0.72 U	1.4 U	0.72 U	0.72 U	0.72 U	0.72 U
Benzyl chloride	100-44-7	17	µg/m³	2.3	0.17 U	0.55	0.17 U	0.17 U	--	0.17 U	0.17 U	0.32 U	0.17 U	0.17 U	0.17 U	0.17 U
Bromodichloromethane	75-27-4	23	µg/m³	5.8	0.22 U	0.22 U	0.22 U	0.22 U	--	0.22 U	0.22 U	0.42 U	0.22 U	0.22 U	0.22 U	0.22 U
Bromoform	75-25-2	760	µg/m³	21 U	6.8 U	6.8 U	6.8 U	6.8 U	--	6.8 U	6.8 U	13 U	6.8 U	6.8 U	6.8 U	6.8 U
Bromomethane	74-83-9	170	µg/m³	16 U	5.1 U	5.1 U	5.1 U	5.1 U	--	5.1 U	5.1 U	9.7 U	5.1 U	5.1 U	5.1 U	5.1 U
Butanal	123-72-8	--	µg/m³	29 U	9.7 U	9.7 U	9.7 U	9.7 U	--	9.7 U	9.7 U	18 U	9.7 U	9.7 U	9.7 U	9.7 U
Carbon disulfide	75-15-0	23,000	µg/m³	62 U	21 U	21 U	21 U	21 U	--	21 U	21 U	39 U	21 U	21 U	21 U	21 U
Carbon tetrachloride	56-23-5	140	µg/m³	6.3 U	2.1 U	2.1 U	2.1 U	2.1 U	--	2.1 U	2.1 U	3.9 U	2.1 U	2.1 U	2.1 U	2.1 U
CFC-113	76-13-1	1,000,000	µg/m³	7.7 U	2.5 U	2.5 U	3.3 JB	2.5 U	--	2.5 U	2.5 U	4.8 U	2.5 U	2.5 U	2.5 U	2.5 U
Chlorobenzene	108-90-7	1,700	µg/m³	4.6 U	1.5 U	1.5 U	1.5 U	1.5 U	--	1.5 U	1.5 U	2.9 U	1.5 U	1.5 U	1.5 U	1.5 U
Chlorodifluoromethane	75-45-6	1,700,000	µg/m³	8.3	1.2 U	1.2 U	3.7	4.1	--	1.2 U	2.3	2.2 U	1.5	1.2 U	2.5	1.2 U
Chloroethane	75-00-3	330,000	µg/m³	4.9	3.5	3.6	1.5	1.1	--	2.4	0.87 U	1.6 U	0.87 U	0.87 U	0.87 U	0.87 U
Chloroform	67-66-3	36	µg/m³	6.9	3.5	3.9	2.9	1.9	--	2.6	0.69	0.46	2.5	1.5	0.97	0.47
Chloromethane	74-87-3	3,000	µg/m³	7.3	3	2.6	4.4	3.3	--	2.6	0.68 U	1.3 U	0.68 U	0.68 U	0.68 U	0.68 U

Table 1
Soil Gas Data

				Building A East Office Node							Building A Center					
			Location	VP-01			VP-02				VP-03		VP-04		VP-05	
			Sample ID	VP-01-091218	VP-01-102418	VP-01-102418 Dup	VP-02-091218	VP-02-091218 Dup	VP-02B-091218	VP-02-102418	VP-03-091218	VP-03-102418	VP-04-091218	VP-04-102418	VP-05-091218	VP-05-102418
			Sample Date	09/12/2018	10/24/2018	10/24/2018	09/12/2018	09/12/2018	09/12/2018	10/24/2018	09/12/2018	10/24/2018	09/12/2018	10/24/2018	09/12/2018	10/24/2018
Analyte	**CAS No.**	**Sub-Slab MTCA Method C Soil Gas Screening Level**	**Units**													
cis-1,2-Dichloroethene	156-59-2	--	µg/m^3	4 U	1.3 U	1.3 U	1.3 U	1.3 U	--	1.3 U	1.3 U	2.5 U	1.3 U	1.3 U	1.3 U	1.3 U
cis-1,3-Dichloropropene	10061-01-5	--	µg/m^3	4.5 U	1.5 U	1.5 U	1.5 U	1.5 U	--	1.5 U	1.5 U	2.8 U	1.5 U	1.5 U	1.5 U	1.5 U
Cyclohexane	110-82-7	--	µg/m^3	69 U	23 U	23 U	23 U	23 U	--	23 U	23 U	43 U	23 U	23 U	23 U	23 U
Cyclopentane	287-92-3	--	µg/m^3	2.9 U	22	23	0.95 U	20	--	32	0.95 U	1.8 U	0.95 U	0.95 U	1.2	0.95 U
Dibromochloromethane	124-48-1	31	µg/m^3	0.85 U	0.28 U	0.28 U	0.28 U	0.28 U	--	0.28 U	0.28 U	0.53 U	0.28 U	0.28 U	0.28 U	0.28 U
Dichlorodifluoromethane	75-71-8	3,300	µg/m^3	120	75	72	49	37	--	47	35	23	17	10	39	29
Ethanol	64-17-5	--	µg/m^3	75 U	25 U	25 U	68	52	--	25 U	25 U	47 U	46	26	33	51
F-114	76-14-2	--	µg/m^3	7 U	2.3 U	2.3 U	2.3 U	2.3 U	--	2.3 U	2.3 U	4.4 U	2.3 U	2.3 U	2.3 U	2.3 U
Hexachlorobutadiene	87-68-3	38	µg/m^3	2.1 U	0.7 U	0.7 U	0.7 U	0.7 U	--	0.7 U	0.7 U	1.3 U	0.7 U	0.7 U	0.7 U	0.7 U
Hexanal	66-25-1	--	µg/m^3	41 U	14 U	14 U	14 U	14 U	--	14 U	14 U	26 U	14 U	14 U	14 U	14 U
Hexane	110-54-3	23,000	µg/m^3	140	52	53	69	71	--	52	16	22 U	13	12 U	23	12 U
Iodomethane	74-88-4	--	µg/m^3	5.8 U	1.9 U	1.9 U	1.9 U	1.9 U	--	1.9 U	1.9 U	3.6 U	1.9 U	1.9 U	1.9 U	1.9 U
Isobutene	115-11-7	--	µg/m^3	1,600 J	840 J	830 J	180	130	--	140	36	17	3 U	3 U	56	32
Isoprene	78-79-5	--	µg/m^3	17	8	8.8	7	4.6	--	4.8	0.92 U	1.7 U	0.92 U	0.92 U	0.92 U	0.92 U
Methacrolein	78-85-3	--	µg/m^3	29 U	9.5 U	9.5 U	9.5 U	9.5 U	--	9.5 U	9.5 U	18 U	9.5 U	9.5 U	9.5 U	9.5 U
Methyl t-butyl ether (MTBE)	1634-04-4	3,200	µg/m^3	18 U	5.9 U	5.9 U	5.9 U	5.9 U	--	5.9 U	5.9 U	11 U	5.9 U	5.9 U	5.9 U	5.9 U
Methyl vinyl ketone	78-94-4	--	µg/m^3	29 U	9.5 U	9.5 U	9.5 U	9.5 U	--	9.5 U	9.5 U	18 U	9.5 U	9.5 U	9.5 U	9.5 U
Methylene chloride	75-09-2	20,000	µg/m^3	870 U	290 U	290 U	290 U	410	--	290 U	290 U	540 U	290 U	290 U	290 U	290 U
Pentanal	110-62-3	--	µg/m^3	35 U	12 U	12 U	12 U	12 U	--	12 U	12 U	22 U	12 U	12 U	12 U	12 U
Pentane	109-66-0	--	µg/m^3	360	150	150	150	110	--	120	9.7 U	18 U	9.7 U	9.7 U	9.7 U	9.7 U
Propene	115-07-1	--	µg/m^3	1,300 J	2.3 U	2.3 U	410 J	2.3 U	--	2.3 U	2.3 U	4.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Styrene	100-42-5	33,000	µg/m^3	8.5 U	2.8 U	2.8 U	2.8 U	2.8 U	--	2.8 U	2.8 U	5.3 U	2.8 U	2.8 U	2.8 U	2.8 U
Tetrachloroethene	127-18-4	1,300	µg/m^3	17	11	11	2.6	2.2 U	--	2.2 U	8.5	5.7	5.3	2.2	2.2 U	2.2 U
trans-1,2-Dichloroethene	156-60-5	--	µg/m^3	4 U	1.3 U	1.3 U	1.3 U	1.3 U	--	1.3 U	1.3 U	2.5 U	1.3 U	1.3 U	1.3 U	1.3 U
trans-1,3-Dichloropropene	10061-02-6	--	µg/m^3	4.5 U	1.5 U	1.5 U	1.5 U	1.5 U	--	1.5 U	1.5 U	2.8 U	1.5 U	1.5 U	1.5 U	1.5 U
Trichloroethene	79-01-6	67	µg/m^3	9.1	6.6	8.4	5.4	2.4 JB	--	0.9	0.89 U	3	6.8	0.96	5.8	0.89
Trichlorofluoromethane	75-69-4	23,000	µg/m^3	880	410	390	560	390	--	180	210	110	150	69	390	250
Vinyl acetate	108-05-4	6,700	µg/m^3	70 U	23 U	23 U	23 U	23 U	--	23 U	23 U	44 U	23 U	23 U	23 U	23 U
Vinyl chloride	75-01-4	93	µg/m^3	2.6 U	0.84 U	0.84 U	0.84 U	0.84 U	--	0.84 U	0.84 U	1.6 U	0.84 U	0.84 U	0.84 U	0.84 U

Notes:

--	Not applicable.
BOLD	Detected concentration exceeds criteria.
Bold Italics	Reporting limit exceeds criteria.

Abbreviations:

APH	Air-phase hydrocarbons
CAS	Chemical Abstracts Service
µg/m^3	Micrograms per cubic meter
MTCA	Model Toxics Control Act
NA	Not available
TPH	Total petroleum hydrocarbons

Qualifiers:

J	Analyte was detected, concentration is considered to be an estimate.
JB	Analyte was detected, concentration is considered to be an estimate due to potential blank contamination.
U	Analyte was not detected at the given reporting limit.
UJ	Analyte was not detected at the given reporting limit, which is considered to be an estimate.

Table 1
Soil Gas Data

				Building A West Office Node						Building B East Office Node				Building B Main - Center	
			Location	**VP-06**		**VP-07**		**VP-08**		**VP-09**		**VP-10**		**VP-11**	
			Sample ID	**VP-06-091218**	**VP-06-102418**	**VP-07-091218**	**VP-07-102418**	**VP-08-091218**	**VP-08-102418**	**VP-09-091218**	**VP-09-102418**	**VP-10-091218**	**VP-10-102418**	**VP-11-091218**	**VP-11-102418**
			Sample Date	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**
Analyte	**CAS No.**	**Sub-Slab MTCA Method C Soil Gas Screening Level**	**Units**												
APH EC5-8 aliphatics	NA	200,000	µg/m³	2,900	4,700 J	3,900 J	2,800 J	5,900 J	3,000	1,400	690 J	1,200	470 J	3,900	1,200
APH EC9-10 aromatics	NA	--	µg/m³	82 U	82 UJ	82 U	82 UJ	82 U	120 U	82 U	82 UJ	82 U	82 UJ	100 U	82 U
APH EC9-12 aliphatics	NA	10,000	µg/m³	530	580 J	170	340 J	1,100	330	220	200 J	360	320 J	6,000	790
Benzene	71-43-2	110	µg/m³	20	21	1.3	1.1	26	8.8	1.1 U	1.1 U	1.1 U	1.1 U	11	3.5
Ethylbenzene	100-41-4	33,000	µg/m³	7.7	5.8	1.4 U	1.4 U	15	3.9	2.6	1.4 U	1.4 U	1.4 U	3.3	1.8
m,p-Xylene	179601-23-1	--	µg/m³	14	9.1	4.8	2.9 U	13	4.8	10	2.9 U	2.9 U	2.9 U	10	6.1
Naphthalene	91-20-3	25	µg/m³	0.88 JB	0.54 JB	0.74 JB	0.47 JB	1.5 JB	0.42 JB	1.6 JB	0.4 JB	1.1 JB	0.45 JB	1.7 JB	0.5 JB
o-Xylene	95-47-6	3,300	µg/m³	4.9	2.9	1.6	1.4 U	8.3	2.2	3	1.4 U	1.4 U	1.4 U	8.7	2.6
Toluene	108-88-3	170,000	µg/m³	17	21	3.7	3.7	24	12	5.4	2.3	1.6 JB	3.5	25	13
1,1,1-Trichloroethane	71-55-6	170,000	µg/m³	11	23	23	19	20	13	1.8 U	1.8 U	1.8 U	1.8 U	9.1	1.8 U
1,1,2,2-Tetrachloroethane	79-34-5	14	µg/m³	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.58 U	0.45 U
1,1,2-Trichloroethane	79-00-5	6.7	µg/m³	0.27 JB	0.18 U	0.18 U	0.18 U	0.83	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	3.8	0.18 U
1,1-Dichloroethane	75-34-3	520	µg/m³	1.4	3.8	4.9	4	9.2	7.2	1.3 U	1.3 U	1.3 U	1.3 U	7.5	2.7
1,1-Dichloroethene	75-35-4	6,700	µg/m³	1.6	7.9	2.1	1.3 U	3	2.3	1.3 U	1.3 U	1.3 U	1.3 U	6.8	1.5
1,2,3-Trimethylbenzene	526-73-8	--	µg/m³	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	10 U	8.1 U
1,2,4-Trichlorobenzene	120-82-1	67	µg/m³	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	3.1 U	2.4 U
1,2,4-Trimethylbenzene	95-63-6	230	µg/m³	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	10 U	8.1 U
1,2-Dibromoethane (EDB)	106-93-4	1.4	µg/m³	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.32 U	0.25 U
1,2-Dichlorobenzene	95-50-1	6,700	µg/m³	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2.5 U	2 U
1,2-Dichloroethane (EDC)	107-06-2	32	µg/m³	1.1	1.2	1.2	0.8	2.2	0.89	0.13 U	0.13 U	0.13 U	0.13 U	0.27	0.13 U
1,2-Dichloropropane	78-87-5	83	µg/m³	0.96	1.6	5	4.5	2.9	1.8	0.76 U	0.76 U	0.76 U	0.76 U	0.97 U	0.76 U
1,3,5-Trimethylbenzene	108-67-8	--	µg/m³	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	10 U	8.1 U
1,3-Butadiene	106-99-0	28	µg/m³	**29**	0.073 U	25	0.073 U	**47**	0.073 U	0.073 U	0.073 U	0.088 JB	0.073 U	3.9	0.073 U
1,3-Dichlorobenzene	541-73-1	--	µg/m³	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2.5 U	2 U
1,4-Dichlorobenzene	106-46-7	76	µg/m³	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	1 U	0.79 U
1,4-Dioxane	123-91-1	--	µg/m³	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.5 U	1.2 U
1-Butanol	71-36-3	--	µg/m³	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	59	20 U	25 U	20 U
2-Butanone (MEK)	78-93-3	170,000	µg/m³	11	9.7 U	9.7 U	9.7 U	21	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U	12 U	9.7 U
2-Hexanone	591-78-6	--	µg/m³	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	17 U	14 U
2-Pentanone	107-87-9	--	µg/m³	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	15 U	12 U
2-Propanol	67-63-0	--	µg/m³	28 U	28 U	28 U	28 U	28 U	28 U	28 U	28 U	28 U	28 U	36 U	28 U
3-Hexanone	589-38-8	--	µg/m³	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	17 U	14 U
3-Pentanone	96-22-0	--	µg/m³	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	15 U	12 U
4-Methyl-2-pentanone	108-10-1	100,000	µg/m³	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	17 U	14 U
Acetaldehyde	75-07-0	300	µg/m³	30 U	270 U	100	30 U	30 U	270 U	30 U	30 U	160	30 U	**320**	30 U
Acetone	67-64-1	--	µg/m³	210	120	170	26	1,300 J	550 J	48	17	30	19	20 U	25
Acetonitrile	75-05-8	2,000	µg/m³	15	5.5 U	15	5.5 U	39	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	7.1 U	5.5 U
Acrolein	107-02-8	0.67	µg/m³	***3 U***	***3 U***	***3 U***	***3 U***	***3 U***	***3 U***	***3 U***	***3 U***	***3 U***	***3 U***	***3.9 U***	***3 U***
Acrylonitrile	107-13-1	12	µg/m³	11	0.72 U	9.2	0.72 U	**25**	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.91 U	0.72 U
Benzyl chloride	100-44-7	17	µg/m³	0.17 U	0.17 U	0.17 U	0.17 U	0.29 JB	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.63	0.17 U
Bromodichloromethane	75-27-4	23	µg/m³	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	3.2	0.22 U
Bromoform	75-25-2	760	µg/m³	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	8.7 U	6.8 U
Bromomethane	74-83-9	170	µg/m³	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	6.5 U	5.1 U
Butanal	123-72-8	--	µg/m³	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U	12 U	9.7 U
Carbon disulfide	75-15-0	23,000	µg/m³	21 U	21 U	21 U	21 U	27	21 U	21 U	21 U	21 U	21 U	26 U	21 U
Carbon tetrachloride	56-23-5	140	µg/m³	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.6 U	2.1 U
CFC-113	76-13-1	1,000,000	µg/m³	2.5 U	8.2	4.6 JB	2.5 U	9.4	6.9	2.5 U	2.5 U	2.5 U	2.5 U	12	2.9
Chlorobenzene	108-90-7	1,700	µg/m³	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.9 U	1.5 U
Chlorodifluoromethane	75-45-6	1,700,000	µg/m³	1.8	1.2 U	3	1.2 U	11	1.2 U	2.3	1.2 U	5	1.2 U	4	1.2 U
Chloroethane	75-00-3	330,000	µg/m³	1.1	0.88	0.93	0.87 U	3.9	2.4	0.87 U	0.87 U	0.87 U	0.87 U	1.1 U	0.87 U
Chloroform	67-66-3	36	µg/m³	2.1	3.1	2.6	1.9	4.7	2.1	3	2	3.7	1.6	0.45	0.16 U
Chloromethane	74-87-3	3,000	µg/m³	3.2	0.68 U	0.68 U	0.68 U	4	0.68 U	0.68 U	0.68 U	0.88	0.68 U	0.87 U	0.68 U

Table 1
Soil Gas Data

				Building A West Office Node						Building B East Office Node				Building B Main - Center	
			Location	**VP-06**		**VP-07**		**VP-08**		**VP-09**		**VP-10**		**VP-11**	
			Sample ID	**VP-06-091218**	**VP-06-102418**	**VP-07-091218**	**VP-07-102418**	**VP-08-091218**	**VP-08-102418**	**VP-09-091218**	**VP-09-102418**	**VP-10-091218**	**VP-10-102418**	**VP-11-091218**	**VP-11-102418**
			Sample Date	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**
Analyte	**CAS No.**	**Sub-Slab MTCA Method C Soil Gas Screening Level**	**Units**												
cis-1,2-Dichloroethene	156-59-2	--	μg/m^3	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	4.5	1.3 U
cis-1,3-Dichloropropene	10061-01-5	--	μg/m^3	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.9 U	1.5 U
Cyclohexane	110-82-7	--	μg/m^3	23 U	25	23 U	23 U	36	27	23 U	23 U	23 U	23 U	31 JB	23 U
Cyclopentane	287-92-3	--	μg/m^3	20	39	19	15	72	74	0.95 U	0.95 U	0.95 U	0.95 U	1.2 U	0.95 U
Dibromochloromethane	124-48-1	31	μg/m^3	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.36 U	0.28 U
Dichlorodifluoromethane	75-71-8	3,300	μg/m^3	74	140	91	77	57	29	3.8	2.9	7.8	6.6	6	3.6
Ethanol	64-17-5	--	μg/m^3	25 U	31	38	40	32	25 U	28	25 U	41	25 U	55	25 U
F-114	76-14-2	--	μg/m^3	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.9 U	2.3 U
Hexachlorobutadiene	87-68-3	38	μg/m^3	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.9 JB	0.7 U
Hexanal	66-25-1	--	μg/m^3	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	17 U	14 U
Hexane	110-54-3	23,000	μg/m^3	100	110	33	12 U	79	40	13	12 U	14	12 U	33	12 U
Iodomethane	74-88-4	--	μg/m^3	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	2.4 U	1.9 U
Isobutene	115-11-7	--	μg/m^3	700 J	960 J	610 J	430 J	1,200 J	760 J	3 U	3 U	3 U	3 U	95	12
Isoprene	78-79-5	--	μg/m^3	7.3	12	1	0.92 U	16	18	0.92 U	0.92 U	0.92 U	0.92 U	1.2	0.92 U
Methacrolein	78-85-3	--	μg/m^3	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	12 U	9.5 U
Methyl t-butyl ether (MTBE)	1634-04-4	3,200	μg/m^3	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	7.6 U	5.9 U
Methyl vinyl ketone	78-94-4	--	μg/m^3	9.5 U	11	9.5 U	9.5 U	22	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	12 U	9.5 U
Methylene chloride	75-09-2	20,000	μg/m^3	290 U	290 U	470	290 U	290 U	290 U	290 U	290 U	290 U	290 U	360 U	290 U
Pentanal	110-62-3	--	μg/m^3	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	15 U	12 U
Pentane	109-66-0	--	μg/m^3	240	380	55	43	470	290	9.7 U	9.7 U	9.7 U	9.7 U	77	9.7 U
Propene	115-07-1	--	μg/m^3	470 J	450 J	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.6	2.3 U	2.4 JB	2.9 U	2.3 U
Styrene	100-42-5	33,000	μg/m^3	3.4	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	3.6 U	2.8 U
Tetrachloroethene	127-18-4	1,300	μg/m^3	2.2 U	9.5	3.1	2.3	5.4	2.9	3.6	2.2 U	2.2 U	2.2 U	14	3.8
trans-1,2-Dichloroethene	156-60-5	--	μg/m^3	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	2	1.3 U
trans-1,3-Dichloropropene	10061-02-6	--	μg/m^3	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.9 U	1.5 U
Trichloroethene	79-01-6	67	μg/m^3	2.8	28	2.8	1.6	4.4	6.9	2.2 JB	1.2	0.89 U	1.8	28	11
Trichlorofluoromethane	75-69-4	23,000	μg/m^3	1,100 J	2,000 J	2,200 J	1,700 J	960 J	410	6.1	3.6	120	55	5.9	2.7
Vinyl acetate	108-05-4	6,700	μg/m^3	23 U	23 U	23 U	23 U	23 U	23 U	23 U	23 U	23 U	23 U	30 U	23 U
Vinyl chloride	75-01-4	93	μg/m^3	0.84 U	0.84 U	0.84 U	0.84 U	0.92	0.84 U	0.84 U	0.84 U	0.84 U	0.84 U	1.1 U	0.84 U

Notes:

--	Not applicable.
BOLD	Detected concentration exceeds criteria.
Bold Italics	Reporting limit exceeds criteria.

Abbreviations:

APH	Air-phase hydrocarbons
CAS	Chemical Abstracts Service
μg/m^3	Micrograms per cubic meter
MTCA	Model Toxics Control Act
NA	Not available
TPH	Total petroleum hydrocarbons

Qualifiers:

J	Analyte was detected, concentration is considered to be an estimate.
JB	Analyte was detected, concentration is considered to be an estimate due to potential blank contamination.
U	Analyte was not detected at the given reporting limit.
UJ	Analyte was not detected at the given reporting limit, which is considered to be an estimate.

Table 1
Soil Gas Data

				Building B West Office Node						Lab Blank
			Location	VP-12		VP-13		VP-14		VP-LB
			Sample ID	VP-12-091218	VP-12-102418	VP-13-091218	VP-13-102418	VP-14-091218	VP-14-102418	VP-LB-102418
			Sample Date	09/12/2018	10/24/2018	09/12/2018	10/24/2018	09/12/2018	10/24/2018	10/24/2018
Analyte	**CAS No.**	**Sub-Slab MTCA Method C Soil Gas Screening Level**	**Units**							
APH EC5-8 aliphatics	NA	200,000	µg/m³	820	740 J	800	770 J	2,600	710 J	470
APH EC9-10 aromatics	NA	--	µg/m³	82 U	82 UJ	82 U	82 UJ	82 U	82 UJ	250 U
APH EC9-12 aliphatics	NA	10,000	µg/m³	180	250 J	150	180 J	520	390 J	350 U
Benzene	71-43-2	110	µg/m³	1.1 U	1.1 U	1.1 U	1.1 U	3.6	1.1 U	3.2 U
Ethylbenzene	100-41-4	33,000	µg/m³	1.4 U	1.4 U	1.4 U	2.6	1.6	5.7	4.3 U
m,p-Xylene	179601-23-1	--	µg/m³	2.9	2.9 U	2.9 U	6.8	4.4	27	8.7 U
Naphthalene	91-20-3	25	µg/m³	1.1 JB	0.45 JB	0.54 JB	0.36 JB	1.1 JB	2.3 JB	1 U
o-Xylene	95-47-6	3,300	µg/m³	1.4 U	1.4 U	1.4 U	2.6	2.2	8.3	4.3 U
Toluene	108-88-3	170,000	µg/m³	2.3	2.7	1.4 JB	42	9.3	34	4.4
1,1,1-Trichloroethane	71-55-6	170,000	µg/m³	2.1 JB	1.8 U	2.1 JB	15	6.9	3.3	5.5 U
1,1,2,2-Tetrachloroethane	79-34-5	14	µg/m³	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	1.4 U
1,1,2-Trichloroethane	79-00-5	6.7	µg/m³	0.18 U	0.18 U	0.18 U	0.18 U	4.9	0.18 U	0.55 U
1,1-Dichloroethane	75-34-3	520	µg/m³	1.3 U	1.3 U	1.3 U	3.8	2.4	1.3 U	4 U
1,1-Dichloroethene	75-35-4	6,700	µg/m³	1.3 U	1.3 U	1.3 U	8.9	10	1.3 U	4 U
1,2,3-Trimethylbenzene	526-73-8	--	µg/m³	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	25 U
1,2,4-Trichlorobenzene	120-82-1	67	µg/m³	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	7.4 U
1,2,4-Trimethylbenzene	95-63-6	230	µg/m³	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	25 U
1,2-Dibromoethane (EDB)	106-93-4	1.4	µg/m³	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.77 U
1,2-Dichlorobenzene	95-50-1	6,700	µg/m³	2 U	2 U	2 U	2 U	2 U	2 U	6 U
1,2-Dichloroethane (EDC)	107-06-2	32	µg/m³	0.13 U	0.13 U	0.13 U	0.13	0.13 JB	0.31	0.4 U
1,2-Dichloropropane	78-87-5	83	µg/m³	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U	2.3 U
1,3,5-Trimethylbenzene	108-67-8	--	µg/m³	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	25 U
1,3-Butadiene	106-99-0	28	µg/m³	0.088	0.073 U	0.095 JB	0.073 U	16	0.073 U	0.35
1,3-Dichlorobenzene	541-73-1	--	µg/m³	2 U	2 U	2 U	2 U	2 U	2 U	6 U
1,4-Dichlorobenzene	106-46-7	76	µg/m³	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	2.4 U
1,4-Dioxane	123-91-1	--	µg/m³	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	3.6 U
1-Butanol	71-36-3	--	µg/m³	20 U	20 U	100	20 U	21	20 U	61 U
2-Butanone (MEK)	78-93-3	170,000	µg/m³	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U	13	29 U
2-Hexanone	591-78-6	--	µg/m³	14 U	14 U	14 U	14 U	14 U	14 U	41 U
2-Pentanone	107-87-9	--	µg/m³	12 U	12 U	12 U	12 U	12 U	12 U	35 U
2-Propanol	67-63-0	--	µg/m³	28 U	28 U	28 U	28 U	28 U	28 U	86 U
3-Hexanone	589-38-8	--	µg/m³	14 U	14 U	14 U	14 U	14 U	14 U	41 U
3-Pentanone	96-22-0	--	µg/m³	12 U	12 U	12 U	12 U	12 U	12 U	35 U
4-Methyl-2-pentanone	108-10-1	100,000	µg/m³	14 U	14 U	14 U	14 U	14 U	38	41 U
Acetaldehyde	75-07-0	300	µg/m³	30 U	30 U	30 U	30 U	110	30 U	90 U
Acetone	67-64-1	--	µg/m³	25	18	44	23	99	58	64
Acetonitrile	75-05-8	2,000	µg/m³	5.5 U	5.5 U	5.5 U	5.5 U	14	5.5 U	17 U
Acrolein	107-02-8	0.67	µg/m³	***3 U***	***3 U***	***3 U***	***3 U***	***3 U***	***3 U***	***9.2 U***
Acrylonitrile	107-13-1	12	µg/m³	0.72 U	0.72 U	0.72 U	0.72 U	**16**	0.72 U	2.2 U
Benzyl chloride	100-44-7	17	µg/m³	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.52 U
Bromodichloromethane	75-27-4	23	µg/m³	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.67 U
Bromoform	75-25-2	760	µg/m³	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	21 U
Bromomethane	74-83-9	170	µg/m³	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	16 U
Butanal	123-72-8	--	µg/m³	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U	29 U
Carbon disulfide	75-15-0	23,000	µg/m³	21 U	21 U	21 U	21 U	21 U	21 U	62 U
Carbon tetrachloride	56-23-5	140	µg/m³	2.1 U	2.1 U	6.2	2.1 U	62	2.1 U	6.3 U
CFC-113	76-13-1	1,000,000	µg/m³	2.5 U	2.5 U	3.3	15	18	4.1	7.7 U
Chlorobenzene	108-90-7	1,700	µg/m³	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	4.6 U
Chlorodifluoromethane	75-45-6	1,700,000	µg/m³	2.3	1.2 U	7	1.2 U	2.9	1.2 U	18
Chloroethane	75-00-3	330,000	µg/m³	0.87 U	0.87 U	0.87 U	0.87 U	0.87 U	0.87 U	2.6 U
Chloroform	67-66-3	36	µg/m³	3.7	1.3	5.2	2.3	4.3	1.3	0.49 U
Chloromethane	74-87-3	3,000	µg/m³	0.68 U	0.68 U	2	0.68 U	0.68 U	0.68 U	2.1 U

Table 1
Soil Gas Data

				Building B West Office Node						Lab Blank
			Location	**VP-12**		**VP-13**		**VP-14**		**VP-LB**
			Sample ID	**VP-12-091218**	**VP-12-102418**	**VP-13-091218**	**VP-13-102418**	**VP-14-091218**	**VP-14-102418**	**VP-LB-102418**
			Sample Date	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**	**09/12/2018**	**10/24/2018**	**10/24/2018**
Analyte	**CAS No.**	**Sub-Slab MTCA Method C Soil Gas Screening Level**	**Units**							
cis-1,2-Dichloroethene	156-59-2	--	µg/m^3	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	4 U
cis-1,3-Dichloropropene	10061-01-5	--	µg/m^3	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	4.5 U
Cyclohexane	110-82-7	--	µg/m^3	23 U	23 U	23 U	23 U	23 U	23 U	69 U
Cyclopentane	287-92-3	--	µg/m^3	0.95 U	0.95 U	0.95 U	0.95 U	28	0.95 U	2.9 U
Dibromochloromethane	124-48-1	31	µg/m^3	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.85 U
Dichlorodifluoromethane	75-71-8	3,300	µg/m^3	4.3	4	6.5	6.3	59	62	4.9 U
Ethanol	64-17-5	--	µg/m^3	43	25 U	82	25 U	71	49	86
F-114	76-14-2	--	µg/m^3	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	7 U
Hexachlorobutadiene	87-68-3	38	µg/m^3	0.7 U	0.7 U	0.7 U	0.7 U	2.6	0.7 U	2.1 U
Hexanal	66-25-1	--	µg/m^3	14 U	14 U	14 U	14 U	14 U	14 U	41 U
Hexane	110-54-3	23,000	µg/m^3	12 U	12 U	38	12 U	120	12 U	57
Iodomethane	74-88-4	--	µg/m^3	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	5.8 U
Isobutene	115-11-7	--	µg/m^3	3 U	3 U	3 U	3 U	410 J	3 U	9.2 U
Isoprene	78-79-5	--	µg/m^3	0.92 U	0.92 U	0.92 U	0.92 U	47	0.92 U	13
Methacrolein	78-85-3	--	µg/m^3	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	29 U
Methyl t-butyl ether (MTBE)	1634-04-4	3,200	µg/m^3	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	18 U
Methyl vinyl ketone	78-94-4	--	µg/m^3	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	29 U
Methylene chloride	75-09-2	20,000	µg/m^3	290 U	290 U	2,200 J	290 U	300	290 U	2,500 J
Pentanal	110-62-3	--	µg/m^3	12 U	12 U	12 U	12 U	12 U	12 U	35 U
Pentane	109-66-0	--	µg/m^3	9.7 U	9.7 U	9.7 U	9.7 U	260	9.7 U	30 U
Propene	115-07-1	--	µg/m^3	2.7	2.3 U	2.3 U	3.2 JB	2.3 U	2.8 JB	7.4 JB
Styrene	100-42-5	33,000	µg/m^3	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	8.5 U
Tetrachloroethene	127-18-4	1,300	µg/m^3	3	2.2 U	7.6	8	31	3.1	6.8 U
trans-1,2-Dichloroethene	156-60-5	--	µg/m^3	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	4 U
trans-1,3-Dichloropropene	10061-02-6	--	µg/m^3	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	4.5 U
Trichloroethene	79-01-6	67	µg/m^3	1.5 JB	1.3	6.5	35	**94**	7.4	2.7 U
Trichlorofluoromethane	75-69-4	23,000	µg/m^3	33	15	45	29	13	12	5.6 U
Vinyl acetate	108-05-4	6,700	µg/m^3	23 U	23 U	23 U	23 U	23 U	23 U	70 U
Vinyl chloride	75-01-4	93	µg/m^3	0.84 U	0.84 U	0.84 U	0.84 U	0.84 U	0.84 U	2.6 U

Notes:

-- Not applicable.

BOLD Detected concentration exceeds criteria.

Bold Italics Reporting limit exceeds criteria.

Abbreviations:

APH	Air-phase hydrocarbons
CAS	Chemical Abstracts Service
µg/m^3	Micrograms per cubic meter
MTCA	Model Toxics Control Act
NA	Not available
TPH	Total petroleum hydrocarbons

Qualifiers:

J	Analyte was detected, concentration is considered to be an estimate.
JB	Analyte was detected, concentration is considered to be an estimate due to potential blank contamination.
U	Analyte was not detected at the given reporting limit.
UJ	Analyte was not detected at the given reporting limit, which is considered to be an estimate.

Table 2
JEM Results

Analyte	USEPA's Online JEM Worksheet—Predicted Concentrations to Indoor Air											Indoor Air MTCA Method C Cleanup Levels—Noncancer (µg/m^3)	Indoor Air MTCA Method C Cleanup Levels—Cancer (µg/m^3)
	Sub-Slab Location	Soil Gas Concentration (µg/m^3)	Low Prediction (µg/m^3)	Cancer Risk (1)	Hazard Quotient (2)	Best Estimate (µg/m^3)	Cancer Risk (1)	Hazard Quotient (2)	High Prediction (µg/m^3)	Cancer Risk (1)	Hazard Quotient (2)		
Building A													
1,2,4-Trimethylbenzene	VP-1	420	4.21E-04	NA	7.08E-05	8.78E-04	NA	1.48E-04	1.63E-03	NA	2.74E-04	7	NA
1,3-Butadiene	VP-8	47	1.57E-04	1.81E-08	NA	3.70E-04	4.25E-08	NA	7.17E-04	8.25E-08	NA	2	0.83
Acrolein	VP-1	9.2	1.44E-05	NA	7.22E-04	3.18E-05	NA	1.59E-03	6.04E-05	NA	3.02E-03	0.02	NA
Acrylonitrile	VP-8	25	4.47E-05	1.25E-09	2.24E-05	9.93E-05	2.78E-09	4.97E-05	1.90E-04	5.30E-09	9.48E-05	2	0.368
Naphthalene	VP-1	33	3.26E-05	NA	1.09E-05	6.74E-05	NA	2.25E-05	1.25E-04	NA	4.17E-05	3.00	0.74
Building B													
Acetaldehyde	VP-11	320	7.41E-04	6.7E-10	8.23E-05	1.44E-03	1.3E-09	1.60E-04	2.61E-03	2.36E-09	2.90E-04	9	11.4
Acrolein	VP-11	3.9	8.11E-06	NA	4.05E-04	1.53E-05	NA	7.63E-04	2.73E-05	NA	1.37E-03	0.02	NA
Acrylonitrile	VP-14	16	3.66E-05	1.02E-09	1.83E-05	7.09E-05	1.98E-09	3.54E-05	1.29E-04	3.59E-09	6.43E-05	2	0.368
Trichloroethene	VP-14	94	1.66E-04	7.5E-09	4.15E-06	2.94E-04	1.33E-08	7.34E-06	5.12E-04	2.31E-08	1.28E-05	2	6.3

Notes:

1 Target cancer risk is 1.0E-6.
2 Target hazard quotient is less than 1.0.

Abbreviations:

µg/m^3	Micrograms per cubic meters
MTCA	Model Toxics Control Act
NA	Not applicable
USEPA	U.S. Environmental Protection Agency

Table 3
Reduced Analytes List

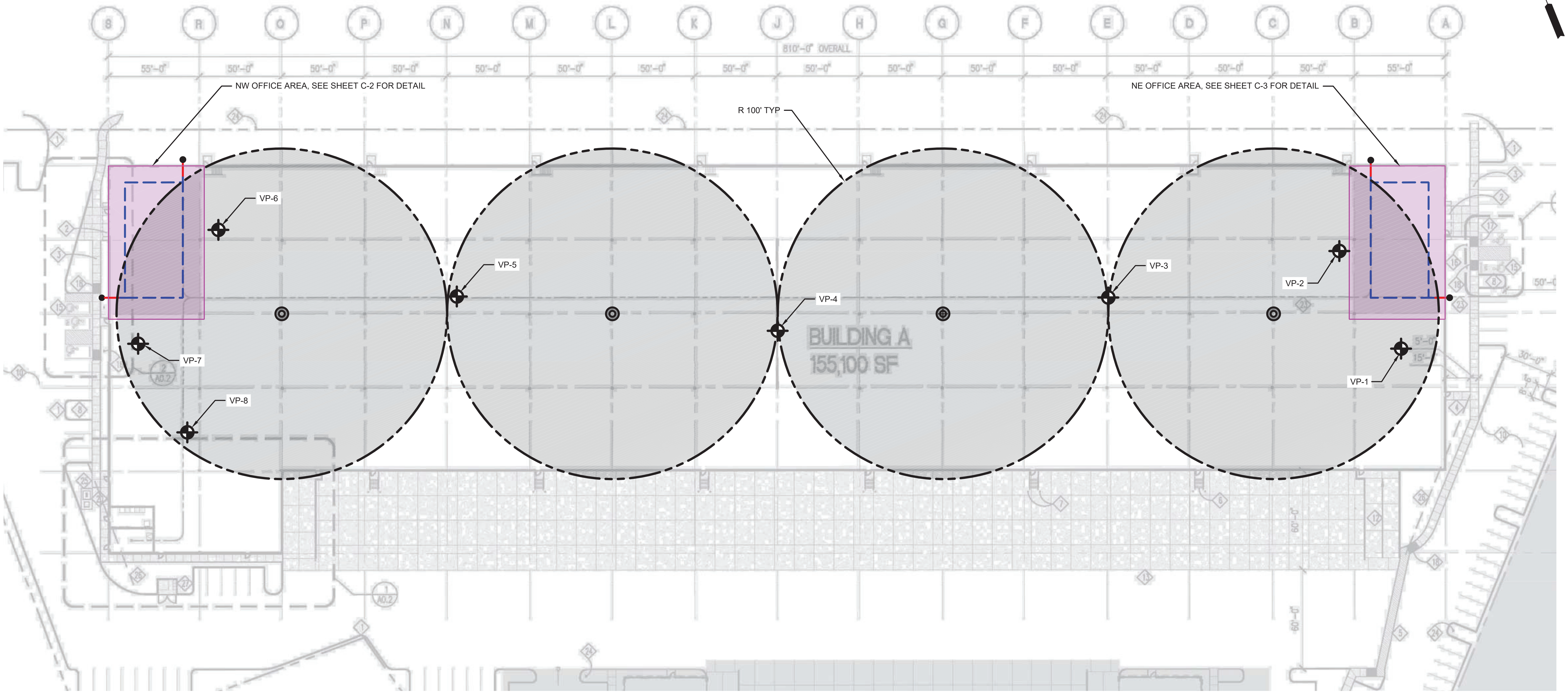
Analyte	CAS No.
APH EC5-8 aliphatics	NA
APH EC9-10 aromatics	NA
APH EC9-12 aliphatics	NA
1,1,1-Trichloroethane	71-55-6
1,1,2-Trichloroethane	79-00-5
1,1-Dichloroethane	75-34-3
1,1-Dichloroethene	75-35-4
1,2,3-Trimethylbenzene	526-73-8
1,2,4-Trimethylbenzene	95-63-6
1,2-Dichloroethane (EDC)	107-06-2
1,2-Dichloropropane	78-87-5
1,3,5-Trimethylbenzene	108-67-8
1,3-Butadiene	106-99-0
1-Butanol	71-36-3
2-Butanone (MEK)	78-93-3
2-Propanol	67-63-0
4-Methyl-2-pentanone	108-10-1
Acetaldehyde	75-07-0
Acetonitrile	75-05-8
Acrolein	107-02-8
Acrylonitrile	107-13-1
Benzene	71-43-2
Benzyl chloride	100-44-7
Bromodichloromethane	75-27-4
Carbon disulfide	75-15-0
Carbon tetrachloride	56-23-5
CFC-113	76-13-1
Chlorodifluoromethane	75-45-6
Chloroethane	75-00-3
Chloroform	67-66-3
Chloromethane	74-87-3
cis-1,2-Dichloroethene	156-59-2
Cyclohexane	110-82-7
Cyclopentane	287-92-3
Dichlorodifluoromethane	75-71-8
Ethylbenzene	100-41-4
Hexachlorobutadiene	87-68-3
Hexane	110-54-3
Isobutene	115-11-7
Isoprene	78-79-5
m,p-Xylene	179601-23-1
Methyl vinyl ketone	78-94-4
Naphthalene	91-20-3
o-Xylene	95-47-6
Pentane	109-66-0
Propene	115-07-1
Styrene	100-42-5
Tetrachloroethene	127-18-4
Toluene	108-88-3
trans-1,2-Dichloroethene	156-60-5
Trichloroethene	79-01-6
Trichlorofluoromethane	75-69-4
Vinyl chloride	75-01-4

Abbreviations:

APH	Air-phase hydrocarbons
CAS	Chemical Abstracts Service
NA	Not available

Figures

Figure 1
Sub-Slab Vapor Pin Locations in Building A
(Herrera Environmental Consultants Figure)



NOTES:

1. 30mil GEOMEMBRANE SHALL BE A CONTINUOUS SHEET UNDER BUILDING SLAB AND SHALL EXTEND TO EXTERIOR EDGE OF PERIMETER FOOTING OR BE SEALED TO FOOTINGS BY BATTEN STRIP.
2. ALL PENETRATIONS THROUGH MEMBRANE SHALL BE BOOTED AND SEALED. SEE DETAILS 1 AND 2/C-8.
3. ALL INTERIOR VENT PIPING MUST BE PRESSURE TESTED USING HYDRO STATIC OR PNEUMATIC METHOD.
4. GRANULAR MATERIAL UNDER SLAB IN PIPE TRENCH SIZED LARGER THAN PERFORATIONS IN PIPE OR ADD GEOTEXTILE WRAP AROUND PERFORATED PIPE.
5. ALL SLAB PENETRATIONS SHALL BE SEALED WITH ELASTOMERIC POLYURETHANE SEALANT.

LEGEND:

●	4" RISER VENT	▭	VAPOR MONITORING ZONE
◎	RISER VENT WITH BLOWER	🟪	30mil PVC MEMBRANE EXTENTS
⊕	ECOLOGY RECOMMENDED MONITORING LOCATION		
– – –	2" DIA SCH 40 PERFORATED PVC COLLECTION PIPE		
───	4" DIA SCH 80 OR GALVANIZED SOLID WALL PIPE		

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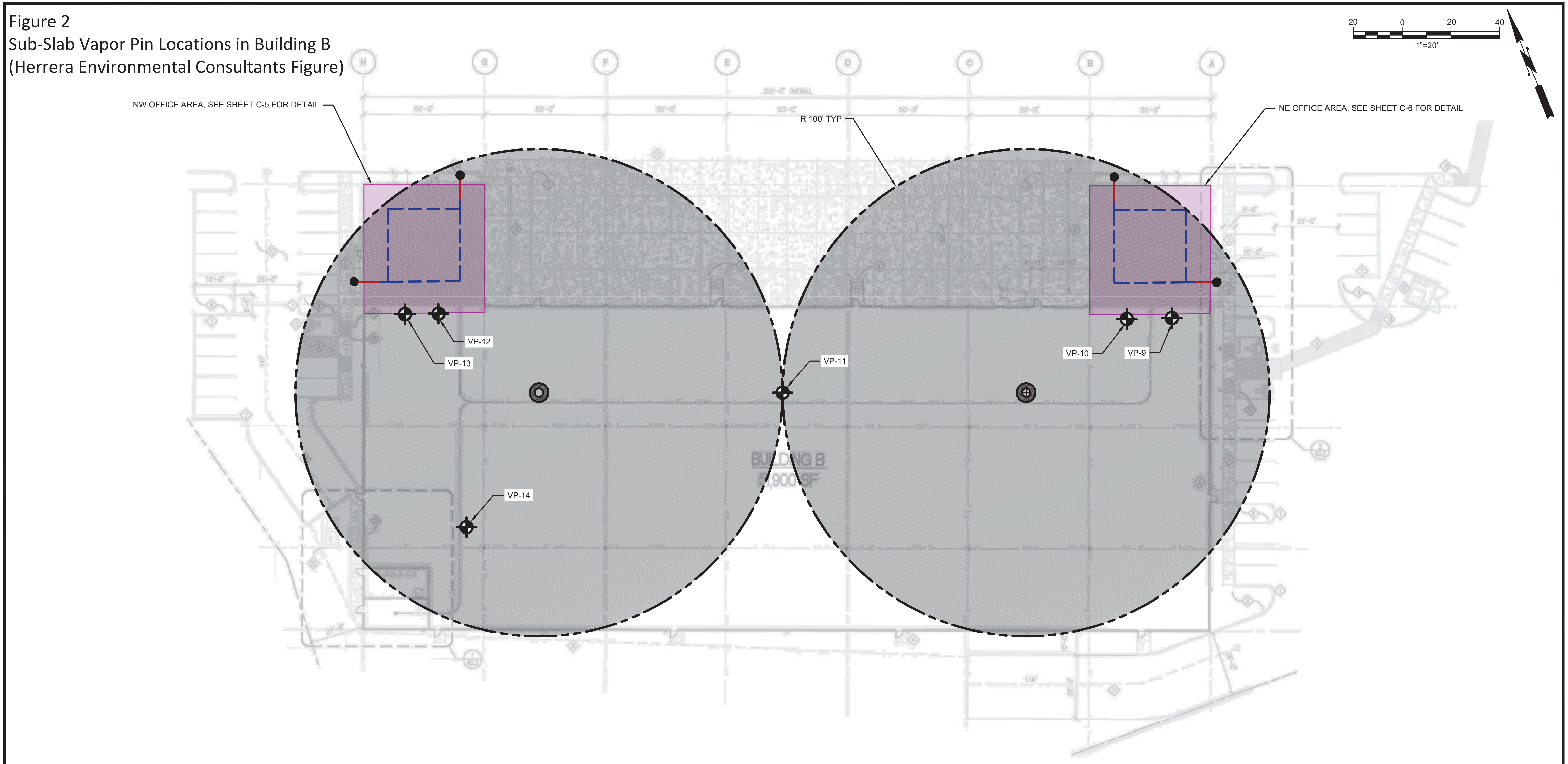
AVE 55
TAYLOR WAY METHANE MITIGATION

PAD A

DATE: AUGUST 2018
PROJECT NO: 16-06475-000
DRAWING NO: Figure 1
SHEET NO: 2 OF 4

Figure 2
Sub-Slab Vapor Pin Locations in Building B
(Herrera Environmental Consultants Figure)



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LEGEND:

●	4" RISER VENT	▭	VAPOR MONITORING ZONE
◎	RISER VENT WITH BLOWER	▭	30mil PVC MEMBRANE EXTENTS
⊕	ECOLOGY RECOMMENDED MONITORING LOCATION		
— — —	2" DIA SCH 40 PERFORATED PVC COLLECTION PIPE		
——	4" DIA SCH 80 OR GALVANIZED SOLID WALL PIPE		

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AVE 55
TAYLOR WAY METHANE MITIGATION

PAD B

DATE: AUGUST 2018
PROJECT NO: 16-06475-000
DRAWING NO: Figure 2
SHEET NO: 3 OF 4

Attachment 1
Ecology Correspondence

From:	Teel, Steve (ECY) <STEE461@ECY.WA.GOV>
Sent:	Thursday, September 6, 2018 1:28 PM
To:	Tom Colligan
Cc:	Gabe Cisneros; Kristin Anderson; Drew Zaborowski; Scott Hooton (shooton@portoftacoma.com); Kara Hitchko; Acklam, Nicholas (ECY)
Subject:	RE: Addendum for VI assessment at Taylor Way site
Attachments:	bld-B_ss_201809061133.pdf

Tom –
Attached is a figure that shows our recommendations for changes to the Building B locations. Basically, we want them to be about 15 feet in from the outside edge and about 15 feet apart from each other. Please let me know by COB today if you have any questions because I won't be in the office tomorrow.
Thanks,
Steve

Steve Teel, LHG
Cleanup Project Manager/Hydrogeologist
Washington State Department of Ecology
Toxics Cleanup Program, Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775
Phone (360) 407-6247
steve.teel@ecy.wa.gov

From: Tom Colligan <Tom.Colligan@floydsnider.com>
Sent: Wednesday, September 5, 2018 2:43 PM
To: Teel, Steve (ECY) <STEE461@ECY.WA.GOV>
Cc: Gabe Cisneros <Gabe.Cisneros@floydsnider.com>; Kristin Anderson <Kristin.Anderson@floydsnider.com>; Drew Zaborowski <dzaborowski@avenue55.net>; Scott Hooton (shooton@portoftacoma.com) <shooton@portoftacoma.com>; Kara Hitchko <Kara.Hitchko@floydsnider.com>
Subject: Addendum for VI assessment at Taylor Way site

Steve, attached is a detail sheet C-10 for the vapor pins- and updated location maps which you have seen already. If you have any suggestions as to moving some locations, let us know. As we discussed today, these will be installed Friday by Gabe and sampled next week, per the protocols in the work plan as amended by your email comments below.

From: Teel, Steve (ECY) [mailto:STEE461@ECY.WA.GOV]
Sent: Tuesday, August 21, 2018 4:12 PM
To: Tom Colligan <Tom.Colligan@floydsnider.com>
Cc: Scott Hooton (shooton@portoftacoma.com) <shooton@portoftacoma.com>; Drew Zaborowski <dzaborowski@avenue55.net>; Michael Spillane <mspillane@herrerainc.com>; Acklam, Nicholas (ECY)

<nack461@ECY.WA.GOV>
Subject: RE: Addendum for VI assessment at Taylor Way site

Tom,
Thank you for submitting the below-referenced plan for our review. Please revise the plan to incorporate the following comments:

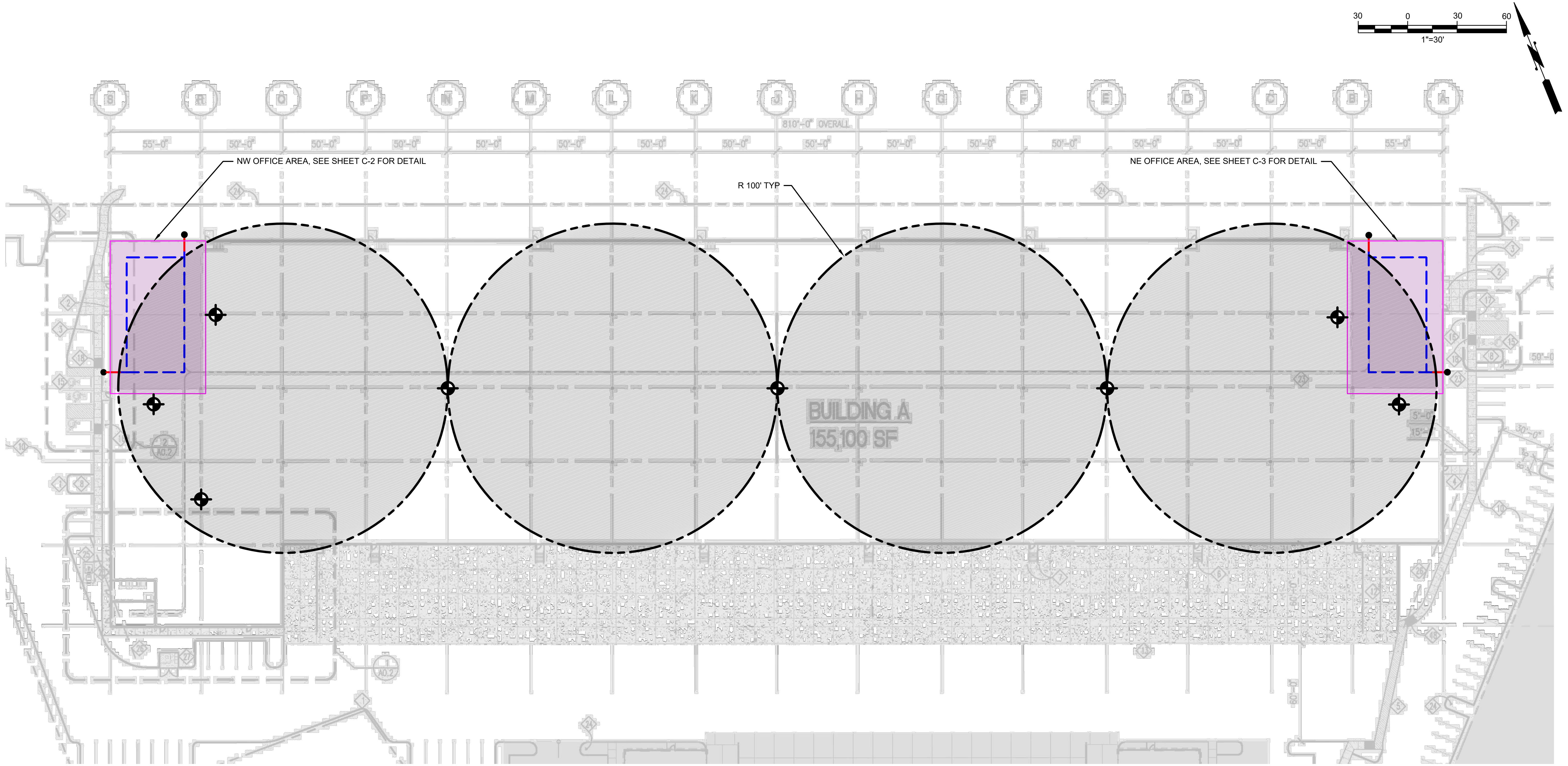
1. Four additional permanent sub-slab monitoring locations are needed. These additional locations shall be at the edge of the membrane at the south side of each of the office nodes in Buildings A and B. Because the office node monitoring points were not installed in the center of the office area prior to pouring the slab, the proposed network of only one near-membrane monitoring point per node is not sufficient. Therefore, two per node is needed. Provide an updated map to Ecology for review and approval.
2. Ecology does not agree that the proposed one indoor air sample from each warehouse space is sufficient. Due to the size of the warehouse space, at least four samples are needed from the Building A warehouse and at least two samples are needed from the Building B warehouse. A survey shall be made prior to conducting indoor air sampling to check for any areas of preferential vapor intrusion (such as cracks, utility penetrations, expansion joints, and floor drains). This information shall be used in planning Indoor air sample locations. A map with proposed indoor air sample locations shall be provided to Ecology for review and approval.
3. Field QC duplicate samples need to be included. Duplicate soil vapor samples shall be collected by using a T-splitter at the point of sample collection to divide the sample stream into two separate sample containers. Duplicate samples shall be collected on a daily frequency.
4. As stated in our previous comments, for the first year, at least two indoor air sampling rounds are required (winter and summer).
5. The building shall not be occupied until Ecology agrees that the vapor intrusion mitigation system is working adequately.
6. Ambient air background samples shall be collected in an upwind location from the Site. Therefore, the proposed location of the drive aisle between the buildings is not appropriate.
7. The use of Tedlar bags for sample collection is not recommended because of issues with adsorption of compounds. Remove all references to Tedlar bags from Attachment 1.
8. The constituent list for analyses shall include all compounds previously detected in soil gas, sub-slab, and indoor air samples and all potential constituents of concern for the Site.
9. Differential pressures shall be measured in the locations adjacent to the office nodes using a micro-manometer that is auto-zeroing and has a pressure differential sensitivity to 0.001 inches of water (such as a CLK-Zephyr II+ data logging micro-manometer). Differential pressures shall be recorded using a data logger for at least 48 hours (preferably one week) prior to sampling to assess fluctuations (if any) of cross-slab differential pressure.
10. A standard photoionization detector is generally not sensitive enough for vapor intrusion investigations because they are limited to ppmv range. As noted by the ITRC in their online guidance, (available at: https://www.itrcweb.org/PetroleumVI-Guidance/, for lower detection limits, either mobile laboratories or portable GC/MS or small-footprint gas chromatographs are available.

Steve Teel, LHG
Cleanup Project Manager/Hydrogeologist
Washington State Department of Ecology
Toxics Cleanup Program, Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775
Phone (360) 407-6247
steve.teel@ecy.wa.gov

From: Tom Colligan <Tom.Colligan@floydsnider.com>
Sent: Monday, August 13, 2018 11:02 AM
To: Teel, Steve (ECY) <STEE461@ECY.WA.GOV>
Cc: Scott Hooton (shooton@portoftacoma.com) <shooton@portoftacoma.com>; Drew Zaborowski <dzaborowski@avenue55.net>; Michael Spillane <mspillane@herrerainc.com>
Subject: Addendum for VI assessment at Taylor Way site

Steve, attached is the addendum detailing the approach for further assessment of the VI pathway at Buildings A and B at the Portside Development of the Taylor Way site. Let me know your thoughts as we would like to get in the field as soon as possible.

Tom Colligan L.H.G.
FLOYD | SNIDER
601 Union Street, Suite 600 | Seattle, WA 98101
direct tel 206.805.2166
Office tel: 206.292.2078 | fax: 206.682.7867
Tom.Colligan@floydsnider.com | www.floydsnider.com



NOTES:

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LEGEND:

●	4" RISER VENT	▨	VAPOR MONITORING ZONE
⌖	MONITORING LOCATION	🟪	30mil PVC MEMBRANE EXTENTS
– – –	2" DIA SCH 40 PERFORATED PVC COLLECTION PIPE		
──	2" DIA SCH 80 PVC OR GALVANIZED PIPE		

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DESIGNED: M. SPILLANE
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DESIGNED: -
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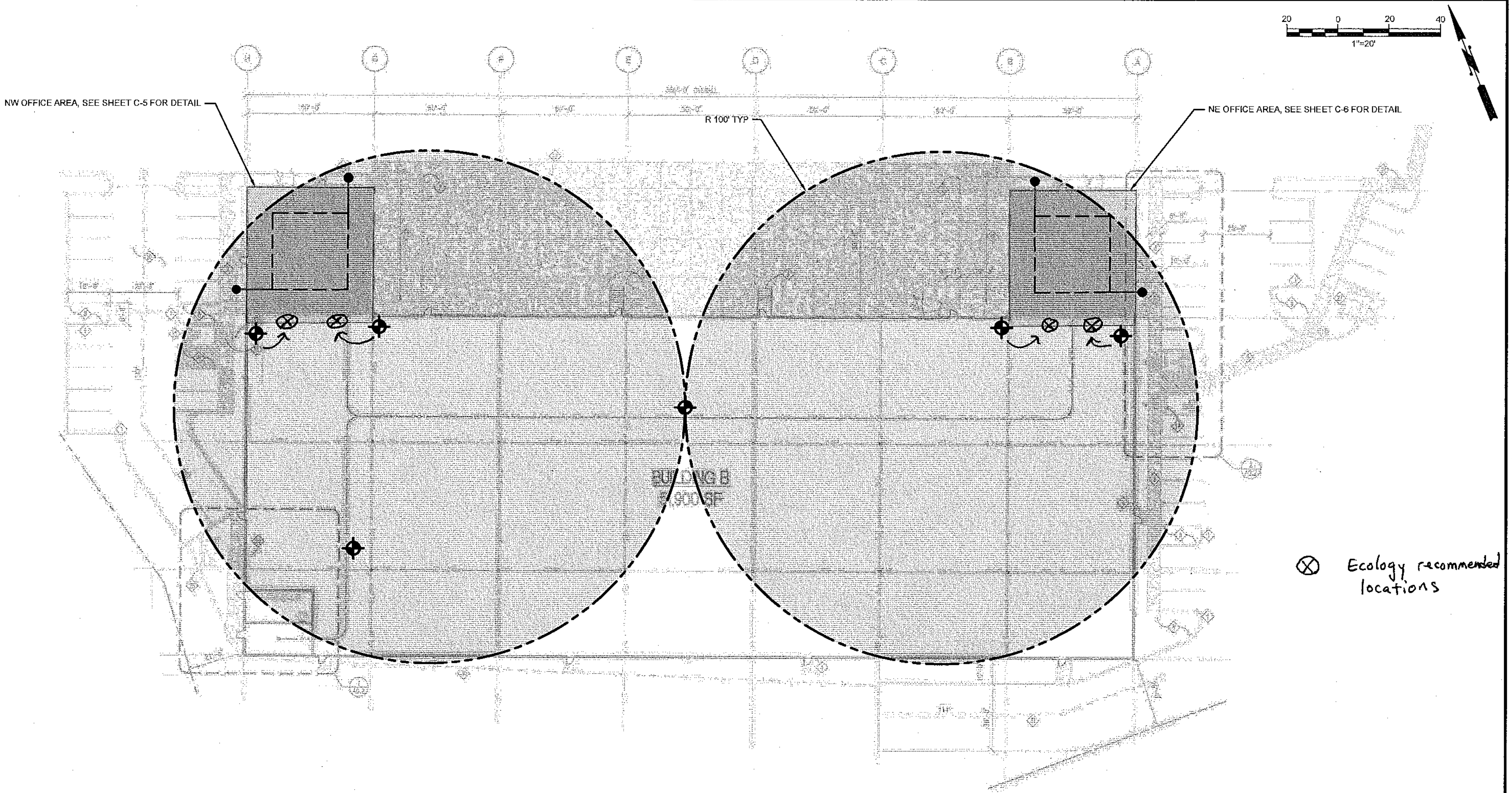
SCALE: AS NOTED
APPROVED: M. SPILLANE

AVE 55
TAYLOR WAY METHANE MITIGATION
BUILDING A SITE PLAN

DATE: AUGUST 2018
PROJECT NO: 16-06475-000
DRAWING NO: C-1
SHEET NO: 3 OF 12



⊗ Ecology recommended locations

NOTES:

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LEGEND:

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⊕	MONITORING LOCATION	▨	30mil PVC MEMBRANE EXTENTS
– – –	2" DIA SCH 40 PERFORATED PVC COLLECTION PIPE		
———	2" DIA SCH 80 PVC OR GALVANIZED PIPE		

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AVE 55
TAYLOR WAY METHANE MITIGATION

BUILDING B SITE PLAN

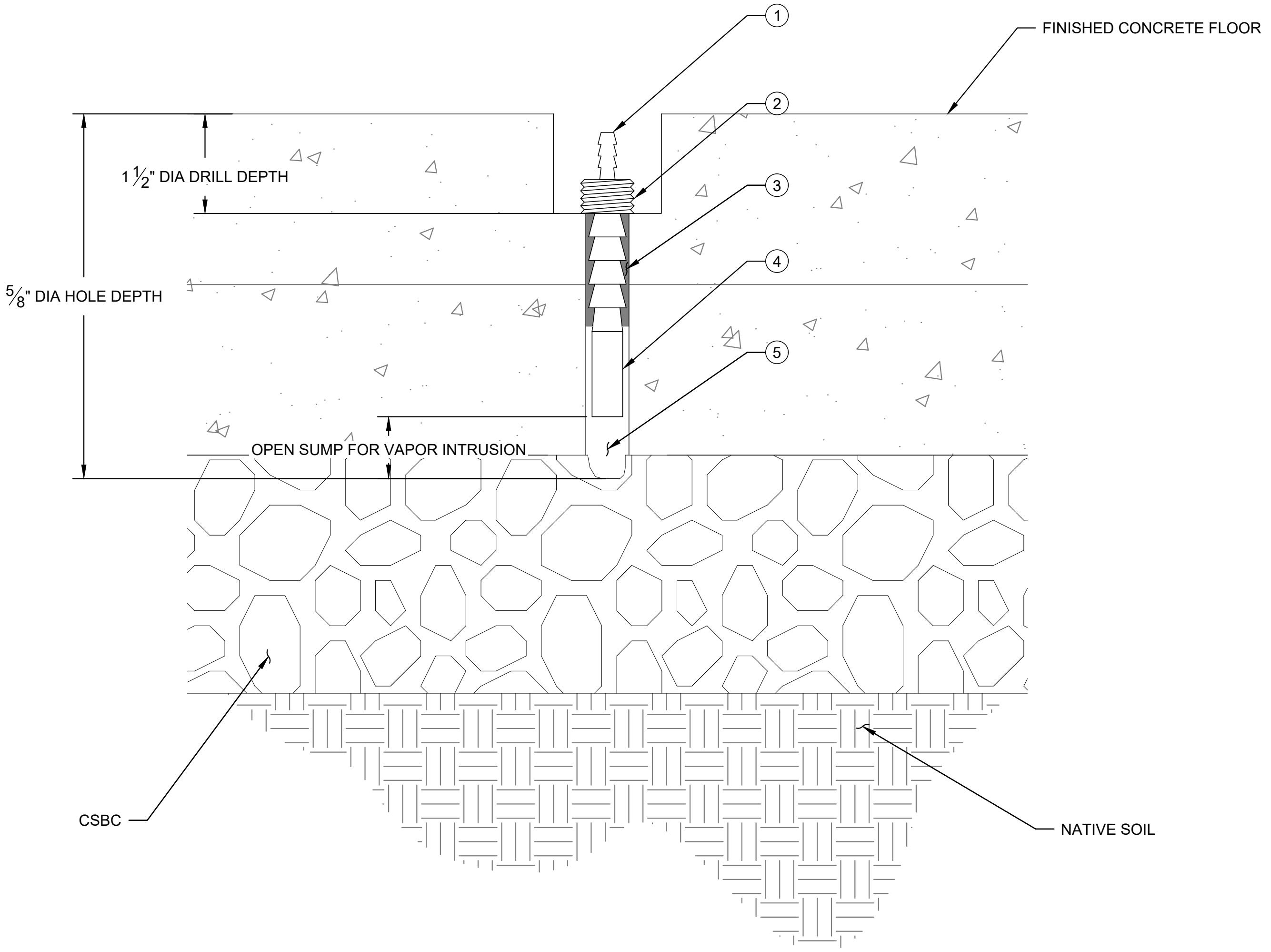
DATE: AUGUST 2018
PROJECT NO: 16-06475-000
DRAWING NO: C-4
SHEET NO: 6 OF 12

ITEMIZED NOTES:

① VAPOR PIN STAINLESS STEEL HOSE BARB ADAPTER
② TREADS FOR STAINLESS STEEL SECURE VAPOR PIN COVER
③ SILICONE SLEEVE
④ 1-1/2" STAINLESS STEEL VAPOR PIN EXTENSION
⑤ 1" MAX OPEN SUMP FOR VAPOR INTRUSION
⑥ STAINLESS STEEL SECURE VAPOR PIN COVER
⑦ SILICONE VAPOR PIN CAP

INSTALLATION NOTES:

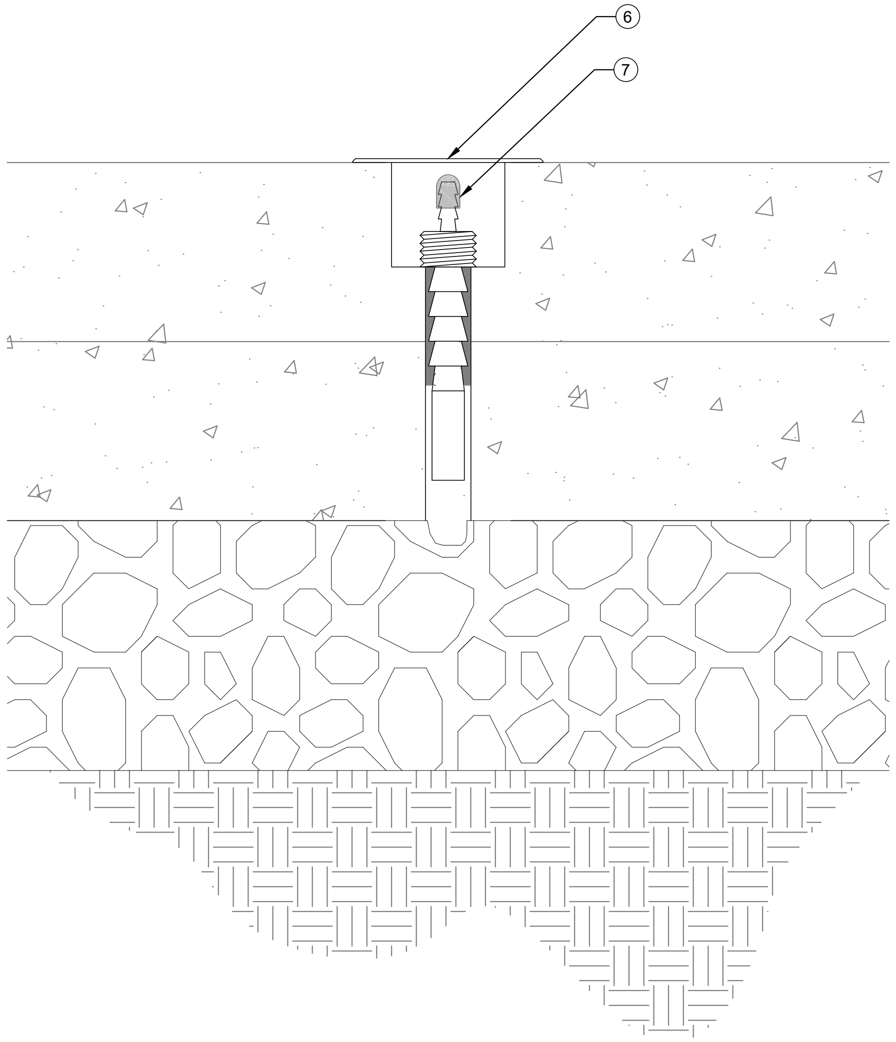
1. SELECT LOCATION FOR THE PERMANENT SUB-SLAB PROBE BASED ON THE OBJECTIVES OF THE PHASE OF WORK, PRESENCE OR POTENTIAL PRESENCE OF OBSTRUCTIONS AND INPUT FROM THE BUILDING OWNER.
2. USING A HAMMER OR CHISEL, CHIP AN "X" IN THE CONCRETE AS A STARTING POINT FOR DRILLING TO PREVENT THE BIT FROM WANDERING OFF THE DESIRED TARGET LOCATION.
3. MARK A DEPTH OF 1-3/4" ON THE 1-1/2" MASONRY BIT AND WRAP WITH DUCT TAPED FLAP. THE FLAP WILL ACT AS A DEPTH GAUGE. WHEN THE DUCT TAPE FLAP HITS THE SLAB, THE BIT IS AT THE APPROPRIATE DEPTH.
4. USING THE VAPOR PIN DRILLING GUIDE PROVIDED DRILL A 5/8" DIAMETER HOLE THROUGH THE SLAB.
5. VACUUM AND CLEAN HOLE HOLE USING THE BRUSH PROVIDED.
6. DAMPEN A PAPER TOWEL WITH DISTILLED WATER AND WIPE AWAY THE DUST FROM 1-1/2" HOLE AND WET THE SIDEWALLS. DO NOT ALLOW EXCESS WATER ON THE TOWEL GO INTO THE SUBSURFACE.
7. SLIDE SILICONE SLEEVE ONTO VAPOR PIN, SCREW 1-1/2" EXTENSION ONTO VAPOR PIN. USING THE INSTALLATION TOOL PROVIDED, HAMMER VAPOR PIN INTO PLACE UNTIL FULLY SEATED.
8. INSTALL VAPOR PIN CAP AND SCREW ACCESS COVER IN PLACE.
9. DETAIL 1 IS A TYPICAL CROSS SECTION OF THE PERMANENT SUB-SLAB VAPOR PIN PROBE DURING THE MONITORING PROCESS.
10. DETAIL 2 IS A TYPICAL CROSS SECTION OF THE PERMANENT SUB-SLAB VAPOR PIN PROBE CAPPED FLUSH WITH THE FINISH GRADE.



DETAIL - SUB-SLAB VAPORPIN PROBE DURING MONITORING

SCALE: NTS

1
C-1



DETAIL - SUB-SLAB VAPORPIN PROBE CAPPED

SCALE: NTS

2
-

PHOTO - INSTALLED VAPOR PIN

SCALE: NTS

3
-

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SCALE: AS NOTED	APPROVED: M. SPILLANE

AVE 55
TAYLOR WAY METHANE MITIGATION

SUB-SLAB VAPOR PIN PROBE INSTALLATION

DATE: AUGUST 2018
PROJECT NO: 16-06475-000
DRAWING NO: C-10
SHEET NO: 12 OF 12

Attachment 2
Photographs

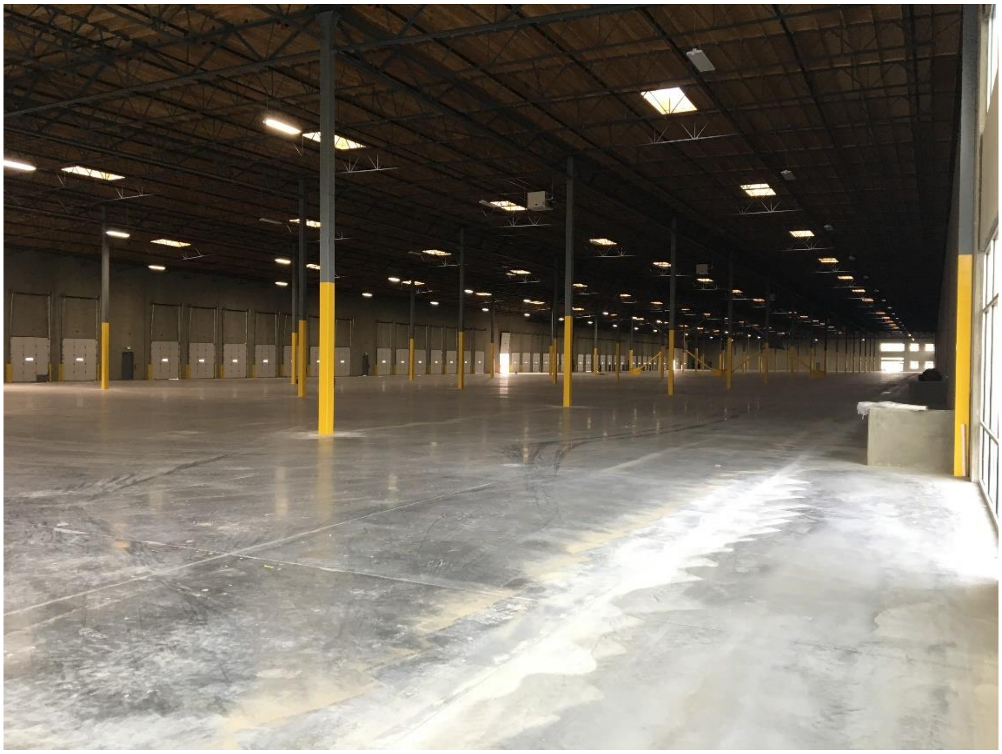
Photograph 1. Soil vapor pin with extension next to slab for comparison.

Photograph 2. Hammering vapor pin in place.

Photograph 3. Vapor pin.

Photograph 4. Vapor pin with flushed-cover.

Photograph 5. Aerial of property; view to the southwest. Building A is in the lower portion of the photo, and Building B is adjacent to and southwest of Building A.



Photograph 6. Building A interior; northeast corner facing west.

Photograph 7. Building A interior; northeast office node.

Photograph 8. Building A interior; northwest corner facing east.

Photograph 9. Building A interior; northwest office node.

Photograph 10. Building A interior; southwest corner facing east.

Attachment 3
Vapor Pin Standard Operating Procedure

Standard Operating Procedure
Installation and Extraction of the Vapor Pin®

Updated September 9, 2016

Scope:

This standard operating procedure describes the installation and extraction of the VAPOR PIN® for use in sub-slab soil-gas sampling.

Purpose:

The purpose of this procedure is to assure good quality control in field operations and uniformity between field personnel in the use of the VAPOR PIN® for the collection of sub-slab soil-gas samples or pressure readings.

Equipment Needed:

- Assembled VAPOR PIN® [VAPOR PIN® and silicone sleeve(Figure 1)]; Because of sharp edges, gloves are recommended for sleeve installation;
- Hammer drill;
- 5/8-inch (16mm) diameter hammer bit (hole **must** be 5/8-inch (16mm) diameter to ensure seal. It is recommended that you use the drill guide). (Hilti™ TE-YX 5/8" x 22" (400 mm) #00206514 or equivalent);
- 1½-inch (38mm) diameter hammer bit (Hilti™ TE-YX 1½" x 23" #00293032 or equivalent) for flush mount applications;
- ¾-inch (19mm) diameter bottle brush;
- Wet/Dry vacuum with HEPA filter (optional);
- VAPOR PIN® installation/extraction tool;
- Dead blow hammer;
- VAPOR PIN® flush mount cover, if desired;
- VAPOR PIN® drilling guide, if desired;
- VAPOR PIN® protective cap; and
- VOC-free hole patching material (hydraulic cement) and putty knife or trowel for repairing the hole following the extraction of the VAPOR PIN®.

Figure 1. Assembled VAPOR PIN®

Installation Procedure:

1) Check for buried obstacles (pipes, electrical lines, etc.) prior to proceeding.

2) Set up wet/dry vacuum to collect drill cuttings.

3) If a flush mount installation is required, drill a 1½-inch (38mm) diameter hole at least 1¾-inches (45mm) into the slab. Use of a VAPOR PIN® drilling guide is recommended.

4) Drill a 5/8-inch (16mm) diameter hole through the slab and approximately 1-inch (25mm) into the underlying soil to form a void. Hole **must** be 5/8-inch (16mm) in diameter to ensure seal. It is recommended that you use the drill guide.

VAPOR PIN® protected under US Patent # 8,220,347 B2, US 9,291,531 B2 and other patents pending

5) Remove the drill bit, brush the hole with the bottle brush, and remove the loose cuttings with the vacuum.

6) Place the lower end of VAPOR PIN® assembly into the drilled hole. Place the small hole located in the handle of the installation/extraction tool over the vapor pin to protect the barb fitting, and tap the vapor pin into place using a dead blow hammer (Figure 2). Make sure the installation/extraction tool is aligned parallel to the vapor pin to avoid damaging the barb fitting.

Figure 2. Installing the VAPOR PIN®

During installation, the silicone sleeve will form a slight bulge between the slab and the VAPOR PIN® shoulder. Place the protective cap on VAPOR PIN® to prevent vapor loss prior to sampling (Figure 3).

Figure 3. Installed VAPOR PIN®

7) For flush mount installations, cover the vapor pin with a flush mount cover, using either the plastic cover or the optional stainless-steel Secure Cover (Figure 4).

Figure 4. Secure Cover Installed

8) Allow 20 minutes or more (consult applicable guidance for your situation) for the sub-slab soil-gas conditions to re-equilibrate prior to sampling.

9) Remove protective cap and connect sample tubing to the barb fitting of the VAPOR PIN®. This connection can be made using a short piece of Tygon™ tubing to join the VAPOR PIN® with the Nylaflow tubing (Figure 5). Put the

Nylaflow tubing as close to the VAPOR PIN® as possible to minimize contact between soil gas and Tygon™ tubing.

Figure 5. VAPOR PIN® sample connection

10) Conduct leak tests in accordance with applicable guidance. If the method of leak testing is not specified, an alternative can be the use of a water dam and vacuum pump, as described in SOP Leak Testing the VAPOR PIN® via Mechanical Means (Figure 6). For flush-mount installations, distilled water can be poured directly into the 1 1/2 inch (38mm) hole.

Figure 6. Water dam used for leak detection

11) Collect sub-slab soil gas sample or pressure reading. When finished, replace the protective cap and flush mount cover until the next event. If the sampling is complete, extract the VAPOR PIN®.

Extraction Procedure:

1) Remove the protective cap, and thread the installation/extraction tool onto the barrel of the VAPOR PIN® (Figure 7). Turn the tool clockwise continuously, don't stop turning, the VAPOR PIN® will feed into the bottom of the installation/extraction tool and will extract from the hole like a wine cork, DO NOT PULL.

2) Fill the void with hydraulic cement and smooth with a trowel or putty knife.

Figure 7. Removing the VAPOR PIN®

- Prior to reuse, remove the silicone sleeve and protective cap and discard. Decontaminate the VAPOR PIN® in a hot water and Alconox® wash, then heat in an oven to a temperature of 265° F (130° C) for 15 to 30 minutes. For both steps, **STAINLESS – ½ hour, BRASS 8 minutes**

3) Replacement parts and supplies are available online.

Attachment 4
Soil Vapor Sampling Sheets

SOIL VAPOR SAMPLING SHEET

Site Reference: Ave 55 - Taylor Way

Address:

Date: 9/12/18

Personnel: Gabe C & Kara Hitchkd

	Vacuum Test		Purging				Helium		Sampling				PID		
Soil Vapor Sampling Point ID	Time Start Vacuum Testing	Time Stop Vacuum Testing	Time Start Purging	Time Stop Purging	Purging Rate (ml/min)	Total Volume Purged (ml)	Time of Helium Reading	Helium Reading (%)	Time Start Sampling	Time Stop Sampling	Canister Vacuum Before Sampling (in Hg)	Canister Vacuum After Sampling (in Hg)	Time of PID Reading	PID Reading	CANID/FLOW ID Notes
VP-4	1103	1108	1114	1115	~~167~~ 150		1117	18	1116	1121	28	4.5	1122	0.0	3672/256
VP-6	1159	1204	1204	1205	~~167~~ 150		1208	10	1206	1210	30	4.5	1211	1.2	2300/108
VP-8	1226	1231	1231	1232	150		1237	10	1235	1239	29.5	4.5	1240	0.1	3669/105
VP-10	1347	1352	1352	1353	150		1355	10	1353	1400	30	2.5	1400	0.0	3386/01
VP-14	1425	1430	1430	1431	150		1445	10	1442	1448	29.5	4.5	1449	0.4	2298/201
VP-13	1515	1520	1520	1521	150		1525	10	1522	1527	29.5	4.5	1528	0.0	3389/101

Notes:

Helium varies between 10% & as high as 30%
tried to keep it @ 10%

SOIL VAPOR SAMPLING SHEET

Site Reference: Area 55 - Taylor Way

Address:

Date: 9/12/18

Personnel:

	Vacuum Test		Purging				Helium		Sampling				PID		
Soil Vapor Sampling Point ID	Time Start Vacuum Testing	Time Stop Vacuum Testing	Time Start Purging	Time Stop Purging	Purging Rate (ml/min)	Total Volume Purged (ml)	Time of Helium Reading	Helium Reading (%)	Time Start Sampling	Time Stop Sampling	Canister Vacuum Before Sampling (in Hg)	Canister Vacuum After Sampling (in Hg)	Time of PID Reading	PID Reading	Canister ID/ Flow Cont Notes
VP-1	0907	0912	0912	0913	~~167~~ 150		0918	15%	0919	0926	30	4.5	0928	3.5	3250/31
VP-2	0951	0956	0957	0958	~~167~~ 150		0957	40%	0957	1010	30	4.5	1016	0.0	3378/02
VP-2D	0951	0956	0957	0958	150		0957	40%	0957	1005	30	4.5	1016	0.0	3258/102
VP-3	10:38	10:43	1044	10:45			10:47	10%	10:47	10:51	30	4.5	10:54	0.0	2301/106
VP-5	11:39	11:44	11:44	11:45			11:48	10%	11:46	11:50	29.5	4.5	11:51	0.0	2435/07
VP-7	12:21	12:26	12:26	12:27			12:29	10%	12:28	12:32	28.5	4.5	12:34	0.0	3251/109
VP-9	13:28	13:33	13:34	13:35			13:40	5%	13:36	13:42	30	4.5	13:45	0.0	2297/231
VP-11	14:18	14:23	14:23	14:24			14:31	5%	14:28	14:32	28.7	4.5	14:35	0.0	3677/257
VP-12	15:02	15:07	15:07	15:08			15:09	5%	15:09	15:15	29.1	4.5	15:16	0.0	2437/03
VP-2B	15:47	15:53	15:53	15:54	↓		15:56	10%	15:54	16:03	29.5	4.5	16:03	0.0	3674/111

Notes:

200 cc/min = 4.31 min sample time to 4.5 in Hg

- Switched to new helium canister for VP-9 and wasn't able to get the percent up to 10.

Soil Vapor Sampling Sheet

Site Reference: Taylor Way
Address:

Date: 10/24/18
Personnel: Kara and Gabe

Soil Vapor Sampling Point ID	Vacuum Test		Purging				Helium		Sampling				PID		
	Time Start Vacuum Testing	Time Stop Vacuum Testing	Time Start Purging	Time Stop Purging	Purging Rate ~~(ml/min)~~ cc/min	Total Volume Purged ~~(ml)~~ cc	Time of Helium Reading	Helium Reading (%)	Time Start Sampling	Time Stop Sampling	Canister Vacuum Before Sampling (in Hg)	Canister Vacuum After Sampling (in Hg)	Time of PID Reading	PID Reading	Notes
VP-2-102418	7:52	7:57	7:58	7:59	150 ~~167~~	150	–	–	7:59	8:05	29	4.5	8:10	0.0	3311 / #242
VP-3	8:54	8:59	9:00	9:01	167 ↓	↓	–	–	9:03	9:08	28.5	4.5	9:11	0.0	3483 / #258
VP-5	9:44	9:49	9:49	9:50			–	–	9:51	9:57	29.5	4.5	10:01	0.0	3255 / #240
VP-8	10:33	10:38	10:39	10:40			–	–	10:41	10:46	29.5	4.5	10:50	0.0	3676 / #241
VP-11	11:19	11:25	11:25	11:26			–	–	11:27	11:33	29.5	4.5	11:35	0.0	2436 / #230
VP-9	11:56	12:01	12:01	12:02			–	–	12:02	12:07	29	4.5	12:09	0.0	3347 / #244

Notes:

Soil Vapor Sampling Sheet

Site Reference: Ave 55 - Taylor Way
Address:

Date: 10/24/18
Personnel: G. Cisneros . K. Hitchko

Soil Vapor Sampling Point ID	Vacuum Test		Purging				Helium Suma CANiste Purg		Sampling				PID		Notes	
	Time Start Vacuum Testing	Time Stop Vacuum Testing	Time Start Purging	Time Stop Purging	Purging Rate (ml/min) 150	Total Volume Purged (ml)	Time of Helium Reading	Helium Reading (%)	Time Start Sampling	Time Stop Sampling	Canister Vacuum Before Sampling (in Hg)	Canister Vacuum After Sampling (in Hg)	Time of PID Reading	PID Reading	Flow ID	Canistr ID
VP-1-102418	0819	0825	0837	0838	~~200 107~~		200 N/A	N/A	0838	0843	28	4.5	0844	0.0	257	3257
VP-1-102418 Dup	0832	0837	0837	0838	~~200 167~~				0838	0843	27.5	4.5	〃	0.0	256	3390
VP-4-102418	0901	0906	0906	0907	~~200~~				0909	0913	30	4.5	0914	0.0	101	3668
VP-6-102418	0930	0935	0936	0937	~~200~~		150ml/min		0937	0942	28.5	4.5	0943	0.0	204	2299
VP-7-102418	0956	1001	1001	1002	150		150 ml/min		1002	1008	30	4.5	1009	0.0	224	3344
VP-12-102418	1024	1029	1029	1030	150		150 ml/min		1030	1035	29.5	4.5	1036	0.0	243	3672
VP-13-102418	1042	1047	1047	1048	150		150ml/min		1048	1054	30	4.5	1055	0.0	203	3387
VP-14-102418	1114	1119	1119	1121	150		150ml/min		1121	1127	30	4.5	1128	0.0	221	3260
VP-10-102418	1148	1153	1153	1154	150		150ml/min		1155	1201	29	4.0	1202	0.0	17	2433

Notes:

Attachment 5
Laboratory Reports

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

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www.friedmanandbruya.com

September 28, 2018

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on September 12, 2018 from the Ave 55-Taylor Way, F&BI 809188 project. There are 38 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS0928R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 12, 2018 by Friedman & Bruya, Inc. from the Floyd-Snider Ave 55-Taylor Way project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
809188 -01	VP-1-091218
809188 -02	VP-2-091218
809188 -03	VP-2-091218 Dup
809188 -04	VP-3-091218
809188 -05	VP-5-091218
809188 -06	VP-7-091218
809188 -07	VP-9-091218
809188 -08	VP-4-091218
809188 -09	VP-6-091218
809188 -10	VP-8-091218
809188 -11	VP-10-091218
809188 -12	VP-14-091218
809188 -13	VP-13-091218
809188 -14	VP-11-091218
809188 -15	VP-12-091218
809188 -16	VP-2B-091218

The helium analysis will be sent in an additional report.

Several TO-15 and APH analytes exceeded the calibration range. The data were qualified accordingly.

Several TO15 compounds were present in the samples at a concentration less than 10 times the concentration in the method blank. The data were qualified accordingly.

Non-petroleum compounds with a Q value greater than 85 were subtracted from the APH ranges for all samples.

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-1-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-01 1/10
Date Analyzed:	09/20/18	Data File:	091930.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	105	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	11,000
APH EC9-12 aliphatics	21,000 ve
APH EC9-10 aromatics	2,700

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-2-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-02 1/3.3
Date Analyzed:	09/19/18	Data File:	091915.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,800
APH EC9-12 aliphatics	330
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-2-091218 Dup	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-03 1/3.3
Date Analyzed:	09/20/18	Data File:	091916.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,000
APH EC9-12 aliphatics	310
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-3-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-04 1/3.3
Date Analyzed:	09/20/18	Data File:	091917.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,100
APH EC9-12 aliphatics	180
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-5-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-05 1/3.3
Date Analyzed:	09/20/18	Data File:	091918.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,400
APH EC9-12 aliphatics	360
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-7-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-06 1/3.3
Date Analyzed:	09/20/18	Data File:	091919.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,900 ve
APH EC9-12 aliphatics	170
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-9-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-07 1/3.3
Date Analyzed:	09/20/18	Data File:	091920.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	86	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,400
APH EC9-12 aliphatics	220
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-4-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-08 1/3.3
Date Analyzed:	09/20/18	Data File:	091921.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	820
APH EC9-12 aliphatics	130
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-6-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-09 1/3.3
Date Analyzed:	09/20/18	Data File:	091922.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,900
APH EC9-12 aliphatics	530
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-8-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-10 1/3.3
Date Analyzed:	09/20/18	Data File:	091923.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	5,900 ve
APH EC9-12 aliphatics	1,100
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-10-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-11 1/3.3
Date Analyzed:	09/20/18	Data File:	091924.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,200
APH EC9-12 aliphatics	360
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-14-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-12 1/3.3
Date Analyzed:	09/20/18	Data File:	091925.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,600
APH EC9-12 aliphatics	520
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-13-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-13 1/3.3
Date Analyzed:	09/20/18	Data File:	091926.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	800
APH EC9-12 aliphatics	150
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-11-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-14 1/4.2
Date Analyzed:	09/20/18	Data File:	091929.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,900
APH EC9-12 aliphatics	6,000
APH EC9-10 aromatics	<100

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-12-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-15 1/3.3
Date Analyzed:	09/20/18	Data File:	091927.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	820
APH EC9-12 aliphatics	180
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-2B-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-16 1/3.3
Date Analyzed:	09/20/18	Data File:	091928.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,300
APH EC9-12 aliphatics	420
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/19/18	Lab ID:	08-2081 mb
Date Analyzed:	09/19/18	Data File:	091911.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<46
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-1-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-01 1/10
Date Analyzed:	09/20/18	Data File:	091930.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	113	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	8.3	2.3	1-Butanol	<61	<20
Propene	1,300 ve	740 ve	Carbon tetrachloride	<6.3	<1
Dichlorodifluoromethane	120	24	Benzene	28	8.6
Chloromethane	7.3	3.5	Cyclohexane	<69	<20
F-114	<7	<1	2-Pentanone	<35	<10
Isobutene	1,600 ve	700 ve	3-Pentanone	<35	<10
Acetaldehyde	<90	<50	Pentanal	<35	<10
Vinyl chloride	<2.6	<1	1,2-Dichloropropane	3.3	0.71
1,3-Butadiene	4.7	2.1	1,4-Dioxane	<3.6	<1
Bromomethane	<16	<4	Bromodichloromethane	5.8	0.86
Chloroethane	4.9	1.8	Trichloroethene	9.1	1.7
Ethanol	<75	<40	cis-1,3-Dichloropropene	<4.5	<1
Acetonitrile	27	16	4-Methyl-2-pentanone	<41	<10
Acrolein	<9.2	<4	trans-1,3-Dichloropropene	<4.5	<1
Acrylonitrile	<2.2	<1	Toluene	62	16
Pentane	360	120	1,1,2-Trichloroethane	1.0	0.19
Trichlorofluoromethane	880	160	3-Hexanone	<41	<10
Acetone	1,300 ve	560 ve	2-Hexanone	<41	<10
2-Propanol	<86	<35	Hexanal	<41	<10
Isoprene	17	5.9	Tetrachloroethene	17	2.5
Iodomethane	<5.8	<1	Dibromochloromethane	<0.85	<0.1
1,1-Dichloroethene	<4	<1	1,2-Dibromoethane (EDB)	<0.77	<0.1
Methacrolein	<29	<10	Chlorobenzene	<4.6	<1
trans-1,2-Dichloroethene	<4	<1	Ethylbenzene	75	17
Cyclopentane	<2.9	<1	1,1,2,2-Tetrachloroethane	<1.4	<0.2
Methyl vinyl ketone	<29	<10	m,p-Xylene	270	61
Butanal	<29	<10	o-Xylene	120	28
Methylene chloride	<870	<250	Styrene	<8.5	<2
CFC-113	<7.7	<1	Bromoform	<21	<2
Carbon disulfide	<62	<20	Benzyl chloride	2.3	0.45
Methyl t-butyl ether (MTBE)	<18	<5	1,3,5-Trimethylbenzene	130	27
Vinyl acetate	<70	<20	1,2,4-Trimethylbenzene	420	85
1,1-Dichloroethane	6.0	1.5	1,3-Dichlorobenzene	<6	<1
cis-1,2-Dichloroethene	<4	<1	1,4-Dichlorobenzene	<2.4	<0.4
Hexane	140	39	1,2,3-Trimethylbenzene	130	27
Chloroform	6.9	1.4	1,2-Dichlorobenzene	<6	<1
2-Butanone (MEK)	94	32	1,2,4-Trichlorobenzene	<7.4	<1
1,2-Dichloroethane (EDC)	5.8	1.4	Naphthalene	33	6.3
1,1,1-Trichloroethane	15	2.7	Hexachlorobutadiene	<2.1	<0.2

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-2-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-02 1/3.3
Date Analyzed:	09/19/18	Data File:	091915.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	3.7	1.0	1-Butanol	53	17
Propene	410 ve	240 ve	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	49	9.9	Benzene	7.0	2.2
Chloromethane	4.4	2.1	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	180	77	3-Pentanone	<12	<3.3
Acetaldehyde	80	44	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	1.1	0.24
1,3-Butadiene	11	4.8	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	1.5	0.57	Trichloroethene	5.4	1.0
Ethanol	68	36	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	6.9	4.1	4-Methyl-2-pentanone	26	6.2
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	5.8	2.7	Toluene	11	2.9
Pentane	150	52	1,1,2-Trichloroethane	0.65	0.12
Trichlorofluoromethane	560	99	3-Hexanone	<14	<3.3
Acetone	91	38	2-Hexanone	<14	<3.3
2-Propanol	300	120	Hexanal	<14	<3.3
Isoprene	7.0	2.5	Tetrachloroethene	2.6	0.38
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	1.3 fb	0.34 fb	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	2.8	0.64
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	8.4	1.9
Butanal	<9.7	<3.3	o-Xylene	3.0	0.70
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	3.3 fb	0.43 fb	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	2.6	0.64	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	69	20	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.9	0.59	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.59	0.15	Naphthalene	1.2	0.23 fb
1,1,1-Trichloroethane	16	2.9	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-2-091218 Dup	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-03 1/3.3
Date Analyzed:	09/20/18	Data File:	091916.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	4.1	1.2	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	37	7.4	Benzene	5.2	1.6
Chloromethane	3.3	1.6	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	130	56	3-Pentanone	<12	<3.3
Acetaldehyde	66	36	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	0.79	0.17
1,3-Butadiene	6.3	2.8	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	1.1	0.42	Trichloroethene	2.4 fb	0.45 fb
Ethanol	52	28	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	4.0	1.8	Toluene	7.9	2.1
Pentane	110	37	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	390	70	3-Hexanone	<14	<3.3
Acetone	160	67	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	4.6	1.6	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	1.8	0.43
Cyclopentane	20	6.9	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	5.3	1.2
Butanal	<9.7	<3.3	o-Xylene	1.8	0.42
Methylene chloride	410	120	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	1.9	0.47	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	71	20	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	1.9	0.39	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.39	0.096	Naphthalene	0.59 fb	0.11 fb
1,1,1-Trichloroethane	11	2.0	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID: VP-3-091218
Date Received: 09/12/18
Date Collected: 09/12/18
Date Analyzed: 09/20/18
Matrix: Air
Units: ug/m3

Client: Floyd-Snider
Project: Ave 55-Taylor Way, F&BI 809188
Lab ID: 809188-04 1/3.3
Data File: 091917.D
Instrument: GCMS7
Operator: bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	2.3	0.65	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	35	7.1	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	36	16	3-Pentanone	<12	<3.3
Acetaldehyde	49	27	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	1.6	0.71	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	<0.89	<0.16
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	1.8	0.48
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	210	37	3-Hexanone	<14	<3.3
Acetone	28	12	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	8.5	1.3
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	16	4.6	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	0.69	0.14	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.57 fb	0.11 fb
1,1,1-Trichloroethane	5.0	0.91	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-5-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-05 1/3.3
Date Analyzed:	09/20/18	Data File:	091918.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	2.5	0.71	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	39	7.9	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	56	25	3-Pentanone	<12	<3.3
Acetaldehyde	45	25	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	1.5	0.32
1,3-Butadiene	2.4	1.1	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	5.8	1.1
Ethanol	33	18	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	4.9	1.3
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	390	69	3-Hexanone	<14	<3.3
Acetone	100	42	2-Hexanone	<14	<3.3
2-Propanol	130	52	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	1.7	0.40
Cyclopentane	1.2	0.43	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	7.4	1.7
Butanal	<9.7	<3.3	o-Xylene	2.4	0.54
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	23	6.5	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	0.97	0.20	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.16	0.040	Naphthalene	1.0 fb	0.20 fb
1,1,1-Trichloroethane	8.5	1.6	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-7-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-06 1/3.3
Date Analyzed:	09/20/18	Data File:	091919.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	3.0	0.85	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	91	18	Benzene	1.3	0.40
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	610 ve	270 ve	3-Pentanone	<12	<3.3
Acetaldehyde	100	58	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	5.0	1.1
1,3-Butadiene	25	11	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	0.93	0.35	Trichloroethene	2.8	0.51
Ethanol	38	20	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	15	8.8	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	9.2	4.2	Toluene	3.7	0.98
Pentane	55	19	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	2,200 ve	400 ve	3-Hexanone	<14	<3.3
Acetone	170	70	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	1.0	0.36	Tetrachloroethene	3.1	0.46
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	2.1	0.52	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	19	6.6	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	4.8	1.1
Butanal	<9.7	<3.3	o-Xylene	1.6	0.37
Methylene chloride	470	140	Styrene	<2.8	<0.66
CFC-113	4.6 fb	0.60 fb	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	4.9	1.2	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	33	9.4	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.6	0.54	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	1.2	0.29	Naphthalene	0.74 fb	0.14 fb
1,1,1-Trichloroethane	23	4.1	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-9-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-07 1/3.3
Date Analyzed:	09/20/18	Data File:	091920.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	2.3	0.65	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	3.8	0.77	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	2.2 fb	0.41 fb
Ethanol	28	15	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	5.4	1.4
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	6.1	1.1	3-Hexanone	<14	<3.3
Acetone	48	20	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	3.6	0.53
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	2.6	0.59
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	10	2.3
Butanal	<9.7	<3.3	o-Xylene	3.0	0.70
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	13	3.8	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	3.0	0.61	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	1.6 fb	0.31 fb
1,1,1-Trichloroethane	<1.8	<0.33	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-4-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-08 1/3.3
Date Analyzed:	09/20/18	Data File:	091921.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	1.5	0.42	1-Butanol	54	18
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	17	3.5	Benzene	1.1	0.34
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	34	19	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	6.8	1.3
Ethanol	46	24	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	1.7 fb	0.44 fb
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	150	27	3-Hexanone	<14	<3.3
Acetone	130	56	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	5.3	0.78
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	13	3.6	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.5	0.51	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.71 fb	0.14 fb
1,1,1-Trichloroethane	4.0	0.73	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-6-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-09 1/3.3
Date Analyzed:	09/20/18	Data File:	091922.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	101	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	1.8	0.52	1-Butanol	<20	<6.6
Propene	470 ve	280 ve	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	74	15	Benzene	20	6.2
Chloromethane	3.2	1.5	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	700 ve	310 ve	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	0.96	0.21
1,3-Butadiene	29	13	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	1.1	0.41	Trichloroethene	2.8	0.53
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	15	8.9	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	11	5.2	Toluene	17	4.4
Pentane	240	80	1,1,2-Trichloroethane	0.27 fb	0.049 fb
Trichlorofluoromethane	1,100 ve	190 ve	3-Hexanone	<14	<3.3
Acetone	210	89	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	7.3	2.6	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	1.6	0.40	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	7.7	1.8
Cyclopentane	20	7.0	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	14	3.1
Butanal	<9.7	<3.3	o-Xylene	4.9	1.1
Methylene chloride	<290	<82	Styrene	3.4	0.81
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	1.4	0.35	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	100	29	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.1	0.43	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	11	3.7	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	1.1	0.26	Naphthalene	0.88 fb	0.17 fb
1,1,1-Trichloroethane	11	2.0	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-8-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-10 1/3.3
Date Analyzed:	09/20/18	Data File:	091923.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	11	3.1	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	57	12	Benzene	26	8.0
Chloromethane	4.0	1.9	Cyclohexane	36	10
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	1,200 ve	510 ve	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	0.92	0.36	1,2-Dichloropropane	2.9	0.62
1,3-Butadiene	47	21	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	3.9	1.5	Trichloroethene	4.4	0.81
Ethanol	32	17	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	39	23	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	25	12	Toluene	24	6.5
Pentane	470	160	1,1,2-Trichloroethane	0.83	0.15
Trichlorofluoromethane	960 ve	170 ve	3-Hexanone	<14	<3.3
Acetone	1,300 ve	540 ve	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	16	5.6	Tetrachloroethene	5.4	0.80
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	3.0	0.76	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	15	3.4
Cyclopentane	72	25	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	22	7.7	m,p-Xylene	13	3.1
Butanal	<9.7	<3.3	o-Xylene	8.3	1.9
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	9.4	1.2	Bromoform	<6.8	<0.66
Carbon disulfide	27	8.7	Benzyl chloride	0.29 fb	0.056 fb
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	9.2	2.3	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	79	22	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	4.7	0.96	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	21	7.1	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	2.2	0.54	Naphthalene	1.5 fb	0.29 fb
1,1,1-Trichloroethane	20	3.6	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-10-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-11 1/3.3
Date Analyzed:	09/20/18	Data File:	091924.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	5.0	1.4	1-Butanol	59	20
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	7.8	1.6	Benzene	<1.1	<0.33
Chloromethane	0.88	0.43	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	160	91	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	0.088 fb	0.040 fb	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	<0.89	<0.16
Ethanol	41	22	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	1.6 fb	0.43 fb
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	120	21	3-Hexanone	<14	<3.3
Acetone	30	13	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	14	3.9	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	3.7	0.77	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	1.1 fb	0.20 fb
1,1,1-Trichloroethane	<1.8	<0.33	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-14-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-12 1/3.3
Date Analyzed:	09/20/18	Data File:	091925.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	2.9	0.82	1-Butanol	21	7.0
Propene	<2.3	<1.3	Carbon tetrachloride	62	9.9
Dichlorodifluoromethane	59	12	Benzene	3.6	1.1
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	410 ve	180 ve	3-Pentanone	<12	<3.3
Acetaldehyde	110	59	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	16	7.2	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	94	18
Ethanol	71	38	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	14	8.2	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	16	7.6	Toluene	9.3	2.5
Pentane	260	87	1,1,2-Trichloroethane	4.9	0.89
Trichlorofluoromethane	13	2.3	3-Hexanone	<14	<3.3
Acetone	99	42	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	47	17	Tetrachloroethene	31	4.6
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	10	2.6	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	1.6	0.36
Cyclopentane	28	9.7	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	4.4	1.0
Butanal	<9.7	<3.3	o-Xylene	2.2	0.50
Methylene chloride	300	86	Styrene	<2.8	<0.66
CFC-113	18	2.3	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	2.4	0.59	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	120	34	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	4.3	0.87	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.13 fb	0.033 fb	Naphthalene	1.1 fb	0.20 fb
1,1,1-Trichloroethane	6.9	1.3	Hexachlorobutadiene	2.6	0.24

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-13-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-13 1/3.3
Date Analyzed:	09/20/18	Data File:	091926.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	7.0	2.0	1-Butanol	100	33
Propene	<2.3	<1.3	Carbon tetrachloride	6.2	0.99
Dichlorodifluoromethane	6.5	1.3	Benzene	<1.1	<0.33
Chloromethane	2.0	0.98	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	0.095 fb	0.043 fb	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	6.5	1.2
Ethanol	82	44	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	1.4 fb	0.38 fb
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	45	8.1	3-Hexanone	<14	<3.3
Acetone	44	18	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	7.6	1.1
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	2,200 ve	630 ve	Styrene	<2.8	<0.66
CFC-113	3.3	0.43	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	38	11	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	5.2	1.1	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.54 fb	0.10 fb
1,1,1-Trichloroethane	2.1 fb	0.39 fb	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-11-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-14 1/4.2
Date Analyzed:	09/20/18	Data File:	091929.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	102	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	4.0	1.1	1-Butanol	<25	<8.4
Propene	<2.9	<1.7	Carbon tetrachloride	<2.6	<0.42
Dichlorodifluoromethane	6.0	1.2	Benzene	11	3.4
Chloromethane	<0.87	<0.42	Cyclohexane	31 fb	9.1 fb
F-114	<2.9	<0.42	2-Pentanone	<15	<4.2
Isobutene	95	41	3-Pentanone	<15	<4.2
Acetaldehyde	320	180	Pentanal	<15	<4.2
Vinyl chloride	<1.1	<0.42	1,2-Dichloropropane	<0.97	<0.21
1,3-Butadiene	3.9	1.8	1,4-Dioxane	<1.5	<0.42
Bromomethane	<6.5	<1.7	Bromodichloromethane	3.2	0.48
Chloroethane	<1.1	<0.42	Trichloroethene	28	5.2
Ethanol	55	29	cis-1,3-Dichloropropene	<1.9	<0.42
Acetonitrile	<7.1	<4.2	4-Methyl-2-pentanone	<17	<4.2
Acrolein	<3.9	<1.7	trans-1,3-Dichloropropene	<1.9	<0.42
Acrylonitrile	<0.91	<0.42	Toluene	25	6.5
Pentane	77	26	1,1,2-Trichloroethane	3.8	0.69
Trichlorofluoromethane	5.9	1.0	3-Hexanone	<17	<4.2
Acetone	<20	<8.4	2-Hexanone	<17	<4.2
2-Propanol	<36	<15	Hexanal	<17	<4.2
Isoprene	1.2	0.44	Tetrachloroethene	14	2.1
Iodomethane	<2.4	<0.42	Dibromochloromethane	<0.36	<0.042
1,1-Dichloroethene	6.8	1.7	1,2-Dibromoethane (EDB)	<0.32	<0.042
Methacrolein	<12	<4.2	Chlorobenzene	<1.9	<0.42
trans-1,2-Dichloroethene	2.0	0.50	Ethylbenzene	3.3	0.77
Cyclopentane	<1.2	<0.42	1,1,2,2-Tetrachloroethane	<0.58	<0.084
Methyl vinyl ketone	<12	<4.2	m,p-Xylene	10	2.3
Butanal	<12	<4.2	o-Xylene	8.7	2.0
Methylene chloride	<360	<100	Styrene	<3.6	<0.84
CFC-113	12	1.6	Bromoform	<8.7	<0.84
Carbon disulfide	<26	<8.4	Benzyl chloride	0.63	0.12
Methyl t-butyl ether (MTBE)	<7.6	<2.1	1,3,5-Trimethylbenzene	<10	<2.1
Vinyl acetate	<30	<8.4	1,2,4-Trimethylbenzene	<10	<2.1
1,1-Dichloroethane	7.5	1.9	1,3-Dichlorobenzene	<2.5	<0.42
cis-1,2-Dichloroethene	4.5	1.1	1,4-Dichlorobenzene	<1	<0.17
Hexane	33	9.4	1,2,3-Trimethylbenzene	<10	<2.1
Chloroform	0.45	0.092	1,2-Dichlorobenzene	<2.5	<0.42
2-Butanone (MEK)	<12	<4.2	1,2,4-Trichlorobenzene	<3.1	<0.42
1,2-Dichloroethane (EDC)	0.27	0.067	Naphthalene	1.7 fb	0.33 fb
1,1,1-Trichloroethane	9.1	1.7	Hexachlorobutadiene	0.90 fb	0.084 fb

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-12-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-15 1/3.3
Date Analyzed:	09/20/18	Data File:	091927.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	2.3	0.65	1-Butanol	<20	<6.6
Propene	2.7	1.6	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	4.3	0.88	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	0.088	0.040	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	1.5 fb	0.28 fb
Ethanol	43	23	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	2.3	0.60
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	33	5.9	3-Hexanone	<14	<3.3
Acetone	25	11	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	3.0	0.44
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	2.9	0.67
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	3.7	0.75	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	1.1 fb	0.21 fb
1,1,1-Trichloroethane	2.1 fb	0.38 fb	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/19/18	Lab ID:	08-2081 mb
Date Analyzed:	09/19/18	Data File:	091911.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<0.35	<0.1	1-Butanol	<6.1	<2
Propene	<0.69	<0.4	Carbon tetrachloride	<0.63	<0.1
Dichlorodifluoromethane	<0.49	<0.1	Benzene	<0.32	<0.1
Chloromethane	<0.21	<0.1	Cyclohexane	<6.9	<2
F-114	<0.7	<0.1	2-Pentanone	<3.5	<1
Isobutene	<0.92	<0.4	3-Pentanone	<3.5	<1
Acetaldehyde	<9	<5	Pentanal	<3.5	<1
Vinyl chloride	<0.26	<0.1	1,2-Dichloropropane	<0.23	<0.05
1,3-Butadiene	<0.022	<0.01	1,4-Dioxane	<0.36	<0.1
Bromomethane	<1.6	<0.4	Bromodichloromethane	<0.067	<0.01
Chloroethane	<0.26	<0.1	Trichloroethene	<0.27	<0.05
Ethanol	<7.5	<4	cis-1,3-Dichloropropene	<0.45	<0.1
Acetonitrile	<1.7	<1	4-Methyl-2-pentanone	<4.1	<1
Acrolein	<0.92	<0.4	trans-1,3-Dichloropropene	<0.45	<0.1
Acrylonitrile	<0.22	<0.1	Toluene	<0.38	<0.1
Pentane	<3	<1	1,1,2-Trichloroethane	<0.055	<0.01
Trichlorofluoromethane	<0.56	<0.1	3-Hexanone	<4.1	<1
Acetone	<4.8	<2	2-Hexanone	<4.1	<1
2-Propanol	<8.6	<3.5	Hexanal	<4.1	<1
Isoprene	<0.28	<0.1	Tetrachloroethene	<0.68	<0.1
Iodomethane	<0.58	<0.1	Dibromochloromethane	<0.085	<0.01
1,1-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methacrolein	<2.9	<1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Cyclopentane	<0.29	<0.1	1,1,2,2-Tetrachloroethane	<0.14	<0.02
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	<0.87	<0.2
Butanal	<2.9	<1	o-Xylene	<0.43	<0.1
Methylene chloride	<87	<25	Styrene	<0.85	<0.2
CFC-113	<0.77	<0.1	Bromoform	<2.1	<0.2
Carbon disulfide	<6.2	<2	Benzyl chloride	<0.052	<0.01
Methyl t-butyl ether (MTBE)	<1.8	<0.5	1,3,5-Trimethylbenzene	<2.5	<0.5
Vinyl acetate	<7	<2	1,2,4-Trimethylbenzene	<2.5	<0.5
1,1-Dichloroethane	<0.4	<0.1	1,3-Dichlorobenzene	<0.6	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	1,4-Dichlorobenzene	<0.24	<0.04
Hexane	<3.5	<1	1,2,3-Trimethylbenzene	<2.5	<0.5
Chloroform	<0.049	<0.01	1,2-Dichlorobenzene	<0.6	<0.1
2-Butanone (MEK)	<2.9	<1	1,2,4-Trichlorobenzene	<0.74	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01	Naphthalene	0.14 lc	0.026 lc
1,1,1-Trichloroethane	<0.55	<0.1	Hexachlorobutadiene	<0.21	<0.02

Date of Report: 09/28/18
Date Received: 09/12/18
Project: Ave 55-Taylor Way, F&BI 809188

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD APH

Laboratory Code: 809150-01 1/5 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	3,400	3,300	3
APH EC9-12 aliphatics	ug/m3	1,000	1,000	0
APH EC9-10 aromatics	ug/m3	300	320	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	45	80	70-130
APH EC9-12 aliphatics	ug/m3	45	116	70-130
APH EC9-10 aromatics	ug/m3	45	94	70-130

Date of Report: 09/28/18
Date Received: 09/12/18
Project: Ave 55-Taylor Way, F&BI 809188

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chlorodifluoromethane	ppbv	5	114	70-130
Propene	ppbv	5	101	70-130
Dichlorodifluoromethane	ppbv	5	108	70-130
Chloromethane	ppbv	5	102	70-130
F-114	ppbv	5	111	70-130
Isobutene	ppbv	5	105	70-130
Acetaldehyde	ppbv	5	124	70-130
Vinyl chloride	ppbv	5	107	70-130
1,3-Butadiene	ppbv	5	116	70-130
Bromomethane	ppbv	5	118	70-130
Chloroethane	ppbv	5	104	70-130
Ethanol	ppbv	5	91	70-130
Acetonitrile	ppbv	5	98	70-130
Acrolein	ppbv	5	103	70-130
Acrylonitrile	ppbv	5	123	70-130
Pentane	ppbv	5	107	70-130
Trichlorofluoromethane	ppbv	5	111	70-130
Acetone	ppbv	5	102	70-130
2-Propanol	ppbv	5	111	70-130
Isoprene	ppbv	5	110	70-130
Iodomethane	ppbv	5	107	70-130
1,1-Dichloroethene	ppbv	5	108	70-130
Methacrolein	ppbv	5	102	70-130
trans-1,2-Dichloroethene	ppbv	5	108	70-130
Cyclopentane	ppbv	5	112	70-130
Methyl vinyl ketone	ppbv	5	120	70-130
Butanal	ppbv	5	97	70-130
Methylene chloride	ppbv	5	82	70-130
CFC-113	ppbv	5	107	70-130
Carbon disulfide	ppbv	5	100	70-130
Methyl t-butyl ether (MTBE)	ppbv	5	111	70-130
Vinyl acetate	ppbv	5	106	70-130
1,1-Dichloroethane	ppbv	5	111	70-130
cis-1,2-Dichloroethene	ppbv	5	106	70-130
Hexane	ppbv	5	115	70-130
Chloroform	ppbv	5	113	70-130
2-Butanone (MEK)	ppbv	5	109	70-130
1,2-Dichloroethane (EDC)	ppbv	5	113	70-130
1,1,1-Trichloroethane	ppbv	5	115	70-130

Date of Report: 09/28/18
Date Received: 09/12/18
Project: Ave 55-Taylor Way, F&BI 809188

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
1-Butanol	ppbv	5	96	70-130
Carbon tetrachloride	ppbv	5	108	70-130
Benzene	ppbv	5	110	70-130
Cyclohexane	ppbv	5	103	70-130
2-Pentanone	ppbv	5	106	70-130
3-Pentanone	ppbv	5	113	70-130
Pentanal	ppbv	5	94	70-130
1,2-Dichloropropane	ppbv	5	103	70-130
1,4-Dioxane	ppbv	5	111	70-130
Bromodichloromethane	ppbv	5	110	70-130
Trichloroethene	ppbv	5	101	70-130
cis-1,3-Dichloropropene	ppbv	5	99	70-130
4-Methyl-2-pentanone	ppbv	5	96	70-130
trans-1,3-Dichloropropene	ppbv	5	105	70-130
Toluene	ppbv	5	98	70-130
1,1,2-Trichloroethane	ppbv	5	104	70-130
3-Hexanone	ppbv	5	101	70-130
2-Hexanone	ppbv	5	100	70-130
Hexanal	ppbv	5	98	70-130
Tetrachloroethene	ppbv	5	101	70-130
Dibromochloromethane	ppbv	5	119	70-130
1,2-Dibromoethane (EDB)	ppbv	5	111	70-130
Chlorobenzene	ppbv	5	106	70-130
Ethylbenzene	ppbv	5	109	70-130
1,1,2,2,-Tetrachloroethane	ppbv	5	118	70-130
m,p-Xylene	ppbv	10	116	70-130
o-Xylene	ppbv	5	123	70-130
Styrene	ppbv	5	109	70-130
Bromoform	ppbv	5	114	70-130
Benzyl chloride	ppbv	5	126	70-130
1,3,5-Trimethylbenzene	ppbv	5	110	70-130
1,2,4-Trimethylbenzene	ppbv	5	105	70-130
1,3-Dichlorobenzene	ppbv	5	114	70-130
1,4-Dichlorobenzene	ppbv	5	124	70-130
1,2,3-Trimethylbenzene	ppbv	5	107	70-130
1,2-Dichlorobenzene	ppbv	5	117	70-130
1,2,4-Trichlorobenzene	ppbv	5	101	70-130
Naphthalene	ppbv	5	100	70-130
Hexachloro-1,3-butadiene	ppbv	5	108	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

809188

SAMPLE CHAIN OF CUSTODY

ME 09-12-18

~~Page~~ # 1 of 3

Report To Tom Colligan
Company Floyd Snider
Address 601 Union St, Suite 600
City, State, ZIP Seattle, WA 98101
Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*)	Kora, Gabe
PROJECT NAME	Ave 55-Taylor way
PO #	
REPORTING LEVEL	☐ Indoor Air ☑ Sub Slab/Soil Gas ☐ Deep Soil Gas ☐ SVE/Grab
INVOICE TO	Tom Colligan

TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☑ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	APH (MA-APH)	Helium		Notes
VP-1-091218	01	3252	31	9/12/18	30	0919	4.5	0926	X	X	X		*See table 3 for full
VP-2-091218	02	3378	02	↓	30	0957	4.5	1010 ~~1000~~	↓	↓	↓		list of VOCs
VP-2-091218 Dup	03	3258	102		30	0957	4.5	1005 ~~1010~~					
VP-3-091218	04	2301	106		30	10:47	4.5	10:51					↓
~~VP-4-091218~~	—	~~3672~~	~~256~~										
VP-5-091218	05	2435	07		29.5	11:46	4.5 ~~11:50~~	11:50					
VP-7-091218	06	3251	109		28.5	12:28	4.5	12:32					
VP-9-091218	07	2297	231	↓	30	13:36	4.5 ~~13:4~~	13:42	↓	↓	↓		↓

Samples received at 21 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd Snider	9/12/18	1720
Received by:	[illegible]	FB	9/12/18	1720
Relinquished by:				
Received by:				

FORMS\COC\COCTO-15.DOC

809188

SAMPLE CHAIN OF CUSTODY

ME 09-12-18

Page # 2 of 3

Report To Tom Colligan
Company Floyd Snider
Address 601 Union St, Suite 600
City, State, ZIP Seattle, WA 98101
Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*) Kara, Gabe

PROJECT NAME Ave 55-Taylor Way

PO #

REPORTING LEVEL
☐ Indoor Air
☑ Sub Slab/Soil Gas
☐ Deep Soil Gas
☐ SVE/Grab

INVOICE TO Tom Colligan

TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☑ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	APH (MA-APH) ~~TO-15 BTEXN~~	Helium ~~TO-15 cVOCs~~		Notes
VP-4-091218	08	3672	256	9/12/18	28	1117	4.5	1121	X	X	X		*See table 3 for full
VP-6-091218	09	2300	108	9/12/18	30	1206	4.5	1210					list of VOCs
VP-8-091218	10	3669	105	9/12	29.5	1235	4.5	1239					
VP-10-091218	11	3386	01	9/12	30	1353	~~4.5~~ 7.0	1400					
VP-14-091218	12	2298	201	9/12	29.5	1442	4.5	1448					
~~VP-13~~ VP-13-091218	13	3289	101	9/12	29.5	1522	~~1527~~ 4.5	1527					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabriel Cisneros	Floyd Snider	9/12/18	1720
Received by:	Eric Young	FeB	9/12/18	1722
Relinquished by:				
Received by:				

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809188

SAMPLE CHAIN OF CUSTODY

ME 09-12-18

Page # 3 of 3

Report To Tom Colligan

Company Floyd Snider

Address 601 Union St, Suite 600

City, State, ZIP Seattle, WA 98101

Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*) Kera, Gabe

PROJECT NAME Ave 55 - Taylor Way

PO #

REPORTING LEVEL
☐ Indoor Air ☑ Sub Slab/Soil Gas ☐ Deep Soil Gas ☐ SVE/Grab

INVOICE TO Tom Colligan

TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☑ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	APH (MA-APH) ~~TO-15 BTEXN~~	Helium ~~TO-15 cVOCs~~	Archive	Notes
VP-11-091218	14	3677	257	9/12/18	28.7	14:28	4.5	14:37	X	X	X		* See table 3 for full list of VOCs
VP-12-091218	15	2437	03	↓	29.1 ~~28.7~~	15:09	4.5	15:15	↓	↓	↓		↓
VP-2B-091218	16	3674	111	↓	29.5	15:54 ~~15:56~~	4.5	16:03	~~↓~~	~~↓~~	~~↓~~	X	HOLD ANALYSIS

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd Snider	9/12/18	1720
Received by:	[illegible]	F&B	9/12/18	1720
Relinquished by:				
Received by:				

FORMS\COC\COCTO-15.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 8, 2018

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the additional results from the testing of material submitted on September 12, 2018 from the Ave 55-Taylor Way, F&BI 809188 project. There are 5 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS1008R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 12, 2018 by Friedman & Bruya, Inc. from the Floyd-Snider Ave 55-Taylor Way, F&BI 809188 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
809188 -01	VP-1-091218
809188 -02	VP-2-091218
809188 -03	VP-2-091218 Dup
809188 -04	VP-3-091218
809188 -05	VP-5-091218
809188 -06	VP-7-091218
809188 -07	VP-9-091218
809188 -08	VP-4-091218
809188 -09	VP-6-091218
809188 -10	VP-8-091218
809188 -11	VP-10-091218
809188 -12	VP-14-091218
809188 -13	VP-13-091218
809188 -14	VP-11-091218
809188 -15	VP-12-091218
809188 -16	VP-2B-091218

All quality control requirements were acceptable.

Date of Report: 10/08/18
Date Received: 09/12/18
Project: Ave 55-Taylor Way, F&BI 809188
Date Extracted: 10/02/18
Date Analyzed: 10/02/18

RESULTS FROM THE ANALYSIS OF AIR SAMPLES FOR HELIUM USING METHOD ASTM D1946

Results Reported as % Helium

Sample ID Laboratory ID	Helium
VP-1-091218 809188-01	<0.6
VP-2-091218 809188-02	<0.6
VP-2-091218 Dup 809188-03	<0.6
VP-3-091218 809188-04	<0.6
VP-5-091218 809188-05	<0.6
VP-7-091218 809188-06	<0.6
VP-9-091218 809188-07	<0.6
VP-4-091218 809188-08	<0.6
VP-6-091218 809188-09	<0.6
VP-8-091218 809188-10	<0.6
VP-10-091218 809188-11	<0.6
VP-14-091218 809188-12	<0.6

Date of Report: 10/08/18
Date Received: 09/12/18
Project: Ave 55-Taylor Way, F&BI 809188
Date Extracted: 10/02/18
Date Analyzed: 10/02/18

RESULTS FROM THE ANALYSIS OF AIR SAMPLES FOR HELIUM USING METHOD ASTM D1946

Results Reported as % Helium

Sample ID Laboratory ID	Helium
VP-13-091218 809188-13	<0.6
VP-11-091218 809188-14	<0.6
VP-12-091218 809188-15	<0.6
Method Blank	<0.6

Date of Report: 10/08/18
Date Received: 09/12/18
Project: Ave 55-Taylor Way, F&BI 809188

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR HELIUM
USING METHOD ASTM D1946

Laboratory Code: 809188-13 (Duplicate)

Analyte	Sample Result (%)	Duplicate Result (%)	Relative Percent Difference	Acceptance Criteria
Helium	<0.6	<0.6	nm	0-50

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

809188

SAMPLE CHAIN OF CUSTODY

ME 09-12-18 Page # 1 of 3

Report To Tom Colligan
Company Floyd Snider
Address 601 Union St, Suite 600
City, State, ZIP Seattle, WA 98101
Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (signature) Kora, Gabe
PROJECT NAME Ave 55 - Taylor way
PO #
REPORTING LEVEL
☐ Indoor Air ☑ Sub Slab/Soil Gas ☐ Deep Soil Gas ☐ SVE/Grab
INVOICE TO Tom Colligan

TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☑ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	APH (MA-APH) ~~TO15 BTEXN~~	Helium ~~TO15 cVOCs~~		Notes
VP-1-091218	01	3252	31	9/12/18	30	0919	4.5	0926	X	X	X		*See table 3 for full
VP-2-091218	02	3378	02	↓	30	0957	4.5	1010 ~~1010~~	↓	↓	↓		list of VOCs
VP-2-091218 Dup	03	3258	102		30	0957	4.5	1005 ~~1010~~					
VP-3-091218	04	2301	106		30	10:47	4.5	10:51					↓
~~VP-4-091218~~		~~3692~~	~~256~~										
VP-5-091218	05	2435	07		29.5	11:46	4.5 ~~11:50~~	11:50					
VP-7-091218	06	3251	109		28.5	12:28	4.5	12:32					
VP-9-091218	07	2297	231	↓	30	13:36	4.5 ~~13:4~~	13:42	↓	↓	↓		↓

Samples received at 21 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Gabe Cisneros	Floyd Snider	9/12/18	1720
Received by:		[illegible]	F&B	9/12/18	1720
Relinquished by:					
Received by:					

FORMS\COC\COCTO-15.DOC

809188

SAMPLE CHAIN OF CUSTODY

ME 09-12-18

Page # 2 of 3

Report To Tom Colligan

Company Floyd Snider

Address 601 Union St, Suite 600

City, State, ZIP Seattle, WA 98101

Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*) Kara, Gabe

PROJECT NAME Ave 55-Taylor Way

PO #

REPORTING LEVEL
☐ Indoor Air
☑ Sub Slab/Soil Gas
☐ Deep Soil Gas
☐ SVE/Grab

INVOICE TO Tom Colligan

TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☑ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	APH (MA-APH) ~~TO-15 BTEXN~~	Helium ~~TO-15 cVOCs~~		Notes
VP-4-091218	08	3672	256	9/12/18	28	1117	4.5	1121	X	X	X		*See table 3 for full
VP-6-091218	09	2300	108	9/12/18	30	1206	4.5	1210	↓	↓	↓		list of VOCs
VP-8-091218	10	3669	105	9/12	29.5	1235	4.5	1239	↓	↓	↓		↓
VP-10-091218	11	3386	01	9/12	30	1353	7.0 ~~4.5~~	1400	↓	↓	↓		↓
VP-14-091218	12	2298	201	9/12	29.5	1442	4.5	1448	↓	↓	↓		↓
VP-13-091218	13	3289	101	9/12	29.5	1522	4.5 ~~1527~~	1527	↓	↓	↓		↓

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabriel Cisneros	Floyd Snider	9/12/18	1720
Received by:	Eric Young	FeB	9/12/18	1722
Relinquished by:				
Received by:				

809188

SAMPLE CHAIN OF CUSTODY

ME 09-12-18

Page # 3 of 3

Report To Tom Colligan
Company Floyd Snider
Address 601 Union St, Suite 600
City, State, ZIP Seattle, WA 98101
Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*) Kera, Gabe

PROJECT NAME	PO #
Ave 55-Taylor Way	

REPORTING LEVEL		INVOICE TO
☐ Indoor Air	☐ Deep Soil Gas	Tom Colligan
☑ Sub Slab/Soil Gas	☐ SVE/Grab	

TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☑ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	APH (MA-APH) ~~TO-15 BTEXN~~	Helium ~~TO-15 cVOCs~~	Archive	Notes
VP-11-091218	14	3677	257	9/12/18	28.7	14:28	4.5	14:37	X	X	X		* See table 3 for full list of VOCs
VP-12-091218	15	2437	03	↓	29.1 ~~28.7~~	15:09	4.5	15:15	↓	↓	↓		↓
VP-2B-091218	16	3674	111	↓	29.5	15:54 ~~15:56~~	4.5	16:03	~~↓~~	~~↓~~	~~↓~~	X	HOLD ANALYSIS

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd Snider	9/12/18	1720
Received by:	Eric Young	F&B	9/12/18	1720
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

November 7, 2018

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on October 24, 2018 from the Taylor Way-Ave 55, F&BI 810462 project. There are 25 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS1107R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 24, 2018 by Friedman & Bruya, Inc. from the Floyd-Snider Taylor Way-Ave 55, F&BI 810462 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
810462 -01	VP-2-102418
810462 -02	VP-1-102418
810462 -03	VP-1-102418 Dup
810462 -04	VP-3-102418
810462 -05	VP-5-102418
810462 -06	VP-8-102418
810462 -07	VP-11-102418
810462 -08	VP-9-102418
810462 -09	VP-4-102418
810462 -10	VP-6-102418
810462 -11	VP-7-102418
810462 -12	VP-12-102418
810462 -13	VP-13-102418
810462 -14	VP-14-102418
810462 -15	VP-10-102418
810462 -16	VP-LB-102418

Naphthalene was detected in the TO-15 method blank at a level greater than one tenth the concentration detected in the samples. The data were flagged accordingly.

Several compounds exceeded the calibration range of the instrument. The data were flagged accoridngly.

An 8270D internal standard failed the acceptance criteria for sample VP-3-102418 due to matrix interferences. The data were flagged accordingly. The sample was diluted and reanalyzed.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-2-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-01 1/3.3
Date Analyzed:	10/26/18	Data File:	102608.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	47	9.6	Benzene	8.4	2.6
Chloromethane	2.6	1.3	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	140	60	3-Pentanone	<12	<3.3
Acetaldehyde	<270	<150	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	1.3	0.29
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	2.4	0.89	Trichloroethene	0.90	0.17
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	7.1	1.9
Pentane	120	40	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	180	32	3-Hexanone	<14	<3.3
Acetone	<16	<6.6	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	4.8	1.7	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	2.2	0.50
Cyclopentane	32	11	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	4.6	1.1
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	3.1	0.77	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	52	15	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.6	0.54	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.52	0.13	Naphthalene	0.35 fb	0.066 fb
1,1,1-Trichloroethane	9.2	1.7	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-1-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-02 1/3.3
Date Analyzed:	10/26/18	Data File:	102609.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	111	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	75	15	Benzene	5.0	1.6
Chloromethane	3.0	1.4	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	840 ve	370 ve	3-Pentanone	<12	<3.3
Acetaldehyde	110	62	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	2.5	0.55
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	3.5	1.3	Trichloroethene	6.6	1.2
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	11	2.8
Pentane	150	50	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	410	73	3-Hexanone	<14	<3.3
Acetone	500 ve	210 ve	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	8.0	2.9	Tetrachloroethene	11	1.6
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	1.8	0.47	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	6.7	1.6
Cyclopentane	22	7.7	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	19	4.3
Butanal	<9.7	<3.3	o-Xylene	8.1	1.9
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	23	4.7
1,1-Dichloroethane	5.0	1.2	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	52	15	1,2,3-Trimethylbenzene	8.5	1.7
Chloroform	3.5	0.72	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	3.2	0.78	Naphthalene	5.5	1.0
1,1,1-Trichloroethane	9.2	1.7	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-1-102418 Dup	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-03 1/3.3
Date Analyzed:	10/26/18	Data File:	102610.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	111	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	72	15	Benzene	4.9	1.5
Chloromethane	2.6	1.3	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	830 ve	360 ve	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	2.5	0.53
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	3.6	1.3	Trichloroethene	8.4	1.6
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	12	3.3
Pentane	150	50	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	390	69	3-Hexanone	<14	<3.3
Acetone	490 ve	210 ve	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	8.8	3.2	Tetrachloroethene	11	1.6
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	1.8	0.45	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	6.7	1.5
Cyclopentane	23	7.8	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	18	4.2
Butanal	<9.7	<3.3	o-Xylene	8.0	1.8
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	0.55	0.11
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	24	4.9
1,1-Dichloroethane	5.1	1.3	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	53	15	1,2,3-Trimethylbenzene	9.0	1.8
Chloroform	3.9	0.81	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	2.9	0.73	Naphthalene	3.6	0.69
1,1,1-Trichloroethane	8.8	1.6	Hexachlorobutadiene	<0.7	<0.066

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-3-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	11/24/18	Lab ID:	810462-04 1/3.3
Date Analyzed:	10/26/18	Data File:	102611.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	96	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	<1.2 J	<0.33 J	1-Butanol	<20 J	<6.6 J
Propene	<2.3 J	<1.3 J	Carbon tetrachloride	<2.1 J	<0.33 J
Dichlorodifluoromethane	18 J	3.7 J	Benzene	<1.1 J	<0.33 J
Chloromethane	<0.68 J	<0.33 J	Cyclohexane	<23 J	<6.6 J
F-114	<2.3 J	<0.33 J	2-Pentanone	<12	<3.3
Isobutene	16 J	6.9 J	3-Pentanone	<12	<3.3
Acetaldehyde	<30 J	<16 J	Pentanal	<12	<3.3
Vinyl chloride	<0.84 J	<0.33 J	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073 J	<0.033 J	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1 J	<1.3 J	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87 J	<0.33 J	Trichloroethene	1.1	0.20
Ethanol	<25 J	<13 J	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5 J	<3.3 J	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3 J	<1.3 J	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72 J	<0.33 J	Toluene	2.3	0.61
Pentane	<9.7 J	<3.3 J	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	96 J	17 J	3-Hexanone	<14	<3.3
Acetone	21 J	8.8 J	2-Hexanone	<14	<3.3
2-Propanol	<28 J	<12 J	Hexanal	<14	<3.3
Isoprene	<0.92 J	<0.33 J	Tetrachloroethene	4.7	0.69
Iodomethane	<1.9 J	<0.33 J	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3J	<0.33 J	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5 J	<3.3 J	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3 J	<0.33 J	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95 J	<0.33 J	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5 J	<3.3 J	m,p-Xylene	<2.9	<0.66
Butanal	<9.7 J	<3.3 J	o-Xylene	<1.4	<0.33
Methylene chloride	<290 J	<82 J	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21 J	<6.6 J	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9 J	<1.6 J	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23 J	<6.6 J	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3 J	<0.33 J	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3 J	<0.33 J	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12 J	<3.3 J	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	0.32 J	0.066 J	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7 J	<3.3 J	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13 J	<0.033 J	Naphthalene	0.59 fb	0.11 fb
1,1,1-Trichloroethane	2.9 J	0.54 J	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-3-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-04 1/6.25
Date Analyzed:	11/03/18	Data File:	110225.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<2.2	<0.62	1-Butanol	<38	<12
Propene	<4.3	<2.5	Carbon tetrachloride	<3.9	<0.62
Dichlorodifluoromethane	23	4.6	Benzene	<2	<0.62
Chloromethane	<1.3	<0.62	Cyclohexane	<43	<12
F-114	<4.4	<0.62	2-Pentanone	<22	<6.2
Isobutene	17	7.4	3-Pentanone	<22	<6.2
Acetaldehyde	<56	<31	Pentanal	<22	<6.2
Vinyl chloride	<1.6	<0.62	1,2-Dichloropropane	<1.4	<0.31
1,3-Butadiene	<0.14	<0.062	1,4-Dioxane	<2.3	<0.62
Bromomethane	<9.7	<2.5	Bromodichloromethane	<0.42	<0.062
Chloroethane	<1.6	<0.62	Trichloroethene	3.0	0.56
Ethanol	<47	<25	cis-1,3-Dichloropropene	<2.8	<0.62
Acetonitrile	<10	<6.2	4-Methyl-2-pentanone	<26	<6.2
Acrolein	<5.7	<2.5	trans-1,3-Dichloropropene	<2.8	<0.62
Acrylonitrile	<1.4	<0.62	Toluene	4.0	1.0
Pentane	<18	<6.2	1,1,2-Trichloroethane	<0.34	<0.062
Trichlorofluoromethane	110	20	3-Hexanone	<26	<6.2
Acetone	<30	<12	2-Hexanone	<26	<6.2
2-Propanol	<54	<22	Hexanal	<26	<6.2
Isoprene	<1.7	<0.62	Tetrachloroethene	5.7	0.84
Iodomethane	<3.6	<0.62	Dibromochloromethane	<0.53	<0.062
1,1-Dichloroethene	<2.5	<0.62	1,2-Dibromoethane (EDB)	<0.48	<0.062
Methacrolein	<18	<6.2	Chlorobenzene	<2.9	<0.62
trans-1,2-Dichloroethene	<2.5	<0.62	Ethylbenzene	<2.7	<0.62
Cyclopentane	<1.8	<0.62	1,1,2,2-Tetrachloroethane	<0.86	<0.12
Methyl vinyl ketone	<18	<6.2	m,p-Xylene	<5.4	<1.2
Butanal	<18	<6.2	o-Xylene	<2.7	<0.62
Methylene chloride	<540	<160	Styrene	<5.3	<1.2
CFC-113	<4.8	<0.62	Bromoform	<13	<1.2
Carbon disulfide	<39	<12	Benzyl chloride	<0.32	<0.062
Methyl t-butyl ether (MTBE)	<11	<3.1	1,3,5-Trimethylbenzene	<15	<3.1
Vinyl acetate	<44	<12	1,2,4-Trimethylbenzene	<15	<3.1
1,1-Dichloroethane	<2.5	<0.62	1,3-Dichlorobenzene	<3.8	<0.62
cis-1,2-Dichloroethene	<2.5	<0.62	1,4-Dichlorobenzene	<1.5	<0.25
Hexane	<22	<6.2	1,2,3-Trimethylbenzene	<15	<3.1
Chloroform	0.46	0.094	1,2-Dichlorobenzene	<3.8	<0.62
2-Butanone (MEK)	<18	<6.2	1,2,4-Trichlorobenzene	<4.6	<0.62
1,2-Dichloroethane (EDC)	<0.25	<0.062	Naphthalene	0.75 fb	0.14 fb
1,1,1-Trichloroethane	3.7	0.68	Hexachlorobutadiene	<1.3	<0.12

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-5-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-05 1/3.3
Date Analyzed:	10/26/18	Data File:	102612.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	96	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	29	5.9	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	32	14	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	1.2	0.26
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	0.89	0.16
Ethanol	51	27	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	4.0	1.1
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	250	45	3-Hexanone	<14	<3.3
Acetone	35	15	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	3.3	0.77
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	0.47	0.096	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.50 fb	0.096 fb
1,1,1-Trichloroethane	6.4	1.2	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-8-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-06 1/3.3
Date Analyzed:	10/26/18	Data File:	102613.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	29	5.9	Benzene	8.8	2.8
Chloromethane	<0.68	<0.33	Cyclohexane	27	7.8
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	760 ve	330 ve	3-Pentanone	<12	<3.3
Acetaldehyde	<270	<150	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	1.8	0.39
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	2.4	0.91	Trichloroethene	6.9	1.3
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	12	3.2
Pentane	290	98	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	410	73	3-Hexanone	<14	<3.3
Acetone	550 ve	230 ve	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	18	6.4	Tetrachloroethene	2.9	0.42
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	2.3	0.58	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	3.9	0.90
Cyclopentane	74	26	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	4.8	1.1
Butanal	<9.7	<3.3	o-Xylene	2.2	0.50
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	6.9	0.90	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	7.2	1.8	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	40	11	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.1	0.44	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.89	0.22	Naphthalene	0.42 fb	0.079 fb
1,1,1-Trichloroethane	13	2.4	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-11-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-07 1/3.3
Date Analyzed:	10/26/18	Data File:	102614.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	102	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	3.6	0.72	Benzene	3.5	1.1
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	12	5.1	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	11	2.0
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	13	3.5
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	2.7	0.49	3-Hexanone	<14	<3.3
Acetone	25	10	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	3.8	0.56
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	1.5	0.37	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	1.8	0.42
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	6.1	1.4
Butanal	<9.7	<3.3	o-Xylene	2.6	0.59
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	2.9	0.38	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	2.7	0.66	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	<0.16	<0.033	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.50 fb	0.096 fb
1,1,1-Trichloroethane	<1.8	<0.33	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-9-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-08 1/3.3
Date Analyzed:	10/26/18	Data File:	102615.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	2.6	1.5	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	2.9	0.59	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	1.2	0.21
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	2.3	0.62
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	3.6	0.64	3-Hexanone	<14	<3.3
Acetone	17	7.1	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.0	0.40	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.40 fb	0.076 fb
1,1,1-Trichloroethane	<1.8	<0.33	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-4-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-09 1/3.3
Date Analyzed:	10/26/18	Data File:	102616.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	10	2.1	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	0.96	0.18
Ethanol	26	14	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	2.1	0.57
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	69	12	3-Hexanone	<14	<3.3
Acetone	43	18	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	2.2	0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	1.5	0.31	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.43 fb	0.082 fb
1,1,1-Trichloroethane	2.0	0.36	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-6-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-10 1/3.3
Date Analyzed:	10/26/18	Data File:	102617.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	101	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	450 ve	260 ve	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	140	28	Benzene	21	6.6
Chloromethane	<0.68	<0.33	Cyclohexane	25	7.4
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	960 ve	420 ve	3-Pentanone	<12	<3.3
Acetaldehyde	<270	<150	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	1.6	0.34
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	0.88	0.33	Trichloroethene	28	5.2
Ethanol	31	17	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	21	5.6
Pentane	380	130	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	2,000 ve	360 ve	3-Hexanone	<14	<3.3
Acetone	120	51	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	12	4.2	Tetrachloroethene	9.5	1.4
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	7.9	2.0	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	5.8	1.3
Cyclopentane	39	14	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	11	4.0	m,p-Xylene	9.1	2.1
Butanal	<9.7	<3.3	o-Xylene	2.9	0.68
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	8.2	1.1	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	3.8	0.93	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	110	33	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	3.1	0.64	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	1.2	0.31	Naphthalene	0.54 fb	0.10 fb
1,1,1-Trichloroethane	23	4.1	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-7-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-11 1/3.3
Date Analyzed:	10/26/18	Data File:	102618.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	77	16	Benzene	1.1	0.34
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	430 ve	190 ve	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	4.5	0.97
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	1.6	0.30
Ethanol	40	21	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	3.7	0.98
Pentane	43	15	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	1,700 ve	290 ve	3-Hexanone	<14	<3.3
Acetone	26	11	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	2.3	0.34
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	15	5.1	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	4.0	0.98	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	1.9	0.38	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.80	0.20	Naphthalene	0.47 fb	0.089 fb
1,1,1-Trichloroethane	19	3.4	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-12-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-12 1/3.3
Date Analyzed:	10/26/18	Data File:	102619.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	4.0	0.80	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	1.3	0.24
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	2.7	0.73
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	15 c	2.7 c	3-Hexanone	<14	<3.3
Acetone	18	7.6	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	1.3	0.27	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.45 fb	0.086 fb
1,1,1-Trichloroethane	<1.8	<0.33	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-13-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-13 1/3.3
Date Analyzed:	10/26/18	Data File:	102620.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	3.2 fb	1.8 fb	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	6.3	1.3	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	35	6.6
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	42	11
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	29	5.1	3-Hexanone	<14	<3.3
Acetone	23	9.8	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	8.0	1.2
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	8.9	2.2	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	2.6	0.60
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	6.8	1.6
Butanal	<9.7	<3.3	o-Xylene	2.6	0.60
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	15	2.0	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	3.8	0.95	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.3	0.48	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.13	0.033	Naphthalene	0.36 fb	0.069 fb
1,1,1-Trichloroethane	15	2.7	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-14-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-14 1/3.3
Date Analyzed:	10/26/18	Data File:	102621.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	101	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	2.8 fb	1.6 fb	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	62	12	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	7.4	1.4
Ethanol	49	26	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	38	9.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	34	9.1
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	12	2.2	3-Hexanone	<14	<3.3
Acetone	58	24	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	3.1	0.45
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	5.7	1.3
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	27	6.1
Butanal	<9.7	<3.3	o-Xylene	8.3	1.9
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	4.1	0.53	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	1.3	0.27	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	13	4.4	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.31	0.076	Naphthalene	2.3 fb	0.43 fb
1,1,1-Trichloroethane	3.3	0.61	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-10-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-15 1/3.3
Date Analyzed:	10/26/18	Data File:	102622.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	2.4 fb	1.4 fb	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	6.6	1.3	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	1.8	0.33
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	3.5	0.92
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	55	9.9	3-Hexanone	<14	<3.3
Acetone	19	8.1	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	1.6	0.34	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.45 fb	0.086 fb
1,1,1-Trichloroethane	<1.8	<0.33	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-LB-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-16 1/10
Date Analyzed:	11/03/18	Data File:	110226.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	18	5.1	1-Butanol	<61	<20
Propene	7.4 fb	4.3 fb	Carbon tetrachloride	<6.3	<1
Dichlorodifluoromethane	<4.9	<1	Benzene	<3.2	<1
Chloromethane	<2.1	<1	Cyclohexane	<69	<20
F-114	<7	<1	2-Pentanone	<35	<10
Isobutene	<9.2	<4	3-Pentanone	<35	<10
Acetaldehyde	<90	<50	Pentanal	<35	<10
Vinyl chloride	<2.6	<1	1,2-Dichloropropane	<2.3	<0.5
1,3-Butadiene	0.35	0.16	1,4-Dioxane	<3.6	<1
Bromomethane	<16	<4	Bromodichloromethane	<0.67	<0.1
Chloroethane	<2.6	<1	Trichloroethene	<2.7	<0.5
Ethanol	86	46	cis-1,3-Dichloropropene	<4.5	<1
Acetonitrile	<17	<10	4-Methyl-2-pentanone	<41	<10
Acrolein	<9.2	<4	trans-1,3-Dichloropropene	<4.5	<1
Acrylonitrile	<2.2	<1	Toluene	4.4	1.2
Pentane	<30	<10	1,1,2-Trichloroethane	<0.55	<0.1
Trichlorofluoromethane	<5.6	<1	3-Hexanone	<41	<10
Acetone	64	27	2-Hexanone	<41	<10
2-Propanol	<86	<35	Hexanal	<41	<10
Isoprene	13	4.5	Tetrachloroethene	<6.8	<1
Iodomethane	<5.8	<1	Dibromochloromethane	<0.85	<0.1
1,1-Dichloroethene	<4	<1	1,2-Dibromoethane (EDB)	<0.77	<0.1
Methacrolein	<29	<10	Chlorobenzene	<4.6	<1
trans-1,2-Dichloroethene	<4	<1	Ethylbenzene	<4.3	<1
Cyclopentane	<2.9	<1	1,1,2,2-Tetrachloroethane	<1.4	<0.2
Methyl vinyl ketone	<29	<10	m,p-Xylene	<8.7	<2
Butanal	<29	<10	o-Xylene	<4.3	<1
Methylene chloride	2,500 ve	730 ve	Styrene	<8.5	<2
CFC-113	<7.7	<1	Bromoform	<21	<2
Carbon disulfide	<62	<20	Benzyl chloride	<0.52	<0.1
Methyl t-butyl ether (MTBE)	<18	<5	1,3,5-Trimethylbenzene	<25	<5
Vinyl acetate	<70	<20	1,2,4-Trimethylbenzene	<25	<5
1,1-Dichloroethane	<4	<1	1,3-Dichlorobenzene	<6	<1
cis-1,2-Dichloroethene	<4	<1	1,4-Dichlorobenzene	<2.4	<0.4
Hexane	57	16	1,2,3-Trimethylbenzene	<25	<5
Chloroform	<0.49	<0.1	1,2-Dichlorobenzene	<6	<1
2-Butanone (MEK)	<29	<10	1,2,4-Trichlorobenzene	<7.4	<1
1,2-Dichloroethane (EDC)	<0.4	<0.1	Naphthalene	<1	<0.2
1,1,1-Trichloroethane	<5.5	<1	Hexachlorobutadiene	<2.1	<0.2

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	Not Applicable	Lab ID:	08-2396 mb
Date Analyzed:	10/26/18	Data File:	102605.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<0.35	<0.1	1-Butanol	<6.1	<2
Propene	<0.69	<0.4	Carbon tetrachloride	<0.63	<0.1
Dichlorodifluoromethane	<0.49	<0.1	Benzene	<0.32	<0.1
Chloromethane	<0.21	<0.1	Cyclohexane	<6.9	<2
F-114	<0.7	<0.1	2-Pentanone	<3.5	<1
Isobutene	<0.92	<0.4	3-Pentanone	<3.5	<1
Acetaldehyde	<9	<5	Pentanal	<3.5	<1
Vinyl chloride	<0.26	<0.1	1,2-Dichloropropane	<0.23	<0.05
1,3-Butadiene	<0.022	<0.01	1,4-Dioxane	<0.36	<0.1
Bromomethane	<1.6	<0.4	Bromodichloromethane	<0.067	<0.01
Chloroethane	<0.26	<0.1	Trichloroethene	<0.27	<0.05
Ethanol	<7.5	<4	cis-1,3-Dichloropropene	<0.45	<0.1
Acetonitrile	<1.7	<1	4-Methyl-2-pentanone	<4.1	<1
Acrolein	<0.92	<0.4	trans-1,3-Dichloropropene	<0.45	<0.1
Acrylonitrile	<0.22	<0.1	Toluene	<0.38	<0.1
Pentane	<3	<1	1,1,2-Trichloroethane	<0.055	<0.01
Trichlorofluoromethane	<0.56	<0.1	3-Hexanone	<4.1	<1
Acetone	<4.8	<2	2-Hexanone	<4.1	<1
2-Propanol	<8.6	<3.5	Hexanal	<4.1	<1
Isoprene	<0.28	<0.1	Tetrachloroethene	<0.68	<0.1
Iodomethane	<0.58	<0.1	Dibromochloromethane	<0.085	<0.01
1,1-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methacrolein	<2.9	<1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Cyclopentane	<0.29	<0.1	1,1,2,2-Tetrachloroethane	<0.14	<0.02
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	<0.87	<0.2
Butanal	<2.9	<1	o-Xylene	<0.43	<0.1
Methylene chloride	<87	<25	Styrene	<0.85	<0.2
CFC-113	<0.77	<0.1	Bromoform	<2.1	<0.2
Carbon disulfide	<6.2	<2	Benzyl chloride	<0.052	<0.01
Methyl t-butyl ether (MTBE)	<1.8	<0.5	1,3,5-Trimethylbenzene	<2.5	<0.5
Vinyl acetate	<7	<2	1,2,4-Trimethylbenzene	<2.5	<0.5
1,1-Dichloroethane	<0.4	<0.1	1,3-Dichlorobenzene	<0.6	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	1,4-Dichlorobenzene	<0.24	<0.04
Hexane	<3.5	<1	1,2,3-Trimethylbenzene	<2.5	<0.5
Chloroform	<0.049	<0.01	1,2-Dichlorobenzene	<0.6	<0.1
2-Butanone (MEK)	<2.9	<1	1,2,4-Trichlorobenzene	<0.74	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01	Naphthalene	<0.1	<0.02
1,1,1-Trichloroethane	<0.55	<0.1	Hexachlorobutadiene	<0.21	<0.02

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	Not Applicable	Lab ID:	08-2449 mb
Date Analyzed:	11/02/18	Data File:	110208.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<0.35	<0.1	1-Butanol	<6.1	<2
Propene	<0.69	<0.4	Carbon tetrachloride	<0.63	<0.1
Dichlorodifluoromethane	<0.49	<0.1	Benzene	<0.32	<0.1
Chloromethane	<0.21	<0.1	Cyclohexane	<6.9	<2
F-114	<0.7	<0.1	2-Pentanone	<3.5	<1
Isobutene	<0.92	<0.4	3-Pentanone	<3.5	<1
Acetaldehyde	<9	<5	Pentanal	<3.5	<1
Vinyl chloride	<0.26	<0.1	1,2-Dichloropropane	<0.23	<0.05
1,3-Butadiene	<0.022	<0.01	1,4-Dioxane	<0.36	<0.1
Bromomethane	<1.6	<0.4	Bromodichloromethane	<0.067	<0.01
Chloroethane	<0.26	<0.1	Trichloroethene	<0.27	<0.05
Ethanol	<7.5	<4	cis-1,3-Dichloropropene	<0.45	<0.1
Acetonitrile	<1.7	<1	4-Methyl-2-pentanone	<4.1	<1
Acrolein	<0.92	<0.4	trans-1,3-Dichloropropene	<0.45	<0.1
Acrylonitrile	<0.22	<0.1	Toluene	<0.38	<0.1
Pentane	<3	<1	1,1,2-Trichloroethane	<0.055	<0.01
Trichlorofluoromethane	<0.56	<0.1	3-Hexanone	<4.1	<1
Acetone	<4.8	<2	2-Hexanone	<4.1	<1
2-Propanol	<8.6	<3.5	Hexanal	<4.1	<1
Isoprene	<0.28	<0.1	Tetrachloroethene	<0.68	<0.1
Iodomethane	<0.58	<0.1	Dibromochloromethane	<0.085	<0.01
1,1-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methacrolein	<2.9	<1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Cyclopentane	<0.29	<0.1	1,1,2,2-Tetrachloroethane	<0.14	<0.02
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	<0.87	<0.2
Butanal	<2.9	<1	o-Xylene	<0.43	<0.1
Methylene chloride	<87	<25	Styrene	<0.85	<0.2
CFC-113	<0.77	<0.1	Bromoform	<2.1	<0.2
Carbon disulfide	<6.2	<2	Benzyl chloride	<0.052	<0.01
Methyl t-butyl ether (MTBE)	<1.8	<0.5	1,3,5-Trimethylbenzene	<2.5	<0.5
Vinyl acetate	<7	<2	1,2,4-Trimethylbenzene	<2.5	<0.5
1,1-Dichloroethane	<0.4	<0.1	1,3-Dichlorobenzene	<0.6	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	1,4-Dichlorobenzene	<0.24	<0.04
Hexane	<3.5	<1	1,2,3-Trimethylbenzene	<2.5	<0.5
Chloroform	<0.049	<0.01	1,2-Dichlorobenzene	<0.6	<0.1
2-Butanone (MEK)	<2.9	<1	1,2,4-Trichlorobenzene	<0.74	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01	Naphthalene	0.12 lc	0.023 lc
1,1,1-Trichloroethane	<0.55	<0.1	Hexachlorobutadiene	<0.21	<0.02

Date of Report: 11/07/18
Date Received: 10/24/18
Project: Taylor Way-Ave 55, F&BI 810462

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chlorodifluoromethane	ppbv	5	116	70-130
Propene	ppbv	5	104	70-130
Dichlorodifluoromethane	ppbv	5	103	70-130
Chloromethane	ppbv	5	119	70-130
F-114	ppbv	5	111	70-130
Isobutene	ppbv	5	120	70-130
Acetaldehyde	ppbv	5	126	70-130
Vinyl chloride	ppbv	5	115	70-130
1,3-Butadiene	ppbv	5	127	70-130
Bromomethane	ppbv	5	107	70-130
Chloroethane	ppbv	5	112	70-130
Ethanol	ppbv	5	115	70-130
Acetonitrile	ppbv	5	122	70-130
Acrolein	ppbv	5	110	70-130
Acrylonitrile	ppbv	5	112	70-130
Pentane	ppbv	5	119	70-130
Trichlorofluoromethane	ppbv	5	101	70-130
Acetone	ppbv	5	109	70-130
2-Propanol	ppbv	5	113	70-130
Isoprene	ppbv	5	105	70-130
Iodomethane	ppbv	5	95	70-130
1,1-Dichloroethene	ppbv	5	99	70-130
Methacrolein	ppbv	5	107	70-130
trans-1,2-Dichloroethene	ppbv	5	99	70-130
Cyclopentane	ppbv	5	120	70-130
Methyl vinyl ketone	ppbv	5	118	70-130
Butanal	ppbv	5	101	70-130
Methylene chloride	ppbv	5	90	70-130
CFC-113	ppbv	5	99	70-130
Carbon disulfide	ppbv	5	97	70-130
Methyl t-butyl ether (MTBE)	ppbv	5	105	70-130
Vinyl acetate	ppbv	5	109	70-130
1,1-Dichloroethane	ppbv	5	108	70-130
cis-1,2-Dichloroethene	ppbv	5	95	70-130
Hexane	ppbv	5	112	70-130
Chloroform	ppbv	5	107	70-130
2-Butanone (MEK)	ppbv	5	108	70-130
1,2-Dichloroethane (EDC)	ppbv	5	107	70-130
1,1,1-Trichloroethane	ppbv	5	105	70-130

Date of Report: 11/07/18
Date Received: 10/24/18
Project: Taylor Way-Ave 55, F&BI 810462

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample (continued)

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
1-Butanol	ppbv	5	104	70-130
Carbon tetrachloride	ppbv	5	96	70-130
Benzene	ppbv	5	106	70-130
Cyclohexane	ppbv	5	104	70-130
2-Pentanone	ppbv	5	110	70-130
3-Pentanone	ppbv	5	115	70-130
Pentanal	ppbv	5	96	70-130
1,2-Dichloropropane	ppbv	5	102	70-130
1,4-Dioxane	ppbv	5	98	70-130
Bromodichloromethane	ppbv	5	103	70-130
Trichloroethene	ppbv	5	93	70-130
cis-1,3-Dichloropropene	ppbv	5	86	70-130
4-Methyl-2-pentanone	ppbv	5	93	70-130
trans-1,3-Dichloropropene	ppbv	5	95	70-130
Toluene	ppbv	5	89	70-130
1,1,2-Trichloroethane	ppbv	5	97	70-130
3-Hexanone	ppbv	5	93	70-130
2-Hexanone	ppbv	5	109	70-130
Hexanal	ppbv	5	101	70-130
Tetrachloroethene	ppbv	5	89	70-130
Dibromochloromethane	ppbv	5	106	70-130
1,2-Dibromoethane (EDB)	ppbv	5	102	70-130
Chlorobenzene	ppbv	5	102	70-130
Ethylbenzene	ppbv	5	101	70-130
1,1,2,2,-Tetrachloroethane	ppbv	5	120	70-130
m,p-Xylene	ppbv	10	109	70-130
o-Xylene	ppbv	5	116	70-130
Styrene	ppbv	5	101	70-130
Bromoform	ppbv	5	104	70-130
Benzyl chloride	ppbv	5	126	70-130
1,3,5-Trimethylbenzene	ppbv	5	100	70-130
1,2,4-Trimethylbenzene	ppbv	5	98	70-130
1,3-Dichlorobenzene	ppbv	5	108	70-130
1,4-Dichlorobenzene	ppbv	5	117	70-130
1,2,3-Trimethylbenzene	ppbv	5	105	70-130
1,2-Dichlorobenzene	ppbv	5	112	70-130
1,2,4-Trichlorobenzene	ppbv	5	91	70-130
Naphthalene	ppbv	5	96	70-130
Hexachloro-1,3-butadiene	ppbv	5	100	70-130

Date of Report: 11/07/18
Date Received: 10/24/18
Project: Taylor Way-Ave 55, F&BI 810462

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chlorodifluoromethane	ppbv	5	112	70-130
Propene	ppbv	5	103	70-130
Dichlorodifluoromethane	ppbv	5	94	70-130
Chloromethane	ppbv	5	112	70-130
F-114	ppbv	5	107	70-130
Isobutene	ppbv	5	115	70-130
Acetaldehyde	ppbv	5	123	70-130
Vinyl chloride	ppbv	5	111	70-130
1,3-Butadiene	ppbv	5	122	70-130
Bromomethane	ppbv	5	105	70-130
Chloroethane	ppbv	5	108	70-130
Ethanol	ppbv	5	98	70-130
Acetonitrile	ppbv	5	114	70-130
Acrolein	ppbv	5	115	70-130
Acrylonitrile	ppbv	5	110	70-130
Pentane	ppbv	5	115	70-130
Trichlorofluoromethane	ppbv	5	93	70-130
Acetone	ppbv	5	99	70-130
2-Propanol	ppbv	5	107	70-130
Isoprene	ppbv	5	101	70-130
Iodomethane	ppbv	5	84	70-130
1,1-Dichloroethene	ppbv	5	92	70-130
Methacrolein	ppbv	5	102	70-130
trans-1,2-Dichloroethene	ppbv	5	93	70-130
Cyclopentane	ppbv	5	121	70-130
Methyl vinyl ketone	ppbv	5	113	70-130
Butanal	ppbv	5	94	70-130
Methylene chloride	ppbv	5	72	70-130
CFC-113	ppbv	5	92	70-130
Carbon disulfide	ppbv	5	91	70-130
Methyl t-butyl ether (MTBE)	ppbv	5	96	70-130
Vinyl acetate	ppbv	5	107	70-130
1,1-Dichloroethane	ppbv	5	103	70-130
cis-1,2-Dichloroethene	ppbv	5	89	70-130
Hexane	ppbv	5	105	70-130
Chloroform	ppbv	5	99	70-130
2-Butanone (MEK)	ppbv	5	98	70-130
1,2-Dichloroethane (EDC)	ppbv	5	99	70-130
1,1,1-Trichloroethane	ppbv	5	97	70-130
1-Butanol	ppbv	5	95	70-130
Carbon tetrachloride	ppbv	5	91	70-130

Date of Report: 11/07/18
Date Received: 10/24/18
Project: Taylor Way-Ave 55, F&BI 810462

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample (continued)

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ppbv	5	99	70-130
Cyclohexane	ppbv	5	101	70-130
2-Pentanone	ppbv	5	111	70-130
3-Pentanone	ppbv	5	111	70-130
Pentanal	ppbv	5	104	70-130
1,2-Dichloropropane	ppbv	5	102	70-130
1,4-Dioxane	ppbv	5	93	70-130
Bromodichloromethane	ppbv	5	101	70-130
Trichloroethene	ppbv	5	91	70-130
cis-1,3-Dichloropropene	ppbv	5	87	70-130
4-Methyl-2-pentanone	ppbv	5	88	70-130
trans-1,3-Dichloropropene	ppbv	5	92	70-130
Toluene	ppbv	5	86	70-130
1,1,2-Trichloroethane	ppbv	5	95	70-130
3-Hexanone	ppbv	5	94	70-130
2-Hexanone	ppbv	5	106	70-130
Hexanal	ppbv	5	98	70-130
Tetrachloroethene	ppbv	5	84	70-130
Dibromochloromethane	ppbv	5	101	70-130
1,2-Dibromoethane (EDB)	ppbv	5	98	70-130
Chlorobenzene	ppbv	5	93	70-130
Ethylbenzene	ppbv	5	94	70-130
1,1,2,2,-Tetrachloroethane	ppbv	5	114	70-130
m,p-Xylene	ppbv	10	101	70-130
o-Xylene	ppbv	5	108	70-130
Styrene	ppbv	5	95	70-130
Bromoform	ppbv	5	95	70-130
Benzyl chloride	ppbv	5	117	70-130
1,3,5-Trimethylbenzene	ppbv	5	92	70-130
1,2,4-Trimethylbenzene	ppbv	5	91	70-130
1,3-Dichlorobenzene	ppbv	5	99	70-130
1,4-Dichlorobenzene	ppbv	5	107	70-130
1,2,3-Trimethylbenzene	ppbv	5	98	70-130
1,2-Dichlorobenzene	ppbv	5	102	70-130
1,2,4-Trichlorobenzene	ppbv	5	81	70-130
Naphthalene	ppbv	5	89	70-130
Hexachloro-1,3-butadiene	ppbv	5	90	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

810462

SAMPLE CHAIN OF CUSTODY ME 10-24-18

Page # 1 of 2

Report To Tom Colligan
Company Floyd Snider
Address 601 Union St., Suite 600
City, State, ZIP Seattle, WA 98101
Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*) Kara, Gabe

PROJECT NAME	PO #
Taylor Way-Ave 55	

REPORTING LEVEL
☐ Indoor Air ☐ Deep Soil Gas
☑ Sub Slab/Soil Gas ☐ SVE/Grab

INVOICE TO Tom Colligan

TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☑ Dispose after 30 days
☐ Archive Samples
☐ Other

									ANALYSIS REQUESTED				
Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	TO-15 BTEXN	TO-15 cVOCs		Notes
VP-2-102418	01	3311	242	10/24/18	29	7:59	4.5	8:05	X	X	X		
VP-1-102418	02	3257	257		28	0838	4.5	0843	X	X	X		
VP-1-102418 DUP	03	3390	256		27.5	0838	4.5	0843	X	X	X		
VP-3-102418	04	3483	258		28.5	9:03	4.5	9:08	X	X	X		
VP-5-102418	05	3255	240		29.5	9:51	4.5	9:57	X	X	X		
VP-8-102418	06	3676	241		29.5	10:41	4.5	10:46	X	X	X		
VP-11-102418	07	2436	230		29.5	11:27	4.5	11:33	X	X	X		Samples received at 21 °C
VP-9-102418	08	3347	244	↓	29	12:02	4.5	12:07	X	X	X		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Kara Hitchko	Floyd Snider	10/24/18	13:16
Received by:	Eric [illegible]	F&B	10/24/18	3:16
Relinquished by:				
Received by:				

FORMS\COC\COCTO-15.DOC

810462

SAMPLE CHAIN OF CUSTODY ME 10-24-18

Page # 2 of 2

Report To Tom Colligan
Company Floyd|Snider
Address 601 Union St. Ste. 600
City, State, ZIP Seattle, WA 98101
Phone 206 292-2078 Email

SAMPLERS (signature)

PROJECT NAME	PO #
Ave 55- Taylor Way	

REPORTING LEVEL
☐ Indoor Air ☐ Deep Soil Gas
☒ Sub Slab/Soil Gas ☐ SVE/Grab

INVOICE TO

TURNAROUND TIME
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ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	TO-15 BTEXN	TO-15 cVOCs		Notes
VP-4-102418	09	~~10~~ 3668	101	10/24/18	30	0909	4.5	0913	X	X	X		
VP-6-102418	10	2299	204		28.5	0937	4.5	0942	X	X	X		
VP-7-102418	11	3344	224		30	1002	4.5	1008	X	X	X		
VP-12-102418	12	3672	243		29.5	~~1035~~ 1030	4.5	1035	X	X	X		
VP-13-102418	13	3387	203		30	~~1148~~ 1048	4.5	1054	X	X	X		
VP-14-102418	14	3260	221		30	1121	4.5	1127	X	X	X		Samples received at 21 °C
VP-10-102418	15	2433	17	↓	29	1155	4.0	1201	X	X	X		
VP-LB-102418	16	2434	111	|	30	1121	0.0	1122	X	X	X		Archive

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Kara Hatchko	Floyd Snider	10/24/18	13:16
Received by:	Eric Ka	FB	10/24/18	13:16
Relinquished by:				
Received by:				

FORMS\COC\COCTO-15.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

November 16, 2018

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the additional results from the testing of material submitted on October 24, 2018 from the Taylor Way-Ave 55, F&BI 810462 project. There are 20 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Gabe Cisneros
FDS1116R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 24, 2018 by Friedman & Bruya, Inc. from the Floyd-Snider Taylor Way-Ave 55, F&BI 810462 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
810462 -01	VP-2-102418
810462 -02	VP-1-102418
810462 -03	VP-1-102418 Dup
810462 -04	VP-3-102418
810462 -05	VP-5-102418
810462 -06	VP-8-102418
810462 -07	VP-11-102418
810462 -08	VP-9-102418
810462 -09	VP-4-102418
810462 -10	VP-6-102418
810462 -11	VP-7-102418
810462 -12	VP-12-102418
810462 -13	VP-13-102418
810462 -14	VP-14-102418
810462 -15	VP-10-102418
810462 -16	VP-LB-102418

An opening APH calibration standard was not analyzed on 10/26/18. The data were qualified accordingly. A full list TO15 calibration standard was analyzed and was within acceptance limits.

The APH EC5-8 aliphatics concentration for sample VP-6-102418 exceeded the calibration range. The data were flagged accordingly.

Non-petroleum compounds with Q values over 85 were subtracted from the APH EC5-8 and EC9-12 aliphatics ranges, if present.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-2-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-01 1/3.3
Date Analyzed:	10/26/18	Data File:	102608.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,200 ca
APH EC9-12 aliphatics	340 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-1-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-02 1/5
Date Analyzed:	11/09/18	Data File:	110911.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	BAT/MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,600
APH EC9-12 aliphatics	2,000
APH EC9-10 aromatics	170

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-1-102418 Dup	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-03 1/5
Date Analyzed:	11/09/18	Data File:	110912.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	BAT/MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,200
APH EC9-12 aliphatics	1,700
APH EC9-10 aromatics	160

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-3-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-04 1/3.3
Date Analyzed:	10/26/18	Data File:	102611.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	790
APH EC9-12 aliphatics	370
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-5-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-05 1/3.3
Date Analyzed:	10/26/18	Data File:	102612.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	750 ca
APH EC9-12 aliphatics	370 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-8-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-06 1/5
Date Analyzed:	11/09/18	Data File:	110913.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	BAT/MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	82	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,000
APH EC9-12 aliphatics	330
APH EC9-10 aromatics	<120

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-11-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-07 1/3.3
Date Analyzed:	11/09/18	Data File:	110914.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	BAT/MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,200
APH EC9-12 aliphatics	790
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-9-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-08 1/3.3
Date Analyzed:	10/26/18	Data File:	102615.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	690 ca
APH EC9-12 aliphatics	200 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-4-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-09 1/3.3
Date Analyzed:	10/26/18	Data File:	102616.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	480 ca
APH EC9-12 aliphatics	140 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-6-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-10 1/3.3
Date Analyzed:	10/26/18	Data File:	102617.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	4,700 ve ca
APH EC9-12 aliphatics	580 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-7-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-11 1/3.3
Date Analyzed:	10/26/18	Data File:	102618.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,800 ca
APH EC9-12 aliphatics	340 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-12-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-12 1/3.3
Date Analyzed:	10/26/18	Data File:	102619.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	740 ca
APH EC9-12 aliphatics	250 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-13-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-13 1/3.3
Date Analyzed:	10/26/18	Data File:	102620.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	770 ca
APH EC9-12 aliphatics	180 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-14-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-14 1/3.3
Date Analyzed:	10/26/18	Data File:	102621.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	710 ca
APH EC9-12 aliphatics	390 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-10-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-15 1/3.3
Date Analyzed:	10/26/18	Data File:	102622.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	470 ca
APH EC9-12 aliphatics	320 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-LB-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-16 1/10
Date Analyzed:	11/03/18	Data File:	110226.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	470
APH EC9-12 aliphatics	<350
APH EC9-10 aromatics	<250

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	Not Applicable	Lab ID:	08-2484 mb
Date Analyzed:	11/09/18	Data File:	110907.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	79	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<46
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Date of Report: 11/16/18
Date Received: 10/24/18
Project: Taylor Way-Ave 55, F&BI 810462

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD MA-APH

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	45	112	70-130
APH EC9-12 aliphatics	ug/m3	45	129	70-130
APH EC9-10 aromatics	ug/m3	45	107	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

810462

SAMPLE CHAIN OF CUSTODY ME 10-24-08

Report To Tom Colligan
Company Floyd Snider
Address 601 Union St., Suite 600
City, State, ZIP Seattle, WA 98101
Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*) Kara, Gabe

PROJECT NAME	PO #
Taylor Way-Ave 55	

REPORTING LEVEL	INVOICE TO
☐ Indoor Air ☐ Deep Soil Gas ☑ Sub Slab/Soil Gas ☐ SVE/Grab	Tom Colligan

Page # 1 of 2

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Rush charges authorized by:

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☑ Dispose after 30 days
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☐ Other

									ANALYSIS REQUESTED				
Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	TO-15 BTEXN	TO-15 cVOCs	APH	Notes (X)-per GC 11/8/16 MC
VP-2-102418	01	3311	242	10/24/18	29	7:59	4.5	8:05	X	X	X	(X)	
VP-1-102418	02	3257	257	↓	28	0838	4.5	0843	X	X	X	↓	
VP-1-102418 Dup	03	3390	256		27.5	0838	4.5	0843	X	X	X		
VP-3-102418	04	3483	258		28.5	9:03	4.5	9:08	X	X	X		
VP-5-102418	05	3255	240		29.5	9:51	4.5	9:57	X	X	X		
VP-8-102418	06	3676	241		29.5	10:41	4.5	10:46	X	X	X		
VP-11-102418	07	2436	230		29.5	11:27	4.5	11:33	X	X	X		Samples received at 21 °C
VP-9-102418	08	3347	244	↓	29	12:02	4.5	12:07	X	X	X	↓	

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Kara Hitchko	Floyd Snider	10/24/18	13:16
Received by:	Eric Clar	F B	10/24/18	3:16
Relinquished by:				
Received by:				

810462

SAMPLE CHAIN OF CUSTODY

ME 10-24-18

Page # 2 of 2

Report To Tom Colligan
Company Floyd|Snider
Address 601 Union St. Ste. 600
City, State, ZIP Seattle, WA 98101
Phone 206 292-2078 Email

SAMPLERS (signature)

PROJECT NAME Ave 55- Taylor Way

PO #

REPORTING LEVEL
☐ Indoor Air ☐ Deep Soil Gas
☒ Sub Slab/Soil Gas ☐ SVE/Grab

INVOICE TO

TURNAROUND TIME
☒ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

									ANALYSIS REQUESTED				
Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	TO-15 BTEXN	TO-15 cVOCs	APH	Notes
VP-4-102418	09	~~10~~ 3668	101	10/24/18	30	0909	4.5	0913	X	X	X	X	
VP-6-102418	10	2299	204		28.5	0937	4.5	0942	X	X	X		
VP-7-102418	11	3344	224		30	1002	4.5	1008	X	X	X		
VP-12-102418	12	3672	243		29.5	~~1035~~ 1030	4.5	1035	X	X	X		
VP-13-102418	13	3387	203		30	~~1448~~ 1048	4.5	1054	X	X	X		
VP-14-102418	14	3260	221		30	1121	4.5	1127	X	X	X		Samples received at 21 °C
VP-10-102418	15	2433	17		29	1155	4.0	1201	X	X	X		
VP-LB-102418	16	2434	111		30	1121	0.0	1122	X	X	X		Archive

Friedman & Bruya, Inc.
3012 16th Avenue West
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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Koren Hitchko	Floyd Snider	10/24/18	13:16
Received by:	Eric Ka	F B	10/24/18	1316
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Attachment 6
Johnson and Ettinger Model Inputs and Results

Building A

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Ave 55 - Taylor Way Building A
Report Date: Mon Nov 26 2018 06:24:19 GMT-0800 (Pacific Standard Time)
Report Generated From: https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 420[μg/m^3]
Depth of soil gas sample: 0.85ft +/- 0ft
Average soil/ground water temperature: 15C

CHEMICAL PROPERTIES
Chemical of Concern: 1,2,4-Trimethylbenzene CAS Number: 95636
Molecular Weight: 120.2 [g/mole] Henrys Constant: 0.1315008 [unitless]
Diffusivity in Air: 6.060e-2 [cm^2/sec] Diffusivity in Water: 7.920e-6 [cm^2/sec]
Unit Risk Factor: 0 [(μg/m^3)$^{-1}$] Reference Concentration: 0.00595 [mg/m^3]

SOIL PROPERTIES
Soil Type: Sandy Loam Total Porosity: 0.387
Unsaturated Zone Moisture Content:
low= 0.039 best estimate= 0.103 high= 0.17
Capillary Zone Moisture Content: 0.32 Height of Capillary Rise: 0.25 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.45[hr^{-1}]
Building Mixing Height: 10[m] Building Footprint Area: 150000[m^2]
Subsurface Foundation Area: 150060[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.006118[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.000002089

[1] Low Indoor Air Prediction: 4.210e-4 [μg/m^3] or 8.568e-5 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 7.075e-5

Best Estimate Indoor Air Prediction: 8.775e-4[μg/m^3] or 1.786e-4 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 1.475e-4

[2] High Indoor Air Prediction: 0.001631[μg/m^3] or 3.320e-4 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 2.741e-4

Based on parameter analysis:

[1] "Low Prediction" concentrations produced with HIGHEST moisture content.
[2] "High Prediction" concentrations produced with LOWEST moisture content.

Building Mixing Height is outside the recommended range for this building type.
Building Footpring Area is outside the recommended range for this building type.
Subsurface Foundation Area is outside the recommended range for this building type.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Ave 55 - Taylor Way Building A
Report Date: Mon Nov 26 2018 07:16:55 GMT-0800 (Pacific Standard Time)
Report Generated From: https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 47[μg/m^3]
Depth of soil gas sample: 0.85ft +/- 0ft
Average soil/ground water temperature: 15C

CHEMICAL PROPERTIES
Chemical of Concern: 1,3-Butadiene CAS Number: 106990
Molecular Weight: 54.09 [g/mole] Henrys Constant: 2.300116 [unitless]
Diffusivity in Air: 0.2490 [cm^2/sec] Diffusivity in Water: 1.080e-5 [cm^2/sec]
Unit Risk Factor: 0.00028 [(μg/m^3)$^{-1}$] Reference Concentration: 0 [mg/m^3]

SOIL PROPERTIES
Soil Type: Sandy Loam Total Porosity: 0.387
Unsaturated Zone Moisture Content:
low= 0.039 best estimate= 0.103 high= 0.17
Capillary Zone Moisture Content: 0.32 Height of Capillary Rise: 0.25 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.45[hr^{-1}]
Building Mixing Height: 10[m] Building Footprint Area: 150000[m^2]
Subsurface Foundation Area: 150060[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.02514[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.000007861

[1]Low Indoor Air Prediction: 1.572e-4 [μg/m^3] or 7.110e-5 [ppbv]
Cancer Risk of this concentration: 1.809e-8 Hazard Risk of this concentration: 0.

Best Estimate Indoor Air Prediction: 3.695e-4[μg/m^3] or 1.671e-4 [ppbv]
Cancer Risk of this concentration: 4.252e-8 Hazard Risk of this concentration: 0.

[2]High Indoor Air Prediction: 7.167e-4[μg/m^3] or 3.242e-4 [ppbv]
Cancer Risk of this concentration: 8.247e-8 Hazard Risk of this concentration: 0.

Based on parameter analysis: Diffusion is the dominant mechanism across foundation. Diffusion through foundation is the overall rate-limiting process for the subsurface to indoor-air pathway.

[1] "Low Prediction" concentrations produced with HIGHEST moisture content.
[2] "High Prediction" concentrations produced with LOWEST moisture content.

Building Mixing Height is outside the recommended range for this building type.
Building Footpring Area is outside the recommended range for this building type.
Subsurface Foundation Area is outside the recommended range for this building type.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Ave 55 - Taylor Way Building A
Report Date: Mon Nov 26 2018 07:31:04 GMT-0800 (Pacific Standard Time)
Report Generated From: https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 9.2[μg/m^3]
Depth of soil gas sample: 0.85ft +/- 0ft
Average soil/ground water temperature: 15C

CHEMICAL PROPERTIES
Chemical of Concern: Acrolein CAS Number: 107028
Molecular Weight: 56.1 [g/mole] Henrys Constant: 0.003375252 [unitless]
Diffusivity in Air: 0.1050 [cm^2/sec] Diffusivity in Water: 1.220e-5 [cm^2/sec]
Unit Risk Factor: 0 [(μg/m^3)$^{-1}$] Reference Concentration: 0.00002 [mg/m^3]

SOIL PROPERTIES
Soil Type: Sandy Loam Total Porosity: 0.387
Unsaturated Zone Moisture Content:
low= 0.039 best estimate= 0.103 high= 0.17
Capillary Zone Moisture Content: 0.32 Height of Capillary Rise: 0.25 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.45[hr^{-1}]
Building Mixing Height: 10[m] Building Footprint Area: 150000[m^2]
Subsurface Foundation Area: 150060[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.01061[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.000003451

[1]Low Indoor Air Prediction: 1.443e-5 [μg/m^3] or 6.294e-6 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 7.216e-4

Best Estimate Indoor Air Prediction: 3.175e-5[μg/m^3] or 1.385e-5 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.001588

[2]High Indoor Air Prediction: 6.036e-5[μg/m^3] or 2.632e-5 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.003018

Based on parameter analysis:

[1] "Low Prediction" concentrations produced with HIGHEST moisture content.
[2] "High Prediction" concentrations produced with LOWEST moisture content.

Building Mixing Height is outside the recommended range for this building type.
Building Footpring Area is outside the recommended range for this building type.
Subsurface Foundation Area is outside the recommended range for this building type.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Ave 55 - Taylor Way Building A
Report Date: Mon Nov 26 2018 07:33:01 GMT-0800 (Pacific Standard Time)
Report Generated From: https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 25[μg/m^3]
Depth of soil gas sample: 0.85ft +/- 0ft
Average soil/ground water temperature: 15C

CHEMICAL PROPERTIES
Chemical of Concern: Acrylonitrile CAS Number: 107131
Molecular Weight: 53.06 [g/mole] Henrys Constant: 0.002598185 [unitless]
Diffusivity in Air: 0.1220 [cm^2/sec] Diffusivity in Water: 1.340e-5 [cm^2/sec]
Unit Risk Factor: 0.000068 [(μg/m^3)$^{-1}$] Reference Concentration: 0.002 [mg/m^3]

SOIL PROPERTIES
Soil Type: Sandy Loam Total Porosity: 0.387
Unsaturated Zone Moisture Content:
low= 0.039 best estimate= 0.103 high= 0.17
Capillary Zone Moisture Content: 0.32 Height of Capillary Rise: 0.25 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.45[hr^{-1}]
Building Mixing Height: 10[m] Building Footprint Area: 150000[m^2]
Subsurface Foundation Area: 150060[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.01233[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.000003974

[1]Low Indoor Air Prediction: 4.471e-5 [μg/m^3] or 2.062e-5 [ppbv]
Cancer Risk of this concentration: 1.249e-9 Hazard Risk of this concentration: 2.235e-5

Best Estimate Indoor Air Prediction: 9.934e-5[μg/m^3] or 4.581e-5 [ppbv]
Cancer Risk of this concentration: 2.776e-9 Hazard Risk of this concentration: 4.967e-5

[2]High Indoor Air Prediction: 1.897e-4[μg/m^3] or 8.745e-5 [ppbv]
Cancer Risk of this concentration: 5.300e-9 Hazard Risk of this concentration: 9.483e-5

Based on parameter analysis:

[1] "Low Prediction" concentrations produced with HIGHEST moisture content.
[2] "High Prediction" concentrations produced with LOWEST moisture content.

Building Mixing Height is outside the recommended range for this building type.
Building Footpring Area is outside the recommended range for this building type.
Subsurface Foundation Area is outside the recommended range for this building type.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Ave 55 - Taylor Way Building A
Report Date: Mon Nov 26 2018 07:34:04 GMT-0800 (Pacific Standard Time)
Report Generated From: https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS   Concentration = 33[μg/m^3]
Depth of soil gas sample: 0.85ft +/- 0ft
Average soil/ground water temperature: 15C

CHEMICAL PROPERTIES
Chemical of Concern: Naphthalene   CAS Number: 91203
Molecular Weight: 128.18 [g/mole]   Henrys Constant: 0.009593771 [unitless]
Diffusivity in Air: 5.900e-2 [cm^2/sec]   Diffusivity in Water: 7.500e-6 [cm^2/sec]
Unit Risk Factor: 0 [(μg/m^3)$^{-1}$]   Reference Concentration: 0.003 [mg/m^3]

SOIL PROPERTIES
Soil Type: Sandy Loam   Total Porosity: 0.387
Unsaturated Zone Moisture Content:
    low= 0.039 best estimate= 0.103 high= 0.17
Capillary Zone Moisture Content: 0.32   Height of Capillary Rise: 0.25 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade   Air Exchange Rate: 0.45[hr^{-1}]
Building Mixing Height: 10[m]   Building Footprint Area: 150000[m^2]
Subsurface Foundation Area: 150060[m^2]   Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years]   non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year]   non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years]   non-carcinogens: 30 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.005959[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.000002041

[1]Low Indoor Air Prediction: 3.256e-5 [μg/m^3] or 6.215e-6 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 1.085e-5

Best Estimate Indoor Air Prediction: 6.736e-5[μg/m^3] or 1.286e-5 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 2.245e-5

[2]High Indoor Air Prediction: 1.250e-4[μg/m^3] or 2.385e-5 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 4.166e-5

Based on parameter analysis:

[1]"Low Prediction" concentrations produced with HIGHEST moisture content.
[2]"High Prediction" concentrations produced with LOWEST moisture content.

Building Mixing Height is outside the recommended range for this building type.
Building Footpring Area is outside the recommended range for this building type.
Subsurface Foundation Area is outside the recommended range for this building type.

Building B

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Ave 55 - Taylor Way Building B
Report Date: Mon Nov 26 2018 07:14:34 GMT-0800 (Pacific Standard Time)
Report Generated From: https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 320[μg/m^3]
Depth of soil gas sample: 0.85ft +/- 0ft
Average soil/ground water temperature: 15C

CHEMICAL PROPERTIES

Chemical of Concern: Acetaldehyde CAS Number: 75070
Molecular Weight: 44.05 [g/mole] Henrys Constant: 0.002312649 [unitless]
Diffusivity in Air: 0.1240 [cm^2/sec] Diffusivity in Water: 1.410e-5 [cm^2/sec]
Unit Risk Factor: 0.0000022 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0.009 [mg/m^3]

SOIL PROPERTIES

Soil Type: Sandy Loam Total Porosity: 0.387
Unsaturated Zone Moisture Content:
low= 0.039 best estimate= 0.103 high= 0.17
Capillary Zone Moisture Content: 0.32 Height of Capillary Rise: 0.25 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES

Building Type: Slab-on-Grade Air Exchange Rate: 0.45[hr^{-1}]
Building Mixing Height: 10[m] Building Footprint Area: 51900[m^2]
Subsurface Foundation Area: 52000[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS

Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]

JOHNSON & ETTINGER SIMULATION RESULTS

Effective Diffusion Coefficient (D_{eff}): 0.01254[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.000004492

[1]Low Indoor Air Prediction: 7.407e-4 [μg/m^3] or 4.114e-4 [ppbv]
Cancer Risk of this concentration: 6.697e-10 Hazard Risk of this concentration: 8.230e-5

Best Estimate Indoor Air Prediction: 0.001438[μg/m^3] or 7.984e-4 [ppbv]
Cancer Risk of this concentration: 1.300e-9 Hazard Risk of this concentration: 1.597e-4

[2]High Indoor Air Prediction: 0.002609[μg/m^3] or 0.001449 [ppbv]
Cancer Risk of this concentration: 2.359e-9 Hazard Risk of this concentration: 2.899e-4

Based on parameter analysis:

[1]"Low Prediction" concentrations produced with HIGHEST moisture content.
[2]"High Prediction" concentrations produced with LOWEST moisture content.

Building Mixing Height is outside the recommended range for this building type.
Building Footpring Area is outside the recommended range for this building type.
Subsurface Foundation Area is outside the recommended range for this building type.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Ave 55 - Taylor Way Building B
Report Date: Mon Nov 26 2018 06:51:45 GMT-0800 (Pacific Standard Time)
Report Generated From: https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 3.9[μg/m^3]
Depth of soil gas sample: 0.85ft +/- 0ft
Average soil/ground water temperature: 15C

CHEMICAL PROPERTIES
Chemical of Concern: Acrolein CAS Number: 107028
Molecular Weight: 56.1 [g/mole] Henrys Constant: 0.003375252 [unitless]
Diffusivity in Air: 0.1050 [cm^2/sec] Diffusivity in Water: 1.220e-5 [cm^2/sec]
Unit Risk Factor: 0 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0.00002 [mg/m^3]

SOIL PROPERTIES
Soil Type: Sandy Loam Total Porosity: 0.387
Unsaturated Zone Moisture Content:
low= 0.039 best estimate= 0.103 high= 0.17
Capillary Zone Moisture Content: 0.32 Height of Capillary Rise: 0.25 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.45[hr^{-1}]
Building Mixing Height: 10[m] Building Footprint Area: 51900[m^2]
Subsurface Foundation Area: 52000[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.01061[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.000003912

[1]Low Indoor Air Prediction: 8.106e-6 [μg/m^3] or 3.535e-6 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 4.053e-4

Best Estimate Indoor Air Prediction: 1.526e-5[μg/m^3] or 6.654e-6 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 7.629e-4

[2]High Indoor Air Prediction: 2.733e-5[μg/m^3] or 1.192e-5 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.001367

Based on parameter analysis:

[1] "Low Prediction" concentrations produced with HIGHEST moisture content.
[2] "High Prediction" concentrations produced with LOWEST moisture content.

Building Mixing Height is outside the recommended range for this building type.
Building Footpring Area is outside the recommended range for this building type.
Subsurface Foundation Area is outside the recommended range for this building type.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Ave 55 - Taylor Way Building B
Report Date: Mon Nov 26 2018 07:00:49 GMT-0800 (Pacific Standard Time)
Report Generated From: https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 16[μg/m^3]
Depth of soil gas sample: 0.85ft +/- 0ft
Average soil/ground water temperature: 15C

CHEMICAL PROPERTIES
Chemical of Concern: Acrylonitrile CAS Number: 107131
Molecular Weight: 53.06 [g/mole] Henrys Constant: 0.002598185 [unitless]
Diffusivity in Air: 0.1220 [cm^2/sec] Diffusivity in Water: 1.340e-5 [cm^2/sec]
Unit Risk Factor: 0.000068 [(μg/m^3)$^{-1}$] Reference Concentration: 0.002 [mg/m^3]

SOIL PROPERTIES
Soil Type: Sandy Loam Total Porosity: 0.387
Unsaturated Zone Moisture Content:
low= 0.039 best estimate= 0.103 high= 0.17
Capillary Zone Moisture Content: 0.32 Height of Capillary Rise: 0.25 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.45[hr^{-1}]
Building Mixing Height: 10[m] Building Footprint Area: 51900[m^2]
Subsurface Foundation Area: 52000[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.01233[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.00000443

[1]Low Indoor Air Prediction: 3.658e-5 [μg/m^3] or 1.687e-5 [ppbv]
Cancer Risk of this concentration: 1.022e-9 Hazard Risk of this concentration: 1.829e-5

Best Estimate Indoor Air Prediction: 7.089e-5[μg/m^3] or 3.269e-5 [ppbv]
Cancer Risk of this concentration: 1.981e-9 Hazard Risk of this concentration: 3.544e-5

[2]High Indoor Air Prediction: 1.285e-4[μg/m^3] or 5.927e-5 [ppbv]
Cancer Risk of this concentration: 3.592e-9 Hazard Risk of this concentration: 6.427e-5

Based on parameter analysis:

[1] "Low Prediction" concentrations produced with HIGHEST moisture content.
[2] "High Prediction" concentrations produced with LOWEST moisture content.

Building Mixing Height is outside the recommended range for this building type.
Building Footpring Area is outside the recommended range for this building type.
Subsurface Foundation Area is outside the recommended range for this building type.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Ave 55 - Taylor Way Building B
Report Date: Mon Nov 26 2018 07:07:57 GMT-0800 (Pacific Standard Time)
Report Generated From: https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 94[µg/m^3]
Depth of soil gas sample: 0.85ft +/- 0ft
Average soil/ground water temperature: 15C

CHEMICAL PROPERTIES
Chemical of Concern: Trichloroethylene CAS Number: 79016
Molecular Weight: 131.39 [g/mole] Henrys Constant: 0.2642082 [unitless]
Diffusivity in Air: 7.900e-2 [cm^2/sec] Diffusivity in Water: 9.100e-6 [cm^2/sec]
Unit Risk Factor: 0.00011 [(µg/m^3)$^{-1}$] Reference Concentration: 0.04 [mg/m^3]

SOIL PROPERTIES
Soil Type: Sandy Loam Total Porosity: 0.387
Unsaturated Zone Moisture Content:
low= 0.039 best estimate= 0.103 high= 0.17
Capillary Zone Moisture Content: 0.32 Height of Capillary Rise: 0.25 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.45[hr^{-1}]
Building Mixing Height: 10[m] Building Footprint Area: 51900[m^2]
Subsurface Foundation Area: 52000[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.007976[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.000003124

[1]Low Indoor Air Prediction: 1.660e-4 [µg/m^3] or 3.091e-5 [ppbv]
Cancer Risk of this concentration: 7.504e-9 Hazard Risk of this concentration: 4.150e-6

Best Estimate Indoor Air Prediction: 2.936e-4[µg/m^3] or 5.468e-5 [ppbv]
Cancer Risk of this concentration: 1.327e-8 Hazard Risk of this concentration: 7.341e-6

[2]High Indoor Air Prediction: 5.118e-4[µg/m^3] or 9.529e-5 [ppbv]
Cancer Risk of this concentration: 2.313e-8 Hazard Risk of this concentration: 1.279e-5

Based on parameter analysis:

[1] "Low Prediction" concentrations produced with HIGHEST moisture content.
[2] "High Prediction" concentrations produced with LOWEST moisture content.

Building Mixing Height is outside the recommended range for this building type.
Building Footpring Area is outside the recommended range for this building type.
Subsurface Foundation Area is outside the recommended range for this building type.

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Memorandum

To: Steve Teel, Washington State Department of Ecology
Copies: Drew Zaborowski, Avenue 55; Scott Hooton, Port of Tacoma
From: Tom Colligan and Kristin Anderson, Floyd|Snider
Date: May 15, 2020
Project No: Ave 55-Taylor Way
Re: **Supplemental Post-Construction Vapor Intrusion Assessment**
1514 Taylor Way Development, Tacoma, Washington

This memorandum presents the results of a supplemental vapor intrusion assessment completed for the Taylor Way Property (Property), which is part of the larger Taylor Way and Alexander Avenue Fill Area (TWAAFA) Site. Sampling was completed in accordance with an Ecology-approved work plan (2020 Work Plan; Floyd|Snider 2020). The 2020 Work Plan was prepared following receipt of a letter from Ecology dated November 14, 2019, requesting that additional vapor intrusion (VI) assessment sampling be performed at the two warehouse buildings that were recently constructed at the Property.

BACKGROUND

Two prior VI assessments were performed on the Property. The first assessment was a pre-construction methane survey and preliminary VI assessment that was performed between December 2016 and May 2018 during the preloading phase of construction for the two above-grade warehouse buildings (Building A and Building B). Soil gas samples were collected at several locations within each future building pad footprint and along the future drive aisle between the two buildings. The vapor samples were field analyzed for methane using a landfill gas detector. At a subset of the locations, soil gas samples were collected for laboratory analysis of volatile organic compounds (VOCs).

The results of the methane survey and preliminary VI assessment were summarized in a memorandum to Ecology dated June 2018 (Floyd|Snider 2018a). Methane was not detected in soil gas at concentrations that necessitated further action per the Interim Action Work Plan (IAWP; Floyd|Snider 2017). The maximum detected soil methane concentration was 1.4% by volume.

On the western portion of Building A, however, VOC analysis detected chloroform at a concentration exceeding the Model Toxics Control Act (MTCA) soil gas screening level for industrial worker exposure. Benzene was also detected at a concentration less than its industrial screening level but greater than the residential screening level. A number of additional VOCs were detected but at concentrations less than residential MTCA screening levels.

At the pad for Building B, VOC sampling conducted during wet-season construction was complicated by excessive moisture in the soil. Multiple attempts were made to acquire samples free of moisture, but only one vapor sample was able to be collected via evacuated Summa canister. The laboratory reported excessive water vapor as well as excessive residual vacuum in the Summa canister. Chloroform, benzene, and other VOCs exceeded their MTCA industrial screening levels at this location.

The results of the preliminary assessment indicated a potential for VOCs to exist at concentrations greater than MTCA screening levels under the footprint of the future buildings. As a precautionary measure, a passive vapor mitigation system was installed under each of the two office “node” locations in both buildings. The extents passive vapor mitigation system beneath the office nodes within the two buildings are shown on Figure 1. These node locations can be used as either normal open warehouse space or can be converted to interior offices if a tenant so desires. As described in the June 2018 memorandum, the passive mitigation system includes perforated polyvinyl chloride (PVC) piping laid in trenches under the subgrade of the office areas. After the piping was installed, it was overlain with a single-sheet PVC membrane. The concrete floor slab was subsequently poured over the membrane. The piping is connected to aboveground riser vents that are currently stubbed off and capped 2 to 3 feet above floor level. The passive system is designed to allow sub-slab ventilation driven by atmospheric pressure differentials (i.e., soil vapor at pressure exceeding atmospheric pressure naturally vents via the riser; therefore, vapor pressure cannot build up below the floor slab at levels greater than atmospheric). Additionally, the vertical riser allows for the installation of an inline blower as an option to convert the system from passive ventilation to an active venting system.

The second VI assessment was completed following pouring of the floor slabs and erection of the building walls and roof, but prior to building occupancy. The assessment included two rounds of sub-slab vapor sampling from 14 permanently installed vapor implants installed in both buildings in September 2018. Eight vapor pin implants (VP-1 through VP-8) were installed in Building A and six implants (VP-9 through VP-14) were installed in Building B. Two vapor pins were installed adjacent to each membrane installed in the four office nodes. The remainder of the pins were distributed uniformly across the warehouse spaces. Results of the two rounds of sub-slab sampling were provided to Ecology in a memorandum dated December 4, 2018 (Floyd|Snider 2018b). During the first round of testing in September 2019, a number of compounds (1,2,4-trimethylbezene, 1,3-butadiene, naphthalene, acrylonitrile, and acetaldehyde) exceeded

MTCA Method C sub-slab screening levels at several locations. However, during re-sampling in October 2019, no compounds exceeded the screening levels.[1]

SUPPLEMENTAL POST-CONSTRUCTION VAPOR INTRUSION ASSESSMENT SAMPLING

As described in the November 14, 2019, letter from Ecology, a supplemental VI assessment was needed to further assess indoor air quality with paired indoor and ambient air samples collected concurrently with soil vapor samples and to determine whether a pressure differential is present between sub-slab vapor and indoor air. The results of this supplemental VI assessment will be used to determine whether vapor intrusion from sub-slab VOCs is occurring at concentrations exceeding applicable indoor air cleanup levels (CULs).

Building Survey

Prior to sampling, a survey of both buildings was performed on December 13, 2019. The survey included inspection of the condition of the existing vapor pins, examination for floor slab cracks or open penetrations, and noting the materials stored and/or chemicals used in each building. The completed building survey form is provided in Attachment 1.

It was observed during the survey that approximately the western third of Building A is currently used for storage and distribution of dental supplies that include liquids such as acetone and ethanol, a variety of cleaning/sanitizing solutions, dental adhesives, and many additional products. Liquid chemicals are stored in sealed containers and not opened or used on site.

It is separated from the unused remainder of Building A by an interior partition wall. Forklift operators transfer pallets from the loading bays located across the main warehouse space. A small single break room, bathroom, and manager's office enclosure totaling approximately 1,000 square feet are built out over a portion of the office node, as shown in Figure 1. This area has its own heat and ventilation system. The rest of Building A, as well as Building B, does not have ventilation systems, as is typical of warehouse space.

The new floor slabs of both buildings were found to be in excellent condition with no cracks. One comparatively wide expansion joint was observed in the approximate center of the unoccupied portion of Building A. Few penetrations in the concrete were observed and all were sealed except for the gravel-filled flange around the large fire water supply lines that are located in the southwest corner of each building, as shown in Figure 1. The fire supply lines are enclosed within a small mechanical room in Building A and are not enclosed in Building B. The PVC riser pipes for

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[1] Leak detection consisting of shut-in vacuum tests of the sampling train was performed on all locations during the September and October 2019 sampling events. No vacuum leakage was detected. For the September event, helium leak testing was also performed to confirm that leakage did not occur between the vapor pin and the floor slab. However, helium leak testing was not performed during the October event because leakage around the vapor pins did not occur during the September event. Therefore, it is not possible to confirm the lack of leakage during the October sampling event.

the office node sub-slab piping were located for all office nodes; these risers are currently cut off 2 to 3 feet above floor level and capped inside each building.

The previously installed vapor pin implants were located in Building A with one exception; vapor pin VP-6 in the dental supply operations area was not able to be located and is believed to be located under permanently installed warehouse shelving. All pins in Building B were located and found to be accessible.

During site visits subsequent to the initial building survey, gasoline-fueled vehicles belonging to building subcontractors (heating/cooling, electrical, etc.) performing work in the unoccupied portion of Building A were also observed.

Measurement of Cross-Slab Differential Pressures

Cross-slab differential pressures were measured to determine whether soil vapor pressure under the building is at times greater than, less than, or equal to ambient air pressure inside the building. Cross-slab differential pressure measurements were collected using a differential pressure data logger connected to both the indoor air of the building and an existing vapor pin implant. Cross-slab differential pressure data were collected between the slab and main warehouse at VP-1, located next to the eastern office node of Building A; at VP-3, located near the center of the building; and between the slab and enclosed office space at VP-7, next to the western office node. Measurements were taken continuously for 1 week using a data logger with a resolution of 0.001 inches of water as specified in the 2020 Work Plan.

Sub-Slab Soil Vapor Sampling

Sub-slab soil vapor samples were collected on January 13 and 14, 2020, with an additional sample collected on February 18, 2020.

Prior to collection of the soil gas samples, concentrations of methane, carbon dioxide, oxygen, and nitrogen were collected using a portable landfill gas analyzer consistent with the prior methane survey as specified in the IAWP. The portable gas analyzer achieves accuracy of 0.3% by volume for methane and carbon dioxide and 1% by volume for oxygen.[2] Cross-slab differential pressure at each location were also measured using the landfill gas analyzer, which has a resolution of 0.001 inches of water. Final methane, carbon dioxide, oxygen, and nitrogen concentrations were recorded after purging three volumes from the sub-slab sampling point using the gas analyzer's pump.

Sub-slab soil vapor samples were collected from the accessible existing vapor pin implant locations at Buildings A and B as specified in the 2020 Work Plan. Samples were collected in accordance with Ecology guidance for VI assessment (Ecology 2018a) using laboratory-certified

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[2] Nitrogen concentration is calculated as the gas balance by subtracting the sum of methane, carbon dioxide, and oxygen from 100%.

1-liter evacuated Summa canisters equipped with a flow control device and laboratory-provided manifolds and polytetrafluoroethylene tubing. Prior to sample collection, a shut-in (or closed valve) test was performed to assess the sampling train for air leaks. The closed-valve test was conducted for a period of 5 minutes. All canisters maintained their vacuum for the duration of the test.

A tracer gas test was performed during sampling to test for leaks in the seal between the vapor pin implant and surrounding slab. The tracer was applied by placing towels soaked with isopropyl alcohol (2-propanol) over the implant and around all connections during the filling of the Summa canister. Leaks were identified by laboratory analysis for isopropyl alcohol in the soil vapor samples; isopropyl alcohol concentrations were compared with the soil vapor concentrations of approximately 300 micrograms per cubic meter (µg/m^3) detected in the sub-slab vapor during previous sampling that did not use isopropyl alcohol.

Results of the leak test conducted during the January 13 and 14, 2020, sampling event indicated an elevated isopropyl alcohol concentration (in excess of 100,000 µg/m^3) in the sample collected at VP-03. The remaining samples passed the tracer gas leak test with isopropyl alcohol concentrations ranging from non-detect to 320 µg/m^3. VP-03 was re-sampled on February 18, 2020, after re-sealing the vapor pin. This sample passed the leak test with no detectable isopropyl present.

Samples were collected after purging the sample line of at least three volumes of sub-slab vapor within the sampling train at a flow rate less than 200 milliliters per minute (mL/min). After the sampling train was purged, soil gas samples were collected over a 5-minute period at a flow rate of less than 150 mL/min. Sample collection was stopped before the vacuum in the canister was fully depleted. A field duplicate sample was collected at location VP-11 using a laboratory-supplied flow splitter.

Once the sampling period was completed, the inlet port of the canister was tightly sealed for transportation to the analytical laboratory. The initial canister vacuums, vacuum testing times, purging times, purged volumes, sampling start and end times, and final vacuum readings were recorded on soil vapor sampling sheets, which are included in Attachment 2. Field photographs of sample collection are also included in Attachment 2.

Indoor Air Sampling

Indoor air samples were collected on January 13 and 14, 2020, concurrently with sub-slab sampling. Indoor air samples were collected over a period of 8 hours. Within the occupied portion of Building A, three air samples were collected; one sample was collected from the current break room, one sample was collected in the main warehouse area, and one sample was collected inside the mechanical room next to the open penetration for the fire supply lines in the southwest corner of the building. Within the unused area of Building A, one sample was collected near the wide expansion joint and one sample was collected at the office node. In the smaller unoccupied

Building B, three samples were collected; one sample was collected over each office node and one sample was collected next to the open penetration for the fire supply lines in the southwest corner of the building. Sample locations are shown on Figure 1.

Indoor air samples were collected using a laboratory-certified evacuated 6-liter summa canister fitted with a flow control device. The canisters were placed at a height of 3 feet. Vacuum readings were collected at the start of sampling and monitored for a period of 5 to 10 minutes after opening the canister to ensure that the flow control device was working properly. All sample canisters appeared to be leak-free and were allowed to collect air samples undisturbed for 8 hours. Field photographs of sample collection are included in Attachment 2.

Ambient Air Sampling

One ambient air background sample was collected along the property boundary at an appropriate upwind location. The wind direction was apparent at the site due to snowfall that occurred at the time of sampling and was blowing to the north-northwest with variable gusts to the northwest and northeast. The ambient air sample was, therefore, set up at the southeast corner of the Building B parking lot as the most consistently upwind location (refer to Figure 1). The ambient air sample was collected concurrently with indoor air sampling by filling a laboratory-certified evacuated 6-liter Summa canister over a period of 8 hours.

SUMMARY OF RESULTS

Field observations of differential pressures, field analysis of landfill gases, and laboratory analytical results are presented below.

Cross-Slab Differential Pressure

Results from the cross-slab differential pressure monitoring for VP-1, VP-3, and VP-7 compared to atmospheric barometric pressure data collected by the National Weather Service (Tacoma, WA Station N7WGJ/station ID AT582) are presented in Attachment 3. These data tables and plots present the maximum and minimum cross-slab pressure differential (in inches of water) and barometric pressure for each 15-minute interval during the monitoring period. At both VP-1 and VP-7 at the edges of the office nodes, the maximum and minimum values were clustered near zero with approximately equal positive (greater pressure under the slab) and negative (greater pressure in ambient air) variation. Cross-slab differential pressures at VP-3 in the central portion of Building A were generally zero. Consistent trends indicating sustained higher pressure under the slab were not noted at any location. At VP-7, the data logger was connected by tubing run along the floor of the dental supply company workspace to span the distance between the vapor implant and the enclosed break room/office. At this location, greater variation was observed during the workday due to workers periodically rolling loaded carts over the tubing causing temporary spikes in pressure readings.

Over the same monitoring period, low and high atmospheric pressures were observed but were not correlated with cross-slab differential pressures at either location. These data demonstrate that sub-slab and ambient air pressure are approximately in equilibrium during all weather conditions and atmospheric pressure at the time of sample collection should not be a factor in sample collection.

During sample collection, cross-slab differential pressures measured using the landfill gas detector at all vapor pin locations ranged from -0.003 to 0.006 inches of water, consistent with the measurements taken at VP-1, VP-3, and VP-7 prior to sampling. Cross-slab differential pressures measured during sampling are presented in Table 1.

Landfill Gas Data

Measurements of methane, carbon dioxide, oxygen, and nitrogen were collected using a field landfill gas analyzer. Landfill gas concentrations were also re-surveyed at accessible locations on April 22, 2020. Landfill gas concentration field measurements are presented in Table 1.

Methane concentrations were generally less than 5%, except for two locations. At VP-7 and VP-8 on the west side of Building A, methane concentrations were 8.2% and 27.2%, respectively, during the January 2020 soil vapor sampling event. The methane concentrations at these points were 19.4% and 1.6%, respectively, when re-surveyed in April 2020. In accordance with the IAWP, these methane concentrations were evaluated using ASTM Standard E2993-16 (refer to IAWP Appendix B, Table 1; Floyd|Snider 2017). According to the standard, no further action is needed to address methane concentrations between 5% and 30% if cross-slab differential pressures are less than 500 Pascals (approximately 2 inches of water). Cross-slab differential pressures at VP-7 and VP-8 ranged from -0.003 to 0.001 inches of water, significantly less than the threshold to evaluate the need for vapor controls.

Carbon dioxide concentrations measured using a landfill gas meter ranged from 0% to 5.9%. Oxygen concentrations ranged from 0.0% to 20.1% and nitrogen concentrations ranged from 72.5% to 97.9%. Greater concentrations of methane and carbon dioxide did not appear to predict lesser concentrations of oxygen in sub-slab soil gas.

Analytical Data

Samples were analyzed for the targeted list of VOCs specified in the 2020 Work Plan and volatile compounds by Method MA Air-Phase Hydrocarbons. Results for detected analytes in sub-slab soil vapor are presented in Table 2, and results for detected analytes in indoor and ambient air are presented in Table 3. Analytes that were non-detect in either all sub-slab soil vapor or all indoor air samples are presented in Table 4. Laboratory analytical reports are provided in Attachment 4.

In sub-slab soil vapor, detected VOCs did not exceed any of the applicable MTCA Method C screening levels. In indoor air, concentrations of chloroform at IA-A1 and IA-A3 slightly exceeded the MTCA Method C CUL for chloroform (1.3 and 1.9 µg/m^3, respectively, versus the CUL of 1.1 µg/m^3). Chloroform was also detected in the ambient air sample. All sub-slab concentrations were less than the MTCA Method C screening levels. The CUL exceedances for chloroform both occurred in samples collected from within and near the break room in Building A, where there are several potential sources of background chloroform according to the U.S. Environmental Protection Agency's findings (USEPA 2011), such as chlorinated tap water. Chloroform also cannot be ruled out as a minor constituent in the thousands of dental care products stored in this area observed during the building survey.

For air-phase petroleum hydrocarbons, a site-specific MTCA Method B CUL was calculated for indoor air using the calculations provided in Attachment B of Ecology's Implementation Memorandum No. 18 (Ecology 2018b). Detected petroleum hydrocarbon concentrations in indoor air samples were similar across the site, so the CUL was calculated for each sample and then averaged for each building. The lowest average MTCA Method B CUL was 550 µg/m^3 for indoor air in Building A; using a standard attenuation factor of 0.03, the corresponding sub-slab soil vapor screening level is 18,000 µg/m^3. Site-specific MTCA Method B CUL and screening level calculations are presented in Attachment 5. Total petroleum hydrocarbon concentrations did not exceed the site-specific screening level in sub-slab soil vapor or site-specific CUL in indoor air.

RECOMMENDATIONS

In accordance with the 2020 Work Plan, active vapor mitigation should be considered if sub-slab soil vapor contains contaminants at concentrations that exceed the applicable MTCA Method C screening levels, and other Site conditions including indoor air contaminant concentrations exceeding the CULs due to VI and/or significant pressure differentials between the slab and ambient air indicate that the VI pathway may be complete at the site.

The results of this sampling effort indication that no sub-slab contaminant concentrations have exceeded their applicable MTCA Method C screening levels. Indoor air samples further indicate that VI is not occurring in the building; two of eight samples had chloroform slightly exceeded the MTCA Method C CUL, but these detections are not correlated with elevated sub-slab chloroform and are instead most likely due to background conditions in the built environment. Sub-slab pressure differentials are largely nonexistent at the site based on several weeks' worth of continuous measurement at varying atmospheric conditions. Therefore, a driving force for VI does not exist.

Collectively, the sampling data obtained since 2018 indicate that VI does not pose a significant risk to building occupants and does not require active mitigation. The Interim Action Completion Report will be revised to reflect the findings of this supplemental VI assessment.

REFERENCES

Floyd|Snider. 2017. *Interim Action Work Plan, 1514 Taylor Way Development*. Prepared for Avenue 55, LLC. June.

_____. 2018a. *Summary of Soil Vapor Survey Data and Vapor Mitigation Plan for the 1514 Taylor Way Site*. Memorandum from Tom Colligan and Kristin Anderson, Floyd|Snider, to Steve Teel, Washington State Department of Ecology. 8 June.

_____. 2018b. *Summary of Sub-Slab Soil Vapor Assessment, 1514 Taylor Way, Tacoma, Washington*. Memorandum from Tom Colligan and Gabriel Cisneros, Floyd|Snider, to Nick Acklam, Washington State Department of Ecology. 4 December.

_____. 2020. *Sampling Plan Addendum for Post-Construction Vapor Intrusion Assessment, 1514 Taylor Way Development, Tacoma, Washington.* Memorandum from Tom Colligan and Kristin Anderson, Floyd|Snider, to Steve Teel, Washington State Department of Ecology. 7 January.

U.S. Environmental Protection Agency (USEPA).2011. *Background Indoor Air Concentrations of Volatile Organic Compounds in North American Residences (1990–2005): A Compilation of Statistics for Assessing Vapor Intrusion.* June.

Washington State Department of Ecology (Ecology). 2018a. *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action.* April.

_____. 2018b. *Petroleum Vapor Intrusion (PVI): Updated Screening Levels, Cleanup Levels, and Assessing PVI Threats to Future Buildings.* Memorandum from Jeff Johnston, Washington State Department of Ecology. January 10.

LIST OF ATTACHMENTS

Table 1	Field Parameter Measurements
Table 2	Analytical Results for Detected Compounds in Soil Vapor
Table 3	Analytical Results for Detected Compounds in Air
Table 4	Summary of Non-Detect Results
Figure 1	Sample Locations
Attachment 1	Building Survey Form
Attachment 2	Sub-Slab Vapor Sampling Field Forms and Field Photographs
Attachment 3	Cross-Slab Differential Pressure Plots and Data Tables
Attachment 4	Laboratory Analytical Data
Attachment 5	Site-Specific MTCA Method B Cleanup Level Calculations

Tables

Table 1
Field Parameter Measurements

Location	Date	Methane (%) (1)	Carbon Dioxide (%)	Oxygen (%)	Nitrogen (%)	Cross-Slab Differential Pressure (Pascals)
VP-1	1/13/2020	0.0	0.0	5.4	94.6	-0.50
	4/22/2020	0.0	0.1	7.4	92.5	-0.25
VP-2	1/13/2020	0.0	0.0	2.1	97.9	0.99
	4/22/2020	-- (2)	-- (2)	-- (2)	-- (2)	-- (2)
VP-3	2/18/2020	0.0	0.0	16.1	83.8	-0.25
	4/22/2020	-- (2)	-- (2)	-- (2)	-- (2)	-- (2)
VP-4	1/14/2020	0.1	0.0	13.6	86.2	0.25
	4/22/2020	0.0	0.0	13.6	86.4	-0.25
VP-5	2/18/2020	0.0	0.0	1.42	85.7	0.00
	4/22/2020	0.0	0.0	15.5	84.5	0.00
VP-7	2/18/2020	8.2	0.0	2.6	89.2	-0.75
	4/22/2020	1.6	0.0	7.0	91.3	-0.50
VP-8	2/18/2020	27.2	0.0	0.2	72.5	0.00
	4/22/2020	19.4	0.0	0.1	80.4	0.25
VP-9	2/18/2020	0.1	1.0	20.4	78.5	0.50
	4/22/2020	0.1	1.6	18.6	79.7	0.00
VP-10	2/18/2020	0.1	1.1	18.2	80.7	0.99
	4/22/2020	0.1	0.9	16.8	82.2	0.00
VP-11	1/14/2020	4.2	5.0	0.0	90.8	0.50
	4/22/2020	3.5	6.3	0.0	90.1	0.25
VP-12	2/18/2020	0.1	1.0	20.1	78.8	1.49
	4/22/2020	0.1	2.8	13.4	83.8	0.00
VP-13	2/18/2020	0.1	5.3	11.9	82.7	-0.75
	4/22/2020	0.0	5.9	8.9	85.1	-0.25
VP-14	2/18/2020	0.1	3.7	5.8	90.4	1.24
	4/22/2020	1.5	4.2	0.0	94.3	0.00

Notes:

1 ASTM guidance requires further action to address methane concentrations between 5% and 30% if cross-slab differential pressures exceed 500 Pascals.

2 Location under reams of paper stacked approximately 15 feet high and inacessible.

Table 2
Analytical Results for Detected Compounds in Soil Vapor

			Location Description	Building A—Unoccupied Portion				Building A—Occupied Portion			Building B						
			Sample ID	**VP-01**	**VP-02**	**VP-03**	**VP-04**	**VP-05**	**VP-07**	**VP-08**	**VP-09**	**VP-10**	**VP-11**	**VP-11 dup**	**VP-12**	**VP-13**	**VP-14**
Analyte	**Units**	**MTCA Screening Level (1)**	**Site Max**														
Total Petroleum Hydrocarbons (TPH)																	
APH EC5-8 aliphatics	µg/m³	--	2,300 J	710	420	240	220	440	970	2,300 J	130 U	130 U	700	620	130 U	130 U	130 U
APH EC9-10 aromatics	µg/m³	--	130 U	72 U	65 U	130 U	67 U	72 U	72 U	72 U	70 U	70 U	77 U	67 U	70 U	70 U	70 U
APH EC9-12 aliphatics	µg/m³	--	1,700	380	170	310	140	220	180	630	170	270	1,700	1,600	230	280	250
Total TPH	µg/m³	18,000 (2)	2,900	1,100	590	560	360	660	1,200	2,900 J	170	270	2,400	2,200	230	280	250
Volatile Organic Compounds																	
1,1,1-Trichloroethane	µg/m³	170,000	22	6.9	4.5	2.9 U	1.5 U	7.8	22	18	1.5 U	1.5 U	1.7 U	1.5 U	1.5 U	1.5 U	1.5 U
1,1-Dichloroethane	µg/m³	520	9.5	1.2 U	1.1 U	2.2 U	1.1 U	1.2 U	2.0	9.5	1.1 U	1.1 U	2.2	2.2	1.1 U	1.1 U	1.1 U
1,2-Dichloroethane	µg/m³	32	0.45	0.20	0.11 U	0.22 U	0.11 U	0.12 U	0.45	0.33	0.11 U	0.11 U	0.13 U	0.11 U	0.11 U	0.11 U	0.11 U
1,2-Dichloropropane	µg/m³	230	5.7	1.1	0.60 U	1.2 U	0.62 U	1.6	5.7	2.5	0.65 U	0.65 U	0.72 U	0.62 U	0.65 U	0.65 U	0.65 U
2-Butanone	µg/m³	170,000	22	8.6 U	7.7 U	16 U	8.0 U	8.6 U	8.6 U	22	8.3 U	8.3 U	9.1 U	8.0 U	8.3 U	8.3 U	8.3 U
2-Propanol	µg/m³	--	320 J	25 U	22 U	46 U	320 J	25 U	100	61	98	69	140	140	190 J	140	24 U
Benzene	µg/m³	110	3.3	0.93 U	0.83 U	1.7 U	0.86 U	0.93 U	1.6	3.3	0.89 U	0.89 U	2.4	2.3	0.89 U	0.89 U	0.89 U
Chloroform	µg/m³	36	1.6	0.82	0.15	0.53	1.6	0.51	0.57	0.52	1.0	0.97	0.15 U	0.13 U	1.1	1.1	0.18
cis-1,2-Dichloroethene	µg/m³	--	2.1 U	1.1 U	1.0 U	2.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.5	1.5	1.1 U	1.1 U	1.1 U
Cyclohexane	µg/m³	--	75	20 U	18 U	37 U	19 U	20 U	20 U	75	19 U	19 U	21 U	19 U	19 U	19 U	19 U
Dichlorodifluoromethane	µg/m³	3,300	16	12	13	3.5	3.3	7.1	16	6.1	2.4	2.8	1.8	1.8	2.4	2.7	15
Ethylbenzene	µg/m³	33,000	4.6	1.3 U	1.1 U	2.3 U	1.2 U	1.3 U	1.3 U	4.6	1.2 U	1.2 U	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U
Hexane	µg/m³	23,000	29	10 U	9.2 U	19 U	9.5 U	10 U	10 U	29	9.9 U	9.9 U	11 U	9.5 U	9.9 U	9.9 U	9.9 U
Pentane	µg/m³	--	230 J	8.6 U	7.7 U	16 U	8.0 U	8.6 U	36	230 J	8.3 U	8.3 U	9.1 U	8.0 U	8.3 U	8.3 U	8.3 U
Propene	µg/m³	--	18	18	1.8 U	7.0	1.9 U	2.0 U	2.0 U	2.0 U	1.9 U	1.9 U	2.1 U	1.9 U	1.9 U	1.9 U	1.9 U
Trichloroethene	µg/m³	67	2.5	1.7	0.70 U	1.5 U	0.73 U	0.78 U	0.78 U	1.1	0.75 U	0.75 U	2.5	2.4	0.75 U	0.75 U	0.75 U
Trichlorofluoromethane	µg/m³	23,000	740 J	360	170	3.5	43	160	740 J	120	6.3 U	14	7.0 U	6.1 U	6.3 U	10	6.3 U
Xylenes	µg/m³	3,300	9.3	2.5 U	2.3 U	4.7 U	2.3 U	2.5 U	2.5 U	9.3	2.4 U	2.4 U	1.9	4.3	2.4 U	2.4 U	2.4 U

Notes:

All screening levels and results presented in this table are rounded to two significant figures.

-- Not established.

1 MTCA Method C screening levels from Ecology's CLARC master data table except where noted.

2 An average site-specific MTCA Method B cleanup level of 580 µg/m3 was calculated using site indoor air sample data in accordance with Ecology's Implementation Memorandum No. 18 Attachment B; the resultant soil vapor screening level uses a standard sub-slab attenuation factor of 0.03.

Abbreviations:

CLARC	Cleanup Levels and Risk Calculation
Ecology	Washington State Department of Ecology
µg/m³	Micrograms per cubic meter
MTCA	Model Toxics Control Act

Qualifiers:

J	The reported concentration is considered an estimate.
U	The analyte was not detected at the given reporting limit.

Table 3
Analytical Results for Detected Compounds in Air

			Location Description	North of Building B	Building A—Break Room	Building A—Unoccupied	Building A—Occupied	Building A—Unoccupied	Building A—Mechanical	Building B		
			Sample ID	Ambient	IA-A1	IA-A2	IA-A3	IA-A4	IA-A5	IA-B1	IA-B2	IA-B3
Analyte	**Units**	**MTCA CUL (1)**	**Site Max**									
Total Petroleum Hydrocarbons (TPH)												
APH EC5-8 aliphatics	µg/m³	--	350	46 U	270	260	350	260	160	230	250	230
APH EC9-10 aromatics	µg/m³	--	67 U	25 U	25 U	25 U	25 U	25 U	25 U	30 U	67 U	25 U
APH EC9-12 aliphatics	µg/m³	--	94 U	35 U	88	39	66	35 U	35 U	42 U	94 U	35 U
Total TPH	µg/m³	550 (2)	420	46 U	360	300	420	260	160	230	250	230
Volatile Organic Compounds												
1,2-Dichloroethane	µg/m³	0.96	0.12	0.12	0.097	0.097	0.11	0.093	0.093	0.087	0.11 U	0.089
1,2-Dichloropropane	µg/m³	6.8	0.62 U	0.23 U	0.23 U	0.26	0.25	0.25	0.23 U	0.28 U	0.62 U	0.23 U
2-Butanone	µg/m³	5,000	47	2.9 U	26	21	47	23	16	3.5 U	8.0 U	2.9 U
2-Propanol	µg/m³	--	230 J	8.6 U	230 J	54	140 J	46	31	21	23 U	24
Benzene	µg/m³	3.2	0.86 U	0.63	0.74	0.61	0.64	0.66	0.67	0.50	0.86 U	0.51
Chloroform	µg/m³	1.1	1.9	0.12	**1.3**	0.39	**1.9**	0.41	0.86	0.10	0.13 U	0.11
Dichlorodifluoromethane	µg/m³	100	2.6	2.5	2.2	2.3	2.4	2.4	2.5	2.4	2.6	2.5
Ethylbenzene	µg/m³	1,000	1.2 U	0.43 U	0.44	0.43 U	0.46	0.43 U	0.43 U	0.52 U	1.2 U	0.43 U
Hexachlorobutadiene	µg/m³	1.1	0.58 U	0.21	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.26 U	0.58 U	0.21 U
Hexane	µg/m³	700	9.5 U	3.5 U	4.2	3.5 U	4.5	3.5 U	3.5 U	4.2 U	9.5 U	3.5 U
Naphthalene	µg/m³	0.74	0.2 JQ	0.15 JQ	0.20 JQ	0.073 JQ	0.14 JQ	0.073 UJ	0.073 JQ	0.088 UJ	0.20 UJ	0.073 UJ
Pentane	µg/m³	--	130 J	4.3	80 J	120 J	130 J	120 J	56	110 J	120	120 J
trans-1,2-Dichloroethene	µg/m³	--	4.7	0.40 U	2.8	0.65	4.7	0.71	1.9	0.48 U	1.1 U	0.40 U
Xylenes	µg/m³	100	2.3 U	0.87 U	1.9	0.87 U	2.1	0.87 U	1.0	1.0 U	2.3 U	0.87 U

Notes:

All CULs and results presented in this table are rounded to two significant figures.

-- Not established.

RED/BOLD The concentration exceeds the applicable MTCA Method C CUL.

1 MTCA Method C CULs from Ecology's CLARC master data table except where noted.

2 An average site-specific MTCA Method B CUL was calculated using site indoor air sample data in accordance with Ecology's Implementation Memorandum No. 18 Atttachment B. Calculation was performed using default (i.e., most conservative) parameters and one-half the reporiting limit for non-detect values.

Abbreviations:

CLARC	Cleanup Levels and Risk Calculation
CUL	Cleanup level
Ecology	Washington State Department of Ecology
µg/m³	Microgram per cubic meter
MTCA	Model Toxics Control Act
VI	Vapor Instrusion

Qualifiers:

J	The reported concentration is considered an estimate.
JQ	Concentration is an estimated value reported below the associated quantitation limit but above the MDL, acceptable for use with qualification.
U	The analyte was not detected at the given reporting limit.
UJ	The analyte was not detected at the given reporting limit; the reported concentration is considered an estimate.

Table 4
Summary of Non-Detect Results

		Sample Media	Soil Vapor													
		Sample ID	VP-01	VP-02	VP-03	VP-04	VP-05	VP-07	VP-08	VP-09	VP-10	VP-11	VP-11 dup	VP-12	VP-13	VP-14
Analyte	**Units**	**MTCA Method C Screening Level**														
1,1-Dichloroethene	µg/m^3	6,700	1.1 U	1.0 U	2.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U
1,1,2-Trichloroethane	µg/m^3	6.7	0.32 U	0.28 U	0.59 U	0.29 U	0.32 U	0.32 U	0.32 U	0.31 U	0.31 U	0.34 U	0.29 U	0.31 U	0.31 U	0.31 U
1,2,3-Trimethylbenzene (1)	µg/m^3	--	140 U	130 U	260 U	130 U	140 U	140 U	140 U	140 U	140 U	150 U	130 U	140 U	140 U	140 U
1,2,4-Trimethylbenzene	µg/m^3	2,000	7.1 U	6.4 U	13 U	6.6 U	7.1 U	7.1 U	7.1 U	6.9 U	6.9 U	7.6 U	6.6 U	6.9 U	6.9 U	6.9 U
1,3,5-Trimethylbenzene	µg/m^3	--	7.1 U	6.4 U	13 U	6.6 U	7.1 U	7.1 U	7.1 U	6.9 U	6.9 U	7.6 U	6.6 U	6.9 U	6.9 U	6.9 U
1,3-Butadiene	µg/m^3	28	0.064 U	0.057 U	0.12 U	0.060 U	0.064 U	0.064 U	0.064 U	0.062 U	0.062 U	0.069 U	0.060 U	0.062 U	0.062 U	0.062 U
1-Butanol (1)	µg/m^3	--	87 U	78 U	160 U	81 U	87 U	87 U	87 U	84 U	84 U	93 U	81 U	84 U	84 U	84 U
4-Methyl-2-pentanone	µg/m^3	100,000	12 U	11 U	22 U	11 U	12 U	12 U	12 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U
Acetaldehyde (1)	µg/m^3	300	260 U	230 U	490 U	240 U	260 U	260 U	260 U	250 U	250 U	280 U	240 U	250 U	250 U	250 U
Acetonitrile (1)	µg/m^3	2,000	49 U	44 U	90 U	46 U	49 U	49 U	49 U	48 U	48 U	53 U	46 U	48 U	48 U	48 U
Acrolein	µg/m^3	0.67	***2.7 U***	***2.4 U***	***5.0 U***	***2.5 U***	***2.7 U***	***2.7 U***	***2.7 U***	***2.6 U***	***2.6 U***	***2.8 U***	***2.5 U***	***2.6 U***	***2.6 U***	***2.6 U***
Acrylonitrile (1)	µg/m^3	67	32 U	29 U	60 U	30 U	32 U	32 U	32 U	31 U	31 U	34 U	30 U	31 U	31 U	31 U
Benzyl chloride	µg/m^3	17	0.15 U	0.13 U	0.28 U	0.14 U	0.15 U	0.15 U	0.15 U	0.14 U	0.14 U	0.16 U	0.14 U	0.14 U	0.14 U	0.14 U
Bromodichloromethane	µg/m^3	23	0.19 U	0.17 U	0.36 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0.18 U	0.19 U	0.19 U	0.19 U
Carbon disulfide	µg/m^3	23,000	18 U	16 U	34 U	17 U	18 U	18 U	18 U	17 U	17 U	19 U	17 U	17 U	17 U	17 U
Carbon tetrachloride	µg/m^3	140	1.8 U	1.6 U	3.4 U	1.7 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2.0 U	1.7 U	1.8 U	1.8 U	1.8 U
CFC-113	µg/m^3	170,000	2.2 U	2.0 U	4.1 U	2.1 U	2.2 U	2.2 U	2.2 U	2.1 U	2.1 U	2.4 U	2.1 U	2.1 U	2.1 U	2.1 U
Chlorodifluoromethane (1)	µg/m^3	1,700,000	100 U	91 U	190 U	95 U	100 U	100 U	100 U	98 U	98 U	110 U	95 U	98 U	98 U	98 U
Chloroethane	µg/m^3	330,000	7.7 U	6.9 U	14 U	7.1 U	7.7 U	7.7 U	7.7 U	7.4 U	7.4 U	8.2 U	7.1 U	7.4 U	7.4 U	7.4 U
Chloromethane	µg/m^3	3,000	6.0 U	5.4 U	11 U	5.6 U	6.0 U	6.0 U	6.0 U	5.8 U	5.8 U	6.4 U	5.6 U	5.8 U	5.8 U	5.8 U
Cyclopentane (1)	µg/m^3	--	84 U	75 U	160 U	78 U	84 U	84 U	84 U	81 U	81 U	90 U	78 U	81 U	81 U	81 U
Ethylene dibromide	µg/m^3	1.4	0.22 U	0.20 U	0.41 U	0.21 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.24 U	0.21 U	0.22 U	0.22 U	0.22 U
Hexachlorobutadiene	µg/m^3	38	0.62 U	0.55 U	1.2 U	0.58 U	0.62 U	0.62 U	0.62 U	0.60 U	0.60 U	0.66 U	0.58 U	0.60 U	0.60 U	0.60 U
Isobutene (1)	µg/m^3	--	68 U	60 U	120 U	62 U	68 U	68 U	68 U	64 U	64 U	71 U	62 U	64 U	64 U	64 U
Isoprene (1)	µg/m^3	--	81 U	73 U	150 U	76 U	81 U	81 U	81 U	78 U	78 U	87 U	76 U	78 U	78 U	78 U
Methyl vinyl ketone (1)	µg/m^3	--	84 U	75 U	160 U	78 U	84 U	84 U	84 U	81 U	81 U	90 U	78 U	81 U	81 U	81 U
Methylene chloride	µg/m^3	20,000	250 U	230 U	470 U	230 U	250 U	250 U	250 U	240 U	240 U	270 U	230 U	240 U	240 U	240 U
Naphthalene	µg/m^3	25	0.76 U	0.68 U	1.4 U	0.71 U	0.76 U	0.76 U	0.76 U	0.73 U	0.73 U	0.81 U	0.71 U	0.73 U	0.73 U	0.73 U
Styrene	µg/m^3	33,000	2.5 U	2.2 U	4.6 U	2.3 U	2.5 U	2.5 U	2.5 U	2.4 U	2.4 U	2.6 U	2.3 U	2.4 U	2.4 U	2.4 U
Tetrachloroethene	µg/m^3	1,300	20 U	18 U	37 U	18 U	20 U	20 U	20 U	19 U	19 U	21 U	18 U	19 U	19 U	19 U
Toluene	µg/m^3	170,000	55 U	49 U	100 U	51 U	55 U	55 U	55 U	53 U	53 U	58 U	51 U	53 U	53 U	53 U
trans-1,2-Dichloroethene	µg/m^3	--	1.1 U	1.0 U	2.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U
Vinyl chloride	µg/m^3	93	0.74 U	0.66 U	1.4 U	0.69 U	0.74 U	0.74 U	0.74 U	0.72 U	0.72 U	0.79 U	0.69 U	0.72 U	0.72 U	0.72 U

Notes:

All CULs and results presented in this table are rounded to two significant figures.

-- Not established.

Italics Reporting limit of non-detect result exceeds MTCA Method C CUL.

1 Analyte not available in TO-15 analytical standards; the reported concentration was generated from a library search.

Abbreviations:

CUL Cleanup level

µg/m^3 Micrograms per cubic meter

MTCA Model Toxics Control Act

Qualifiers:

U The analyte was not detected at the given reporting limit.

Table 4
Summary of Non-Detect Results

		Sample Media	Ambient Air	Indoor Air							
		Sample ID	**Ambient**	**IA-A1**	**IA-A2**	**IA-A3**	**IA-A4**	**IA-A5**	**IA-B1**	**IA-B2**	**IA-B3**
Analyte	**Units**	**MTCA Method C CUL**									
1,1,1-Trichloroethane	µg/m³	5,000	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.65 U	1.5 U	0.55 U
1,1-Dichloroethane	µg/m³	16	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.49 U	1.1 U	0.40 U
1,1-Dichloroethene	µg/m³	200	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.48 U	1.1 U	0.40 U
1,1,2-Trichloroethane	µg/m³	0.20	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.13 U	***0.29 U***	0.11 U
1,2,3-Trimethylbenzene (1)	µg/m³	60	49 U	49 U	49 U	49 U	49 U	49 U	59 U	130 U	49 U
1,2,4-Trimethylbenzene	µg/m³	60	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.9 U	6.6 U	2.5 U
1,3,5-Trimethylbenzene	µg/m³	60	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.9 U	6.6 U	2.5 U
1,3-Butadiene	µg/m³	0.83	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.026 U	0.059 U	0.022 U
1-Butanol (1)	µg/m³	--	30 U	30 U	30 U	30 U	30 U	30 U	36 U	81 U	30 U
4-Methyl-2-pentanone	µg/m³	3,000	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U	4.9 U	11 U	4.1 U
Acetaldehyde (1)	µg/m³	9.0	***90 U***	***90 U***	***90 U***	***90 U***	***90 U***	***90 U***	***110 U***	***240 U***	***90 U***
Acetonitrile (1)	µg/m³	60	17 U	17 U	17 U	17 U	17 U	17 U	20 U	46 U	17 U
Acrolein	µg/m³	0.02	***0.92 U***	***0.92 U***	***0.92 U***	***0.92 U***	***0.92 U***	***0.92 U***	***1.1 U***	***2.5 U***	***0.92 U***
Acrylonitrile (1)	µg/m³	2.0	***11 U***	***11 U***	***11 U***	***11 U***	***11 U***	***11 U***	***13 U***	***30 U***	***11 U***
Benzyl chloride	µg/m³	0.51	0.057	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.062 U	0.14 U	0.052 U
Bromodichloromethane	µg/m³	0.68	0.074	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.080 U	0.18 U	0.067 U
Carbon disulfide	µg/m³	700	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	7.5 U	17 U	6.2 U
Carbon tetrachloride	µg/m³	4.2	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.75 U	1.7 U	0.63 U
cis-1,2-Dichloroethene	µg/m³	--	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.48 U	1.1 U	0.40 U
CFC-113	µg/m³	5,000	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.92 U	2.1 U	0.77 U
Chlorodifluoromethane (1)	µg/m³	50,000	35 U	35 U	35 U	35 U	35 U	35 U	42 U	95 U	35 U
Chloroethane	µg/m³	10,000	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	3.2 U	7.1 U	2.6 U
Chloromethane	µg/m³	90	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.5 U	5.6 U	2.1 U
Cyclohexane	µg/m³	--	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	8.3 U	19 U	6.9 U
Cyclopentane (1)	µg/m³	--	29 U	29 U	29 U	29 U	29 U	29 U	34 U	78 U	29 U
Ethylene dibromide	µg/m³	0.042	***0.077 U***	***0.077 U***	***0.077 U***	***0.077 U***	***0.077 U***	***0.077 U***	***0.092 U***	***0.21 U***	***0.077 U***
Isobutene (1)	µg/m³	--	23 U	23 U	23 U	23 U	23 U	23 U	28 U	62 U	23 U
Isoprene (1)	µg/m³	--	28 U	28 U	28 U	28 U	28 U	28 U	34 U	76 U	28 U
Methyl vinyl ketone (1)	µg/m³	--	29 U	29 U	29 U	29 U	29 U	29 U	35 U	78 U	29 U
Methylene chloride	µg/m³	600	87 U	87 U	87 U	87 U	87 U	87 U	100 U	230 U	87 U
Propene	µg/m³	--	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.83 U	1.9 U	0.69 U
Styrene	µg/m³	1,000	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	1.0 U	2.3 U	0.85 U
Tetrachloroethene	µg/m³	40	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	8.1 U	18 U	6.8 U
Toluene	µg/m³	5,000	19 U	19 U	19 U	19 U	19 U	19 U	23 U	51 U	19 U
Trichloroethene	µg/m³	2.0	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.32 U	0.73 U	0.27 U
Trichlorofluoromethane	µg/m³	700	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.7 U	6.1 U	2.2 U
Vinyl chloride	µg/m³	2.8	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.31 U	0.69 U	0.26 U

Notes:

All CULs and results presented in this table are rounded to two significant figures.

-- Not established.

Italics Reporting limit of non-detect result exceeds MTCA C CUL.

1 Analyte not available in TO-15 analytical standards; the reported concentration was generated from a library search.

Abbreviations:

CUL Cleanup level

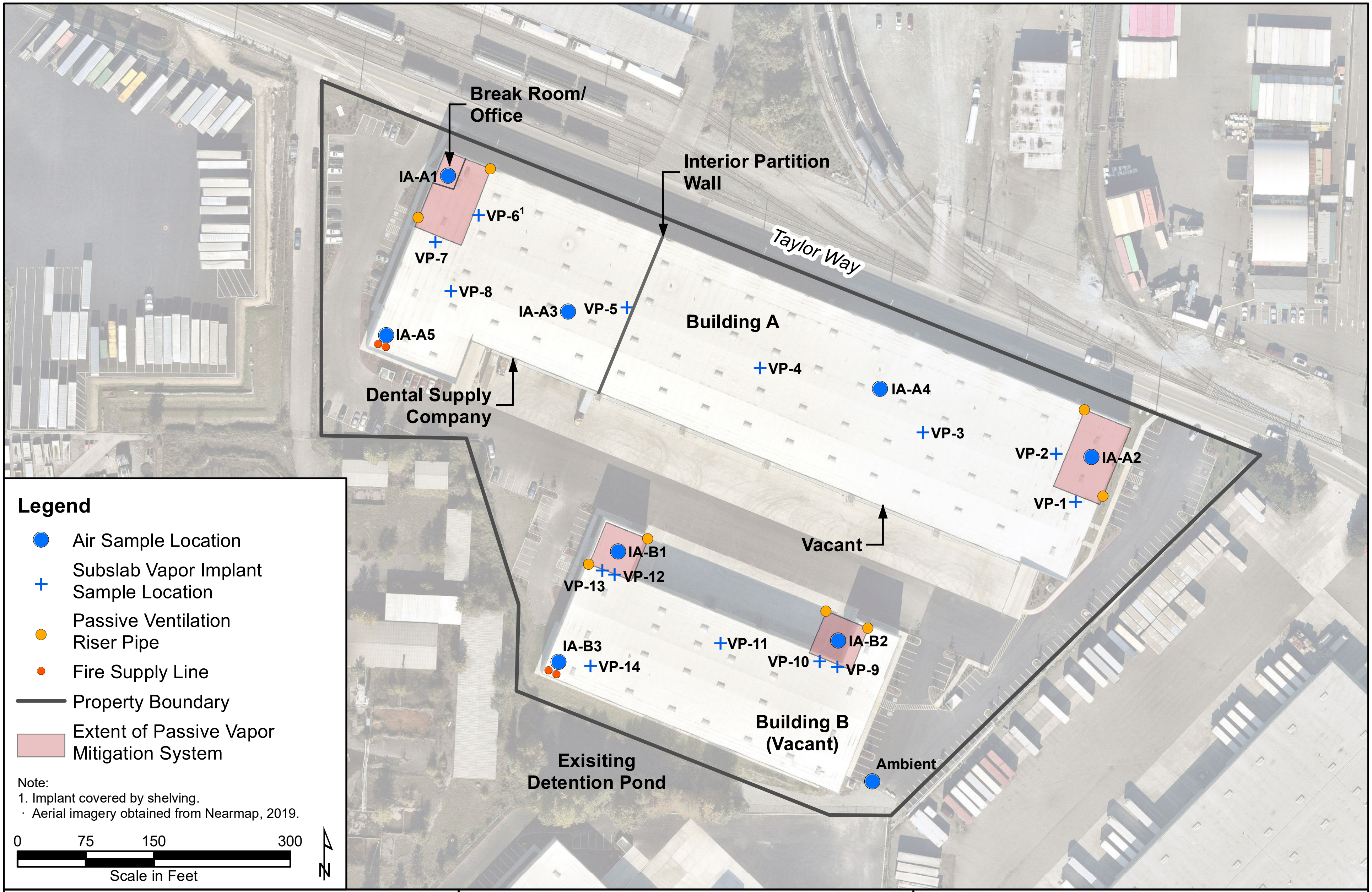
µg/m³ Micrograms per cubic meter

MTCA Model Toxics Control Act

Qualifiers:

U The analyte was not detected at the given reporting limit.

Figure



Note:
1. Implant covered by shelving.
· Aerial imagery obtained from Nearmap, 2019.

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Supplemental Post-Construction Vapor Intrusion Assessment 1514 Taylor Way Development Tacoma, Washington

Figure 1
Sample Locations

I:\GIS\Projects\Ave55-TaylorWay\MXD\Supplimental Post-Construction Vapor Intrusion Assessment\Figure 1 Sample Locations.mxd
2/24/2020

Attachment 1
Building Survey Form

DEPARTMENT OF
ECOLOGY
State of Washington

Building Feature and Water Use Survey

1. Building Ownership and Occupancy

1a. Occupant

Date: 12/13/2019
Name: dental supply company
Address: (west portion of bldg A)
1514 Taylor Way, Tacoma

Phone: Home ( ) Work ( )

1b. Owner or Landlord (check if same as occupant ____)

Date: 12/13/2019
Name: Port of Tacoma
Address:

Phone: Home ( ) Work ( )

2. General Building Information: What type of building is this? Check all appropriate responses below

☐ **Single Family**	☐ **Multiple Family**	☐ **School**	☒ **Commercial**
☐ Ranch	☐ 2-Family		☐ Building is being used as a day care center
☐ Raised Ranch	☐ Duplex		
☐ Cape	☐ Apartment House		
☐ Colonial	# of units _______		
☐ Split Level	☐ Condominium		What type of business is conducted in your building?
☐ Mobile Residence	# of units _______		
☐ Other (specify)	☐ Other (specify)		

2a. Number of floors? 1

2b. What was the original construction date of the building? March 2019

2c. Are there drains or sumps present (circle one)? YES [✓ NO]
If so, describe each, including information on contents:

2d. Are elevator shafts present (circle one)? YES [✓ NO]
If so, describe each:

3. Building Occupants (workers or residents)

Age (if under 18)	Sex (M or F)	Occupation	Number of years working or living here	Number of hours spent in building per day
—	M+F	warehouse : inventory,	<1	8
		forklift operation		
—	M+F	construction	<1	8
< 20 individuals total work in bldg				

4. Heating and Ventilation System(s)

4a. Please describe the type of materials your building is constructed out of (For example, wood, stone, concrete, etc.)

concrete slab on grade, poured concrete floors, metal roof structure. gypsum board interior partitions

4b. Has your building been weatherized with any of the following? (Circle all that apply)

Insulation Storm Windows [✓ Energy-Efficient Windows] Other (specify) ______

(office enclosure)

4c. What type of foundation does your building/residence have? (Circle all that apply)

Full basement Crawlspace [✓ Concrete Slab] (i.e. concrete floor that is not below ground level)

Other (specify) _______

4d. Does the basement/crawlspace have air vents leading out of the structure? NA

- If it has vents, are these vents always open, always closed, or opened and closed based on the season?

- Is the crawlspace lined with a plastic layer?

- If so, what is the position of that plastic layer? (Circle one)

  On the ground Attached to the floor joist Attached to the foundation

- What is the condition of that plastic layer? (Circle one)

  Whole Absent in places Torn

5. Foundation Type

5a. Basement characteristics (Check yes or no)

Do you have a basement?	**Yes**	[✓ **No**]
Is there a basement sump (pit where water drains)?		No
Is your basement finished?		NA

5b. Does the basement have any additional characteristics that might permit soil vapor entry, such as utility conduits , a portion of the wall missing or exposed soils around sump? If so, please describe.

NA

5c. Describe your foundation (Check all that apply)

Foundation floor is:		**Foundation walls are:**		**Inside of the foundation is:**	
Concrete	X	Poured concrete	X	Wet	
Dirt		Cinder block		Damp	
Other (specify)		Laid up stone		Dry	X

5d. Are there cracks in the foundation? (Circle one) Yes [✓ No]

5e. How would you describe them? (Check the box that best describes cracks in your foundation)

None	Few (1-2)	Some (3-6)	Many (more than 6)

NA

5f. Has the original structure of the building been altered by construction? For example, have half basements or spaces under the building been constructed? If so, please describe alterations.

NO

Floor Slab Characteristics

	YES	NO	DON'T KNOW
5g. Was a vapor barrier installed under the floor slab?	☒	☐	☐
If so, describe: Vapor barrier under office nodes			
5h. Were any other liners installed under the floor slab?	☐	☒	☐
If so, describe:			
5i. Were fibers or additional rebar added to the concrete floor slab to minimize cracking?	☒	☐	☐
If so, describe:			
5J. Were other techniques used to restrict vapor migration through the floor slab?	☒	☐	☐
If so, describe: sub-slab capillary break			

6. Heating and Ventilation System(s)

6a. What type of heating system(s) is/are used in your building? (Circle all that apply)

(office enclosure)

[✓ *Hot Air Circulation*]

Hot Air Radiation

Heat Pump

Unvented Kerosene Heater

Steam Radiation

Electric Wall/ Baseboard

Wood Stove

Other, specify:

6b. What type(s) of fuel(s) are used in your building/residence? (Circle all that apply)

[✓ Natural Gas] *[✓ Electric]* *Coal* *Fuel Oil*

Wood *Solar* *Other, specify*

6c. Does your building have a fireplace? (Circle one) Yes [✓ No]

6d. What types of mechanical ventilation systems are present in your building ? (Circle all that apply)

Central Air Conditioning *Mechanical Fans* *Bathroom Ventilation Fan*

Kitchen Range Hood Fan *Air-to-Air heat Exchanger* *[✓ Individual Air Conditioning Units]*
(office enclosure)

Other, please specify:

6e. Does your building have roof vents? (Circle the one that applies) Yes [✓ No]

7. Sources of Chemical Contamination:

Are any of these items present in the building? (Check all that apply)

Present?	Potential Source of Chemical	Location of Source
	Paints or paint thinners	
X	Cleaning solvents	dental supply area
	Air fresheners	
	Oven cleaners	
	Carpet/upholstery cleaners	
	Hairspray	
	Nail polish / polish remover	
	Bathroom cleaner	
	Appliance cleaner	
	Furniture polish	
	Perfume / colognes	
	Hobby supplies (For example, solvents, paints, thinners, glues, photo darkroom chemicals	
	Scented trees, wreaths, potpourri	

7a. Do one or more smokers occupy this building on a regular basis? Yes [✓ No]

7b. Do the occupants of the building have their clothes dry-cleaned once every other week or more? Yes [✓ No]

7c. Was remodeling or painting done in the building in the last month? Yes [✓ No]

7d. Are there any pressed wood products in the building (For example, Hardwood, plywood, wall paneling, particleboard or fiberboard)? Yes [✓ No]

If so, please describe their location:

7e. Within the last month, have you gotten new upholstery, drapes or Other textiles in the building? Yes [✓ No]

7f. Has the building been treated with any insecticides or pesticides? Yes [✓ No]

If so, what chemicals are used and how often are they applied?

7g. Does your property contain any underground storage tanks? Yes [✓ No]

If so, what type?

8. General Comments:

Is there any other information about the structural features of this building, the occupants or potential sources of chemical contaminants to the indoor air that may be of importance in facilitating the evaluation of the indoor air quality of the building?

a few unsealed penetrations around fire water supply lines - E. wall + SW corner of bldg A, SW corner of bldg B

per Are 55 all floor slab joints sealed

9. Water Use Survey

Please check ALL of the boxes below that apply to your property.

Land uses, Property use or Activity Type	Historic Use	Current Use	Planned Future Use
Residential			
Commercial	NA	X	X
Industrial			
Agricultural			
Recreational			
Other, Describe:			

9a. Do you use the public water supply provided by the city? Yes

9b. Do you have a private well? No

9c. If you have a private well, when was it last used? NA

9d. If you have a private well, circle all of the uses for that water: NA

Drinking water *Irrigation* *Livestock* *Vegetable Garden*

Industrial Process

9e. Additional comments concerning water use

THANK YOU!
We appreciate your participation in this survey!
If you have any questions about the survey, or need help filling it out, please contact Steve Teel with the Department of Ecology at 360-407-6247 or stee461@ecy.wa.gov.

Attachment 2
Sub-Slab Vapor Sampling Field Forms and Field Photographs

SOIL VAPOR SAMPLING SHEET

Site Reference: Ave 55 - Taylor Way

Date: 1/13/2020

Address: 1514 Taylor Way Tacoma, WA

Personnel: KA + TS

Soil Vapor Sampling Point ID	Vacuum Test		Purging				Helium		Sampling				PID		
	Time Start Vacuum Testing	Time Stop Vacuum Testing	Time Start Purging	Time Stop Purging	Purging Rate (mL/min)	Total Volume Purged (mL)	Time of Helium Reading	Helium Reading (%)	Time Start Sampling	Time Stop Sampling	Canister Vacuum Before Sampling (in Hg)	Canister Vacuum After Sampling (in Hg)	Time of PID Reading	PID Reading	Notes
VP-1	0955	1000	1001	1002	150	~~145~~ 150			1004	1010	28"Hg	2"Hg			3667
VP-2	1031	1036	1039	~~1038~~ 1041	150	~~145~~			~~1039~~ 1044 1041	1048	30"	2"Hg			2436
VP-5	1129	1134	1134	1135	150	150			1136	1140	29"	2"Hg			2439
VP-7	1159	1204	1205	1206	150	150			1207	1212	29"	2"Hg			4177
VP-8	1225	1230	1230	1231	150	150			1231	1236	29"	2"Hg			4183
VP-13	1334	1339	1341	1342	150	150			1344	1350	29"	2"Hg			3671
VP-12	1402	1407	1408	1409	150	150			1410	1417	28"	2"Hg			2298
~~VP-120~~	~~1402~~	~~1407~~	~~1408~~	~~1409~~	~~150~~	~~150~~			~~1410~~	~~1421~~	~~30"~~	~~2"Hg~~			~~Field Dup. 3220~~ TS
VP-14	1444	1449	1450	1451	150	150			1452	1458	30"	2Hg			4181
VP-10	1512	1517	1517	1518	150	150			1519	1525	29"	2Hg			2302
VP-09	1535	1540	1540	1541	150	150			1543	1549	29"	2Hg			2297
~~VP-2~~ TS															

Notes:

VP-1 begin vacuum 22"Hg, VP-2 begin Vacuum 21"Hg, VP-5 begin vacuum 21"Hg

VP-7 begin vacuum 19"Hg, VP-8 begin Vacuum 20"Hg, VP-13 begin Vacuum 29"Hg

VP-12 begin Vacuum 19"Hg, VP-120 begin vacuum 20"Hg (field duplicate)

VP-14 begin vacuum 24"Hg, VP-10 begin Vacuum 22"Hg, VP-09 begin vacuum 25"Hg

SOIL VAPOR SAMPLING SHEET

Site Reference: Ave 55 - Taylor Way
Address: 1514 Taylor Way Tacoma WA

Date: 1/14/2020
Personnel: KA + TS

	Vacuum Test		Purging				Helium		Sampling				PID		
Soil Vapor Sampling Point ID	Time Start Vacuum Testing	Time Stop Vacuum Testing	Time Start Purging	Time Stop Purging	Purging Rate (mL/min)	Total Volume Purged (mL)	Time of Helium Reading	Helium Reading (%)	Time Start Sampling	Time Stop Sampling	Canister Vacuum Before Sampling (in Hg)	Canister Vacuum After Sampling (in Hg)	Time of PID Reading	PID Reading	Notes
VP-3	1056	1102	1102	1103	~~167~~ 150	150			1103	1109	30"	2"			3287
VP-4	1125	1130	1131	1132	~~167~~ 150	150			1132	1138	29"	2"			2300
VP-11	1222	1228	1228	1231	150	300			1232	1236	29"	2"			3386
VP-110	1222	1228	1228	1231	150	300			1232	1237	29"	2"			3344 Field dup.

Notes:
VP-3 begin vacuum 20" Hg, VP-4 begin vacuum 20" Hg, VP-11 begin vacuum ~~20" Hg~~ TS 18" Hg
VP-110 begin vacuum 19" Hg - field duplicate

SOIL VAPOR SAMPLING SHEET

Site Reference: Ave55 - Taylor Way

Date: 2/18/2020

Address: 1415 Taylor Way Tacoma, WA

Personnel: Tyler Scott

Soil Vapor Sampling Point ID	Vacuum Test		Purging				Helium		Sampling				PID		Notes
	Time Start Vacuum Testing	Time Stop Vacuum Testing	Time Start Purging	Time Stop Purging	Purging Rate (mL/min)	Total Volume Purged (mL)	Time of Helium Reading	Helium Reading (%)	Time Start Sampling	Time Stop Sampling	Canister Vacuum Before Sampling (in Hg)	Canister Vacuum After Sampling (in Hg)	Time of PID Reading	PID Reading	
VP-3	12:27	12:32	12:34	12:38	167	500			12:40	12:44	29	5			
VP-3	13:05	13:10	13:11	13:14	167	500			13:15	13:21	29	5			Dup. VP-3-D

Notes:

VP-3 Vac. test Initial: 25 Hg Final: 25 Hg VP-3

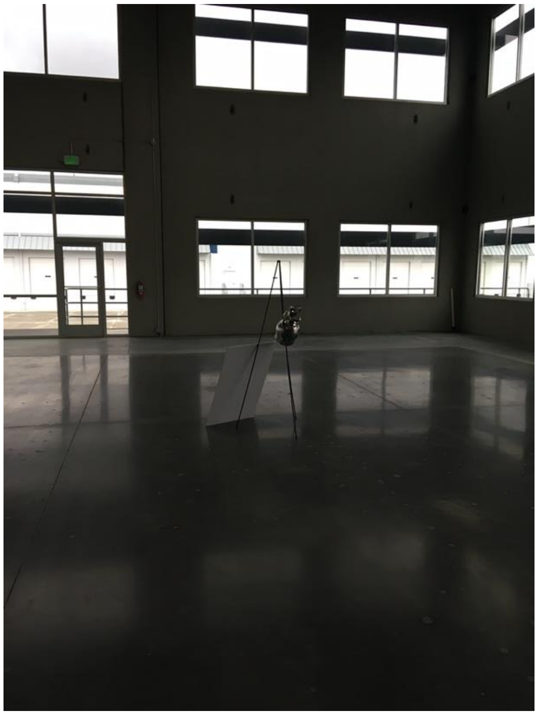
VP-3 Duplicate Vac Test Initial: 25Hg Final: 25 Hg VP-3-D

Photograph 1. Tubing installed at VP-7 to measure cross-slab differential pressure.

Photograph 2. Cross-slab differential pressure data logger with 0.001 inches of water resolution.

Photograph 3. Tubing run to Building A break room enclosure to measure differential pressure.

Photograph 4. Indoor air sample collection in Building A break room enclosure (sample IA-A1).

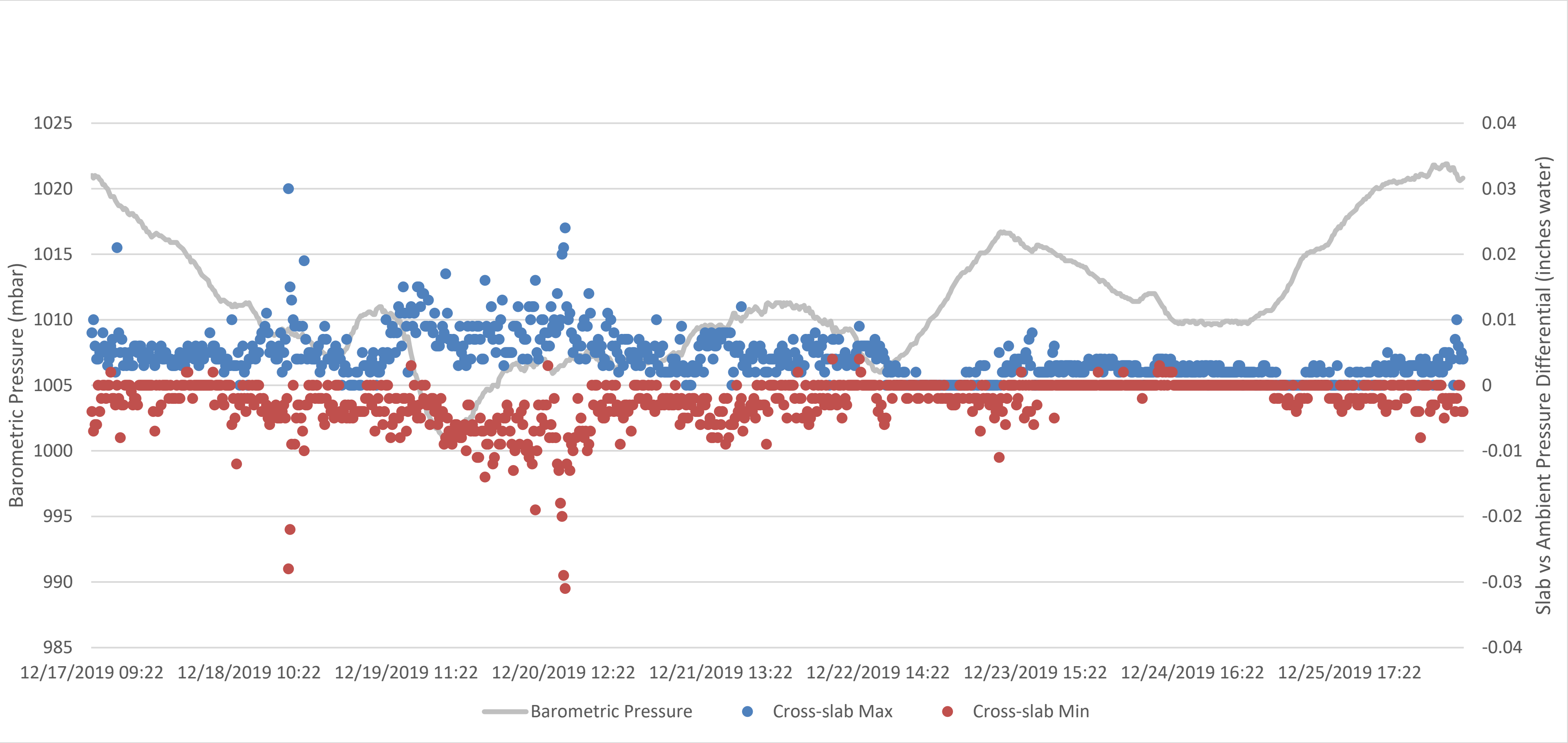


Photograph 5. Indoor air sample location at Building B (sample IA-B2).

Photograph 6. Soil vapor sample collection with isopropyl alcohol-soaked rags at connections for leak detection placed after completion of shut-in test.

Photograph 7. Placement of additional seal to re-sample VP-3 after failed leak test.

Attachment 3
Cross-Slab Differential Pressure Plots and Data Tables



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Supplemental Post-Construction Vapor Intrusion Assessment
1514 Taylor Way Development
Tacoma, Washington

VP-1
Building A East Office Node Sub-Slab
Versus Main Warehouse Ambient

3/4/2020

VP-1
Building A East Office Node Sub-Slab Versus Main Warehouse Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/17/2019	9:22	1021	0.008	-0.004
12/17/2019	9:37	1020.8	0.01	-0.007
12/17/2019	9:52	1021	0.006	-0.006
12/17/2019	10:07	1020.9	0.004	-0.006
12/17/2019	10:22	1020.9	0.004	0
12/17/2019	10:37	1020.7	0.005	-0.004
12/17/2019	10:52	1020.6	0.005	-0.002
12/17/2019	11:07	1020.3	0.008	0
12/17/2019	11:22	1020.3	0.006	0
12/17/2019	11:37	1020.1	0.005	-0.002
12/17/2019	11:52	1020	0.003	0
12/17/2019	12:07	1019.7	0.004	0
12/17/2019	12:22	1019.4	0.006	0.002
12/17/2019	12:37	1019.4	0.007	-0.002
12/17/2019	12:52	1019.4	0.005	-0.002
12/17/2019	13:07	1019.1	0.002	-0.003
12/17/2019	13:22	1018.9	0.021	0
12/17/2019	13:37	1018.7	0.008	-0.002
12/17/2019	13:52	1018.7	0.005	-0.008
12/17/2019	14:07	1018.6	0.007	-0.003
12/17/2019	14:22	1018.4	0.003	-0.003
12/17/2019	14:37	1018.5	0.005	0
12/17/2019	14:52	1018.4	0.003	0
12/17/2019	15:07	1018.1	0.004	0
12/17/2019	15:22	1018	0.005	0
12/17/2019	15:37	1018.1	0.003	-0.001
12/17/2019	15:52	1018.1	0.003	-0.003
12/17/2019	16:07	1017.9	0.006	-0.002
12/17/2019	16:22	1017.9	0.006	-0.002
12/17/2019	16:37	1017.7	0.005	-0.003
12/17/2019	16:52	1017.5	0.006	0
12/17/2019	17:07	1017.5	0.006	0
12/17/2019	17:22	1017.3	0.004	0
12/17/2019	17:37	1017	0.003	0
12/17/2019	17:52	1017	0.005	0
12/17/2019	18:07	1016.7	0.004	0
12/17/2019	18:22	1016.7	0.005	0
12/17/2019	18:37	1016.5	0.004	0
12/17/2019	18:52	1016.3	0.006	0
12/17/2019	19:07	1016.4	0.004	-0.004
12/17/2019	19:22	1016.5	0.003	-0.007
12/17/2019	19:37	1016.6	0.004	0
12/17/2019	19:52	1016.5	0.004	-0.004
12/17/2019	20:07	1016.4	0.005	0
12/17/2019	20:22	1016.4	0.006	-0.003
12/17/2019	20:37	1016.3	0.004	0
12/17/2019	20:52	1016.2	0.004	0
12/17/2019	21:07	1016.1	0.005	0
12/17/2019	21:22	1016.1	0.004	0
12/17/2019	21:37	1016.1	0.004	-0.002
12/17/2019	21:52	1015.9	0.004	0
12/17/2019	22:07	1015.9	0.003	-0.002
12/17/2019	22:22	1015.9	0.003	-0.002
12/17/2019	22:37	1015.9	0.003	-0.002
12/17/2019	22:52	1015.9	0.004	0
12/17/2019	23:07	1015.7	0.004	-0.002
12/17/2019	23:22	1015.6	0.005	-0.002
12/17/2019	23:37	1015.5	0.003	0
12/17/2019	23:52	1015.4	0.004	0
12/18/2019	0:07	1015.2	0.003	0
12/18/2019	0:22	1015	0.004	0.002
12/18/2019	0:37	1014.8	0.006	0.002
12/18/2019	0:52	1014.8	0.005	0
12/18/2019	1:07	1014.4	0.005	0
12/18/2019	1:22	1014.5	0.005	-0.002
12/18/2019	1:37	1014.4	0.004	0
12/18/2019	1:52	1014.2	0.006	0
12/18/2019	2:07	1014	0.005	0
12/18/2019	2:22	1013.9	0.003	0
12/18/2019	2:37	1013.6	0.005	0
12/18/2019	2:52	1013.4	0.006	0
12/18/2019	3:07	1013.3	0.004	0
12/18/2019	3:22	1013.2	0.005	0
12/18/2019	3:37	1013.1	0.005	0
12/18/2019	3:52	1013	0.005	0
12/18/2019	4:07	1012.6	0.008	0
12/18/2019	4:22	1012.5	0.005	0
12/18/2019	4:37	1012.3	0.006	0.002
12/18/2019	4:52	1012.2	0.006	-0.003
12/18/2019	5:07	1011.9	0.004	0
12/18/2019	5:22	1011.8	0.004	0
12/18/2019	5:37	1011.6	0.004	0
12/18/2019	5:52	1011.4	0.005	0
12/18/2019	6:07	1011.5	0.004	-0.002
12/18/2019	6:22	1011.5	0.002	-0.003
12/18/2019	6:37	1011.4	0.003	0
12/18/2019	6:52	1011.3	0.004	0
12/18/2019	7:07	1011.2	0.003	0
12/18/2019	7:22	1011.2	0.003	0
12/18/2019	7:37	1011	0.01	-0.006
12/18/2019	7:52	1011	0.003	-0.002

VP-1
Building A East Office Node Sub-Slab Versus Main Warehouse Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/18/2019	8:07	1011.2	0.003	-0.005
12/18/2019	8:22	1011	0.003	-0.012
12/18/2019	8:37	1011.1	0.005	-0.002
12/18/2019	8:52	1011.1	0	-0.003
12/18/2019	9:07	1011.1	0.003	-0.002
12/18/2019	9:22	1011.1	0.006	0
12/18/2019	9:37	1011.2	0.002	-0.002
12/18/2019	9:52	1011.3	0.003	-0.004
12/18/2019	10:07	1011.2	0	-0.002
12/18/2019	10:22	1011.3	0.004	0
12/18/2019	10:37	1011	0.004	-0.002
12/18/2019	10:52	1010.8	0.006	0
12/18/2019	11:07	1010.6	0.005	-0.003
12/18/2019	11:22	1010.5	0.004	0
12/18/2019	11:37	1010.2	0.005	0
12/18/2019	11:52	1010.1	0.005	0
12/18/2019	12:07	1009.7	0.007	-0.002
12/18/2019	12:22	1009.6	0.008	-0.004
12/18/2019	12:37	1009.2	0.008	-0.002
12/18/2019	12:52	1009.1	0.009	-0.004
12/18/2019	13:07	1008.9	0.011	-0.003
12/18/2019	13:22	1008.9	0.008	-0.005
12/18/2019	13:37	1008.9	0.005	-0.006
12/18/2019	13:52	1009	0.006	-0.005
12/18/2019	14:07	1008.9	0.005	-0.005
12/18/2019	14:22	1008.8	0.005	-0.004
12/18/2019	14:37	1008.9	0.004	-0.003
12/18/2019	14:52	1009	0.004	-0.005
12/18/2019	15:07	1009	0.006	-0.005
12/18/2019	15:22	1009.1	0.008	-0.005
12/18/2019	15:37	1009.3	0.002	-0.004
12/18/2019	15:52	1009.2	0.005	-0.003
12/18/2019	16:07	1009.1	0.007	-0.005
12/18/2019	16:22	1009.1	0.003	-0.002
12/18/2019	16:37	1009.3	0.03	-0.028
12/18/2019	16:52	1009.1	0.015	-0.022
12/18/2019	17:07	1008.9	0.013	-0.009
12/18/2019	17:22	1008.9	0.01	0
12/18/2019	17:37	1008.8	0.009	-0.009
12/18/2019	17:52	1008.9	0.004	-0.005
12/18/2019	18:07	1008.7	0.004	-0.003
12/18/2019	18:22	1008.7	0.009	-0.003
12/18/2019	18:37	1008.7	0.004	-0.005
12/18/2019	18:52	1008.9	0.009	-0.007
12/18/2019	19:07	1008.5	0.019	-0.01
12/18/2019	19:22	1008.5	0.007	-0.003
12/18/2019	19:37	1008.5	0.004	-0.003
12/18/2019	19:52	1008.4	0.005	0
12/18/2019	20:07	1008.3	0.005	-0.002
12/18/2019	20:22	1008.2	0.004	0
12/18/2019	20:37	1007.9	0.004	0
12/18/2019	20:52	1007.8	0.004	-0.002
12/18/2019	21:07	1007.8	0.005	0
12/18/2019	21:22	1007.8	0.006	-0.002
12/18/2019	21:37	1007.7	0.002	-0.002
12/18/2019	21:52	1007.6	0.003	-0.002
12/18/2019	22:07	1007.5	0.007	-0.005
12/18/2019	22:22	1007.4	0.009	-0.006
12/18/2019	22:37	1007.3	0.007	-0.002
12/18/2019	22:52	1007.2	0.004	0
12/18/2019	23:07	1007.3	0.004	-0.003
12/18/2019	23:22	1007.4	0.004	-0.004
12/18/2019	23:37	1007.4	0.005	-0.003
12/18/2019	23:52	1007.6	0.003	-0.005
12/19/2019	0:07	1007.1	0.006	0
12/19/2019	0:22	1006.9	0.005	0
12/19/2019	0:37	1006.9	0.005	0
12/19/2019	0:52	1007	0.004	-0.004
12/19/2019	1:07	1007.4	0	-0.005
12/19/2019	1:22	1007.5	0.002	-0.004
12/19/2019	1:37	1007.7	0.003	-0.003
12/19/2019	1:52	1007.8	0.007	-0.005
12/19/2019	2:07	1008.1	0.002	-0.003
12/19/2019	2:22	1008.5	0	-0.005
12/19/2019	2:37	1008.9	0	-0.003
12/19/2019	2:52	1009	0	-0.005
12/19/2019	3:07	1009.4	0	-0.004
12/19/2019	3:22	1009.4	0.002	-0.004
12/19/2019	3:37	1009.9	0.002	-0.004
12/19/2019	3:52	1010.1	0	-0.004
12/19/2019	4:07	1010.3	0	-0.004
12/19/2019	4:22	1010.3	0.005	-0.004
12/19/2019	4:37	1010.4	0.003	-0.004
12/19/2019	4:52	1010.4	0.003	-0.002
12/19/2019	5:07	1010.5	0.003	0
12/19/2019	5:22	1010.6	0.003	-0.002
12/19/2019	5:37	1010.6	0.002	0
12/19/2019	5:52	1010.5	0.004	-0.003
12/19/2019	6:07	1010.4	0.005	0
12/19/2019	6:22	1010.4	0.003	-0.007
12/19/2019	6:37	1010.8	0	-0.004

VP-1
Building A East Office Node Sub-Slab Versus Main Warehouse Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/19/2019	6:52	1010.9	0.002	-0.002
12/19/2019	7:07	1011	0.002	-0.004
12/19/2019	7:22	1011	0.003	0
12/19/2019	7:37	1010.6	0.005	-0.006
12/19/2019	7:52	1010.7	0.004	-0.004
12/19/2019	8:07	1010.5	0.01	0
12/19/2019	8:22	1010.3	0.005	0
12/19/2019	8:37	1010.4	0.004	-0.002
12/19/2019	8:52	1010.5	0.008	-0.008
12/19/2019	9:07	1010.4	0.009	-0.006
12/19/2019	9:22	1010.2	0.008	-0.005
12/19/2019	9:37	1010.2	0.005	-0.002
12/19/2019	9:52	1010	0.008	-0.002
12/19/2019	10:07	1009.8	0.012	-0.005
12/19/2019	10:22	1009.9	0.011	-0.008
12/19/2019	10:37	1009.6	0.006	-0.004
12/19/2019	10:52	1009.1	0.015	-0.002
12/19/2019	11:07	1008.5	0.011	-0.002
12/19/2019	11:22	1008.7	0.009	-0.007
12/19/2019	11:37	1008.7	0.002	-0.004
12/19/2019	11:52	1008	0.011	-0.002
12/19/2019	12:07	1007.4	0.012	0.003
12/19/2019	12:22	1006.9	0.009	-0.003
12/19/2019	12:37	1005.9	0.011	0
12/19/2019	12:52	1005.8	0.008	-0.004
12/19/2019	13:07	1005.4	0.015	-0.005
12/19/2019	13:22	1004.9	0.015	-0.003
12/19/2019	13:37	1004.4	0.012	-0.005
12/19/2019	13:52	1004	0.014	0
12/19/2019	14:07	1003.6	0.014	-0.002
12/19/2019	14:22	1003.7	0.009	0
12/19/2019	14:37	1002.9	0.009	-0.003
12/19/2019	14:52	1002.8	0.013	-0.003
12/19/2019	15:07	1002.5	0.009	-0.006
12/19/2019	15:22	1002.3	0.009	-0.002
12/19/2019	15:37	1002	0.008	-0.002
12/19/2019	15:52	1001.8	0.011	-0.004
12/19/2019	16:07	1001.7	0.006	-0.003
12/19/2019	16:22	1001.7	0.006	-0.006
12/19/2019	16:37	1001.4	0.006	-0.005
12/19/2019	16:52	1001.3	0.007	-0.002
12/19/2019	17:07	1001.1	0.009	-0.004
12/19/2019	17:22	1001.1	0.008	-0.009
12/19/2019	17:37	1000.7	0.017	-0.008
12/19/2019	17:52	1000.6	0.011	-0.005
12/19/2019	18:07	1000.7	0.007	-0.007
12/19/2019	18:22	1000.7	0.007	-0.008
12/19/2019	18:37	1000.9	0.006	-0.009
12/19/2019	18:52	1000.9	0.007	-0.008
12/19/2019	19:07	1001.1	0.006	-0.006
12/19/2019	19:22	1001.2	0.006	-0.006
12/19/2019	19:37	1001.5	0.003	-0.007
12/19/2019	19:52	1001.5	0.009	-0.008
12/19/2019	20:07	1001.9	0.005	-0.008
12/19/2019	20:22	1001.9	0.006	-0.007
12/19/2019	20:37	1002.2	0.004	-0.006
12/19/2019	20:52	1002.4	0.003	-0.01
12/19/2019	21:07	1002.3	0.009	-0.003
12/19/2019	21:22	1002.4	0.007	-0.003
12/19/2019	21:37	1002.6	0.004	-0.007
12/19/2019	21:52	1002.6	0.009	-0.006
12/19/2019	22:07	1003.2	0.007	-0.007
12/19/2019	22:22	1003.2	0.007	-0.007
12/19/2019	22:37	1003.7	0.009	-0.011
12/19/2019	22:52	1003.7	0.009	-0.011
12/19/2019	23:07	1004	0.007	-0.005
12/19/2019	23:22	1004.1	0.004	-0.007
12/19/2019	23:37	1004.4	0.004	-0.007
12/19/2019	23:52	1004.5	0.016	-0.014
12/20/2019	0:07	1004.7	0.009	-0.009
12/20/2019	0:22	1004.7	0.008	-0.009
12/20/2019	0:37	1004.6	0.008	-0.006
12/20/2019	0:52	1004.7	0.012	-0.007
12/20/2019	1:07	1005	0.007	-0.012
12/20/2019	1:22	1005	0.009	-0.011
12/20/2019	1:37	1005	0.005	-0.006
12/20/2019	1:52	1004.9	0.009	-0.005
12/20/2019	2:07	1005.5	0.007	-0.009
12/20/2019	2:22	1005.7	0.01	-0.009
12/20/2019	2:37	1005.9	0.013	-0.007
12/20/2019	2:52	1006.1	0.003	-0.005
12/20/2019	3:07	1006.2	0.005	-0.005
12/20/2019	3:22	1006.1	0.005	-0.003
12/20/2019	3:37	1006.2	0.005	-0.004
12/20/2019	3:52	1006.2	0.005	-0.007
12/20/2019	4:07	1006.5	0.005	-0.009
12/20/2019	4:22	1006.6	0.009	-0.013
12/20/2019	4:37	1006.6	0.009	-0.01
12/20/2019	4:52	1006.7	0.009	-0.005
12/20/2019	5:07	1006.6	0.012	-0.005
12/20/2019	5:22	1006.4	0.008	-0.009

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Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/20/2019	5:37	1006.2	0.008	-0.004
12/20/2019	5:52	1006.3	0.004	-0.006
12/20/2019	6:07	1006.1	0.007	-0.003
12/20/2019	6:22	1006.3	0.007	-0.01
12/20/2019	6:37	1006.8	0.004	-0.009
12/20/2019	6:52	1006.8	0.012	-0.011
12/20/2019	7:07	1006.6	0.01	-0.01
12/20/2019	7:22	1006.6	0.012	-0.012
12/20/2019	7:37	1006.4	0.012	-0.007
12/20/2019	7:52	1006.9	0.016	-0.019
12/20/2019	8:07	1006.6	0.005	-0.01
12/20/2019	8:22	1006.8	0.004	-0.003
12/20/2019	8:37	1006.9	0.007	-0.007
12/20/2019	8:52	1006.9	0.01	-0.005
12/20/2019	9:07	1006.9	0.01	-0.003
12/20/2019	9:22	1007	0.008	-0.006
12/20/2019	9:37	1006.6	0.006	-0.003
12/20/2019	9:52	1006.4	0.008	0.003
12/20/2019	10:07	1006.3	0.006	-0.008
12/20/2019	10:22	1006.2	0.012	-0.006
12/20/2019	10:37	1005.9	0.009	-0.008
12/20/2019	10:52	1006	0.01	-0.002
12/20/2019	11:07	1006.2	0.008	-0.008
12/20/2019	11:22	1006.2	0.014	-0.012
12/20/2019	11:37	1006.4	0.009	-0.013
12/20/2019	11:52	1006.5	0.01	-0.018
12/20/2019	12:07	1006.5	0.02	-0.02
12/20/2019	12:22	1006.5	0.021	-0.029
12/20/2019	12:37	1006.7	0.024	-0.031
12/20/2019	12:52	1006.9	0.012	-0.012
12/20/2019	13:07	1006.9	0.01	-0.008
12/20/2019	13:22	1006.9	0.011	-0.013
12/20/2019	13:37	1007.3	0.008	-0.009
12/20/2019	13:52	1007.2	0.005	-0.01
12/20/2019	14:07	1007	0.007	-0.008
12/20/2019	14:22	1007.2	0.007	-0.008
12/20/2019	14:37	1007.1	0.006	-0.002
12/20/2019	14:52	1007.3	0.004	-0.007
12/20/2019	15:07	1007.3	0.006	-0.005
12/20/2019	15:22	1007.1	0.009	-0.007
12/20/2019	15:37	1007.1	0.01	-0.008
12/20/2019	15:52	1007.4	0.004	-0.007
12/20/2019	16:07	1007.6	0.009	-0.01
12/20/2019	16:22	1007.5	0.014	-0.009
12/20/2019	16:37	1007.4	0.011	-0.007
12/20/2019	16:52	1007.2	0.006	0
12/20/2019	17:07	1007.2	0.006	-0.003
12/20/2019	17:22	1007.2	0.005	0
12/20/2019	17:37	1007	0.005	0
12/20/2019	17:52	1007.1	0.007	-0.004
12/20/2019	18:07	1006.8	0.005	-0.004
12/20/2019	18:22	1007	0.006	-0.003
12/20/2019	18:37	1007.3	0.003	-0.005
12/20/2019	18:52	1007.3	0.004	-0.005
12/20/2019	19:07	1006.9	0.009	0
12/20/2019	19:22	1006.9	0.011	-0.002
12/20/2019	19:37	1007.1	0.003	-0.004
12/20/2019	19:52	1006.9	0.01	-0.002
12/20/2019	20:07	1006.5	0.006	0
12/20/2019	20:22	1006.4	0.008	-0.004
12/20/2019	20:37	1006.2	0.006	0
12/20/2019	20:52	1006.3	0.005	-0.003
12/20/2019	21:07	1006.4	0.002	-0.004
12/20/2019	21:22	1006.8	0.004	-0.009
12/20/2019	21:37	1006.9	0.007	-0.004
12/20/2019	21:52	1007	0.003	-0.005
12/20/2019	22:07	1007	0.007	-0.003
12/20/2019	22:22	1007	0.007	-0.003
12/20/2019	22:37	1007.1	0.007	-0.004
12/20/2019	22:52	1007.2	0.005	-0.003
12/20/2019	23:07	1007.3	0.004	-0.007
12/20/2019	23:22	1007.2	0.005	-0.003
12/20/2019	23:37	1007.1	0.005	0
12/20/2019	23:52	1007.1	0.003	0
12/21/2019	0:07	1007.1	0.004	0
12/21/2019	0:22	1006.9	0.007	-0.002
12/21/2019	0:37	1006.9	0.003	-0.002
12/21/2019	0:52	1006.9	0.006	0
12/21/2019	1:07	1006.8	0.005	0
12/21/2019	1:22	1006.7	0.006	-0.003
12/21/2019	1:37	1006.7	0.005	-0.002
12/21/2019	1:52	1006.7	0.004	0
12/21/2019	2:07	1006.8	0.002	-0.003
12/21/2019	2:22	1006.8	0.004	0
12/21/2019	2:37	1006.8	0.004	-0.003
12/21/2019	2:52	1006.8	0.006	-0.004
12/21/2019	3:07	1006.7	0.01	0
12/21/2019	3:22	1006.8	0.003	-0.003
12/21/2019	3:37	1006.7	0.005	-0.003
12/21/2019	3:52	1006.8	0.002	-0.003
12/21/2019	4:07	1006.9	0.006	-0.002

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Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/21/2019	4:22	1006.9	0.002	-0.003
12/21/2019	4:37	1007	0.002	-0.002
12/21/2019	4:52	1007.1	0.002	-0.002
12/21/2019	5:07	1007.2	0.002	-0.003
12/21/2019	5:22	1007.3	0.002	-0.002
12/21/2019	5:37	1007.4	0.004	-0.003
12/21/2019	5:52	1007.5	0.003	-0.003
12/21/2019	6:07	1007.3	0.004	0
12/21/2019	6:22	1007.4	0.002	-0.002
12/21/2019	6:37	1007.5	0.003	-0.003
12/21/2019	6:52	1007.5	0.007	-0.006
12/21/2019	7:07	1007.3	0.009	-0.002
12/21/2019	7:22	1007.6	0.003	-0.005
12/21/2019	7:37	1008	0.002	-0.005
12/21/2019	7:52	1008.1	0	-0.003
12/21/2019	8:07	1008.3	0.002	-0.005
12/21/2019	8:22	1008.6	0	-0.002
12/21/2019	8:37	1008.8	0	-0.003
12/21/2019	8:52	1008.9	0.003	-0.002
12/21/2019	9:07	1009.1	0.002	-0.002
12/21/2019	9:22	1009.2	0.002	-0.004
12/21/2019	9:37	1009.4	0.003	-0.004
12/21/2019	9:52	1009.3	0.006	-0.004
12/21/2019	10:07	1009.4	0.004	-0.006
12/21/2019	10:22	1009.5	0.007	-0.003
12/21/2019	10:37	1009.4	0.002	-0.002
12/21/2019	10:52	1009.6	0.008	-0.003
12/21/2019	11:07	1009.5	0.006	-0.002
12/21/2019	11:22	1009.5	0.006	-0.006
12/21/2019	11:37	1009.6	0.007	-0.005
12/21/2019	11:52	1009.6	0.008	-0.008
12/21/2019	12:07	1009.5	0.004	-0.008
12/21/2019	12:22	1009.4	0.006	-0.006
12/21/2019	12:37	1009.4	0.006	-0.006
12/21/2019	12:52	1009.5	0.007	-0.008
12/21/2019	13:07	1009.6	0.008	-0.004
12/21/2019	13:22	1009.6	0.007	-0.006
12/21/2019	13:37	1009.4	0.008	-0.004
12/21/2019	13:52	1009.4	0.008	-0.002
12/21/2019	14:07	1009.2	0.008	-0.009
12/21/2019	14:22	1009.3	0.008	-0.002
12/21/2019	14:37	1009.6	0.006	-0.008
12/21/2019	14:52	1009.8	0.008	-0.006
12/21/2019	15:07	1010.1	0	-0.006
12/21/2019	15:22	1010.5	0.002	-0.006
12/21/2019	15:37	1010.5	0.005	-0.005
12/21/2019	15:52	1010.1	0.006	0
12/21/2019	16:07	1010.2	0.005	-0.004
12/21/2019	16:22	1010.1	0.006	-0.003
12/21/2019	16:37	1009.9	0.012	-0.002
12/21/2019	16:52	1010.2	0.003	-0.007
12/21/2019	17:07	1010.2	0.004	-0.005
12/21/2019	17:22	1010.3	0.003	-0.004
12/21/2019	17:37	1010.6	0.002	-0.004
12/21/2019	17:52	1010.8	0.002	-0.004
12/21/2019	18:07	1010.6	0.005	-0.003
12/21/2019	18:22	1010.7	0.004	-0.004
12/21/2019	18:37	1010.8	0.006	-0.002
12/21/2019	18:52	1011	0.002	-0.005
12/21/2019	19:07	1010.9	0.005	0
12/21/2019	19:22	1010.7	0.005	-0.003
12/21/2019	19:37	1010.6	0.006	-0.003
12/21/2019	19:52	1010.4	0.005	0
12/21/2019	20:07	1010.6	0.004	-0.003
12/21/2019	20:22	1010.6	0.002	-0.003
12/21/2019	20:37	1011.2	0.002	-0.009
12/21/2019	20:52	1011.3	0.002	-0.004
12/21/2019	21:07	1011.2	0.004	0
12/21/2019	21:22	1011.1	0.004	0
12/21/2019	21:37	1011	0.004	0
12/21/2019	21:52	1011.1	0.004	0
12/21/2019	22:07	1011.3	0.002	-0.002
12/21/2019	22:22	1011.3	0.004	-0.002
12/21/2019	22:37	1011.3	0.005	-0.002
12/21/2019	22:52	1011.3	0.003	0
12/21/2019	23:07	1011	0.006	0
12/21/2019	23:22	1011.3	0.004	-0.003
12/21/2019	23:37	1011.1	0.005	0
12/21/2019	23:52	1011.3	0.004	-0.005
12/22/2019	0:07	1011.2	0.003	0
12/22/2019	0:22	1011.3	0.003	0
12/22/2019	0:37	1011.1	0.003	0
12/22/2019	0:52	1010.9	0.007	0
12/22/2019	1:07	1010.9	0.005	-0.002
12/22/2019	1:22	1011.1	0.002	-0.005
12/22/2019	1:37	1011	0.004	0.002
12/22/2019	1:52	1010.8	0.003	-0.002
12/22/2019	2:07	1011	0.002	-0.002
12/22/2019	2:22	1011	0.003	-0.005
12/22/2019	2:37	1011.1	0.003	-0.005
12/22/2019	2:52	1010.7	0.007	0

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Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/22/2019	3:07	1010.7	0.006	-0.004
12/22/2019	3:22	1010.9	0.007	-0.006
12/22/2019	3:37	1010.5	0.006	-0.005
12/22/2019	3:52	1010.6	0.006	-0.002
12/22/2019	4:07	1010.2	0.005	0
12/22/2019	4:22	1010.1	0.008	-0.002
12/22/2019	4:37	1010.2	0.006	-0.004
12/22/2019	4:52	1010.1	0.005	0
12/22/2019	5:07	1009.9	0.003	-0.002
12/22/2019	5:22	1009.9	0.006	0
12/22/2019	5:37	1009.7	0.007	-0.002
12/22/2019	5:52	1010	0.002	-0.003
12/22/2019	6:07	1009.7	0.004	0
12/22/2019	6:22	1009.6	0.004	-0.002
12/22/2019	6:37	1009.8	0	-0.003
12/22/2019	6:52	1009.9	0.004	-0.003
12/22/2019	7:07	1009.3	0.007	0.004
12/22/2019	7:22	1009	0.007	0
12/22/2019	7:37	1009.4	0.004	-0.002
12/22/2019	7:52	1009.2	0.003	-0.003
12/22/2019	8:07	1009	0.007	0
12/22/2019	8:22	1009	0.004	0
12/22/2019	8:37	1009.1	0.004	-0.005
12/22/2019	8:52	1009.1	0.004	0
12/22/2019	9:07	1009.3	0.005	-0.002
12/22/2019	9:22	1009.3	0.003	-0.003
12/22/2019	9:37	1009.2	0.004	0
12/22/2019	9:52	1009.3	0.004	0
12/22/2019	10:07	1009.2	0.004	0
12/22/2019	10:22	1009	0.004	0
12/22/2019	10:37	1008.8	0.003	0
12/22/2019	10:52	1008.6	0.005	0
12/22/2019	11:07	1008.1	0.006	0
12/22/2019	11:22	1007.6	0.009	0.004
12/22/2019	11:37	1007.4	0.006	0.002
12/22/2019	11:52	1007.3	0.006	0
12/22/2019	12:07	1007	0.006	0
12/22/2019	12:22	1007	0.006	0
12/22/2019	12:37	1006.9	0.006	0
12/22/2019	12:52	1006.7	0.006	0
12/22/2019	13:07	1006.7	0.005	0
12/22/2019	13:22	1006.6	0.006	0
12/22/2019	13:37	1006.2	0.006	0
12/22/2019	13:52	1006.1	0.007	0
12/22/2019	14:07	1006.2	0.004	-0.002
12/22/2019	14:22	1006.1	0.005	-0.004
12/22/2019	14:37	1006	0.006	0
12/22/2019	14:52	1006	0.005	-0.003
12/22/2019	15:07	1006.2	0.005	-0.005
12/22/2019	15:22	1006.2	0.004	-0.006
12/22/2019	15:37	1006.6	0	-0.005
12/22/2019	15:52	1006.7	0.002	0
12/22/2019	16:07	1006.6	0.003	0
12/22/2019	16:22	1006.6	0.002	0
12/22/2019	16:37	1006.7	0.002	-0.002
12/22/2019	16:52	1006.8	0	0
12/22/2019	17:07	1006.9	0.003	0
12/22/2019	17:22	1007	0	0
12/22/2019	17:37	1007	0.002	0
12/22/2019	17:52	1007.2	0	0
12/22/2019	18:07	1007.3	0	0
12/22/2019	18:22	1007.3	0.002	0
12/22/2019	18:37	1007.4	0.002	0
12/22/2019	18:52	1007.5	0	-0.002
12/22/2019	19:07	1007.7	0	-0.002
12/22/2019	19:22	1007.9	0	0
12/22/2019	19:37	1008.1	0	0
12/22/2019	19:52	1008.1	0	0
12/22/2019	20:07	1008.2	0	0
12/22/2019	20:22	1008.2	0.002	0
12/22/2019	20:37	1008.6	0	-0.002
12/22/2019	20:52	1008.8	0	-0.002
12/22/2019	21:07	1008.9	0	0
12/22/2019	21:22	1009	0	0
12/22/2019	21:37	1009.2	0	0
12/22/2019	21:52	1009.3	0	0
12/22/2019	22:07	1009.5	0	0
12/22/2019	22:22	1009.8	0	-0.002
12/22/2019	22:37	1010	0	0
12/22/2019	22:52	1010.1	0	0
12/22/2019	23:07	1010.2	0	0
12/22/2019	23:22	1010.3	0	0
12/22/2019	23:37	1010.4	0	0
12/22/2019	23:52	1010.6	0	-0.002
12/23/2019	0:07	1010.8	0	0
12/23/2019	0:22	1011	0	-0.002
12/23/2019	0:37	1011.1	0	-0.002
12/23/2019	0:52	1011.3	0	0
12/23/2019	1:07	1011.5	0	-0.002
12/23/2019	1:22	1011.6	0	-0.002
12/23/2019	1:37	1011.9	0	-0.002

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Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/23/2019	1:52	1012.1	0	-0.002
12/23/2019	2:07	1012.4	0	-0.003
12/23/2019	2:22	1012.6	0	-0.003
12/23/2019	2:37	1012.8	0	-0.003
12/23/2019	2:52	1013	0	-0.002
12/23/2019	3:07	1013.2	0	-0.002
12/23/2019	3:22	1013.3	0	0
12/23/2019	3:37	1013.5	0	0
12/23/2019	3:52	1013.6	0	-0.002
12/23/2019	4:07	1013.6	0	0
12/23/2019	4:22	1013.7	0.002	0
12/23/2019	4:37	1013.9	0	0
12/23/2019	4:52	1013.8	0.002	-0.002
12/23/2019	5:07	1014	0	0
12/23/2019	5:22	1014.2	0	-0.004
12/23/2019	5:37	1014.4	0	-0.002
12/23/2019	5:52	1014.4	0.002	-0.002
12/23/2019	6:07	1014.7	0	-0.002
12/23/2019	6:22	1014.9	0	-0.003
12/23/2019	6:37	1015.1	0.003	-0.007
12/23/2019	6:52	1015.1	0	0
12/23/2019	7:07	1015.1	0.003	-0.002
12/23/2019	7:22	1015.1	0.003	0
12/23/2019	7:37	1015.2	0	-0.002
12/23/2019	7:52	1015.3	0	-0.002
12/23/2019	8:07	1015.5	0	-0.003
12/23/2019	8:22	1015.7	0	-0.003
12/23/2019	8:37	1015.9	0	-0.002
12/23/2019	8:52	1016	0	-0.005
12/23/2019	9:07	1016.2	0	-0.004
12/23/2019	9:22	1016.3	0	-0.003
12/23/2019	9:37	1016.6	0.005	-0.011
12/23/2019	9:52	1016.7	0	-0.002
12/23/2019	10:07	1016.6	0.002	-0.004
12/23/2019	10:22	1016.7	0.002	0
12/23/2019	10:37	1016.6	0.002	-0.006
12/23/2019	10:52	1016.6	0.003	-0.002
12/23/2019	11:07	1016.6	0.006	0
12/23/2019	11:22	1016.6	0.003	0
12/23/2019	11:37	1016.4	0.002	0
12/23/2019	11:52	1016.4	0.003	0
12/23/2019	12:07	1016.1	0.004	0
12/23/2019	12:22	1016.1	0.003	-0.003
12/23/2019	12:37	1016.2	0.004	-0.002
12/23/2019	12:52	1016.1	0.004	0
12/23/2019	13:07	1015.8	0.004	0.002
12/23/2019	13:22	1015.8	0.002	0
12/23/2019	13:37	1015.6	0.004	-0.005
12/23/2019	13:52	1015.5	0.005	0
12/23/2019	14:07	1015.5	0.004	-0.004
12/23/2019	14:22	1015.4	0.007	0
12/23/2019	14:37	1015.3	0.003	-0.004
12/23/2019	14:52	1015.2	0.008	0
12/23/2019	15:07	1015.4	0	-0.006
12/23/2019	15:22	1015.4	0	0
12/23/2019	15:37	1015.7	0	-0.003
12/23/2019	15:52	1015.7	0.002	0
12/23/2019	16:07	1015.6	0.002	0
12/23/2019	16:22	1015.6	0.002	0
12/23/2019	16:37	1015.5	0.002	0
12/23/2019	16:52	1015.5	0.002	0
12/23/2019	17:07	1015.5	0.002	0
12/23/2019	17:22	1015.4	0.002	0
12/23/2019	17:37	1015.3	0.003	0
12/23/2019	17:52	1015.3	0.002	0
12/23/2019	18:07	1015.2	0.005	0
12/23/2019	18:22	1015.1	0.006	-0.005
12/23/2019	18:37	1015	0.003	0
12/23/2019	18:52	1014.9	0.003	0
12/23/2019	19:07	1014.9	0.002	0
12/23/2019	19:22	1014.9	0.003	0
12/23/2019	19:37	1014.7	0.003	0
12/23/2019	19:52	1014.7	0.002	0
12/23/2019	20:07	1014.5	0.003	0
12/23/2019	20:22	1014.5	0.003	0
12/23/2019	20:37	1014.5	0.003	0
12/23/2019	20:52	1014.5	0.003	0
12/23/2019	21:07	1014.5	0.003	0
12/23/2019	21:22	1014.4	0.002	0
12/23/2019	21:37	1014.4	0.003	0
12/23/2019	21:52	1014.3	0.002	0
12/23/2019	22:07	1014.2	0.003	0
12/23/2019	22:22	1014.2	0.002	0
12/23/2019	22:37	1014.1	0.002	0
12/23/2019	22:52	1014.1	0.002	0
12/23/2019	23:07	1014	0.002	0
12/23/2019	23:22	1014	0.003	0
12/23/2019	23:37	1013.8	0.003	0
12/23/2019	23:52	1013.6	0.004	0
12/24/2019	0:07	1013.5	0.003	0
12/24/2019	0:22	1013.5	0.003	0

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Building A East Office Node Sub-Slab Versus Main Warehouse Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/24/2019	0:37	1013.4	0.003	0
12/24/2019	0:52	1013.3	0.003	0
12/24/2019	1:07	1013.2	0.004	0
12/24/2019	1:22	1013.1	0.003	0.002
12/24/2019	1:37	1012.9	0.004	0
12/24/2019	1:52	1013	0.004	0
12/24/2019	2:07	1013	0.002	0
12/24/2019	2:22	1012.9	0.004	0
12/24/2019	2:37	1012.7	0.003	0
12/24/2019	2:52	1012.7	0.003	0
12/24/2019	3:07	1012.5	0.004	0
12/24/2019	3:22	1012.4	0.003	0
12/24/2019	3:37	1012.2	0.004	0
12/24/2019	3:52	1012.2	0.003	0
12/24/2019	4:07	1012.1	0.003	0
12/24/2019	4:22	1012	0.003	0
12/24/2019	4:37	1012	0.002	0
12/24/2019	4:52	1012	0.002	0
12/24/2019	5:07	1011.8	0.003	0
12/24/2019	5:22	1011.8	0.003	0.002
12/24/2019	5:37	1011.7	0.003	0
12/24/2019	5:52	1011.7	0.003	0
12/24/2019	6:07	1011.6	0.003	0
12/24/2019	6:22	1011.6	0.003	0
12/24/2019	6:37	1011.5	0.002	0
12/24/2019	6:52	1011.4	0.002	0
12/24/2019	7:07	1011.4	0.003	0
12/24/2019	7:22	1011.4	0.003	0
12/24/2019	7:37	1011.4	0.002	0
12/24/2019	7:52	1011.4	0.002	0
12/24/2019	8:07	1011.6	0.002	0
12/24/2019	8:22	1011.6	0	-0.002
12/24/2019	8:37	1011.8	0	0
12/24/2019	8:52	1011.9	0.002	0
12/24/2019	9:07	1011.9	0.002	0
12/24/2019	9:22	1012	0.002	0
12/24/2019	9:37	1012	0.002	0
12/24/2019	9:52	1012	0.002	0
12/24/2019	10:07	1012	0.002	0
12/24/2019	10:22	1012	0.003	0
12/24/2019	10:37	1011.8	0.002	0
12/24/2019	10:52	1011.6	0.004	0.002
12/24/2019	11:07	1011.4	0.004	0.003
12/24/2019	11:22	1011.2	0.004	0
12/24/2019	11:37	1011	0.004	0.002
12/24/2019	11:52	1010.9	0.003	0
12/24/2019	12:07	1010.5	0.004	0.002
12/24/2019	12:22	1010.5	0.003	0
12/24/2019	12:37	1010.3	0.003	0.002
12/24/2019	12:52	1010.1	0.004	0.002
12/24/2019	13:07	1010	0.003	0.002
12/24/2019	13:22	1009.9	0.003	0
12/24/2019	13:37	1009.8	0.003	0
12/24/2019	13:52	1009.8	0.002	0
12/24/2019	14:07	1009.7	0.002	0
12/24/2019	14:22	1009.8	0.002	0
12/24/2019	14:37	1009.7	0.002	0
12/24/2019	14:52	1009.7	0.003	0
12/24/2019	15:07	1009.9	0.002	0
12/24/2019	15:22	1009.9	0.002	0
12/24/2019	15:37	1009.9	0.002	0
12/24/2019	15:52	1009.8	0.003	0
12/24/2019	16:07	1009.8	0.002	0
12/24/2019	16:22	1009.9	0.002	0
12/24/2019	16:37	1009.9	0.002	0
12/24/2019	16:52	1009.7	0.002	0
12/24/2019	17:07	1009.7	0.003	0
12/24/2019	17:22	1009.8	0.002	0
12/24/2019	17:37	1009.9	0.002	0
12/24/2019	17:52	1009.9	0.003	0
12/24/2019	18:07	1009.7	0.002	0
12/24/2019	18:22	1009.6	0.003	0
12/24/2019	18:37	1009.7	0.003	0
12/24/2019	18:52	1009.7	0	0
12/24/2019	19:07	1009.7	0.003	0
12/24/2019	19:22	1009.6	0.003	0
12/24/2019	19:37	1009.7	0.002	0
12/24/2019	19:52	1009.7	0.002	0
12/24/2019	20:07	1009.7	0.003	0
12/24/2019	20:22	1009.7	0.002	0
12/24/2019	20:37	1009.6	0.003	0
12/24/2019	20:52	1009.6	0.002	0
12/24/2019	21:07	1009.8	0.002	0
12/24/2019	21:22	1009.8	0.002	0
12/24/2019	21:37	1009.9	0.002	0
12/24/2019	21:52	1009.9	0.002	0
12/24/2019	22:07	1009.9	0.002	0
12/24/2019	22:22	1009.8	0.002	0
12/24/2019	22:37	1009.9	0.002	0
12/24/2019	22:52	1009.8	0.002	0
12/24/2019	23:07	1009.9	0.002	0

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Building A East Office Node Sub-Slab Versus Main Warehouse Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/24/2019	23:22	1009.9	0.002	0
12/24/2019	23:37	1009.7	0.003	0
12/24/2019	23:52	1009.8	0.003	0
12/25/2019	0:07	1009.7	0.002	0
12/25/2019	0:22	1009.8	0	0
12/25/2019	0:37	1009.8	0.002	0
12/25/2019	0:52	1009.8	0.002	0
12/25/2019	1:07	1009.7	0.002	0
12/25/2019	1:22	1009.8	0.002	0
12/25/2019	1:37	1010	0.002	0
12/25/2019	1:52	1010	0.002	0
12/25/2019	2:07	1010.1	0.002	0
12/25/2019	2:22	1010.2	0	0
12/25/2019	2:37	1010.3	0	0
12/25/2019	2:52	1010.3	0.002	0
12/25/2019	3:07	1010.5	0	0
12/25/2019	3:22	1010.5	0.002	0
12/25/2019	3:37	1010.5	0.003	0
12/25/2019	3:52	1010.6	0.003	0
12/25/2019	4:07	1010.7	0	0
12/25/2019	4:22	1010.7	0	0
12/25/2019	4:37	1010.7	0.002	0
12/25/2019	4:52	1010.7	0.002	0
12/25/2019	5:07	1010.8	0.002	0
12/25/2019	5:22	1011	0	-0.002
12/25/2019	5:37	1011.2	0.002	0
12/25/2019	5:52	1011.3	0	-0.002
12/25/2019	6:07	1011.5	0	-0.002
12/25/2019	6:22	1011.6	0	0
12/25/2019	6:37	1011.7	0	0
12/25/2019	6:52	1011.9	0	0
12/25/2019	7:07	1012.1	0	0
12/25/2019	7:22	1012.2	0	-0.003
12/25/2019	7:37	1012.6	0	-0.002
12/25/2019	7:52	1012.7	0	-0.003
12/25/2019	8:07	1012.9	0	-0.003
12/25/2019	8:22	1013.2	0	0
12/25/2019	8:37	1013.5	0	-0.003
12/25/2019	8:52	1013.8	0	-0.004
12/25/2019	9:07	1014	0	-0.003
12/25/2019	9:22	1014.3	0	-0.002
12/25/2019	9:37	1014.6	0	-0.002
12/25/2019	9:52	1014.7	0	0
12/25/2019	10:07	1014.9	0	-0.002
12/25/2019	10:22	1014.9	0.002	0
12/25/2019	10:37	1015.1	0	-0.002
12/25/2019	10:52	1015.1	0.002	0
12/25/2019	11:07	1015.2	0.002	0
12/25/2019	11:22	1015.2	0.002	0
12/25/2019	11:37	1015.2	0.003	0
12/25/2019	11:52	1015.3	0	0
12/25/2019	12:07	1015.4	0.002	0
12/25/2019	12:22	1015.4	0	0
12/25/2019	12:37	1015.4	0.003	0
12/25/2019	12:52	1015.5	0	0
12/25/2019	13:07	1015.5	0.002	0
12/25/2019	13:22	1015.6	0	0
12/25/2019	13:37	1015.7	0	0
12/25/2019	13:52	1015.7	0	0
12/25/2019	14:07	1015.9	0.002	-0.002
12/25/2019	14:22	1016.1	0	-0.002
12/25/2019	14:37	1016.4	0	-0.002
12/25/2019	14:52	1016.5	0	-0.002
12/25/2019	15:07	1016.8	0	-0.002
12/25/2019	15:22	1016.9	0.003	-0.002
12/25/2019	15:37	1017.1	0	-0.003
12/25/2019	15:52	1017	0	0
12/25/2019	16:07	1017.3	0	-0.004
12/25/2019	16:22	1017.3	0	-0.003
12/25/2019	16:37	1017.6	0	0
12/25/2019	16:52	1017.8	0	-0.003
12/25/2019	17:07	1017.8	0	0
12/25/2019	17:22	1018	0.002	-0.002
12/25/2019	17:37	1018.1	0	-0.002
12/25/2019	17:52	1018.2	0	0
12/25/2019	18:07	1018.3	0	-0.002
12/25/2019	18:22	1018.4	0.002	-0.002
12/25/2019	18:37	1018.7	0.002	-0.003
12/25/2019	18:52	1018.8	0	-0.003
12/25/2019	19:07	1018.9	0.002	-0.002
12/25/2019	19:22	1019	0	-0.002
12/25/2019	19:37	1019.2	0	0
12/25/2019	19:52	1019.2	0	-0.002
12/25/2019	20:07	1019.4	0.002	0
12/25/2019	20:22	1019.4	0.002	0
12/25/2019	20:37	1019.6	0.002	-0.002
12/25/2019	20:52	1019.7	0	-0.002
12/25/2019	21:07	1019.9	0	-0.002
12/25/2019	21:22	1020	0	0
12/25/2019	21:37	1020.1	0.003	0
12/25/2019	21:52	1020	0.002	0

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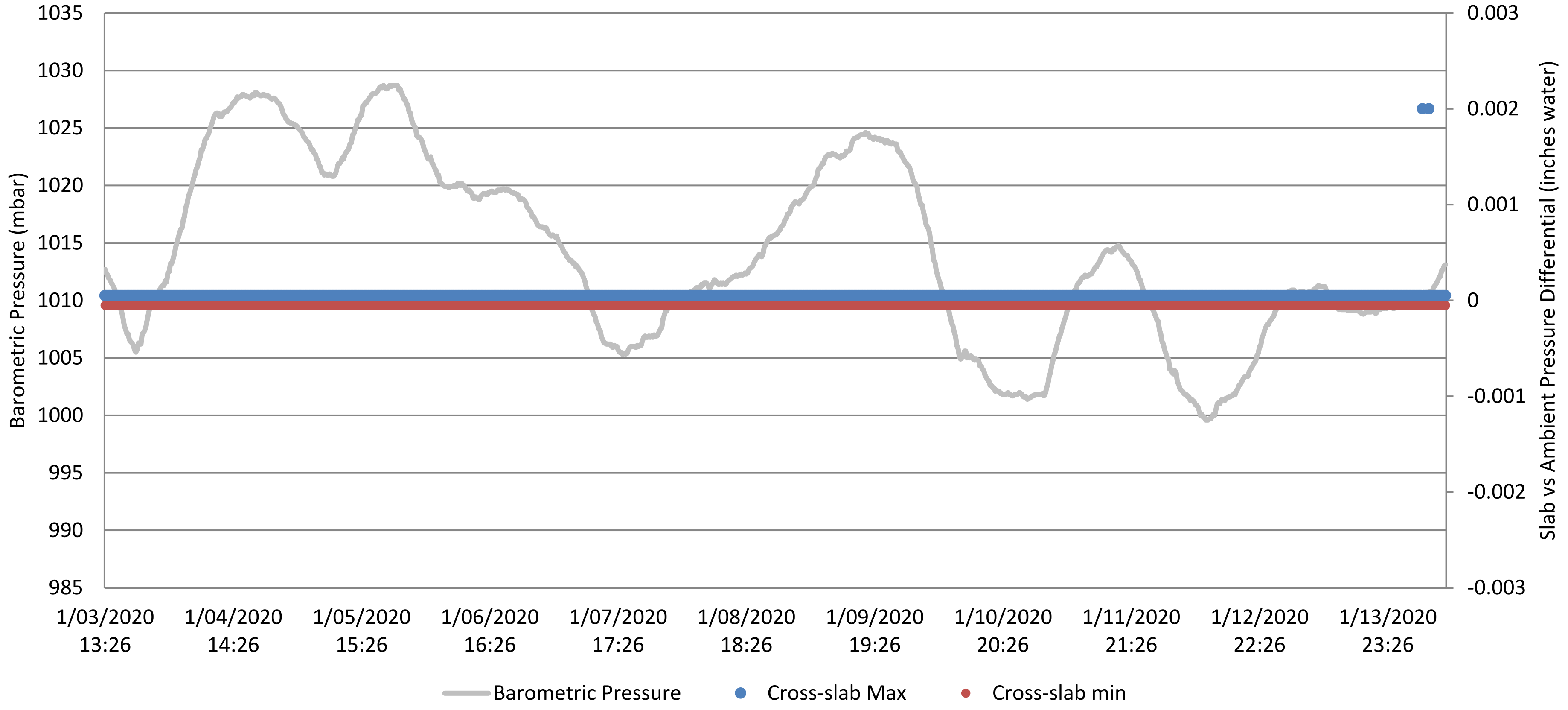
Building A East Office Node Sub-Slab Versus Main Warehouse Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/25/2019	22:07	1020	0.002	0
12/25/2019	22:22	1020.1	0	-0.002
12/25/2019	22:37	1020.3	0	-0.003
12/25/2019	22:52	1020.3	0.003	0
12/25/2019	23:07	1020.4	0.002	-0.004
12/25/2019	23:22	1020.4	0.005	-0.003
12/25/2019	23:37	1020.5	0.003	-0.003
12/25/2019	23:52	1020.5	0.002	0
12/26/2019	0:07	1020.5	0.003	0
12/26/2019	0:22	1020.6	0.002	0
12/26/2019	0:37	1020.5	0.004	-0.003
12/26/2019	0:52	1020.4	0.003	-0.003
12/26/2019	1:07	1020.5	0.003	0
12/26/2019	1:22	1020.5	0.004	0
12/26/2019	1:37	1020.5	0	0
12/26/2019	1:52	1020.6	0.003	0
12/26/2019	2:07	1020.6	0.002	-0.002
12/26/2019	2:22	1020.7	0.002	-0.002
12/26/2019	2:37	1020.8	0.002	0
12/26/2019	2:52	1020.7	0.003	0
12/26/2019	3:07	1020.7	0.003	0
12/26/2019	3:22	1020.8	0.003	0
12/26/2019	3:37	1020.7	0.003	0
12/26/2019	3:52	1021	0.003	-0.004
12/26/2019	4:07	1020.9	0.003	-0.004
12/26/2019	4:22	1020.9	0	-0.004
12/26/2019	4:37	1021.1	0.004	-0.008
12/26/2019	4:52	1021.1	0.002	0
12/26/2019	5:07	1021	0.002	0
12/26/2019	5:22	1021	0.004	0
12/26/2019	5:37	1020.9	0.003	0
12/26/2019	5:52	1021	0.003	0
12/26/2019	6:07	1021.3	0.002	-0.004
12/26/2019	6:22	1021.5	0.002	-0.003
12/26/2019	6:37	1021.8	0	-0.003
12/26/2019	6:52	1021.8	0.003	-0.003
12/26/2019	7:07	1021.6	0.003	0
12/26/2019	7:22	1021.6	0.004	0
12/26/2019	7:37	1021.5	0.002	0
12/26/2019	7:52	1021.6	0.003	0
12/26/2019	8:07	1021.8	0.002	-0.002
12/26/2019	8:22	1021.8	0.005	-0.005
12/26/2019	8:37	1021.9	0.005	-0.002
12/26/2019	8:52	1021.9	0.003	-0.003
12/26/2019	9:07	1021.5	0.005	-0.002
12/26/2019	9:22	1021.4	0.004	-0.002
12/26/2019	9:37	1021.6	0.004	-0.002
12/26/2019	9:52	1021.6	0	-0.002
12/26/2019	10:07	1021.2	0.007	-0.004
12/26/2019	10:22	1021.1	0.01	-0.002
12/26/2019	10:37	1020.7	0.006	0
12/26/2019	10:52	1020.6	0.004	0
12/26/2019	11:07	1020.7	0.005	-0.004
12/26/2019	11:22	1020.8	0.004	-0.004



Note: All but two measurements of cross-slab differential pressure were 0.000 inches of water.

FLOYD | SNIDER strategy ▪ science ▪ engineering	**Supplemental Post-Construction Vapor Intrusion Assessment 1514 Taylor Way Development Tacoma, Washington**	VP-3 Building A Main Warehouse Sub-Slab Versus Ambient

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VP-3
Building A Main Warehouse Sub-Slab Versus Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
1/3/2020	13:26	1012.7	0	0
1/3/2020	13:41	1012.4	0	0
1/3/2020	13:56	1012.2	0	0
1/3/2020	14:11	1011.9	0	0
1/3/2020	14:26	1011.8	0	0
1/3/2020	14:41	1011.5	0	0
1/3/2020	14:56	1011.3	0	0
1/3/2020	15:11	1011.1	0	0
1/3/2020	15:26	1010.8	0	0
1/3/2020	15:41	1010.2	0	0
1/3/2020	15:56	1010.2	0	0
1/3/2020	16:11	1009.6	0	0
1/3/2020	16:26	1009.3	0	0
1/3/2020	16:41	1009	0	0
1/3/2020	16:56	1008.5	0	0
1/3/2020	17:11	1007.8	0	0
1/3/2020	17:26	1007.5	0	0
1/3/2020	17:41	1007.1	0	0
1/3/2020	17:56	1007.1	0	0
1/3/2020	18:11	1006.6	0	0
1/3/2020	18:26	1006.4	0	0
1/3/2020	18:41	1006.3	0	0
1/3/2020	18:56	1006.1	0	0
1/3/2020	19:11	1005.7	0	0
1/3/2020	19:26	1005.5	0	0
1/3/2020	19:41	1005.7	0	0
1/3/2020	19:56	1006.3	0	0
1/3/2020	20:11	1006.2	0	0
1/3/2020	20:26	1006.2	0	0
1/3/2020	20:41	1007.1	0	0
1/3/2020	20:56	1007.2	0	0
1/3/2020	21:11	1007.4	0	0
1/3/2020	21:26	1007.8	0	0
1/3/2020	21:41	1008.4	0	0
1/3/2020	21:56	1008.9	0	0
1/3/2020	22:11	1009.4	0	0
1/3/2020	22:26	1009.6	0	0
1/3/2020	22:41	1009.9	0	0
1/3/2020	22:56	1010.1	0	0
1/3/2020	23:11	1010.5	0	0
1/3/2020	23:26	1010.5	0	0
1/3/2020	23:41	1010.7	0	0
1/3/2020	23:56	1010.8	0	0
1/4/2020	0:11	1011	0	0
1/4/2020	0:26	1011.2	0	0
1/4/2020	0:41	1011.3	0	0
1/4/2020	0:56	1011.3	0	0
1/4/2020	1:11	1011.7	0	0
1/4/2020	1:26	1011.6	0	0
1/4/2020	1:41	1012.4	0	0
1/4/2020	1:56	1012.5	0	0
1/4/2020	2:11	1013.2	0	0
1/4/2020	2:26	1013.2	0	0
1/4/2020	2:41	1013.6	0	0
1/4/2020	2:56	1014	0	0
1/4/2020	3:11	1014.6	0	0
1/4/2020	3:26	1015	0	0
1/4/2020	3:41	1015.4	0	0
1/4/2020	3:56	1015.8	0	0
1/4/2020	4:11	1016.2	0	0
1/4/2020	4:26	1016.3	0	0
1/4/2020	4:41	1017	0	0
1/4/2020	4:56	1017.3	0	0
1/4/2020	5:11	1018.1	0	0
1/4/2020	5:26	1018.4	0	0
1/4/2020	5:41	1019.1	0	0
1/4/2020	5:56	1019.3	0	0
1/4/2020	6:11	1019.7	0	0
1/4/2020	6:26	1020	0	0
1/4/2020	6:41	1020.6	0	0
1/4/2020	6:56	1020.9	0	0
1/4/2020	7:11	1021.4	0	0
1/4/2020	7:26	1021.6	0	0
1/4/2020	7:41	1022.1	0	0
1/4/2020	7:56	1022.4	0	0
1/4/2020	8:11	1023.1	0	0
1/4/2020	8:26	1023.1	0	0
1/4/2020	8:41	1023.5	0	0
1/4/2020	8:56	1024	0	0
1/4/2020	9:11	1024.1	0	0
1/4/2020	9:26	1024.3	0	0
1/4/2020	9:41	1024.6	0	0
1/4/2020	9:56	1025	0	0
1/4/2020	10:11	1025.3	0	0
1/4/2020	10:26	1025.6	0	0
1/4/2020	10:41	1026	0	0
1/4/2020	10:56	1026.2	0	0
1/4/2020	11:11	1026.3	0	0
1/4/2020	11:26	1026.3	0	0
1/4/2020	11:41	1026	0	0
1/4/2020	11:56	1026.2	0	0

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Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
1/4/2020	12:11	1026	0	0
1/4/2020	12:26	1026.2	0	0
1/4/2020	12:41	1026.4	0	0
1/4/2020	12:56	1026.4	0	0
1/4/2020	13:11	1026.4	0	0
1/4/2020	13:26	1026.6	0	0
1/4/2020	13:41	1026.7	0	0
1/4/2020	13:56	1026.8	0	0
1/4/2020	14:11	1027	0	0
1/4/2020	14:26	1027.2	0	0
1/4/2020	14:41	1027.2	0	0
1/4/2020	14:56	1027.4	0	0
1/4/2020	15:11	1027.7	0	0
1/4/2020	15:26	1027.6	0	0
1/4/2020	15:41	1027.7	0	0
1/4/2020	15:56	1027.7	0	0
1/4/2020	16:11	1027.9	0	0
1/4/2020	16:26	1027.9	0	0
1/4/2020	16:41	1027.8	0	0
1/4/2020	16:56	1027.8	0	0
1/4/2020	17:11	1027.7	0	0
1/4/2020	17:26	1027.7	0	0
1/4/2020	17:41	1027.6	0	0
1/4/2020	17:56	1027.7	0	0
1/4/2020	18:11	1027.9	0	0
1/4/2020	18:26	1027.8	0	0
1/4/2020	18:41	1028.1	0	0
1/4/2020	18:56	1028.1	0	0
1/4/2020	19:11	1027.9	0	0
1/4/2020	19:26	1027.9	0	0
1/4/2020	19:41	1027.8	0	0
1/4/2020	19:56	1027.8	0	0
1/4/2020	20:11	1027.9	0	0
1/4/2020	20:26	1027.9	0	0
1/4/2020	20:41	1027.8	0	0
1/4/2020	20:56	1027.8	0	0
1/4/2020	21:11	1027.8	0	0
1/4/2020	21:26	1027.7	0	0
1/4/2020	21:41	1027.6	0	0
1/4/2020	21:56	1027.5	0	0
1/4/2020	22:11	1027.6	0	0
1/4/2020	22:26	1027.6	0	0
1/4/2020	22:41	1027.5	0	0
1/4/2020	22:56	1027.3	0	0
1/4/2020	23:11	1027.2	0	0
1/4/2020	23:26	1027.1	0	0
1/4/2020	23:41	1026.9	0	0
1/4/2020	23:56	1026.6	0	0
1/5/2020	0:11	1026.2	0	0
1/5/2020	0:26	1026.1	0	0
1/5/2020	0:41	1025.8	0	0
1/5/2020	0:56	1025.7	0	0
1/5/2020	1:11	1025.5	0	0
1/5/2020	1:26	1025.5	0	0
1/5/2020	1:41	1025.4	0	0
1/5/2020	1:56	1025.4	0	0
1/5/2020	2:11	1025.3	0	0
1/5/2020	2:26	1025.3	0	0
1/5/2020	2:41	1025.2	0	0
1/5/2020	2:56	1025.1	0	0
1/5/2020	3:11	1024.9	0	0
1/5/2020	3:26	1024.8	0	0
1/5/2020	3:41	1024.7	0	0
1/5/2020	3:56	1024.5	0	0
1/5/2020	4:11	1024.2	0	0
1/5/2020	4:26	1024.1	0	0
1/5/2020	4:41	1023.9	0	0
1/5/2020	4:56	1023.8	0	0
1/5/2020	5:11	1023.7	0	0
1/5/2020	5:26	1023.4	0	0
1/5/2020	5:41	1023.1	0	0
1/5/2020	5:56	1023.1	0	0
1/5/2020	6:11	1022.8	0	0
1/5/2020	6:26	1022.7	0	0
1/5/2020	6:41	1022.3	0	0
1/5/2020	6:56	1022.2	0	0
1/5/2020	7:11	1021.7	0	0
1/5/2020	7:26	1021.6	0	0
1/5/2020	7:41	1021.1	0	0
1/5/2020	7:56	1021.1	0	0
1/5/2020	8:11	1020.9	0	0
1/5/2020	8:26	1021	0	0
1/5/2020	8:41	1020.9	0	0
1/5/2020	8:56	1020.9	0	0
1/5/2020	9:11	1021	0	0
1/5/2020	9:26	1020.9	0	0
1/5/2020	9:41	1020.8	0	0
1/5/2020	9:56	1020.8	0	0
1/5/2020	10:11	1020.9	0	0
1/5/2020	10:26	1021.1	0	0
1/5/2020	10:41	1021.6	0	0

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Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
1/5/2020	10:56	1021.9	0	0
1/5/2020	11:11	1021.9	0	0
1/5/2020	11:26	1022.1	0	0
1/5/2020	11:41	1022.4	0	0
1/5/2020	11:56	1022.3	0	0
1/5/2020	12:11	1022.7	0	0
1/5/2020	12:26	1022.9	0	0
1/5/2020	12:41	1023	0	0
1/5/2020	12:56	1023.2	0	0
1/5/2020	13:11	1023.6	0	0
1/5/2020	13:26	1023.7	0	0
1/5/2020	13:41	1024.4	0	0
1/5/2020	13:56	1024.5	0	0
1/5/2020	14:11	1024.9	0	0
1/5/2020	14:26	1025.2	0	0
1/5/2020	14:41	1025.7	0	0
1/5/2020	14:56	1025.7	0	0
1/5/2020	15:11	1026.1	0	0
1/5/2020	15:26	1026.1	0	0
1/5/2020	15:41	1026.9	0	0
1/5/2020	15:56	1027	0	0
1/5/2020	16:11	1027.2	0	0
1/5/2020	16:26	1027.2	0	0
1/5/2020	16:41	1027.4	0	0
1/5/2020	16:56	1027.6	0	0
1/5/2020	17:11	1027.7	0	0
1/5/2020	17:26	1027.9	0	0
1/5/2020	17:41	1028	0	0
1/5/2020	17:56	1028	0	0
1/5/2020	18:11	1028	0	0
1/5/2020	18:26	1028.1	0	0
1/5/2020	18:41	1028.3	0	0
1/5/2020	18:56	1028.5	0	0
1/5/2020	19:11	1028.6	0	0
1/5/2020	19:26	1028.5	0	0
1/5/2020	19:41	1028.7	0	0
1/5/2020	19:56	1028.5	0	0
1/5/2020	20:11	1028.4	0	0
1/5/2020	20:26	1028.4	0	0
1/5/2020	20:41	1028.6	0	0
1/5/2020	20:56	1028.7	0	0
1/5/2020	21:11	1028.6	0	0
1/5/2020	21:26	1028.7	0	0
1/5/2020	21:41	1028.7	0	0
1/5/2020	21:56	1028.7	0	0
1/5/2020	22:11	1028.7	0	0
1/5/2020	22:26	1028.7	0	0
1/5/2020	22:41	1028.3	0	0
1/5/2020	22:56	1028.4	0	0
1/5/2020	23:11	1028.1	0	0
1/5/2020	23:26	1027.8	0	0
1/5/2020	23:41	1027.5	0	0
1/5/2020	23:56	1027.5	0	0
1/6/2020	0:11	1027.1	0	0
1/6/2020	0:26	1027	0	0
1/6/2020	0:41	1026.4	0	0
1/6/2020	0:56	1026.3	0	0
1/6/2020	1:11	1025.7	0	0
1/6/2020	1:26	1025.4	0	0
1/6/2020	1:41	1025.2	0	0
1/6/2020	1:56	1025	0	0
1/6/2020	2:11	1024.3	0	0
1/6/2020	2:26	1024.2	0	0
1/6/2020	2:41	1024.2	0	0
1/6/2020	2:56	1024.1	0	0
1/6/2020	3:11	1023.9	0	0
1/6/2020	3:26	1023.5	0	0
1/6/2020	3:41	1023.1	0	0
1/6/2020	3:56	1022.9	0	0
1/6/2020	4:11	1022.5	0	0
1/6/2020	4:26	1022.3	0	0
1/6/2020	4:41	1022.4	0	0
1/6/2020	4:56	1022.5	0	0
1/6/2020	5:11	1021.9	0	0
1/6/2020	5:26	1021.8	0	0
1/6/2020	5:41	1021.5	0	0
1/6/2020	5:56	1021.3	0	0
1/6/2020	6:11	1020.9	0	0
1/6/2020	6:26	1020.9	0	0
1/6/2020	6:41	1020.3	0	0
1/6/2020	6:56	1020.2	0	0
1/6/2020	7:11	1020.1	0	0
1/6/2020	7:26	1020	0	0
1/6/2020	7:41	1019.9	0	0
1/6/2020	7:56	1019.9	0	0
1/6/2020	8:11	1019.9	0	0
1/6/2020	8:26	1019.8	0	0
1/6/2020	8:41	1019.9	0	0
1/6/2020	8:56	1019.9	0	0
1/6/2020	9:11	1019.9	0	0
1/6/2020	9:26	1020	0	0

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Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
1/6/2020	9:41	1019.9	0	0
1/6/2020	9:56	1019.9	0	0
1/6/2020	10:11	1020.2	0	0
1/6/2020	10:26	1020.1	0	0
1/6/2020	10:41	1020	0	0
1/6/2020	10:56	1020.2	0	0
1/6/2020	11:11	1020	0	0
1/6/2020	11:26	1020	0	0
1/6/2020	11:41	1019.8	0	0
1/6/2020	11:56	1019.6	0	0
1/6/2020	12:11	1019.5	0	0
1/6/2020	12:26	1019.6	0	0
1/6/2020	12:41	1019.4	0	0
1/6/2020	12:56	1019.3	0	0
1/6/2020	13:11	1018.9	0	0
1/6/2020	13:26	1018.9	0	0
1/6/2020	13:41	1019	0	0
1/6/2020	13:56	1018.9	0	0
1/6/2020	14:11	1018.8	0	0
1/6/2020	14:26	1018.8	0	0
1/6/2020	14:41	1019.1	0	0
1/6/2020	14:56	1019.2	0	0
1/6/2020	15:11	1019.3	0	0
1/6/2020	15:26	1019.3	0	0
1/6/2020	15:41	1019.2	0	0
1/6/2020	15:56	1019.2	0	0
1/6/2020	16:11	1019.4	0	0
1/6/2020	16:26	1019.4	0	0
1/6/2020	16:41	1019.5	0	0
1/6/2020	16:56	1019.5	0	0
1/6/2020	17:11	1019.4	0	0
1/6/2020	17:26	1019.4	0	0
1/6/2020	17:41	1019.4	0	0
1/6/2020	17:56	1019.6	0	0
1/6/2020	18:11	1019.6	0	0
1/6/2020	18:26	1019.6	0	0
1/6/2020	18:41	1019.6	0	0
1/6/2020	18:56	1019.7	0	0
1/6/2020	19:11	1019.7	0	0
1/6/2020	19:26	1019.6	0	0
1/6/2020	19:41	1019.7	0	0
1/6/2020	19:56	1019.6	0	0
1/6/2020	20:11	1019.6	0	0
1/6/2020	20:26	1019.5	0	0
1/6/2020	20:41	1019.4	0	0
1/6/2020	20:56	1019.4	0	0
1/6/2020	21:11	1019.3	0	0
1/6/2020	21:26	1019.3	0	0
1/6/2020	21:41	1019.2	0	0
1/6/2020	21:56	1019.2	0	0
1/6/2020	22:11	1018.8	0	0
1/6/2020	22:26	1018.9	0	0
1/6/2020	22:41	1018.8	0	0
1/6/2020	22:56	1018.8	0	0
1/6/2020	23:11	1018.7	0	0
1/6/2020	23:26	1018.5	0	0
1/6/2020	23:41	1018.1	0	0
1/6/2020	23:56	1018	0	0
1/7/2020	0:11	1017.8	0	0
1/7/2020	0:26	1017.7	0	0
1/7/2020	0:41	1017.3	0	0
1/7/2020	0:56	1017.3	0	0
1/7/2020	1:11	1017.1	0	0
1/7/2020	1:26	1016.9	0	0
1/7/2020	1:41	1016.6	0	0
1/7/2020	1:56	1016.5	0	0
1/7/2020	2:11	1016.4	0	0
1/7/2020	2:26	1016.4	0	0
1/7/2020	2:41	1016.4	0	0
1/7/2020	2:56	1016.3	0	0
1/7/2020	3:11	1016.3	0	0
1/7/2020	3:26	1016.3	0	0
1/7/2020	3:41	1016	0	0
1/7/2020	3:56	1015.8	0	0
1/7/2020	4:11	1015.7	0	0
1/7/2020	4:26	1015.6	0	0
1/7/2020	4:41	1015.7	0	0
1/7/2020	4:56	1015.6	0	0
1/7/2020	5:11	1015.5	0	0
1/7/2020	5:26	1015.6	0	0
1/7/2020	5:41	1015.3	0	0
1/7/2020	5:56	1015	0	0
1/7/2020	6:11	1014.8	0	0
1/7/2020	6:26	1014.7	0	0
1/7/2020	6:41	1014.4	0	0
1/7/2020	6:56	1014.2	0	0
1/7/2020	7:11	1014.1	0	0
1/7/2020	7:26	1013.8	0	0
1/7/2020	7:41	1013.7	0	0
1/7/2020	7:56	1013.5	0	0
1/7/2020	8:11	1013.5	0	0

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Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
1/7/2020	8:26	1013.4	0	0
1/7/2020	8:41	1013.2	0	0
1/7/2020	8:56	1013.2	0	0
1/7/2020	9:11	1012.9	0	0
1/7/2020	9:26	1013	0	0
1/7/2020	9:41	1012.8	0	0
1/7/2020	9:56	1012.6	0	0
1/7/2020	10:11	1012.5	0	0
1/7/2020	10:26	1012.3	0	0
1/7/2020	10:41	1012	0	0
1/7/2020	10:56	1011.7	0	0
1/7/2020	11:11	1011.2	0	0
1/7/2020	11:26	1010.9	0	0
1/7/2020	11:41	1010.1	0	0
1/7/2020	11:56	1009.9	0	0
1/7/2020	12:11	1009.3	0	0
1/7/2020	12:26	1009.1	0	0
1/7/2020	12:41	1008.8	0	0
1/7/2020	12:56	1008.6	0	0
1/7/2020	13:11	1008.1	0	0
1/7/2020	13:26	1007.9	0	0
1/7/2020	13:41	1007.5	0	0
1/7/2020	13:56	1007.4	0	0
1/7/2020	14:11	1006.8	0	0
1/7/2020	14:26	1006.6	0	0
1/7/2020	14:41	1006.3	0	0
1/7/2020	14:56	1006.3	0	0
1/7/2020	15:11	1006.2	0	0
1/7/2020	15:26	1006.2	0	0
1/7/2020	15:41	1006.2	0	0
1/7/2020	15:56	1006.2	0	0
1/7/2020	16:11	1006	0	0
1/7/2020	16:26	1005.9	0	0
1/7/2020	16:41	1006.1	0	0
1/7/2020	16:56	1006	0	0
1/7/2020	17:11	1006	0	0
1/7/2020	17:26	1005.7	0	0
1/7/2020	17:41	1005.5	0	0
1/7/2020	17:56	1005.5	0	0
1/7/2020	18:11	1005.3	0	0
1/7/2020	18:26	1005.3	0	0
1/7/2020	18:41	1005.4	0	0
1/7/2020	18:56	1005.3	0	0
1/7/2020	19:11	1005.4	0	0
1/7/2020	19:26	1005.7	0	0
1/7/2020	19:41	1005.9	0	0
1/7/2020	19:56	1006	0	0
1/7/2020	20:11	1006	0	0
1/7/2020	20:26	1006	0	0
1/7/2020	20:41	1006	0	0
1/7/2020	20:56	1005.9	0	0
1/7/2020	21:11	1006.1	0	0
1/7/2020	21:26	1006	0	0
1/7/2020	21:41	1006.1	0	0
1/7/2020	21:56	1006.1	0	0
1/7/2020	22:11	1006.5	0	0
1/7/2020	22:26	1006.8	0	0
1/7/2020	22:41	1006.9	0	0
1/7/2020	22:56	1006.8	0	0
1/7/2020	23:11	1006.8	0	0
1/7/2020	23:26	1006.9	0	0
1/7/2020	23:41	1006.8	0	0
1/7/2020	23:56	1006.9	0	0
1/8/2020	0:11	1006.8	0	0
1/8/2020	0:26	1007	0	0
1/8/2020	0:41	1006.9	0	0
1/8/2020	0:56	1006.9	0	0
1/8/2020	1:11	1007	0	0
1/8/2020	1:26	1007.3	0	0
1/8/2020	1:41	1007.5	0	0
1/8/2020	1:56	1007.6	0	0
1/8/2020	2:11	1008.4	0	0
1/8/2020	2:26	1008.7	0	0
1/8/2020	2:41	1009.1	0	0
1/8/2020	2:56	1009.1	0	0
1/8/2020	3:11	1009.4	0	0
1/8/2020	3:26	1009.5	0	0
1/8/2020	3:41	1009.7	0	0
1/8/2020	3:56	1009.6	0	0
1/8/2020	4:11	1009.9	0	0
1/8/2020	4:26	1009.8	0	0
1/8/2020	4:41	1009.7	0	0
1/8/2020	4:56	1009.7	0	0
1/8/2020	5:11	1009.7	0	0
1/8/2020	5:26	1009.6	0	0
1/8/2020	5:41	1009.6	0	0
1/8/2020	5:56	1009.8	0	0
1/8/2020	6:11	1009.8	0	0
1/8/2020	6:26	1010.1	0	0
1/8/2020	6:41	1010.1	0	0
1/8/2020	6:56	1010.5	0	0

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Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
1/8/2020	7:11	1010.5	0	0
1/8/2020	7:26	1010.6	0	0
1/8/2020	7:41	1010.8	0	0
1/8/2020	7:56	1010.8	0	0
1/8/2020	8:11	1010.9	0	0
1/8/2020	8:26	1010.9	0	0
1/8/2020	8:41	1011.1	0	0
1/8/2020	8:56	1011.1	0	0
1/8/2020	9:11	1011.1	0	0
1/8/2020	9:26	1011.1	0	0
1/8/2020	9:41	1011.4	0	0
1/8/2020	9:56	1011.3	0	0
1/8/2020	10:11	1011.5	0	0
1/8/2020	10:26	1011.5	0	0
1/8/2020	10:41	1011.5	0	0
1/8/2020	10:56	1011.3	0	0
1/8/2020	11:11	1011	0	0
1/8/2020	11:26	1011.1	0	0
1/8/2020	11:41	1011.4	0	0
1/8/2020	11:56	1011.5	0	0
1/8/2020	12:11	1011.8	0	0
1/8/2020	12:26	1011.7	0	0
1/8/2020	12:41	1011.5	0	0
1/8/2020	12:56	1011.4	0	0
1/8/2020	13:11	1011.4	0	0
1/8/2020	13:26	1011.5	0	0
1/8/2020	13:41	1011.4	0	0
1/8/2020	13:56	1011.5	0	0
1/8/2020	14:11	1011.4	0	0
1/8/2020	14:26	1011.4	0	0
1/8/2020	14:41	1011.6	0	0
1/8/2020	14:56	1011.7	0	0
1/8/2020	15:11	1011.8	0	0
1/8/2020	15:26	1011.9	0	0
1/8/2020	15:41	1012	0	0
1/8/2020	15:56	1012.1	0	0
1/8/2020	16:11	1012.1	0	0
1/8/2020	16:26	1012.2	0	0
1/8/2020	16:41	1012.1	0	0
1/8/2020	16:56	1012.2	0	0
1/8/2020	17:11	1012.2	0	0
1/8/2020	17:26	1012.3	0	0
1/8/2020	17:41	1012.2	0	0
1/8/2020	17:56	1012.3	0	0
1/8/2020	18:11	1012.4	0	0
1/8/2020	18:26	1012.3	0	0
1/8/2020	18:41	1012.4	0	0
1/8/2020	18:56	1012.7	0	0
1/8/2020	19:11	1012.8	0	0
1/8/2020	19:26	1012.9	0	0
1/8/2020	19:41	1013	0	0
1/8/2020	19:56	1013.3	0	0
1/8/2020	20:11	1013.5	0	0
1/8/2020	20:26	1013.7	0	0
1/8/2020	20:41	1013.8	0	0
1/8/2020	20:56	1014	0	0
1/8/2020	21:11	1014	0	0
1/8/2020	21:26	1013.8	0	0
1/8/2020	21:41	1014.1	0	0
1/8/2020	21:56	1014.7	0	0
1/8/2020	22:11	1014.8	0	0
1/8/2020	22:26	1015.1	0	0
1/8/2020	22:41	1015.3	0	0
1/8/2020	22:56	1015.5	0	0
1/8/2020	23:11	1015.4	0	0
1/8/2020	23:26	1015.6	0	0
1/8/2020	23:41	1015.6	0	0
1/8/2020	23:56	1015.7	0	0
1/9/2020	0:11	1015.7	0	0
1/9/2020	0:26	1015.8	0	0
1/9/2020	0:41	1016	0	0
1/9/2020	0:56	1016.1	0	0
1/9/2020	1:11	1016.4	0	0
1/9/2020	1:26	1016.5	0	0
1/9/2020	1:41	1016.6	0	0
1/9/2020	1:56	1017	0	0
1/9/2020	2:11	1017.1	0	0
1/9/2020	2:26	1017.5	0	0
1/9/2020	2:41	1017.5	0	0
1/9/2020	2:56	1017.7	0	0
1/9/2020	3:11	1018.1	0	0
1/9/2020	3:26	1018.3	0	0
1/9/2020	3:41	1018.4	0	0
1/9/2020	3:56	1018.6	0	0
1/9/2020	4:11	1018.5	0	0
1/9/2020	4:26	1018.5	0	0
1/9/2020	4:41	1018.4	0	0
1/9/2020	4:56	1018.7	0	0
1/9/2020	5:11	1018.7	0	0
1/9/2020	5:26	1018.8	0	0
1/9/2020	5:41	1018.9	0	0

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Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
1/9/2020	5:56	1019.2	0	0
1/9/2020	6:11	1019.4	0	0
1/9/2020	6:26	1019.6	0	0
1/9/2020	6:41	1019.7	0	0
1/9/2020	6:56	1019.9	0	0
1/9/2020	7:11	1019.9	0	0
1/9/2020	7:26	1020	0	0
1/9/2020	7:41	1020.2	0	0
1/9/2020	7:56	1020.6	0	0
1/9/2020	8:11	1020.8	0	0
1/9/2020	8:26	1021.4	0	0
1/9/2020	8:41	1021.5	0	0
1/9/2020	8:56	1021.6	0	0
1/9/2020	9:11	1021.9	0	0
1/9/2020	9:26	1021.9	0	0
1/9/2020	9:41	1022.3	0	0
1/9/2020	9:56	1022.5	0	0
1/9/2020	10:11	1022.6	0	0
1/9/2020	10:26	1022.7	0	0
1/9/2020	10:41	1022.6	0	0
1/9/2020	10:56	1022.7	0	0
1/9/2020	11:11	1022.8	0	0
1/9/2020	11:26	1022.7	0	0
1/9/2020	11:41	1022.7	0	0
1/9/2020	11:56	1022.6	0	0
1/9/2020	12:11	1022.5	0	0
1/9/2020	12:26	1022.5	0	0
1/9/2020	12:41	1022.4	0	0
1/9/2020	12:56	1022.6	0	0
1/9/2020	13:11	1022.5	0	0
1/9/2020	13:26	1022.6	0	0
1/9/2020	13:41	1022.7	0	0
1/9/2020	13:56	1023	0	0
1/9/2020	14:11	1023	0	0
1/9/2020	14:26	1023	0	0
1/9/2020	14:41	1023.1	0	0
1/9/2020	14:56	1023.6	0	0
1/9/2020	15:11	1023.9	0	0
1/9/2020	15:26	1024.1	0	0
1/9/2020	15:41	1024.1	0	0
1/9/2020	15:56	1024.2	0	0
1/9/2020	16:11	1024.2	0	0
1/9/2020	16:26	1024.3	0	0
1/9/2020	16:41	1024.4	0	0
1/9/2020	16:56	1024.4	0	0
1/9/2020	17:11	1024.4	0	0
1/9/2020	17:26	1024.4	0	0
1/9/2020	17:41	1024.6	0	0
1/9/2020	17:56	1024.5	0	0
1/9/2020	18:11	1024.5	0	0
1/9/2020	18:26	1024.2	0	0
1/9/2020	18:41	1024.2	0	0
1/9/2020	18:56	1024.1	0	0
1/9/2020	19:11	1024	0	0
1/9/2020	19:26	1024.2	0	0
1/9/2020	19:41	1024.1	0	0
1/9/2020	19:56	1024	0	0
1/9/2020	20:11	1024.1	0	0
1/9/2020	20:26	1024.1	0	0
1/9/2020	20:41	1023.9	0	0
1/9/2020	20:56	1024	0	0
1/9/2020	21:11	1023.9	0	0
1/9/2020	21:26	1023.7	0	0
1/9/2020	21:41	1023.9	0	0
1/9/2020	21:56	1023.9	0	0
1/9/2020	22:11	1023.7	0	0
1/9/2020	22:26	1023.7	0	0
1/9/2020	22:41	1023.6	0	0
1/9/2020	22:56	1023.7	0	0
1/9/2020	23:11	1023.6	0	0
1/9/2020	23:26	1023.6	0	0
1/9/2020	23:41	1023.6	0	0
1/9/2020	23:56	1023	0	0
1/10/2020	0:11	1022.9	0	0
1/10/2020	0:26	1022.9	0	0
1/10/2020	0:41	1022.6	0	0
1/10/2020	0:56	1022.4	0	0
1/10/2020	1:11	1022.2	0	0
1/10/2020	1:26	1022	0	0
1/10/2020	1:41	1021.9	0	0
1/10/2020	1:56	1021.7	0	0
1/10/2020	2:11	1021.6	0	0
1/10/2020	2:26	1021.3	0	0
1/10/2020	2:41	1020.9	0	0
1/10/2020	2:56	1020.4	0	0
1/10/2020	3:11	1020.3	0	0
1/10/2020	3:26	1020.1	0	0
1/10/2020	3:41	1019.9	0	0
1/10/2020	3:56	1019.2	0	0
1/10/2020	4:11	1018.8	0	0
1/10/2020	4:26	1018.3	0	0

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Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
1/10/2020	4:41	1018.3	0	0
1/10/2020	4:56	1017.7	0	0
1/10/2020	5:11	1017.3	0	0
1/10/2020	5:26	1016.6	0	0
1/10/2020	5:41	1016.4	0	0
1/10/2020	5:56	1016.2	0	0
1/10/2020	6:11	1015.7	0	0
1/10/2020	6:26	1014.9	0	0
1/10/2020	6:41	1014.4	0	0
1/10/2020	6:56	1013.5	0	0
1/10/2020	7:11	1013.3	0	0
1/10/2020	7:26	1012.6	0	0
1/10/2020	7:41	1012.2	0	0
1/10/2020	7:56	1011.8	0	0
1/10/2020	8:11	1011.5	0	0
1/10/2020	8:26	1011	0	0
1/10/2020	8:41	1010.8	0	0
1/10/2020	8:56	1010.5	0	0
1/10/2020	9:11	1010.2	0	0
1/10/2020	9:26	1009.9	0	0
1/10/2020	9:41	1009.7	0	0
1/10/2020	9:56	1009	0	0
1/10/2020	10:11	1008.5	0	0
1/10/2020	10:26	1008	0	0
1/10/2020	10:41	1007.8	0	0
1/10/2020	10:56	1007.2	0	0
1/10/2020	11:11	1006.9	0	0
1/10/2020	11:26	1006.1	0	0
1/10/2020	11:41	1005.8	0	0
1/10/2020	11:56	1005.1	0	0
1/10/2020	12:11	1004.9	0	0
1/10/2020	12:26	1005	0	0
1/10/2020	12:41	1005.2	0	0
1/10/2020	12:56	1005.6	0	0
1/10/2020	13:11	1005.6	0	0
1/10/2020	13:26	1005	0	0
1/10/2020	13:41	1005.2	0	0
1/10/2020	13:56	1005	0	0
1/10/2020	14:11	1005.2	0	0
1/10/2020	14:26	1005	0	0
1/10/2020	14:41	1004.9	0	0
1/10/2020	14:56	1004.8	0	0
1/10/2020	15:11	1004.9	0	0
1/10/2020	15:26	1004.8	0	0
1/10/2020	15:41	1004.8	0	0
1/10/2020	15:56	1004.3	0	0
1/10/2020	16:11	1004.3	0	0
1/10/2020	16:26	1004	0	0
1/10/2020	16:41	1003.9	0	0
1/10/2020	16:56	1003.5	0	0
1/10/2020	17:11	1003.3	0	0
1/10/2020	17:26	1003.1	0	0
1/10/2020	17:41	1003	0	0
1/10/2020	17:56	1002.6	0	0
1/10/2020	18:11	1002.6	0	0
1/10/2020	18:26	1002.4	0	0
1/10/2020	18:41	1002.4	0	0
1/10/2020	18:56	1002.1	0	0
1/10/2020	19:11	1002.2	0	0
1/10/2020	19:26	1002.1	0	0
1/10/2020	19:41	1002.1	0	0
1/10/2020	19:56	1001.9	0	0
1/10/2020	20:11	1001.9	0	0
1/10/2020	20:26	1001.8	0	0
1/10/2020	20:41	1001.8	0	0
1/10/2020	20:56	1001.8	0	0
1/10/2020	21:11	1001.9	0	0
1/10/2020	21:26	1002	0	0
1/10/2020	21:41	1001.8	0	0
1/10/2020	21:56	1001.8	0	0
1/10/2020	22:11	1001.7	0	0
1/10/2020	22:26	1001.7	0	0
1/10/2020	22:41	1001.8	0	0
1/10/2020	22:56	1001.8	0	0
1/10/2020	23:11	1001.8	0	0
1/10/2020	23:26	1001.9	0	0
1/10/2020	23:41	1002	0	0
1/10/2020	23:56	1001.9	0	0
1/11/2020	0:11	1001.8	0	0
1/11/2020	0:26	1001.6	0	0
1/11/2020	0:41	1001.6	0	0
1/11/2020	0:56	1001.6	0	0
1/11/2020	1:11	1001.4	0	0
1/11/2020	1:26	1001.5	0	0
1/11/2020	1:41	1001.5	0	0
1/11/2020	1:56	1001.6	0	0
1/11/2020	2:11	1001.7	0	0
1/11/2020	2:26	1001.7	0	0
1/11/2020	2:41	1001.8	0	0
1/11/2020	2:56	1001.8	0	0
1/11/2020	3:11	1001.8	0	0

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Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
1/11/2020	3:26	1001.8	0	0
1/11/2020	3:41	1001.8	0	0
1/11/2020	3:56	1001.8	0	0
1/11/2020	4:11	1001.9	0	0
1/11/2020	4:26	1001.7	0	0
1/11/2020	4:41	1001.9	0	0
1/11/2020	4:56	1002.4	0	0
1/11/2020	5:11	1002.7	0	0
1/11/2020	5:26	1003.4	0	0
1/11/2020	5:41	1003.7	0	0
1/11/2020	5:56	1004.4	0	0
1/11/2020	6:11	1004.8	0	0
1/11/2020	6:26	1005.3	0	0
1/11/2020	6:41	1005.6	0	0
1/11/2020	6:56	1006.1	0	0
1/11/2020	7:11	1006.5	0	0
1/11/2020	7:26	1006.9	0	0
1/11/2020	7:41	1007.1	0	0
1/11/2020	7:56	1007.6	0	0
1/11/2020	8:11	1007.9	0	0
1/11/2020	8:26	1008.3	0	0
1/11/2020	8:41	1008.6	0	0
1/11/2020	8:56	1009.1	0	0
1/11/2020	9:11	1009.3	0	0
1/11/2020	9:26	1009.8	0	0
1/11/2020	9:41	1010	0	0
1/11/2020	9:56	1010.5	0	0
1/11/2020	10:11	1010.6	0	0
1/11/2020	10:26	1010.9	0	0
1/11/2020	10:41	1010.9	0	0
1/11/2020	10:56	1011.4	0	0
1/11/2020	11:11	1011.5	0	0
1/11/2020	11:26	1011.6	0	0
1/11/2020	11:41	1011.9	0	0
1/11/2020	11:56	1012	0	0
1/11/2020	12:11	1012	0	0
1/11/2020	12:26	1012.2	0	0
1/11/2020	12:41	1012.1	0	0
1/11/2020	12:56	1012.1	0	0
1/11/2020	13:11	1012.2	0	0
1/11/2020	13:26	1012.3	0	0
1/11/2020	13:41	1012.3	0	0
1/11/2020	13:56	1012.5	0	0
1/11/2020	14:11	1012.7	0	0
1/11/2020	14:26	1012.9	0	0
1/11/2020	14:41	1012.9	0	0
1/11/2020	14:56	1013.2	0	0
1/11/2020	15:11	1013.3	0	0
1/11/2020	15:26	1013.6	0	0
1/11/2020	15:41	1013.8	0	0
1/11/2020	15:56	1014	0	0
1/11/2020	16:11	1014.2	0	0
1/11/2020	16:26	1014.3	0	0
1/11/2020	16:41	1014.4	0	0
1/11/2020	16:56	1014.4	0	0
1/11/2020	17:11	1014.3	0	0
1/11/2020	17:26	1014.2	0	0
1/11/2020	17:41	1014.2	0	0
1/11/2020	17:56	1014.5	0	0
1/11/2020	18:11	1014.4	0	0
1/11/2020	18:26	1014.6	0	0
1/11/2020	18:41	1014.7	0	0
1/11/2020	18:56	1014.8	0	0
1/11/2020	19:11	1014.7	0	0
1/11/2020	19:26	1014.4	0	0
1/11/2020	19:41	1014.3	0	0
1/11/2020	19:56	1014.1	0	0
1/11/2020	20:11	1014	0	0
1/11/2020	20:26	1013.9	0	0
1/11/2020	20:41	1013.9	0	0
1/11/2020	20:56	1013.6	0	0
1/11/2020	21:11	1013.5	0	0
1/11/2020	21:26	1013.4	0	0
1/11/2020	21:41	1013.1	0	0
1/11/2020	21:56	1013	0	0
1/11/2020	22:11	1012.9	0	0
1/11/2020	22:26	1012.6	0	0
1/11/2020	22:41	1012.4	0	0
1/11/2020	22:56	1011.9	0	0
1/11/2020	23:11	1011.8	0	0
1/11/2020	23:26	1011.4	0	0
1/11/2020	23:41	1011	0	0
1/11/2020	23:56	1010.7	0	0
1/12/2020	0:11	1010.7	0	0
1/12/2020	0:26	1010.4	0	0
1/12/2020	0:41	1010.3	0	0
1/12/2020	0:56	1010	0	0
1/12/2020	1:11	1009.9	0	0
1/12/2020	1:26	1009.3	0	0
1/12/2020	1:41	1009.2	0	0
1/12/2020	1:56	1008.9	0	0

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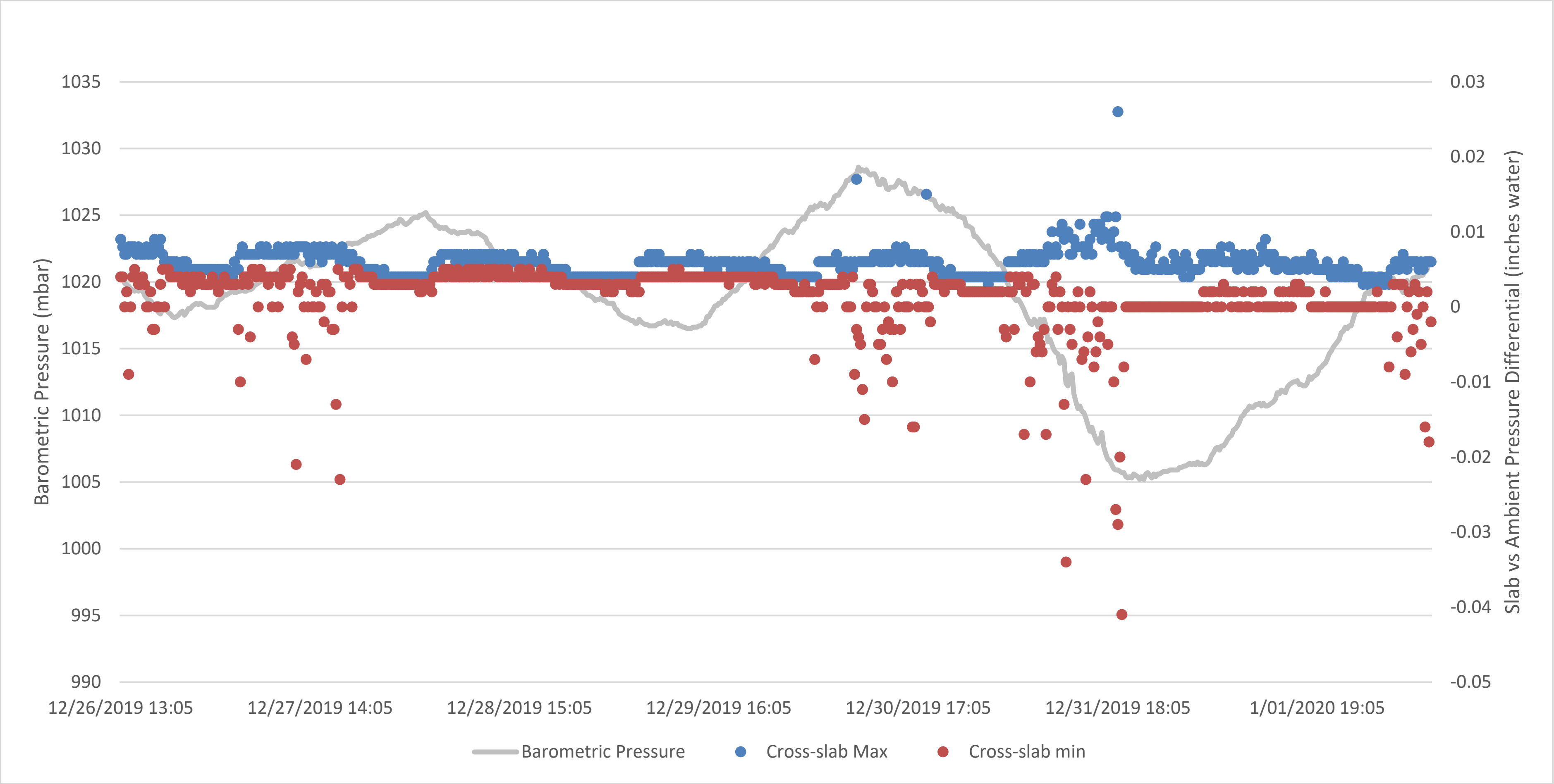
Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
1/12/2020	2:11	1008.6	0	0
1/12/2020	2:26	1008.3	0	0
1/12/2020	2:41	1008.2	0	0
1/12/2020	2:56	1007.4	0	0
1/12/2020	3:11	1007.1	0	0
1/12/2020	3:26	1006.4	0	0
1/12/2020	3:41	1006.2	0	0
1/12/2020	3:56	1005.7	0	0
1/12/2020	4:11	1005.4	0	0
1/12/2020	4:26	1005	0	0
1/12/2020	4:41	1004.9	0	0
1/12/2020	4:56	1004	0	0
1/12/2020	5:11	1004	0	0
1/12/2020	5:26	1003.7	0	0
1/12/2020	5:41	1003.6	0	0
1/12/2020	5:56	1003.9	0	0
1/12/2020	6:11	1003.7	0	0
1/12/2020	6:26	1002.9	0	0
1/12/2020	6:41	1002.7	0	0
1/12/2020	6:56	1002.3	0	0
1/12/2020	7:11	1002.2	0	0
1/12/2020	7:26	1002.1	0	0
1/12/2020	7:41	1001.9	0	0
1/12/2020	7:56	1001.8	0	0
1/12/2020	8:11	1001.8	0	0
1/12/2020	8:26	1001.6	0	0
1/12/2020	8:41	1001.6	0	0
1/12/2020	8:56	1001.3	0	0
1/12/2020	9:11	1001.4	0	0
1/12/2020	9:26	1001.3	0	0
1/12/2020	9:41	1001.2	0	0
1/12/2020	9:56	1000.9	0	0
1/12/2020	10:11	1000.9	0	0
1/12/2020	10:26	1000.7	0	0
1/12/2020	10:41	1000.4	0	0
1/12/2020	10:56	1000	0	0
1/12/2020	11:11	1000.1	0	0
1/12/2020	11:26	999.9	0	0
1/12/2020	11:41	999.8	0	0
1/12/2020	11:56	999.6	0	0
1/12/2020	12:11	999.6	0	0
1/12/2020	12:26	999.6	0	0
1/12/2020	12:41	999.7	0	0
1/12/2020	12:56	999.7	0	0
1/12/2020	13:11	999.9	0	0
1/12/2020	13:26	1000.1	0	0
1/12/2020	13:41	1000	0	0
1/12/2020	13:56	1000.5	0	0
1/12/2020	14:11	1001	0	0
1/12/2020	14:26	1001.1	0	0
1/12/2020	14:41	1001	0	0
1/12/2020	14:56	1001.3	0	0
1/12/2020	15:11	1001.4	0	0
1/12/2020	15:26	1001.4	0	0
1/12/2020	15:41	1001.3	0	0
1/12/2020	15:56	1001.5	0	0
1/12/2020	16:11	1001.5	0	0
1/12/2020	16:26	1001.6	0	0
1/12/2020	16:41	1001.6	0	0
1/12/2020	16:56	1001.7	0	0
1/12/2020	17:11	1001.7	0	0
1/12/2020	17:26	1001.9	0	0
1/12/2020	17:41	1001.8	0	0
1/12/2020	17:56	1002.1	0	0
1/12/2020	18:11	1002.3	0	0
1/12/2020	18:26	1002.6	0	0
1/12/2020	18:41	1002.7	0	0
1/12/2020	18:56	1002.9	0	0
1/12/2020	19:11	1003.1	0	0
1/12/2020	19:26	1003.3	0	0
1/12/2020	19:41	1003.4	0	0
1/12/2020	19:56	1003.4	0	0
1/12/2020	20:11	1003.4	0	0
1/12/2020	20:26	1003.8	0	0
1/12/2020	20:41	1004	0	0
1/12/2020	20:56	1004.2	0	0
1/12/2020	21:11	1004.4	0	0
1/12/2020	21:26	1004.6	0	0
1/12/2020	21:41	1004.7	0	0
1/12/2020	21:56	1005.2	0	0
1/12/2020	22:11	1005.4	0	0
1/12/2020	22:26	1006	0	0
1/12/2020	22:41	1006.1	0	0
1/12/2020	22:56	1006.8	0	0
1/12/2020	23:11	1007	0	0
1/12/2020	23:26	1007.4	0	0
1/12/2020	23:41	1007.7	0	0
1/12/2020	23:56	1007.9	0	0
1/13/2020	0:11	1007.9	0	0
1/13/2020	0:26	1008.2	0	0
1/13/2020	0:41	1008.3	0	0

VP-3
Building A Main Warehouse Sub-Slab Versus Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
1/13/2020	0:56	1008.5	0	0
1/13/2020	1:11	1008.6	0	0
1/13/2020	1:26	1009	0	0
1/13/2020	1:41	1009.2	0	0
1/13/2020	1:56	1009.6	0	0
1/13/2020	2:11	1009.7	0	0
1/13/2020	2:26	1009.9	0	0
1/13/2020	2:41	1010	0	0
1/13/2020	2:56	1010.2	0	0
1/13/2020	3:11	1010.3	0	0
1/13/2020	3:26	1010.6	0	0
1/13/2020	3:41	1010.6	0	0
1/13/2020	3:56	1010.7	0	0
1/13/2020	4:11	1010.8	0	0
1/13/2020	4:26	1010.8	0	0
1/13/2020	4:41	1010.9	0	0
1/13/2020	4:56	1010.9	0	0
1/13/2020	5:11	1010.9	0	0
1/13/2020	5:26	1010.6	0	0
1/13/2020	5:41	1010.5	0	0
1/13/2020	5:56	1010.5	0	0
1/13/2020	6:11	1010.6	0	0
1/13/2020	6:26	1010.8	0	0
1/13/2020	6:41	1010.7	0	0
1/13/2020	6:56	1010.8	0	0
1/13/2020	7:11	1010.7	0	0
1/13/2020	7:26	1010.4	0	0
1/13/2020	7:41	1010.5	0	0
1/13/2020	7:56	1010.7	0	0
1/13/2020	8:11	1010.8	0	0
1/13/2020	8:26	1010.8	0	0
1/13/2020	8:41	1010.8	0	0
1/13/2020	8:56	1010.9	0	0
1/13/2020	9:11	1011	0	0
1/13/2020	9:26	1011	0	0
1/13/2020	9:41	1011.2	0	0
1/13/2020	9:56	1011.3	0	0
1/13/2020	10:11	1011.2	0	0
1/13/2020	10:26	1011.2	0	0
1/13/2020	10:41	1011.2	0	0
1/13/2020	10:56	1011.2	0	0
1/13/2020	11:11	1011.2	0	0
1/13/2020	11:26	1010.9	0	0
1/13/2020	11:41	1010.7	0	0
1/13/2020	11:56	1010.5	0	0
1/13/2020	12:11	1010.4	0	0
1/13/2020	12:26	1010.1	0	0
1/13/2020	12:41	1010	0	0
1/13/2020	12:56	1009.6	0	0
1/13/2020	13:11	1009.6	0	0
1/13/2020	13:26	1009.4	0	0
1/13/2020	13:41	1009.3	0	0
1/13/2020	13:56	1009.2	0	0
1/13/2020	14:11	1009.3	0	0
1/13/2020	14:26	1009.2	0	0
1/13/2020	14:41	1009.2	0	0
1/13/2020	14:56	1009.2	0	0
1/13/2020	15:11	1009.2	0	0
1/13/2020	15:26	1009.2	0	0
1/13/2020	15:41	1009.1	0	0
1/13/2020	15:56	1009.1	0	0
1/13/2020	16:11	1009.1	0	0
1/13/2020	16:26	1009.1	0	0
1/13/2020	16:41	1009.2	0	0
1/13/2020	16:56	1009.2	0	0
1/13/2020	17:11	1009.1	0	0
1/13/2020	17:26	1009.1	0	0
1/13/2020	17:41	1009.1	0	0
1/13/2020	17:56	1009	0	0
1/13/2020	18:11	1008.9	0	0
1/13/2020	18:26	1008.9	0	0
1/13/2020	18:41	1008.8	0	0
1/13/2020	18:56	1008.9	0	0
1/13/2020	19:11	1009	0	0
1/13/2020	19:26	1009	0	0
1/13/2020	19:41	1009	0	0
1/13/2020	19:56	1009	0	0
1/13/2020	20:11	1009	0	0
1/13/2020	20:26	1009.1	0	0
1/13/2020	20:41	1009	0	0
1/13/2020	20:56	1008.9	0	0
1/13/2020	21:11	1008.9	0	0
1/13/2020	21:26	1009.2	0	0
1/13/2020	21:41	1009.2	0	0
1/13/2020	21:56	1009.2	0	0
1/13/2020	22:11	1009.3	0	0
1/13/2020	22:26	1009.3	0	0
1/13/2020	22:41	1009.3	0	0
1/13/2020	22:56	1009.4	0	0
1/13/2020	23:11	1009.3	0	0
1/13/2020	23:26	1009.4	0	0

VP-3
Building A Main Warehouse Sub-Slab Versus Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
1/13/2020	23:41	1009.4	0	0
1/13/2020	23:56	1009.4	0	0
1/13/2020	0:11	1009.4	0	0
1/13/2020	0:26	1009.3	0	0
1/13/2020	0:41	1009.3	0	0
1/14/2020	0:56	1009.4	0	0
1/14/2020	1:11	1009.4	0	0
1/14/2020	1:26	1009.4	0	0
1/14/2020	1:41	1009.4	0	0
1/14/2020	1:56	1009.6	0	0
1/14/2020	2:11	1009.8	0	0
1/14/2020	2:26	1010	0	0
1/14/2020	2:41	1010.2	0	0
1/14/2020	2:56	1010.2	0	0
1/14/2020	3:11	1010.2	0	0
1/14/2020	3:26	1010.3	0	0
1/14/2020	3:41	1010.3	0	0
1/14/2020	3:56	1010.3	0	0
1/14/2020	4:11	1010.2	0	0
1/14/2020	4:26	1010.3	0	0
1/14/2020	4:41	1010.4	0	0
1/14/2020	4:56	1010.4	0	0
1/14/2020	5:11	1010.3	0	0
1/14/2020	5:26	1010.4	0	0
1/14/2020	5:41	1010.5	0	0
1/14/2020	5:56	1010.5	0	0
1/14/2020	6:11	1010.7	0.002	0
1/14/2020	6:26	1010.7	0	0
1/14/2020	6:41	1010.6	0	0
1/14/2020	6:56	1010.7	0	0
1/14/2020	7:11	1010.7	0	0
1/14/2020	7:26	1010.7	0.002	0
1/14/2020	7:41	1010.8	0	0
1/14/2020	7:56	1010.8	0	0
1/14/2020	8:11	1010.9	0	0
1/14/2020	8:26	1011.2	0	0
1/14/2020	8:41	1011.3	0	0
1/14/2020	8:56	1011.5	0	0
1/14/2020	9:11	1011.7	0	0
1/14/2020	9:26	1012	0	0
1/14/2020	9:41	1012.1	0	0
1/14/2020	9:56	1012.6	0	0
1/14/2020	10:11	1012.7	0	0
1/14/2020	10:26	1013	0	0
1/14/2020	10:41	1013.1	0	0



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Supplemental Post-Construction Vapor Intrusion Assessment
1514 Taylor Way Development
Tacoma, Washington

VP-7
Building A West Office Node Sub-Slab
Versus Break Room Ambient

3/4/2020

VP-7
Building A West Office Node Sub-Slab Versus Break Room Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/26/2019	13:05	1020.4	0.009	0.004
12/26/2019	13:20	1020.2	0.008	0.004
12/26/2019	13:35	1019.9	0.007	0
12/26/2019	13:50	1019.8	0.007	0.002
12/26/2019	14:05	1019.7	0.008	-0.009
12/26/2019	14:20	1019.5	0.008	0
12/26/2019	14:35	1019.4	0.008	0.004
12/26/2019	14:50	1019.3	0.008	0.005
12/26/2019	15:05	1019.4	0.007	0.004
12/26/2019	15:20	1019.3	0.008	0.003
12/26/2019	15:35	1019.4	0.007	0.003
12/26/2019	15:50	1019.4	0.007	0.004
12/26/2019	16:05	1019	0.007	0.003
12/26/2019	16:20	1018.8	0.008	0
12/26/2019	16:35	1018.6	0.007	0
12/26/2019	16:50	1018.6	0.008	0.002
12/26/2019	17:05	1018.4	0.007	-0.003
12/26/2019	17:20	1018.3	0.009	-0.003
12/26/2019	17:35	1018	0.008	0
12/26/2019	17:50	1017.7	0.008	0
12/26/2019	18:05	1017.6	0.009	0.003
12/26/2019	18:20	1017.9	0.007	0.005
12/26/2019	18:35	1017.9	0.006	0
12/26/2019	18:50	1017.9	0.006	0.005
12/26/2019	19:05	1017.7	0.006	0.005
12/26/2019	19:20	1017.6	0.006	0.004
12/26/2019	19:35	1017.4	0.006	0.004
12/26/2019	19:50	1017.3	0.006	0.004
12/26/2019	20:05	1017.4	0.006	0.004
12/26/2019	20:20	1017.5	0.005	0.004
12/26/2019	20:35	1017.7	0.005	0.004
12/26/2019	20:50	1017.8	0.006	0.003
12/26/2019	21:05	1017.5	0.006	0.003
12/26/2019	21:20	1017.7	0.006	0.004
12/26/2019	21:35	1018	0.005	0.003
12/26/2019	21:50	1018	0.005	0.002
12/26/2019	22:05	1018.2	0.005	0.004
12/26/2019	22:20	1018.3	0.005	0.004
12/26/2019	22:35	1018.4	0.005	0.003
12/26/2019	22:50	1018.3	0.005	0.004
12/26/2019	23:05	1018.4	0.005	0.004
12/26/2019	23:20	1018.3	0.005	0.003
12/26/2019	23:35	1018.2	0.005	0.003
12/26/2019	23:50	1018.1	0.005	0.003
12/27/2019	0:05	1018.1	0.005	0.003
12/27/2019	0:20	1018.1	0.005	0.003
12/27/2019	0:35	1018.1	0.005	0.004
12/27/2019	0:50	1018.1	0.005	0.003
12/27/2019	1:05	1018.2	0.004	0.003
12/27/2019	1:20	1018.6	0.005	0.002
12/27/2019	1:35	1018.7	0.005	0.003
12/27/2019	1:50	1018.8	0.005	0.003
12/27/2019	2:05	1019.1	0.005	0.004
12/27/2019	2:20	1019	0.005	0.003
12/27/2019	2:35	1019.1	0.004	0.003
12/27/2019	2:50	1019.2	0.004	0.003
12/27/2019	3:05	1019.3	0.004	0.003
12/27/2019	3:20	1019.2	0.006	0.003
12/27/2019	3:35	1019.2	0.005	0.003
12/27/2019	3:50	1019.3	0.005	-0.003
12/27/2019	4:05	1019.3	0.007	-0.01
12/27/2019	4:20	1019.4	0.008	0.003
12/27/2019	4:35	1019.3	0.007	0.004
12/27/2019	4:50	1019.3	0.007	0.004
12/27/2019	5:05	1019.4	0.007	0.003
12/27/2019	5:20	1019.4	0.007	-0.004
12/27/2019	5:35	1019.5	0.007	0.005
12/27/2019	5:50	1019.7	0.007	0.005
12/27/2019	6:05	1019.8	0.007	0.004
12/27/2019	6:20	1019.9	0.007	0
12/27/2019	6:35	1020	0.008	0.005
12/27/2019	6:50	1020.1	0.008	0.004
12/27/2019	7:05	1020.1	0.007	0.004
12/27/2019	7:20	1019.9	0.008	0.004
12/27/2019	7:35	1020.1	0.007	0.003
12/27/2019	7:50	1020.3	0.007	0.004
12/27/2019	8:05	1020.4	0.007	0
12/27/2019	8:20	1020.5	0.007	0.004
12/27/2019	8:35	1020.6	0.007	0.004
12/27/2019	8:50	1020.8	0.008	0
12/27/2019	9:05	1021	0.007	0.003
12/27/2019	9:20	1021.1	0.007	0.004
12/27/2019	9:35	1021.2	0.007	0.005
12/27/2019	9:50	1021.3	0.008	0.004
12/27/2019	10:05	1021.5	0.007	0.004
12/27/2019	10:20	1021.5	0.008	0.005
12/27/2019	10:35	1021.6	0.007	-0.004
12/27/2019	10:50	1021.5	0.007	-0.005
12/27/2019	11:05	1021.6	0.008	-0.021
12/27/2019	11:20	1021.6	0.008	0.002
12/27/2019	11:35	1021.4	0.008	0.003

VP-7
Building A West Office Node Sub-Slab Versus Break Room Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/27/2019	11:50	1021.3	0.008	0.004
12/27/2019	12:05	1021.4	0.008	0
12/27/2019	12:20	1021.5	0.008	-0.007
12/27/2019	12:35	1021.4	0.007	0
12/27/2019	12:50	1021.1	0.006	0.003
12/27/2019	13:05	1021.2	0.007	0
12/27/2019	13:20	1021.2	0.008	0
12/27/2019	13:35	1021.2	0.007	0.002
12/27/2019	13:50	1021.2	0.007	0
12/27/2019	14:05	1021.2	0.008	0
12/27/2019	14:20	1021.4	0.006	0.003
12/27/2019	14:35	1021.6	0.007	-0.002
12/27/2019	14:50	1021.8	0.008	0.003
12/27/2019	15:05	1021.9	0.007	0.002
12/27/2019	15:20	1021.9	0.007	0.002
12/27/2019	15:35	1022.2	0.008	-0.003
12/27/2019	15:50	1022.3	0.007	-0.003
12/27/2019	16:05	1022.5	0.007	-0.013
12/27/2019	16:20	1022.3	0.007	0.005
12/27/2019	16:35	1022.7	0.006	-0.023
12/27/2019	16:50	1022.6	0.008	0
12/27/2019	17:05	1022.8	0.007	0.004
12/27/2019	17:20	1022.8	0.007	0.004
12/27/2019	17:35	1022.9	0.006	0.004
12/27/2019	17:50	1022.9	0.007	0.003
12/27/2019	18:05	1022.8	0.007	0
12/27/2019	18:20	1022.9	0.006	0.005
12/27/2019	18:35	1022.9	0.006	0.005
12/27/2019	18:50	1022.9	0.006	0.005
12/27/2019	19:05	1023	0.006	0.004
12/27/2019	19:20	1023.1	0.005	0.004
12/27/2019	19:35	1023.2	0.005	0.004
12/27/2019	19:50	1023.2	0.005	0.004
12/27/2019	20:05	1023.4	0.005	0.004
12/27/2019	20:20	1023.4	0.005	0.004
12/27/2019	20:35	1023.5	0.005	0.004
12/27/2019	20:50	1023.5	0.005	0.003
12/27/2019	21:05	1023.6	0.005	0.003
12/27/2019	21:20	1023.7	0.004	0.003
12/27/2019	21:35	1023.7	0.004	0.003
12/27/2019	21:50	1023.8	0.004	0.003
12/27/2019	22:05	1023.9	0.005	0.003
12/27/2019	22:20	1024	0.004	0.003
12/27/2019	22:35	1024.2	0.004	0.003
12/27/2019	22:50	1024.2	0.004	0.003
12/27/2019	23:05	1024.2	0.004	0.003
12/27/2019	23:20	1024.3	0.004	0.003
12/27/2019	23:35	1024.4	0.004	0.003
12/27/2019	23:50	1024.4	0.004	0.003
12/28/2019	0:05	1024.7	0.004	0.003
12/28/2019	0:20	1024.6	0.004	0.003
12/28/2019	0:35	1024.4	0.004	0.003
12/28/2019	0:50	1024.3	0.004	0.003
12/28/2019	1:05	1024.4	0.004	0.003
12/28/2019	1:20	1024.5	0.004	0.003
12/28/2019	1:35	1024.7	0.004	0.003
12/28/2019	1:50	1024.8	0.004	0.003
12/28/2019	2:05	1024.8	0.004	0.003
12/28/2019	2:20	1024.8	0.004	0.003
12/28/2019	2:35	1025	0.004	0.002
12/28/2019	2:50	1025	0.004	0.002
12/28/2019	3:05	1025.1	0.004	0.003
12/28/2019	3:20	1025.2	0.004	0.003
12/28/2019	3:35	1024.9	0.004	0.003
12/28/2019	3:50	1024.7	0.004	0.003
12/28/2019	4:05	1024.6	0.005	0.002
12/28/2019	4:20	1024.5	0.006	0.004
12/28/2019	4:35	1024.2	0.006	0.004
12/28/2019	4:50	1024.2	0.006	0.004
12/28/2019	5:05	1024	0.006	0.004
12/28/2019	5:20	1024.1	0.007	0.004
12/28/2019	5:35	1024	0.007	0.005
12/28/2019	5:50	1024.1	0.007	0.004
12/28/2019	6:05	1023.9	0.007	0.005
12/28/2019	6:20	1023.8	0.007	0.005
12/28/2019	6:35	1023.7	0.007	0.004
12/28/2019	6:50	1023.8	0.007	0.004
12/28/2019	7:05	1023.7	0.006	0.004
12/28/2019	7:20	1023.6	0.007	0.005
12/28/2019	7:35	1023.7	0.007	0.004
12/28/2019	7:50	1023.7	0.006	0.004
12/28/2019	8:05	1023.7	0.006	0.004
12/28/2019	8:20	1023.7	0.007	0.004
12/28/2019	8:35	1023.8	0.006	0.005
12/28/2019	8:50	1023.8	0.006	0.004
12/28/2019	9:05	1023.6	0.007	0.005
12/28/2019	9:20	1023.6	0.006	0.004
12/28/2019	9:35	1023.6	0.007	0.005
12/28/2019	9:50	1023.7	0.007	0.004
12/28/2019	10:05	1023.6	0.006	0.005
12/28/2019	10:20	1023.5	0.007	0.005

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Building A West Office Node Sub-Slab Versus Break Room Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/28/2019	10:35	1023.4	0.007	0.004
12/28/2019	10:50	1023.3	0.007	0.004
12/28/2019	11:05	1022.9	0.007	0.005
12/28/2019	11:20	1022.8	0.006	0.004
12/28/2019	11:35	1022.5	0.007	0.005
12/28/2019	11:50	1022.3	0.007	0.005
12/28/2019	12:05	1021.9	0.007	0.005
12/28/2019	12:20	1021.9	0.006	0.004
12/28/2019	12:35	1021.7	0.006	0.004
12/28/2019	12:50	1021.5	0.007	0.005
12/28/2019	13:05	1021.5	0.006	0.004
12/28/2019	13:20	1021.5	0.006	0.004
12/28/2019	13:35	1021	0.006	0.005
12/28/2019	13:50	1021	0.007	0.004
12/28/2019	14:05	1021	0.006	0.004
12/28/2019	14:20	1021	0.007	0.004
12/28/2019	14:35	1021.2	0.006	0.004
12/28/2019	14:50	1021.2	0.006	0.004
12/28/2019	15:05	1021	0.006	0.005
12/28/2019	15:20	1021	0.006	0.005
12/28/2019	15:35	1021	0.006	0.004
12/28/2019	15:50	1021.1	0.006	0.004
12/28/2019	16:05	1021	0.006	0.004
12/28/2019	16:20	1020.9	0.006	0.005
12/28/2019	16:35	1020.9	0.007	0.004
12/28/2019	16:50	1020.8	0.006	0.004
12/28/2019	17:05	1020.7	0.006	0.004
12/28/2019	17:20	1020.5	0.006	0.004
12/28/2019	17:35	1020.4	0.006	0.004
12/28/2019	17:50	1020.6	0.006	0.005
12/28/2019	18:05	1020.3	0.007	0.004
12/28/2019	18:20	1020.5	0.006	0.004
12/28/2019	18:35	1020.4	0.005	0.004
12/28/2019	18:50	1020.3	0.005	0.004
12/28/2019	19:05	1020.2	0.005	0.004
12/28/2019	19:20	1020.2	0.005	0.004
12/28/2019	19:35	1020.1	0.005	0.003
12/28/2019	19:50	1020.1	0.005	0.004
12/28/2019	20:05	1020.1	0.005	0.003
12/28/2019	20:20	1019.9	0.005	0.004
12/28/2019	20:35	1020	0.004	0.003
12/28/2019	20:50	1019.9	0.005	0.003
12/28/2019	21:05	1019.8	0.004	0.003
12/28/2019	21:20	1019.7	0.004	0.003
12/28/2019	21:35	1019.7	0.004	0.003
12/28/2019	21:50	1019.7	0.004	0.003
12/28/2019	22:05	1019.7	0.004	0.003
12/28/2019	22:20	1019.7	0.004	0.003
12/28/2019	22:35	1019.6	0.004	0.003
12/28/2019	22:50	1019.5	0.004	0.003
12/28/2019	23:05	1019.3	0.004	0.003
12/28/2019	23:20	1019.2	0.004	0.003
12/28/2019	23:35	1019	0.004	0.003
12/28/2019	23:50	1019	0.004	0.003
12/29/2019	0:05	1018.9	0.004	0.003
12/29/2019	0:20	1018.8	0.004	0.003
12/29/2019	0:35	1018.6	0.004	0.003
12/29/2019	0:50	1018.7	0.004	0.003
12/29/2019	1:05	1018.7	0.004	0.003
12/29/2019	1:20	1018.8	0.004	0.003
12/29/2019	1:35	1018.6	0.004	0.003
12/29/2019	1:50	1018.6	0.004	0.002
12/29/2019	2:05	1018.4	0.004	0.003
12/29/2019	2:20	1018.4	0.004	0.003
12/29/2019	2:35	1018.4	0.004	0.002
12/29/2019	2:50	1018.4	0.004	0.002
12/29/2019	3:05	1018	0.004	0.003
12/29/2019	3:20	1017.9	0.004	0.003
12/29/2019	3:35	1017.6	0.004	0.003
12/29/2019	3:50	1017.5	0.004	0.003
12/29/2019	4:05	1017.4	0.004	0.003
12/29/2019	4:20	1017.3	0.004	0.003
12/29/2019	4:35	1017.3	0.004	0.003
12/29/2019	4:50	1017.2	0.004	0.003
12/29/2019	5:05	1017.1	0.004	0.002
12/29/2019	5:20	1017.1	0.004	0.002
12/29/2019	5:35	1016.9	0.004	0.003
12/29/2019	5:50	1016.9	0.004	0.002
12/29/2019	6:05	1017.2	0.006	0.002
12/29/2019	6:20	1017	0.006	0.004
12/29/2019	6:35	1016.9	0.006	0.004
12/29/2019	6:50	1016.8	0.006	0.004
12/29/2019	7:05	1016.8	0.006	0.004
12/29/2019	7:20	1016.7	0.007	0.004
12/29/2019	7:35	1016.7	0.006	0.004
12/29/2019	7:50	1016.7	0.007	0.004
12/29/2019	8:05	1016.7	0.007	0.004
12/29/2019	8:20	1016.8	0.006	0.004
12/29/2019	8:35	1016.9	0.007	0.004
12/29/2019	8:50	1016.9	0.006	0.004
12/29/2019	9:05	1017	0.006	0.004

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Building A West Office Node Sub-Slab Versus Break Room Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/29/2019	9:20	1017.1	0.006	0.004
12/29/2019	9:35	1016.9	0.006	0.004
12/29/2019	9:50	1016.9	0.006	0.004
12/29/2019	10:05	1017	0.006	0.004
12/29/2019	10:20	1016.8	0.006	0.005
12/29/2019	10:35	1016.9	0.006	0.004
12/29/2019	10:50	1016.9	0.006	0.004
12/29/2019	11:05	1016.7	0.006	0.005
12/29/2019	11:20	1016.7	0.006	0.004
12/29/2019	11:35	1016.6	0.006	0.004
12/29/2019	11:50	1016.6	0.006	0.004
12/29/2019	12:05	1016.5	0.006	0.004
12/29/2019	12:20	1016.5	0.006	0.004
12/29/2019	12:35	1016.5	0.007	0.004
12/29/2019	12:50	1016.6	0.006	0.004
12/29/2019	13:05	1016.6	0.006	0.004
12/29/2019	13:20	1016.6	0.006	0.004
12/29/2019	13:35	1016.7	0.007	0.004
12/29/2019	13:50	1016.7	0.006	0.004
12/29/2019	14:05	1016.9	0.006	0.004
12/29/2019	14:20	1016.9	0.006	0.004
12/29/2019	14:35	1017.4	0.006	0.004
12/29/2019	14:50	1017.4	0.005	0.004
12/29/2019	15:05	1017.7	0.006	0.004
12/29/2019	15:20	1017.9	0.005	0.004
12/29/2019	15:35	1018.2	0.006	0.004
12/29/2019	15:50	1018.2	0.005	0.004
12/29/2019	16:05	1018.4	0.006	0.004
12/29/2019	16:20	1018.4	0.006	0.004
12/29/2019	16:35	1018.7	0.006	0.004
12/29/2019	16:50	1018.7	0.006	0.004
12/29/2019	17:05	1018.9	0.006	0.004
12/29/2019	17:20	1019	0.006	0.003
12/29/2019	17:35	1019.2	0.005	0.004
12/29/2019	17:50	1019.4	0.006	0.004
12/29/2019	18:05	1019.3	0.006	0.004
12/29/2019	18:20	1019.4	0.005	0.004
12/29/2019	18:35	1019.7	0.006	0.004
12/29/2019	18:50	1019.8	0.005	0.004
12/29/2019	19:05	1020	0.006	0.004
12/29/2019	19:20	1020	0.005	0.004
12/29/2019	19:35	1020.6	0.006	0.004
12/29/2019	19:50	1020.6	0.006	0.004
12/29/2019	20:05	1021	0.006	0.004
12/29/2019	20:20	1021.1	0.005	0.004
12/29/2019	20:35	1021.3	0.006	0.003
12/29/2019	20:50	1021.5	0.005	0.003
12/29/2019	21:05	1021.6	0.005	0.004
12/29/2019	21:20	1021.7	0.005	0.004
12/29/2019	21:35	1022	0.005	0.004
12/29/2019	21:50	1022.2	0.006	0.003
12/29/2019	22:05	1022.3	0.005	0.004
12/29/2019	22:20	1022.4	0.005	0.004
12/29/2019	22:35	1022.7	0.005	0.004
12/29/2019	22:50	1022.6	0.005	0.004
12/29/2019	23:05	1022.9	0.005	0.003
12/29/2019	23:20	1023.1	0.005	0.003
12/29/2019	23:35	1023.4	0.004	0.003
12/29/2019	23:50	1023.6	0.005	0.003
12/30/2019	0:05	1023.8	0.004	0.003
12/30/2019	0:20	1023.9	0.004	0.003
12/30/2019	0:35	1023.8	0.004	0.003
12/30/2019	0:50	1023.7	0.004	0.003
12/30/2019	1:05	1023.8	0.004	0.003
12/30/2019	1:20	1023.7	0.004	0.003
12/30/2019	1:35	1024	0.004	0.002
12/30/2019	1:50	1024.1	0.004	0.002
12/30/2019	2:05	1024.5	0.004	0.002
12/30/2019	2:20	1024.6	0.004	0.002
12/30/2019	2:35	1024.8	0.004	0.002
12/30/2019	2:50	1024.7	0.004	0.003
12/30/2019	3:05	1025.1	0.004	0.002
12/30/2019	3:20	1025.3	0.004	0.002
12/30/2019	3:35	1025.6	0.004	0.002
12/30/2019	3:50	1025.4	0.004	0.002
12/30/2019	4:05	1025.7	0.004	-0.007
12/30/2019	4:20	1025.6	0.004	0
12/30/2019	4:35	1025.7	0.006	0.002
12/30/2019	4:50	1025.9	0.006	0.003
12/30/2019	5:05	1025.7	0.006	0
12/30/2019	5:20	1025.8	0.006	0.003
12/30/2019	5:35	1025.5	0.006	0.003
12/30/2019	5:50	1025.6	0.006	0.003
12/30/2019	6:05	1025.9	0.006	0.003
12/30/2019	6:20	1026	0.006	0.003
12/30/2019	6:35	1026.4	0.006	0.003
12/30/2019	6:50	1026.5	0.007	0.003
12/30/2019	7:05	1026.5	0.006	0.003
12/30/2019	7:20	1026.8	0.005	0.003
12/30/2019	7:35	1027	0.005	0.004
12/30/2019	7:50	1027.2	0.006	0.003

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Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/30/2019	8:05	1027.6	0.006	0
12/30/2019	8:20	1027.6	0.005	0
12/30/2019	8:35	1027.8	0.006	0
12/30/2019	8:50	1027.9	0.005	0.004
12/30/2019	9:05	1028	0.006	-0.009
12/30/2019	9:20	1028.1	0.017	-0.003
12/30/2019	9:35	1028.6	0.006	-0.004
12/30/2019	9:50	1028.3	0.006	-0.005
12/30/2019	10:05	1028.4	0.006	-0.011
12/30/2019	10:20	1028.3	0.006	-0.015
12/30/2019	10:35	1028.4	0.006	0
12/30/2019	10:50	1028.1	0.006	0.003
12/30/2019	11:05	1028	0.006	0.003
12/30/2019	11:20	1028.1	0.006	0.002
12/30/2019	11:35	1028.1	0.007	0
12/30/2019	11:50	1027.8	0.007	0
12/30/2019	12:05	1027.3	0.007	-0.005
12/30/2019	12:20	1027.3	0.006	-0.005
12/30/2019	12:35	1027.7	0.006	-0.003
12/30/2019	12:50	1027.6	0.007	0
12/30/2019	13:05	1027	0.006	-0.007
12/30/2019	13:20	1026.9	0.007	-0.002
12/30/2019	13:35	1027.1	0.006	-0.003
12/30/2019	13:50	1027.1	0.007	-0.01
12/30/2019	14:05	1027.1	0.007	-0.003
12/30/2019	14:20	1027.3	0.008	0.002
12/30/2019	14:35	1027.6	0.007	0
12/30/2019	14:50	1027.5	0.006	-0.003
12/30/2019	15:05	1027.3	0.007	0.003
12/30/2019	15:20	1027.4	0.008	0
12/30/2019	15:35	1026.9	0.007	0
12/30/2019	15:50	1026.6	0.007	0
12/30/2019	16:05	1026.6	0.006	0.003
12/30/2019	16:20	1026.7	0.007	-0.016
12/30/2019	16:35	1027	0.006	-0.016
12/30/2019	16:50	1026.9	0.007	0.003
12/30/2019	17:05	1026.6	0.006	0
12/30/2019	17:20	1026.8	0.006	0.003
12/30/2019	17:35	1026.7	0.007	0.002
12/30/2019	17:50	1026.5	0.006	0
12/30/2019	18:05	1026.6	0.015	0
12/30/2019	18:20	1026.4	0.006	0
12/30/2019	18:35	1026.2	0.006	-0.002
12/30/2019	18:50	1026.2	0.006	0.004
12/30/2019	19:05	1026.1	0.005	0.003
12/30/2019	19:20	1025.7	0.006	0.003
12/30/2019	19:35	1025.6	0.006	0.003
12/30/2019	19:50	1025.4	0.005	0.003
12/30/2019	20:05	1025.7	0.004	0.003
12/30/2019	20:20	1025.5	0.004	0.002
12/30/2019	20:35	1025.3	0.004	0.003
12/30/2019	20:50	1025.5	0.004	0.003
12/30/2019	21:05	1025.3	0.005	0.003
12/30/2019	21:20	1025.5	0.004	0.003
12/30/2019	21:35	1025.1	0.004	0.003
12/30/2019	21:50	1025.1	0.004	0.003
12/30/2019	22:05	1024.9	0.004	0.003
12/30/2019	22:20	1024.9	0.004	0.003
12/30/2019	22:35	1024.8	0.004	0.002
12/30/2019	22:50	1024.8	0.004	0.002
12/30/2019	23:05	1024.2	0.004	0.002
12/30/2019	23:20	1024.2	0.004	0.002
12/30/2019	23:35	1024.1	0.004	0.002
12/30/2019	23:50	1024	0.004	0.002
12/31/2019	0:05	1023.4	0.004	0.002
12/31/2019	0:20	1023.4	0.004	0.002
12/31/2019	0:35	1023.2	0.004	0.002
12/31/2019	0:50	1023	0.004	0.002
12/31/2019	1:05	1022.8	0.004	0.002
12/31/2019	1:20	1022.6	0.004	0.002
12/31/2019	1:35	1022.5	0.004	0.002
12/31/2019	1:50	1022.7	0.003	0.002
12/31/2019	2:05	1022.1	0.004	0.002
12/31/2019	2:20	1022	0.004	0.002
12/31/2019	2:35	1021.8	0.004	0.002
12/31/2019	2:50	1021.6	0.004	0.002
12/31/2019	3:05	1021.3	0.004	0.002
12/31/2019	3:20	1021.4	0.004	0.002
12/31/2019	3:35	1021.2	0.004	0.002
12/31/2019	3:50	1020.9	0.004	-0.003
12/31/2019	4:05	1020.1	0.004	-0.004
12/31/2019	4:20	1019.8	0.006	0.002
12/31/2019	4:35	1019	0.006	0.004
12/31/2019	4:50	1019	0.006	0.002
12/31/2019	5:05	1018.8	0.006	-0.003
12/31/2019	5:20	1018.6	0.006	0.004
12/31/2019	5:35	1018.7	0.006	0.003
12/31/2019	5:50	1018.5	0.006	0.003
12/31/2019	6:05	1018.2	0.007	0.004
12/31/2019	6:20	1017.9	0.006	-0.017
12/31/2019	6:35	1017.5	0.006	0.002

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Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
12/31/2019	6:50	1017.2	0.007	0.004
12/31/2019	7:05	1016.9	0.006	-0.01
12/31/2019	7:20	1016.8	0.007	0.003
12/31/2019	7:35	1017.2	0.007	0.003
12/31/2019	7:50	1017	0.006	-0.006
12/31/2019	8:05	1016.6	0.006	-0.004
12/31/2019	8:20	1017.2	0.007	-0.005
12/31/2019	8:35	1016.8	0.006	-0.006
12/31/2019	8:50	1017.2	0.006	-0.003
12/31/2019	9:05	1016.7	0.007	-0.017
12/31/2019	9:20	1015.5	0.008	0
12/31/2019	9:35	1015.7	0.007	0
12/31/2019	9:50	1015.3	0.01	0.003
12/31/2019	10:05	1014.9	0.007	0.002
12/31/2019	10:20	1014.7	0.008	0.004
12/31/2019	10:35	1014.6	0.007	-0.003
12/31/2019	10:50	1013.9	0.01	0.002
12/31/2019	11:05	1014.4	0.011	0
12/31/2019	11:20	1014.1	0.009	-0.013
12/31/2019	11:35	1012.4	0.01	-0.034
12/31/2019	11:50	1012.2	0.01	0
12/31/2019	12:05	1013	0.007	-0.003
12/31/2019	12:20	1013.1	0.007	-0.005
12/31/2019	12:35	1011.6	0.009	0
12/31/2019	12:50	1011	0.008	0
12/31/2019	13:05	1010.5	0.008	0.002
12/31/2019	13:20	1010.7	0.011	0
12/31/2019	13:35	1010.3	0.008	-0.007
12/31/2019	13:50	1010.2	0.008	-0.006
12/31/2019	14:05	1009.8	0.007	-0.023
12/31/2019	14:20	1009.3	0.008	-0.004
12/31/2019	14:35	1008.8	0.009	0.002
12/31/2019	14:50	1009.1	0.007	0
12/31/2019	15:05	1008.6	0.011	-0.008
12/31/2019	15:20	1008.2	0.01	-0.006
12/31/2019	15:35	1007.9	0.011	-0.002
12/31/2019	15:50	1008.1	0.011	-0.004
12/31/2019	16:05	1008.7	0.009	0
12/31/2019	16:20	1007.6	0.01	0
12/31/2019	16:35	1007.1	0.012	0
12/31/2019	16:50	1006.7	0.012	-0.005
12/31/2019	17:05	1006.6	0.009	0
12/31/2019	17:20	1006.3	0.008	0
12/31/2019	17:35	1006	0.01	-0.01
12/31/2019	17:50	1005.9	0.012	-0.027
12/31/2019	18:05	1005.9	0.026	-0.029
12/31/2019	18:20	1005.8	0.008	-0.02
12/31/2019	18:35	1005.7	0.008	-0.041
12/31/2019	18:50	1005.7	0.007	-0.008
12/31/2019	19:05	1005.4	0.008	0
12/31/2019	19:20	1005.3	0.007	0
12/31/2019	19:35	1005.4	0.006	0
12/31/2019	19:50	1005.3	0.006	0
12/31/2019	20:05	1005.6	0.007	0
12/31/2019	20:20	1005.5	0.005	0
12/31/2019	20:35	1005.4	0.006	0
12/31/2019	20:50	1005.2	0.006	0
12/31/2019	21:05	1005.4	0.005	0
12/31/2019	21:20	1005.2	0.005	0
12/31/2019	21:35	1005.6	0.005	0
12/31/2019	21:50	1005.7	0.005	0
12/31/2019	22:05	1005.5	0.006	0
12/31/2019	22:20	1005.3	0.007	0
12/31/2019	22:35	1005.6	0.005	0
12/31/2019	22:50	1005.4	0.008	0
12/31/2019	23:05	1005.6	0.005	0
12/31/2019	23:20	1005.6	0.005	0
12/31/2019	23:35	1005.7	0.005	0
12/31/2019	23:50	1005.8	0.006	0
1/1/2020	0:05	1005.8	0.005	0
1/1/2020	0:20	1005.8	0.005	0
1/1/2020	0:35	1005.9	0.005	0
1/1/2020	0:50	1005.9	0.005	0
1/1/2020	1:05	1005.9	0.007	0
1/1/2020	1:20	1005.9	0.006	0
1/1/2020	1:35	1005.9	0.005	0
1/1/2020	1:50	1006.1	0.006	0
1/1/2020	2:05	1006.1	0.005	0
1/1/2020	2:20	1006.2	0.004	0
1/1/2020	2:35	1006.2	0.007	0
1/1/2020	2:50	1006.3	0.006	0
1/1/2020	3:05	1006.4	0.004	0
1/1/2020	3:20	1006.3	0.005	0
1/1/2020	3:35	1006.4	0.005	0
1/1/2020	3:50	1006.3	0.005	0
1/1/2020	4:05	1006.5	0.005	0
1/1/2020	4:20	1006.3	0.005	0
1/1/2020	4:35	1006.4	0.007	0
1/1/2020	4:50	1006.3	0.006	0.002
1/1/2020	5:05	1006.3	0.007	0.002
1/1/2020	5:20	1006.4	0.007	0

VP-7
Building A West Office Node Sub-Slab Versus Break Room Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
1/1/2020	5:35	1006.6	0.007	0.002
1/1/2020	5:50	1007	0.006	0.002
1/1/2020	6:05	1007.2	0.007	0.002
1/1/2020	6:20	1007.5	0.006	0
1/1/2020	6:35	1007.6	0.007	0
1/1/2020	6:50	1007.4	0.007	0.002
1/1/2020	7:05	1007.7	0.008	0
1/1/2020	7:20	1007.7	0.006	0.003
1/1/2020	7:35	1007.9	0.006	0.002
1/1/2020	7:50	1008.2	0.006	0.002
1/1/2020	8:05	1008.4	0.008	0.002
1/1/2020	8:20	1008.5	0.006	0
1/1/2020	8:35	1008.9	0.006	0.002
1/1/2020	8:50	1009	0.007	0.002
1/1/2020	9:05	1009.2	0.005	0
1/1/2020	9:20	1009.5	0.006	0
1/1/2020	9:35	1009.9	0.006	0
1/1/2020	9:50	1010	0.007	0.002
1/1/2020	10:05	1010.3	0.006	0
1/1/2020	10:20	1010.4	0.005	0
1/1/2020	10:35	1010.7	0.005	0
1/1/2020	10:50	1010.6	0.007	0.002
1/1/2020	11:05	1010.6	0.005	0.002
1/1/2020	11:20	1010.8	0.006	0.002
1/1/2020	11:35	1010.8	0.006	0
1/1/2020	11:50	1010.9	0.006	0
1/1/2020	12:05	1010.7	0.008	0.002
1/1/2020	12:20	1010.9	0.007	0
1/1/2020	12:35	1010.7	0.009	0
1/1/2020	12:50	1010.7	0.007	0
1/1/2020	13:05	1010.8	0.006	0
1/1/2020	13:20	1010.9	0.007	0
1/1/2020	13:35	1011	0.007	0
1/1/2020	13:50	1011.2	0.005	0
1/1/2020	14:05	1011.7	0.005	0
1/1/2020	14:20	1011.6	0.006	0.002
1/1/2020	14:35	1011.9	0.006	0
1/1/2020	14:50	1011.8	0.006	0.002
1/1/2020	15:05	1011.7	0.006	0
1/1/2020	15:20	1012.1	0.005	0
1/1/2020	15:35	1012.3	0.005	0.002
1/1/2020	15:50	1012.4	0.005	0
1/1/2020	16:05	1012.5	0.005	0.002
1/1/2020	16:20	1012.5	0.006	0.003
1/1/2020	16:35	1012.6	0.006	0.002
1/1/2020	16:50	1012.3	0.005	0.003
1/1/2020	17:05	1012.3	0.006	0.002
1/1/2020	17:20	1012.2	0.006	0.002
1/1/2020	17:35	1012.2	0.006	0.002
1/1/2020	17:50	1012.4	0.005	0.002
1/1/2020	18:05	1012.9	0.006	0.002
1/1/2020	18:20	1012.7	0.007	0
1/1/2020	18:35	1012.9	0.006	0
1/1/2020	18:50	1013	0.005	0
1/1/2020	19:05	1013.1	0.005	0
1/1/2020	19:20	1013.5	0.005	0
1/1/2020	19:35	1013.6	0.005	0
1/1/2020	19:50	1013.8	0.005	0
1/1/2020	20:05	1013.9	0.005	0.002
1/1/2020	20:20	1014.2	0.006	0
1/1/2020	20:35	1014.6	0.005	0
1/1/2020	20:50	1014.8	0.004	0
1/1/2020	21:05	1015.1	0.005	0
1/1/2020	21:20	1015.3	0.004	0
1/1/2020	21:35	1015.5	0.005	0
1/1/2020	21:50	1015.7	0.005	0
1/1/2020	22:05	1016.2	0.004	0
1/1/2020	22:20	1016.3	0.006	0
1/1/2020	22:35	1016.6	0.004	0
1/1/2020	22:50	1016.5	0.004	0
1/1/2020	23:05	1016.7	0.005	0
1/1/2020	23:20	1016.7	0.005	0
1/1/2020	23:35	1017.2	0.004	0
1/1/2020	23:50	1017.7	0.004	0
1/2/2020	0:05	1017.8	0.005	0
1/2/2020	0:20	1018.1	0.004	0
1/2/2020	0:35	1018.4	0.004	0
1/2/2020	0:50	1018.5	0.003	0
1/2/2020	1:05	1019.1	0.004	0
1/2/2020	1:20	1019.2	0.003	0
1/2/2020	1:35	1019.1	0.004	0
1/2/2020	1:50	1019.3	0.004	0
1/2/2020	2:05	1019.8	0.004	0
1/2/2020	2:20	1020.1	0.003	0
1/2/2020	2:35	1020.1	0.003	0.002
1/2/2020	2:50	1020.1	0.004	0
1/2/2020	3:05	1020.3	0.004	0
1/2/2020	3:20	1020.4	0.003	0
1/2/2020	3:35	1020.4	0.003	0
1/2/2020	3:50	1020.1	0.004	0
1/2/2020	4:05	1020.3	0.003	-0.008

VP-7
Building A West Office Node Sub-Slab Versus Break Room Ambient

Date	Time	Barometric Pressure (millibars)	Maximum Cross-Slab Differential Pressure (inches of water)	Minimum Cross-Slab Differential Pressure (inches of water)
1/2/2020	4:20	1020.1	0.005	0
1/2/2020	4:35	1020.3	0.005	0.003
1/2/2020	4:50	1020	0.006	0.003
1/2/2020	5:05	1019.8	0.006	-0.004
1/2/2020	5:20	1019.9	0.005	0.003
1/2/2020	5:35	1019.5	0.006	0.003
1/2/2020	5:50	1019.2	0.007	0.003
1/2/2020	6:05	1019.9	0.006	-0.009
1/2/2020	6:20	1020.1	0.005	0
1/2/2020	6:35	1019.9	0.006	0.002
1/2/2020	6:50	1019.9	0.006	-0.006
1/2/2020	7:05	1020.3	0.006	-0.003
1/2/2020	7:20	1020.3	0.006	0.003
1/2/2020	7:35	1020.4	0.006	-0.001
1/2/2020	7:50	1020.4	0.005	0.002
1/2/2020	8:05	1020.5	0.006	-0.005
1/2/2020	8:20	1020.5	0.005	0
1/2/2020	8:35	1020.9	0.006	-0.016
1/2/2020	8:50	1020.9	0.006	0.002
1/2/2020	9:05	1021.4	0.006	-0.018
1/2/2020	9:20	1021.3	0.006	-0.002

Attachment 4
Laboratory Analytical Data

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
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January 22, 2020

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on January 14, 2020 from the Ave 55-Taylor Way 1514 Taylor Way Tacoma, WA, F&BI 001177 project. There are 60 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Kristin Anderson
FDS0122R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 14, 2020 by Friedman & Bruya, Inc. from the Floyd-Snider Ave 55-Taylor Way 1514 Taylor Way Tacoma, WA, F&BI 001177 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
001177 -01	VP-01-011320
001177 -02	VP-02-011320
001177 -03	VP-05-011320
001177 -04	VP-07-011320
001177 -05	VP-08-011320
001177 -06	VP-13-011320
001177 -07	VP-12-011320
001177 -08	VP-14-011320
001177 -09	VP-10-011320
001177 -10	VP-09-011320
001177 -11	Ambient
001177 -12	IA-B2
001177 -13	IA-B1
001177 -14	IA-B3
001177 -15	IA-A2
001177 -16	IA-A4
001177 -17	IA-A5
001177 -18	IA-A3
001177 -19	IA-A1
001177 -20	VP-03-011420
001177 -21	VP-04-011420
001177 -22	VP-11-011420
001177 -23	VP-110-011420

Non-petroleum compounds identified in the air phase hydrocarbon (APH) ranges were subtracted per the MA-APH method.

The APH EC5-8 aliphatics concentration in sample VP-08-011320 and VP-03-011420 exceeded the calibration range of the instrument. In addition, several TO-15 compounds exceeded the calibration range of the instrument. The data were flagged accordingly.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-01-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-01 1/2.9
Date Analyzed:	01/16/20	Data File:	011529.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	710
APH EC9-12 aliphatics	380
APH EC9-10 aromatics	<72

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-02-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-02 1/2.6
Date Analyzed:	01/16/20	Data File:	011531.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	420
APH EC9-12 aliphatics	170
APH EC9-10 aromatics	<65

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-05-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-03 1/2.9
Date Analyzed:	01/16/20	Data File:	011532.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	102	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	440
APH EC9-12 aliphatics	220
APH EC9-10 aromatics	<72

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-07-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-04 1/2.9
Date Analyzed:	01/16/20	Data File:	011533.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	970
APH EC9-12 aliphatics	180
APH EC9-10 aromatics	<72

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-08-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-05 1/2.9
Date Analyzed:	01/16/20	Data File:	011534.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,300 ve
APH EC9-12 aliphatics	630
APH EC9-10 aromatics	<72

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-13-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-06 1/2.8
Date Analyzed:	01/16/20	Data File:	011535.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<130
APH EC9-12 aliphatics	280
APH EC9-10 aromatics	<70

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-12-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-07 1/2.8
Date Analyzed:	01/16/20	Data File:	011536.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	103	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<130
APH EC9-12 aliphatics	230
APH EC9-10 aromatics	<70

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-14-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-08 1/2.8
Date Analyzed:	01/17/20	Data File:	011629.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<130
APH EC9-12 aliphatics	250
APH EC9-10 aromatics	<70

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-10-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-09 1/2.8
Date Analyzed:	01/17/20	Data File:	011637.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	105	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<130
APH EC9-12 aliphatics	270
APH EC9-10 aromatics	<70

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-09-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-10 1/2.8
Date Analyzed:	01/17/20	Data File:	011630.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<130
APH EC9-12 aliphatics	170
APH EC9-10 aromatics	<70

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Ambient	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, WA, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-11
Date Analyzed:	01/15/20	Data File:	011520.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<46
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-B2	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, WA, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-12 1/2.7
Date Analyzed:	01/16/20	Data File:	011521.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	82	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	250
APH EC9-12 aliphatics	<94
APH EC9-10 aromatics	<67

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-B1	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, WA, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-13 1/1.2
Date Analyzed:	01/16/20	Data File:	011522.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	85	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	230
APH EC9-12 aliphatics	<42
APH EC9-10 aromatics	<30

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-B3	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, WA, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-14
Date Analyzed:	01/16/20	Data File:	011523.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	230
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-A2	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, WA, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-15
Date Analyzed:	01/16/20	Data File:	011524.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	260
APH EC9-12 aliphatics	39
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-A4	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, WA, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-16
Date Analyzed:	01/16/20	Data File:	011525.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	260
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-A5	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, WA, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-17
Date Analyzed:	01/16/20	Data File:	011526.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	160
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-A3	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, WA, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-18
Date Analyzed:	01/16/20	Data File:	011527.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	350
APH EC9-12 aliphatics	66
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-A1	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, WA, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-19
Date Analyzed:	01/16/20	Data File:	011528.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	270
APH EC9-12 aliphatics	88
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-03-011420	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-20 1/2.7
Date Analyzed:	01/17/20	Data File:	011638.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	8,300 ve
APH EC9-12 aliphatics	210
APH EC9-10 aromatics	<67

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-03-011420	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-20 1/34
Date Analyzed:	01/17/20	Data File:	011636.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	33,000 ve
APH EC9-12 aliphatics	<1,200
APH EC9-10 aromatics	<850

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-04-011420	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-21 1/2.7
Date Analyzed:	01/17/20	Data File:	011631.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	220
APH EC9-12 aliphatics	140
APH EC9-10 aromatics	<67

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-11-011420	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-22 1/3.1
Date Analyzed:	01/17/20	Data File:	011632.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	96	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	700
APH EC9-12 aliphatics	1,700
APH EC9-10 aromatics	<77

Client Sample ID:	VP-110-011420	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-23 1/2.7
Date Analyzed:	01/17/20	Data File:	011633.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	620
APH EC9-12 aliphatics	1,600
APH EC9-10 aromatics	<67

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	Not Applicable	Lab ID:	00-0133 mb
Date Analyzed:	01/15/20	Data File:	011519.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	101	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<46
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	Not Applicable	Lab ID:	00-0135 mb
Date Analyzed:	01/17/20	Data File:	011616.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<46
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-01-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-01 1/2.9
Date Analyzed:	01/16/20	Data File:	011529.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	18	11	1,1,1-Trichloroethane	6.9	1.3
Dichlorodifluoromethane	12	2.5	Carbon tetrachloride	<1.8	<0.29
Chloromethane	<6	<2.9	Benzene	<0.93	<0.29
Vinyl chloride	<0.74	<0.29	Cyclohexane	<20	<5.8
1,3-Butadiene	<0.064	<0.029	1,2-Dichloropropane	1.1	0.24
Chloroethane	<7.7	<2.9	Bromodichloromethane	<0.19	<0.029
Acrolein	<2.7	<1.2	Trichloroethene	1.7	0.32
Pentane	<8.6	<2.9	4-Methyl-2-pentanone	<12	<2.9
Trichlorofluoromethane	360	63	Toluene	<55	<14
2-Propanol	<25	<10	1,1,2-Trichloroethane	<0.32	<0.058
1,1-Dichloroethene	<1.1	<0.29	Tetrachloroethene	<20	<2.9
trans-1,2-Dichloroethene	<1.1	<0.29	1,2-Dibromoethane (EDB)	<0.22	<0.029
Methylene chloride	<250	<72	Ethylbenzene	<1.3	<0.29
CFC-113	<2.2	<0.29	m,p-Xylene	<2.5	<0.58
Carbon disulfide	<18	<5.8	o-Xylene	<1.3	<0.29
1,1-Dichloroethane	<1.2	<0.29	Styrene	<2.5	<0.58
cis-1,2-Dichloroethene	<1.1	<0.29	Benzyl chloride	<0.15	<0.029
Hexane	<10	<2.9	1,3,5-Trimethylbenzene	<7.1	<1.4
Chloroform	0.82	0.17	1,2,4-Trimethylbenzene	<7.1	<1.4
2-Butanone (MEK)	<8.6	<2.9	Naphthalene	<0.76	<0.14
1,2-Dichloroethane (EDC)	0.20	0.049	Hexachlorobutadiene	<0.62	<0.058
1,2,3-Trimethylbenzene	<140 L	<29 L			
1-Butanol	< 87L	<29 L			
Acetaldehyde	<260 L	<150 L			
Acetonitrile	<49 L	<29 L			
Acrylonitrile	<32 L	<15 L			
Chlorodifluoromethane	<100 L	<29 L			
Cyclopentane	<84 L	<29 L			
Isobutene	<68 L	<29 L			
Isoprene	<81 L	<29 L			
Methyl vinyl ketone	<84 L	<29 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-02-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-02 1/2.6
Date Analyzed:	01/16/20	Data File:	011531.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3	ppbv
Propene	<1.8	<1
Dichlorodifluoromethane	13	2.6
Chloromethane	<5.4	<2.6
Vinyl chloride	<0.66	<0.26
1,3-Butadiene	<0.057	<0.026
Chloroethane	<6.9	<2.6
Acrolein	<2.4	<1
Pentane	<7.7	<2.6
Trichlorofluoromethane	170	31
2-Propanol	<22	<9.1
1,1-Dichloroethene	<1	<0.26
trans-1,2-Dichloroethene	<1	<0.26
Methylene chloride	<230	<65
CFC-113	<2	<0.26
Carbon disulfide	<16	<5.2
1,1-Dichloroethane	<1.1	<0.26
cis-1,2-Dichloroethene	<1	<0.26
Hexane	<9.2	<2.6
Chloroform	0.15	0.031
2-Butanone (MEK)	<7.7	<2.6
1,2-Dichloroethane (EDC)	<0.11	<0.026
1,2,3-Trimethylbenzene	<130 L	<26 L
1-Butanol	<78 L	<26 L
Acetaldehyde	<230 L	<130 L
Acetonitrile	<44 L	<26 L
Acrylonitrile	<29 L	<13 L
Chlorodifluoromethane	<91 L	<26 L
Cyclopentane	<75 L	<26 L
Isobutene	<60 L	<26 L
Isoprene	<73 L	<26 L
Methyl vinyl ketone	<75 L	<26 L

Compounds:	Concentration ug/m3	ppbv
1,1,1-Trichloroethane	4.5	0.82
Carbon tetrachloride	<1.6	<0.26
Benzene	<0.83	<0.26
Cyclohexane	<18	<5.2
1,2-Dichloropropane	<0.6	<0.13
Bromodichloromethane	<0.17	<0.026
Trichloroethene	<0.7	<0.13
4-Methyl-2-pentanone	<11	<2.6
Toluene	<49	<13
1,1,2-Trichloroethane	<0.28	<0.052
Tetrachloroethene	<18	<2.6
1,2-Dibromoethane (EDB)	<0.2	<0.026
Ethylbenzene	<1.1	<0.26
m,p-Xylene	<2.3	<0.52
o-Xylene	<1.1	<0.26
Styrene	<2.2	<0.52
Benzyl chloride	<0.13	<0.026
1,3,5-Trimethylbenzene	<6.4	<1.3
1,2,4-Trimethylbenzene	<6.4	<1.3
Naphthalene	<0.68	<0.13
Hexachlorobutadiene	<0.55	<0.052

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-05-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-03 1/2.9
Date Analyzed:	01/16/20	Data File:	011532.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	103	70	130

Compounds:	Concentration ug/m3	ppbv
Propene	<2	<1.2
Dichlorodifluoromethane	7.1	1.4
Chloromethane	<6	<2.9
Vinyl chloride	<0.74	<0.29
1,3-Butadiene	<0.064	<0.029
Chloroethane	<7.7	<2.9
Acrolein	<2.7	<1.2
Pentane	<8.6	<2.9
Trichlorofluoromethane	160	28
2-Propanol	<25	<10
1,1-Dichloroethene	<1.1	<0.29
trans-1,2-Dichloroethene	<1.1	<0.29
Methylene chloride	<250	<72
CFC-113	<2.2	<0.29
Carbon disulfide	<18	<5.8
1,1-Dichloroethane	<1.2	<0.29
cis-1,2-Dichloroethene	<1.1	<0.29
Hexane	<10	<2.9
Chloroform	0.51	0.10
2-Butanone (MEK)	<8.6	<2.9
1,2-Dichloroethane (EDC)	<0.12	<0.029
1,2,3-Trimethylbenzene	<140 L	<29 L
1-Butanol	< 87L	<29 L
Acetaldehyde	<260 L	<150 L
Acetonitrile	<49 L	<29 L
Acrylonitrile	<32 L	<15 L
Chlorodifluoromethane	<100 L	<29 L
Cyclopentane	<84 L	<29 L
Isobutene	<68 L	<29 L
Isoprene	<81 L	<29 L
Methyl vinyl ketone	<84 L	<29 L

Compounds:	Concentration ug/m3	ppbv
1,1,1-Trichloroethane	7.8	1.4
Carbon tetrachloride	<1.8	<0.29
Benzene	<0.93	<0.29
Cyclohexane	<20	<5.8
1,2-Dichloropropane	1.6	0.35
Bromodichloromethane	<0.19	<0.029
Trichloroethene	<0.78	<0.14
4-Methyl-2-pentanone	<12	<2.9
Toluene	<55	<14
1,1,2-Trichloroethane	<0.32	<0.058
Tetrachloroethene	<20	<2.9
1,2-Dibromoethane (EDB)	<0.22	<0.029
Ethylbenzene	<1.3	<0.29
m,p-Xylene	<2.5	<0.58
o-Xylene	<1.3	<0.29
Styrene	<2.5	<0.58
Benzyl chloride	<0.15	<0.029
1,3,5-Trimethylbenzene	<7.1	<1.4
1,2,4-Trimethylbenzene	<7.1	<1.4
Naphthalene	<0.76	<0.14
Hexachlorobutadiene	<0.62	<0.058

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-07-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-04 1/2.9
Date Analyzed:	01/16/20	Data File:	011533.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<2	<1.2	1,1,1-Trichloroethane	22	4.1
Dichlorodifluoromethane	16	3.3	Carbon tetrachloride	<1.8	<0.29
Chloromethane	<6	<2.9	Benzene	1.6	0.52
Vinyl chloride	<0.74	<0.29	Cyclohexane	<20	<5.8
1,3-Butadiene	<0.064	<0.029	1,2-Dichloropropane	5.7	1.2
Chloroethane	<7.7	<2.9	Bromodichloromethane	<0.19	<0.029
Acrolein	<2.7	<1.2	Trichloroethene	<0.78	<0.14
Pentane	36	12	4-Methyl-2-pentanone	<12	<2.9
Trichlorofluoromethane	740 ve	130 ve	Toluene	<55	<14
2-Propanol	100	41	1,1,2-Trichloroethane	<0.32	<0.058
1,1-Dichloroethene	<1.1	<0.29	Tetrachloroethene	<20	<2.9
trans-1,2-Dichloroethene	<1.1	<0.29	1,2-Dibromoethane (EDB)	<0.22	<0.029
Methylene chloride	<250	<72	Ethylbenzene	<1.3	<0.29
CFC-113	<2.2	<0.29	m,p-Xylene	<2.5	<0.58
Carbon disulfide	<18	<5.8	o-Xylene	1.7	0.39
1,1-Dichloroethane	2.0	0.49	Styrene	<2.5	<0.58
cis-1,2-Dichloroethene	<1.1	<0.29	Benzyl chloride	<0.15	<0.029
Hexane	<10	<2.9	1,3,5-Trimethylbenzene	<7.1	<1.4
Chloroform	0.57	0.12	1,2,4-Trimethylbenzene	<7.1	<1.4
2-Butanone (MEK)	<8.6	<2.9	Naphthalene	<0.76	<0.14
1,2-Dichloroethane (EDC)	0.45	0.11	Hexachlorobutadiene	<0.62	<0.058
1,2,3-Trimethylbenzene	<140 L	<29 L			
1-Butanol	< 87L	<29 L			
Acetaldehyde	<260 L	<150 L			
Acetonitrile	<49 L	<29 L			
Acrylonitrile	<32 L	<15 L			
Chlorodifluoromethane	<100 L	<29 L			
Cyclopentane	<84 L	<29 L			
Isobutene	<68 L	<29 L			
Isoprene	<81 L	<29 L			
Methyl vinyl ketone	<84 L	<29 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-08-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-05 1/2.9
Date Analyzed:	01/16/20	Data File:	011534.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<2	<1.2	1,1,1-Trichloroethane	18	3.4
Dichlorodifluoromethane	6.1	1.2	Carbon tetrachloride	<1.8	<0.29
Chloromethane	<6	<2.9	Benzene	3.3	1.0
Vinyl chloride	<0.74	<0.29	Cyclohexane	75	22
1,3-Butadiene	<0.064	<0.029	1,2-Dichloropropane	2.5	0.55
Chloroethane	<7.7	<2.9	Bromodichloromethane	<0.19	<0.029
Acrolein	<2.7	<1.2	Trichloroethene	1.1	0.20
Pentane	230 ve	79 ve	4-Methyl-2-pentanone	<12	<2.9
Trichlorofluoromethane	120	21	Toluene	<55	<14
2-Propanol	61	25	1,1,2-Trichloroethane	<0.32	<0.058
1,1-Dichloroethene	<1.1	<0.29	Tetrachloroethene	<20	<2.9
trans-1,2-Dichloroethene	<1.1	<0.29	1,2-Dibromoethane (EDB)	<0.22	<0.029
Methylene chloride	<250	<72	Ethylbenzene	4.6	1.1
CFC-113	<2.2	<0.29	m,p-Xylene	6.2	1.4
Carbon disulfide	<18	<5.8	o-Xylene	3.1	0.70
1,1-Dichloroethane	9.5	2.4	Styrene	<2.5	<0.58
cis-1,2-Dichloroethene	<1.1	<0.29	Benzyl chloride	<0.15	<0.029
Hexane	29	8.1	1,3,5-Trimethylbenzene	<7.1	<1.4
Chloroform	0.52	0.11	1,2,4-Trimethylbenzene	<7.1	<1.4
2-Butanone (MEK)	22	7.3	Naphthalene	<0.76	<0.14
1,2-Dichloroethane (EDC)	0.33	0.081	Hexachlorobutadiene	<0.62	<0.058
1,2,3-Trimethylbenzene	<140 L	<29 L			
1-Butanol	< 87L	<29 L			
Acetaldehyde	<260 L	<150 L			
Acetonitrile	<49 L	<29 L			
Acrylonitrile	<32 L	<15 L			
Chlorodifluoromethane	<100 L	<29 L			
Cyclopentane	<84 L	<29 L			
Isobutene	<68 L	<29 L			
Isoprene	<81 L	<29 L			
Methyl vinyl ketone	<84 L	<29 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-13-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-06 1/2.8
Date Analyzed:	01/16/20	Data File:	011535.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<1.9	<1.1
Dichlorodifluoromethane	2.7	0.54
Chloromethane	<5.8	<2.8
Vinyl chloride	<0.72	<0.28
1,3-Butadiene	<0.062	<0.028
Chloroethane	<7.4	<2.8
Acrolein	<2.6	<1.1
Pentane	<8.3	<2.8
Trichlorofluoromethane	10	1.8
2-Propanol	140	57
1,1-Dichloroethene	<1.1	<0.28
trans-1,2-Dichloroethene	<1.1	<0.28
Methylene chloride	<240	<70
CFC-113	<2.1	<0.28
Carbon disulfide	<17	<5.6
1,1-Dichloroethane	<1.1	<0.28
cis-1,2-Dichloroethene	<1.1	<0.28
Hexane	<9.9	<2.8
Chloroform	1.1	0.22
2-Butanone (MEK)	<8.3	<2.8
1,2-Dichloroethane (EDC)	<0.11	<0.028
1,2,3-Trimethylbenzene	<140 L	<28 L
1-Butanol	<84 L	<28 L
Acetaldehyde	<250 L	<140 L
Acetonitrile	<48 L	<28 L
Acrylonitrile	<31 L	<14 L
Chlorodifluoromethane	<98 L	<28 L
Cyclopentane	<81 L	<28 L
Isobutene	<64 L	<28 L
Isoprene	<78 L	<28 L
Methyl vinyl ketone	<81 L	<28 L

Compounds:	Concentration ug/m3	Concentration ppbv
1,1,1-Trichloroethane	<1.5	<0.28
Carbon tetrachloride	<1.8	<0.28
Benzene	<0.89	<0.28
Cyclohexane	<19	<5.6
1,2-Dichloropropane	<0.65	<0.14
Bromodichloromethane	<0.19	<0.028
Trichloroethene	<0.75	<0.14
4-Methyl-2-pentanone	<11	<2.8
Toluene	<53	<14
1,1,2-Trichloroethane	<0.31	<0.056
Tetrachloroethene	<19	<2.8
1,2-Dibromoethane (EDB)	<0.22	<0.028
Ethylbenzene	<1.2	<0.28
m,p-Xylene	<2.4	<0.56
o-Xylene	<1.2	<0.28
Styrene	<2.4	<0.56
Benzyl chloride	<0.14	<0.028
1,3,5-Trimethylbenzene	<6.9	<1.4
1,2,4-Trimethylbenzene	<6.9	<1.4
Naphthalene	<0.73	<0.14
Hexachlorobutadiene	<0.6	<0.056

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-12-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-07 1/2.8
Date Analyzed:	01/16/20	Data File:	011536.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	109	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Propene	<1.9	<1.1	1,1,1-Trichloroethane	<1.5	<0.28
Dichlorodifluoromethane	2.4	0.49	Carbon tetrachloride	<1.8	<0.28
Chloromethane	<5.8	<2.8	Benzene	<0.89	<0.28
Vinyl chloride	<0.72	<0.28	Cyclohexane	<19	<5.6
1,3-Butadiene	<0.062	<0.028	1,2-Dichloropropane	<0.65	<0.14
Chloroethane	<7.4	<2.8	Bromodichloromethane	<0.19	<0.028
Acrolein	<2.6	<1.1	Trichloroethene	<0.75	<0.14
Pentane	<8.3	<2.8	4-Methyl-2-pentanone	<11	<2.8
Trichlorofluoromethane	<6.3	<1.1	Toluene	<53	<14
2-Propanol	190 ve	79 ve	1,1,2-Trichloroethane	<0.31	<0.056
1,1-Dichloroethene	<1.1	<0.28	Tetrachloroethene	<19	<2.8
trans-1,2-Dichloroethene	<1.1	<0.28	1,2-Dibromoethane (EDB)	<0.22	<0.028
Methylene chloride	<240	<70	Ethylbenzene	<1.2	<0.28
CFC-113	<2.1	<0.28	m,p-Xylene	<2.4	<0.56
Carbon disulfide	<17	<5.6	o-Xylene	<1.2	<0.28
1,1-Dichloroethane	<1.1	<0.28	Styrene	<2.4	<0.56
cis-1,2-Dichloroethene	<1.1	<0.28	Benzyl chloride	<0.14	<0.028
Hexane	<9.9	<2.8	1,3,5-Trimethylbenzene	<6.9	<1.4
Chloroform	1.1	0.22	1,2,4-Trimethylbenzene	<6.9	<1.4
2-Butanone (MEK)	<8.3	<2.8	Naphthalene	<0.73	<0.14
1,2-Dichloroethane (EDC)	<0.11	<0.028	Hexachlorobutadiene	<0.6	<0.056
1,2,3-Trimethylbenzene	<140 L	<28 L			
1-Butanol	<84 L	<28 L			
Acetaldehyde	<250 L	<140 L			
Acetonitrile	<48 L	<28 L			
Acrylonitrile	<31 L	<14 L			
Chlorodifluoromethane	<98 L	<28 L			
Cyclopentane	<81 L	<28 L			
Isobutene	<64 L	<28 L			
Isoprene	<78 L	<28 L			
Methyl vinyl ketone	<81 L	<28 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-14-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-08 1/2.8
Date Analyzed:	01/17/20	Data File:	011629.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	103	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<1.9	<1.1	1,1,1-Trichloroethane	<1.5	<0.28
Dichlorodifluoromethane	15	3.0	Carbon tetrachloride	<1.8	<0.28
Chloromethane	<5.8	<2.8	Benzene	<0.89	<0.28
Vinyl chloride	<0.72	<0.28	Cyclohexane	<19	<5.6
1,3-Butadiene	<0.062	<0.028	1,2-Dichloropropane	<0.65	<0.14
Chloroethane	<7.4	<2.8	Bromodichloromethane	<0.19	<0.028
Acrolein	<2.6	<1.1	Trichloroethene	<0.75	<0.14
Pentane	<8.3	<2.8	4-Methyl-2-pentanone	<11	<2.8
Trichlorofluoromethane	<6.3	<1.1	Toluene	<53	<14
2-Propanol	<24	<9.8	1,1,2-Trichloroethane	<0.31	<0.056
1,1-Dichloroethene	<1.1	<0.28	Tetrachloroethene	<19	<2.8
trans-1,2-Dichloroethene	<1.1	<0.28	1,2-Dibromoethane (EDB)	<0.22	<0.028
Methylene chloride	<240	<70	Ethylbenzene	<1.2	<0.28
CFC-113	<2.1	<0.28	m,p-Xylene	<2.4	<0.56
Carbon disulfide	<17	<5.6	o-Xylene	<1.2	<0.28
1,1-Dichloroethane	<1.1	<0.28	Styrene	<2.4	<0.56
cis-1,2-Dichloroethene	<1.1	<0.28	Benzyl chloride	<0.14	<0.028
Hexane	<9.9	<2.8	1,3,5-Trimethylbenzene	<6.9	<1.4
Chloroform	0.18	0.036	1,2,4-Trimethylbenzene	<6.9	<1.4
2-Butanone (MEK)	<8.3	<2.8	Naphthalene	<0.73	<0.14
1,2-Dichloroethane (EDC)	<0.11	<0.028	Hexachlorobutadiene	<0.6	<0.056
1,2,3-Trimethylbenzene	<140 L	<28 L			
1-Butanol	<84 L	<28 L			
Acetaldehyde	<250 L	<140 L			
Acetonitrile	<48 L	<28 L			
Acrylonitrile	<31 L	<14 L			
Chlorodifluoromethane	<98 L	<28 L			
Cyclopentane	<81 L	<28 L			
Isobutene	<64 L	<28 L			
Isoprene	<78 L	<28 L			
Methyl vinyl ketone	<81 L	<28 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-10-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-09 1/2.8
Date Analyzed:	01/17/20	Data File:	011637.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	110	70	130

Compounds:	Concentration ug/m3	ppbv
Propene	<1.9	<1.1
Dichlorodifluoromethane	2.8	0.57
Chloromethane	<5.8	<2.8
Vinyl chloride	<0.72	<0.28
1,3-Butadiene	<0.062	<0.028
Chloroethane	<7.4	<2.8
Acrolein	<2.6	<1.1
Pentane	<8.3	<2.8
Trichlorofluoromethane	14	2.6
2-Propanol	69	28
1,1-Dichloroethene	<1.1	<0.28
trans-1,2-Dichloroethene	<1.1	<0.28
Methylene chloride	<240	<70
CFC-113	<2.1	<0.28
Carbon disulfide	<17	<5.6
1,1-Dichloroethane	<1.1	<0.28
cis-1,2-Dichloroethene	<1.1	<0.28
Hexane	<9.9	<2.8
Chloroform	0.97	0.20
2-Butanone (MEK)	<8.3	<2.8
1,2-Dichloroethane (EDC)	<0.11	<0.028
1,2,3-Trimethylbenzene	<140 L	<28 L
1-Butanol	<84 L	<28 L
Acetaldehyde	<250 L	<140 L
Acetonitrile	<48 L	<28 L
Acrylonitrile	<31 L	<14 L
Chlorodifluoromethane	<98 L	<28 L
Cyclopentane	<81 L	<28 L
Isobutene	<64 L	<28 L
Isoprene	<78 L	<28 L
Methyl vinyl ketone	<81 L	<28 L

Compounds:	Concentration ug/m3	ppbv
1,1,1-Trichloroethane	<1.5	<0.28
Carbon tetrachloride	<1.8	<0.28
Benzene	<0.89	<0.28
Cyclohexane	<19	<5.6
1,2-Dichloropropane	<0.65	<0.14
Bromodichloromethane	<0.19	<0.028
Trichloroethene	<0.75	<0.14
4-Methyl-2-pentanone	<11	<2.8
Toluene	<53	<14
1,1,2-Trichloroethane	<0.31	<0.056
Tetrachloroethene	<19	<2.8
1,2-Dibromoethane (EDB)	<0.22	<0.028
Ethylbenzene	<1.2	<0.28
m,p-Xylene	<2.4	<0.56
o-Xylene	<1.2	<0.28
Styrene	<2.4	<0.56
Benzyl chloride	<0.14	<0.028
1,3,5-Trimethylbenzene	<6.9	<1.4
1,2,4-Trimethylbenzene	<6.9	<1.4
Naphthalene	<0.73	<0.14
Hexachlorobutadiene	<0.6	<0.056

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-09-011320	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-10 1/2.8
Date Analyzed:	01/17/20	Data File:	011630.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3	ppbv
Propene	<1.9	<1.1
Dichlorodifluoromethane	2.4	0.48
Chloromethane	<5.8	<2.8
Vinyl chloride	<0.72	<0.28
1,3-Butadiene	<0.062	<0.028
Chloroethane	<7.4	<2.8
Acrolein	<2.6	<1.1
Pentane	<8.3	<2.8
Trichlorofluoromethane	<6.3	<1.1
2-Propanol	98	40
1,1-Dichloroethene	<1.1	<0.28
trans-1,2-Dichloroethene	<1.1	<0.28
Methylene chloride	<240	<70
CFC-113	<2.1	<0.28
Carbon disulfide	<17	<5.6
1,1-Dichloroethane	<1.1	<0.28
cis-1,2-Dichloroethene	<1.1	<0.28
Hexane	<9.9	<2.8
Chloroform	1.0	0.21
2-Butanone (MEK)	<8.3	<2.8
1,2-Dichloroethane (EDC)	<0.11	<0.028
1,2,3-Trimethylbenzene	<140 L	<28 L
1-Butanol	<84 L	<28 L
Acetaldehyde	<250 L	<140 L
Acetonitrile	<48 L	<28 L
Acrylonitrile	<31 L	<14 L
Chlorodifluoromethane	<98 L	<28 L
Cyclopentane	<81 L	<28 L
Isobutene	<64 L	<28 L
Isoprene	<78 L	<28 L
Methyl vinyl ketone	<81 L	<28 L

Compounds:	Concentration ug/m3	ppbv
1,1,1-Trichloroethane	<1.5	<0.28
Carbon tetrachloride	<1.8	<0.28
Benzene	<0.89	<0.28
Cyclohexane	<19	<5.6
1,2-Dichloropropane	<0.65	<0.14
Bromodichloromethane	<0.19	<0.028
Trichloroethene	<0.75	<0.14
4-Methyl-2-pentanone	<11	<2.8
Toluene	<53	<14
1,1,2-Trichloroethane	<0.31	<0.056
Tetrachloroethene	<19	<2.8
1,2-Dibromoethane (EDB)	<0.22	<0.028
Ethylbenzene	<1.2	<0.28
m,p-Xylene	<2.4	<0.56
o-Xylene	<1.2	<0.28
Styrene	<2.4	<0.56
Benzyl chloride	<0.14	<0.028
1,3,5-Trimethylbenzene	<6.9	<1.4
1,2,4-Trimethylbenzene	<6.9	<1.4
Naphthalene	<0.73	<0.14
Hexachlorobutadiene	<0.6	<0.056

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Ambient	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-11
Date Analyzed:	01/15/20	Data File:	011520.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3	ppbv
Propene	<0.69	<0.4
Dichlorodifluoromethane	2.5	0.50
Chloromethane	<2.1	<1
Vinyl chloride	<0.26	<0.1
1,3-Butadiene	<0.022	<0.01
Chloroethane	<2.6	<1
Acrolein	<0.92	<0.4
Pentane	4.3	1.5
Trichlorofluoromethane	<2.2	<0.4
2-Propanol	<8.6	<3.5
1,1-Dichloroethene	<0.4	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1
Methylene chloride	<87	<25
CFC-113	<0.77	<0.1
Carbon disulfide	<6.2	<2
1,1-Dichloroethane	<0.4	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1
Hexane	<3.5	<1
Chloroform	0.12	0.024
2-Butanone (MEK)	<2.9	<1
1,2-Dichloroethane (EDC)	0.12	0.029
1,2,3-Trimethylbenzene	<49 L	<10 L
1-Butanol	<30 L	<10 L
Acetaldehyde	<90 L	<50 L
Acetonitrile	<17 L	<10 L
Acrylonitrile	<11 L	<5 L
Chlorodifluoromethane	<35 L	<10 L
Cyclopentane	<29 L	<10 L
Isobutene	<23 L	<10 L
Isoprene	<28 L	<10 L
Methyl vinyl ketone	<29 L	<10 L

Compounds:	Concentration ug/m3	ppbv
1,1,1-Trichloroethane	<0.55	<0.1
Carbon tetrachloride	<0.63	<0.1
Benzene	0.63	0.20
Cyclohexane	<6.9	<2
1,2-Dichloropropane	<0.23	<0.05
Bromodichloromethane	0.074	0.011
Trichloroethene	<0.27	<0.05
4-Methyl-2-pentanone	<4.1	<1
Toluene	<19	<5
1,1,2-Trichloroethane	<0.11	<0.02
Tetrachloroethene	<6.8	<1
1,2-Dibromoethane (EDB)	<0.077	<0.01
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Styrene	<0.85	<0.2
Benzyl chloride	0.057	0.011
1,3,5-Trimethylbenzene	<2.5	<0.5
1,2,4-Trimethylbenzene	<2.5	<0.5
Naphthalene	0.15 j	0.029 j
Hexachlorobutadiene	0.21	0.020

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-B2	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-12 1/2.7
Date Analyzed:	01/16/20	Data File:	011521.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	83	70	130

Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<1.9	<1.1
Dichlorodifluoromethane	2.6	0.52
Chloromethane	<5.6	<2.7
Vinyl chloride	<0.69	<0.27
1,3-Butadiene	<0.059	<0.027
Chloroethane	<7.1	<2.7
Acrolein	<2.5	<1.1
Pentane	120	39
Trichlorofluoromethane	<6.1	<1.1
2-Propanol	<23	<9.4
1,1-Dichloroethene	<1.1	<0.27
trans-1,2-Dichloroethene	<1.1	<0.27
Methylene chloride	<230	<67
CFC-113	<2.1	<0.27
Carbon disulfide	<17	<5.4
1,1-Dichloroethane	<1.1	<0.27
cis-1,2-Dichloroethene	<1.1	<0.27
Hexane	<9.5	<2.7
Chloroform	<0.13	<0.027
2-Butanone (MEK)	<8	<2.7
1,2-Dichloroethane (EDC)	<0.11	<0.027
1,2,3-Trimethylbenzene	<130 L	<27 L
1-Butanol	<81 L	<27 L
Acetaldehyde	<240 L	<130 L
Acetonitrile	<46 L	<27 L
Acrylonitrile	<30 L	<14 L
Chlorodifluoromethane	<95 L	<27 L
Cyclopentane	<78 L	<27 L
Isobutene	<62 L	<27 L
Isoprene	<76 L	<27 L
Methyl vinyl ketone	<78 L	<27 L

Compounds:	Concentration ug/m3	Concentration ppbv
1,1,1-Trichloroethane	<1.5	<0.27
Carbon tetrachloride	<1.7	<0.27
Benzene	<0.86	<0.27
Cyclohexane	<19	<5.4
1,2-Dichloropropane	<0.62	<0.13
Bromodichloromethane	<0.18	<0.027
Trichloroethene	<0.73	<0.13
4-Methyl-2-pentanone	<11	<2.7
Toluene	<51	<13
1,1,2-Trichloroethane	<0.29	<0.054
Tetrachloroethene	<18	<2.7
1,2-Dibromoethane (EDB)	<0.21	<0.027
Ethylbenzene	<1.2	<0.27
m,p-Xylene	<2.3	<0.54
o-Xylene	<1.2	<0.27
Styrene	<2.3	<0.54
Benzyl chloride	<0.14	<0.027
1,3,5-Trimethylbenzene	<6.6	<1.3
1,2,4-Trimethylbenzene	<6.6	<1.3
Naphthalene	<0.2 j	<0.0.38 j
Hexachlorobutadiene	<0.58	<0.054

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-B1	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-13 1/1.2
Date Analyzed:	01/16/20	Data File:	011522.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	87	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Propene	<0.83	<0.48	1,1,1-Trichloroethane	<0.65	<0.12
Dichlorodifluoromethane	2.4	0.48	Carbon tetrachloride	<0.75	<0.12
Chloromethane	<2.5	<1.2	Benzene	0.50	0.16
Vinyl chloride	<0.31	<0.12	Cyclohexane	<8.3	<2.4
1,3-Butadiene	<0.026	<0.012	1,2-Dichloropropane	<0.28	<0.06
Chloroethane	<3.2	<1.2	Bromodichloromethane	<0.08	<0.012
Acrolein	<1.1	<0.48	Trichloroethene	<0.32	<0.06
Pentane	110 ve	39 ve	4-Methyl-2-pentanone	<4.9	<1.2
Trichlorofluoromethane	<2.7	<0.48	Toluene	<23	<6
2-Propanol	21	8.5	1,1,2-Trichloroethane	<0.13	<0.024
1,1-Dichloroethene	<0.48	<0.12	Tetrachloroethene	<8.1	<1.2
trans-1,2-Dichloroethene	<0.48	<0.12	1,2-Dibromoethane (EDB)	<0.092	<0.012
Methylene chloride	<100	<30	Ethylbenzene	<0.52	<0.12
CFC-113	<0.92	<0.12	m,p-Xylene	<1	<0.24
Carbon disulfide	<7.5	<2.4	o-Xylene	<0.52	<0.12
1,1-Dichloroethane	<0.49	<0.12	Styrene	<1	<0.24
cis-1,2-Dichloroethene	<0.48	<0.12	Benzyl chloride	<0.062	<0.012
Hexane	<4.2	<1.2	1,3,5-Trimethylbenzene	<2.9	<0.6
Chloroform	0.10	0.020	1,2,4-Trimethylbenzene	<2.9	<0.6
2-Butanone (MEK)	<3.5	<1.2	Naphthalene	<0.088 j	<0.017 j
1,2-Dichloroethane (EDC)	0.087	0.022	Hexachlorobutadiene	<0.26	<0.024
1,2,3-Trimethylbenzene	<59 L	<12 L			
1-Butanol	<36 L	<12 L			
Acetaldehyde	<110 L	<60 L			
Acetonitrile	<20 L	<12 L			
Acrylonitrile	<13 L	<5 L			
Chlorodifluoromethane	<42 L	<12 L			
Cyclopentane	<34 L	<12 L			
Isobutene	<28 L	<12 L			
Isoprene	<34 L	<12 L			
Methyl vinyl ketone	<35 L	<12 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-B3	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-14
Date Analyzed:	01/16/20	Data File:	011523.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	101	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<0.69	<0.4	1,1,1-Trichloroethane	<0.55	<0.1
Dichlorodifluoromethane	2.5	0.50	Carbon tetrachloride	<0.63	<0.1
Chloromethane	<2.1	<1	Benzene	0.51	0.16
Vinyl chloride	<0.26	<0.1	Cyclohexane	<6.9	<2
1,3-Butadiene	<0.022	<0.01	1,2-Dichloropropane	<0.23	<0.05
Chloroethane	<2.6	<1	Bromodichloromethane	<0.067	<0.01
Acrolein	<0.92	<0.4	Trichloroethene	<0.27	<0.05
Pentane	120 ve	40 ve	4-Methyl-2-pentanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Toluene	<19	<5
2-Propanol	24	9.8	1,1,2-Trichloroethane	<0.11	<0.02
1,1-Dichloroethene	<0.4	<0.1	Tetrachloroethene	<6.8	<1
trans-1,2-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methylene chloride	<87	<25	Ethylbenzene	<0.43	<0.1
CFC-113	<0.77	<0.1	m,p-Xylene	<0.87	<0.2
Carbon disulfide	<6.2	<2	o-Xylene	<0.43	<0.1
1,1-Dichloroethane	<0.4	<0.1	Styrene	<0.85	<0.2
cis-1,2-Dichloroethene	<0.4	<0.1	Benzyl chloride	<0.052	<0.01
Hexane	<3.5	<1	1,3,5-Trimethylbenzene	<2.5	<0.5
Chloroform	0.11	0.022	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	<2.9	<1	Naphthalene	<0.073 j	<0.014 j
1,2-Dichloroethane (EDC)	0.089	0.022	Hexachlorobutadiene	<0.21	<0.02
1,2,3-Trimethylbenzene	<49 L	<10 L			
1-Butanol	<30 L	<10 L			
Acetaldehyde	<90 L	<50 L			
Acetonitrile	<17 L	<10 L			
Acrylonitrile	<11 L	<5 L			
Chlorodifluoromethane	<35 L	<10 L			
Cyclopentane	<29 L	<10 L			
Isobutene	<23 L	<10 L			
Isoprene	<28 L	<10 L			
Methyl vinyl ketone	<29 L	<10 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-A2	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-15
Date Analyzed:	01/16/20	Data File:	011524.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

	Concentration	
Compounds:	ug/m3	ppbv
Propene	<0.69	<0.4
Dichlorodifluoromethane	2.3	0.47
Chloromethane	<2.1	<1
Vinyl chloride	<0.26	<0.1
1,3-Butadiene	<0.022	<0.01
Chloroethane	<2.6	<1
Acrolein	<0.92	<0.4
Pentane	120 ve	40 ve
Trichlorofluoromethane	<2.2	<0.4
2-Propanol	54	22
1,1-Dichloroethene	<0.4	<0.1
trans-1,2-Dichloroethene	0.65	0.16
Methylene chloride	<87	<25
CFC-113	<0.77	<0.1
Carbon disulfide	<6.2	<2
1,1-Dichloroethane	<0.4	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1
Hexane	<3.5	<1
Chloroform	0.39	0.080
2-Butanone (MEK)	21	7.3
1,2-Dichloroethane (EDC)	0.097	0.024
1,2,3-Trimethylbenzene	<49 L	<10 L
1-Butanol	<30 L	<10 L
Acetaldehyde	<90 L	<50 L
Acetonitrile	<17 L	<10 L
Acrylonitrile	<11 L	<5 L
Chlorodifluoromethane	<35 L	<10 L
Cyclopentane	<29 L	<10 L
Isobutene	<23 L	<10 L
Isoprene	<28 L	<10 L
Methyl vinyl ketone	<29 L	<10 L

	Concentration	
Compounds:	ug/m3	ppbv
1,1,1-Trichloroethane	<0.55	<0.1
Carbon tetrachloride	<0.63	<0.1
Benzene	0.61	0.19
Cyclohexane	<6.9	<2
1,2-Dichloropropane	0.26	0.056
Bromodichloromethane	<0.067	<0.01
Trichloroethene	<0.27	<0.05
4-Methyl-2-pentanone	<4.1	<1
Toluene	<19	<5
1,1,2-Trichloroethane	<0.11	<0.02
Tetrachloroethene	<6.8	<1
1,2-Dibromoethane (EDB)	<0.077	<0.01
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Styrene	<0.85	<0.2
Benzyl chloride	<0.052	<0.01
1,3,5-Trimethylbenzene	<2.5	<0.5
1,2,4-Trimethylbenzene	<2.5	<0.5
Naphthalene	0.073 j	0.014 j
Hexachlorobutadiene	<0.21	<0.02

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-A4	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-16
Date Analyzed:	01/16/20	Data File:	011525.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<0.69	<0.4	1,1,1-Trichloroethane	<0.55	<0.1
Dichlorodifluoromethane	2.4	0.49	Carbon tetrachloride	<0.63	<0.1
Chloromethane	<2.1	<1	Benzene	0.66	0.21
Vinyl chloride	<0.26	<0.1	Cyclohexane	<6.9	<2
1,3-Butadiene	<0.022	<0.01	1,2-Dichloropropane	0.25	0.054
Chloroethane	<2.6	<1	Bromodichloromethane	<0.067	<0.01
Acrolein	<0.92	<0.4	Trichloroethene	<0.27	<0.05
Pentane	120 ve	40 ve	4-Methyl-2-pentanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Toluene	<19	<5
2-Propanol	46	19	1,1,2-Trichloroethane	<0.11	<0.02
1,1-Dichloroethene	<0.4	<0.1	Tetrachloroethene	<6.8	<1
trans-1,2-Dichloroethene	0.71	0.18	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methylene chloride	<87	<25	Ethylbenzene	<0.43	<0.1
CFC-113	<0.77	<0.1	m,p-Xylene	<0.87	<0.2
Carbon disulfide	<6.2	<2	o-Xylene	<0.43	<0.1
1,1-Dichloroethane	<0.4	<0.1	Styrene	<0.85	<0.2
cis-1,2-Dichloroethene	<0.4	<0.1	Benzyl chloride	<0.052	<0.01
Hexane	<3.5	<1	1,3,5-Trimethylbenzene	<2.5	<0.5
Chloroform	0.41	0.084	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	23	7.8	Naphthalene	<0.073 j	<0.014 j
1,2-Dichloroethane (EDC)	0.093	0.023	Hexachlorobutadiene	<0.21	<0.02
1,2,3-Trimethylbenzene	<49 L	<10 L			
1-Butanol	<30 L	<10 L			
Acetaldehyde	<90 L	<50 L			
Acetonitrile	<17 L	<10 L			
Acrylonitrile	<11 L	<5 L			
Chlorodifluoromethane	<35 L	<10 L			
Cyclopentane	<29 L	<10 L			
Isobutene	<23 L	<10 L			
Isoprene	<28 L	<10 L			
Methyl vinyl ketone	<29 L	<10 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-A5	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-17
Date Analyzed:	01/16/20	Data File:	011526.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	96	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<0.69	<0.4	1,1,1-Trichloroethane	<0.55	<0.1
Dichlorodifluoromethane	2.5	0.50	Carbon tetrachloride	<0.63	<0.1
Chloromethane	<2.1	<1	Benzene	0.67	0.21
Vinyl chloride	<0.26	<0.1	Cyclohexane	<6.9	<2
1,3-Butadiene	<0.022	<0.01	1,2-Dichloropropane	<0.23	<0.05
Chloroethane	<2.6	<1	Bromodichloromethane	<0.067	<0.01
Acrolein	<0.92	<0.4	Trichloroethene	<0.27	<0.05
Pentane	56	19	4-Methyl-2-pentanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Toluene	<19	<5
2-Propanol	31	12	1,1,2-Trichloroethane	<0.11	<0.02
1,1-Dichloroethene	<0.4	<0.1	Tetrachloroethene	<6.8	<1
trans-1,2-Dichloroethene	1.9	0.48	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methylene chloride	<87	<25	Ethylbenzene	<0.43	<0.1
CFC-113	<0.77	<0.1	m,p-Xylene	1.0	0.23
Carbon disulfide	<6.2	<2	o-Xylene	<0.43	<0.1
1,1-Dichloroethane	<0.4	<0.1	Styrene	<0.85	<0.2
cis-1,2-Dichloroethene	<0.4	<0.1	Benzyl chloride	<0.052	<0.01
Hexane	<3.5	<1	1,3,5-Trimethylbenzene	<2.5	<0.5
Chloroform	0.86	0.18	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	16	5.5	Naphthalene	0.073 j	0.014 j
1,2-Dichloroethane (EDC)	0.093	0.023	Hexachlorobutadiene	<0.21	<0.02
1,2,3-Trimethylbenzene	<49 L	<10 L			
1-Butanol	<30 L	<10 L			
Acetaldehyde	<90 L	<50 L			
Acetonitrile	<17 L	<10 L			
Acrylonitrile	<11 L	<5 L			
Chlorodifluoromethane	<35 L	<10 L			
Cyclopentane	<29 L	<10 L			
Isobutene	<23 L	<10 L			
Isoprene	<28 L	<10 L			
Methyl vinyl ketone	<29 L	<10 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-A3	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-18
Date Analyzed:	01/16/20	Data File:	011527.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<0.69	<0.4	1,1,1-Trichloroethane	<0.55	<0.1
Dichlorodifluoromethane	2.4	0.49	Carbon tetrachloride	<0.63	<0.1
Chloromethane	<2.1	<1	Benzene	0.64	0.20
Vinyl chloride	<0.26	<0.1	Cyclohexane	<6.9	<2
1,3-Butadiene	<0.022	<0.01	1,2-Dichloropropane	0.25	0.055
Chloroethane	<2.6	<1	Bromodichloromethane	<0.067	<0.01
Acrolein	<0.92	<0.4	Trichloroethene	<0.27	<0.05
Pentane	130 ve	44 ve	4-Methyl-2-pentanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Toluene	<19	<5
2-Propanol	140 ve	59 ve	1,1,2-Trichloroethane	<0.11	<0.02
1,1-Dichloroethene	<0.4	<0.1	Tetrachloroethene	<6.8	<1
trans-1,2-Dichloroethene	4.7	1.2	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methylene chloride	<87	<25	Ethylbenzene	0.46	0.11
CFC-113	<0.77	<0.1	m,p-Xylene	1.6	0.36
Carbon disulfide	<6.2	<2	o-Xylene	0.53	0.12
1,1-Dichloroethane	<0.4	<0.1	Styrene	<0.85	<0.2
cis-1,2-Dichloroethene	<0.4	<0.1	Benzyl chloride	<0.052	<0.01
Hexane	4.5	1.3	1,3,5-Trimethylbenzene	<2.5	<0.5
Chloroform	1.9	0.40	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	47	16	Naphthalene	0.14 j	0.026 j
1,2-Dichloroethane (EDC)	0.11	0.026	Hexachlorobutadiene	<0.21	<0.02
1,2,3-Trimethylbenzene	<49 L	<10 L			
1-Butanol	<30 L	<10 L			
Acetaldehyde	<90 L	<50 L			
Acetonitrile	<17 L	<10 L			
Acrylonitrile	<11 L	<5 L			
Chlorodifluoromethane	<35 L	<10 L			
Cyclopentane	<29 L	<10 L			
Isobutene	<23 L	<10 L			
Isoprene	<28 L	<10 L			
Methyl vinyl ketone	<29 L	<10 L			

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-A1	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-19
Date Analyzed:	01/16/20	Data File:	011528.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<0.69	<0.4	1,1,1-Trichloroethane	<0.55	<0.1
Dichlorodifluoromethane	2.2	0.45	Carbon tetrachloride	<0.63	<0.1
Chloromethane	<2.1	<1	Benzene	0.74	0.23
Vinyl chloride	<0.26	<0.1	Cyclohexane	<6.9	<2
1,3-Butadiene	<0.022	<0.01	1,2-Dichloropropane	<0.23	<0.05
Chloroethane	<2.6	<1	Bromodichloromethane	<0.067	<0.01
Acrolein	<0.92	<0.4	Trichloroethene	<0.27	<0.05
Pentane	80 ve	27 ve	4-Methyl-2-pentanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Toluene	<19	<5
2-Propanol	230 ve	94 ve	1,1,2-Trichloroethane	<0.11	<0.02
1,1-Dichloroethene	<0.4	<0.1	Tetrachloroethene	<6.8	<1
trans-1,2-Dichloroethene	2.8	0.71	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methylene chloride	<87	<25	Ethylbenzene	0.44	0.10
CFC-113	<0.77	<0.1	m,p-Xylene	1.4	0.33
Carbon disulfide	<6.2	<2	o-Xylene	0.47	0.11
1,1-Dichloroethane	<0.4	<0.1	Styrene	<0.85	<0.2
cis-1,2-Dichloroethene	<0.4	<0.1	Benzyl chloride	<0.052	<0.01
Hexane	4.2	1.2	1,3,5-Trimethylbenzene	<2.5	<0.5
Chloroform	1.3	0.28	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	26	8.7	Naphthalene	0.2 j	0.039 j
1,2-Dichloroethane (EDC)	0.097	0.024	Hexachlorobutadiene	<0.21	<0.02
1,2,3-Trimethylbenzene	<49 L	<10 L			
1-Butanol	<30 L	<10 L			
Acetaldehyde	<90 L	<50 L			
Acetonitrile	<17 L	<10 L			
Acrylonitrile	<11 L	<5 L			
Chlorodifluoromethane	<35 L	<10 L			
Cyclopentane	<29 L	<10 L			
Isobutene	<23 L	<10 L			
Isoprene	<28 L	<10 L			
Methyl vinyl ketone	<29 L	<10 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-03-011420	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-20 1/2.7
Date Analyzed:	01/17/20	Data File:	011638.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<1.9	<1.1
Dichlorodifluoromethane	2.2	0.44
Chloromethane	<5.6	<2.7
Vinyl chloride	<0.69	<0.27
1,3-Butadiene	<0.06	<0.027
Chloroethane	<7.1	<2.7
Acrolein	<2.5	<1.1
Pentane	<8	<2.7
Trichlorofluoromethane	<6.1	<1.1
2-Propanol	41,000 ve	17,000 ve
1,1-Dichloroethene	<1.1	<0.27
trans-1,2-Dichloroethene	<1.1	<0.27
Methylene chloride	<230	<67
CFC-113	<2.1	<0.27
Carbon disulfide	<17	<5.4
1,1-Dichloroethane	<1.1	<0.27
cis-1,2-Dichloroethene	<1.1	<0.27
Hexane	<9.5	<2.7
Chloroform	0.29	0.059
2-Butanone (MEK)	15	5.1
1,2-Dichloroethane (EDC)	<0.11	<0.027
1,2,3-Trimethylbenzene	<130 L	<27 L
1-Butanol	<81 L	<27 L
Acetaldehyde	<240 L	<130 L
Acetonitrile	<46 L	<27 L
Acrylonitrile	<30 L	<14 L
Chlorodifluoromethane	<95 L	<27 L
Cyclopentane	<78 L	<27 L
Isobutene	<62 L	<27 L
Isoprene	<76 L	<27 L
Methyl vinyl ketone	<78 L	<27 L

Compounds:	Concentration ug/m3	Concentration ppbv
1,1,1-Trichloroethane	<1.5	<0.27
Carbon tetrachloride	<1.7	<0.27
Benzene	<0.86	<0.27
Cyclohexane	<19	<5.4
1,2-Dichloropropane	<0.62	<0.13
Bromodichloromethane	<0.18	<0.027
Trichloroethene	<0.73	<0.13
4-Methyl-2-pentanone	<11	<2.7
Toluene	<51	<13
1,1,2-Trichloroethane	<0.29	<0.054
Tetrachloroethene	<18	<2.7
1,2-Dibromoethane (EDB)	<0.21	<0.027
Ethylbenzene	<1.2	<0.27
m,p-Xylene	3.8	0.88
o-Xylene	1.3	0.29
Styrene	<2.3	<0.54
Benzyl chloride	<0.14	<0.027
1,3,5-Trimethylbenzene	<6.6	<1.3
1,2,4-Trimethylbenzene	<6.6	<1.3
Naphthalene	<0.71	<0.13
Hexachlorobutadiene	<0.58	<0.054

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-03-011420	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-20 1/34
Date Analyzed:	01/17/20	Data File:	011636.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	103	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<23	<14	1,1,1-Trichloroethane	<19	<3.4
Dichlorodifluoromethane	<17	<3.4	Carbon tetrachloride	<21	<3.4
Chloromethane	<70	<34	Benzene	<11	<3.4
Vinyl chloride	<8.7	<3.4	Cyclohexane	<230	<68
1,3-Butadiene	<0.75	<0.34	1,2-Dichloropropane	<7.9	<1.7
Chloroethane	<90	<34	Bromodichloromethane	<2.3	<0.34
Acrolein	<31	<14	Trichloroethene	<9.1	<1.7
Pentane	<100	<34	4-Methyl-2-pentanone	<140	<34
Trichlorofluoromethane	<76	<14	Toluene	<640	<170
2-Propanol	140,000 ve	57,000 ve	1,1,2-Trichloroethane	<3.7	<0.68
1,1-Dichloroethene	<13	<3.4	Tetrachloroethene	<230	<34
trans-1,2-Dichloroethene	<13	<3.4	1,2-Dibromoethane (EDB)	<2.6	<0.34
Methylene chloride	<3,000	<850	Ethylbenzene	<15	<3.4
CFC-113	<26	<3.4	m,p-Xylene	<30	<6.8
Carbon disulfide	<210	<68	o-Xylene	<15	<3.4
1,1-Dichloroethane	<14	<3.4	Styrene	<29	<6.8
cis-1,2-Dichloroethene	<13	<3.4	Benzyl chloride	<1.8	<0.34
Hexane	<120	<34	1,3,5-Trimethylbenzene	<84	<17
Chloroform	<1.7	<0.34	1,2,4-Trimethylbenzene	<84	<17
2-Butanone (MEK)	<100	<34	Naphthalene	<8.9	<1.7
1,2-Dichloroethane (EDC)	<1.4	<0.34	Hexachlorobutadiene	<7.3	<0.68
1,2,3-Trimethylbenzene	<1,700 L	<340 L			
1-Butanol	<1,000 L	<340 L			
Acetaldehyde	<3,100 L	<1700 L			
Acetonitrile	<580 L	<340 L			
Acrylonitrile	<370 L	<170 L			
Chlorodifluoromethane	<1,200 L	<340 L			
Cyclopentane	<990 L	<340 L			
Isobutene	<780 L	<340 L			
Isoprene	<950 L	<340 L			
Methyl vinyl ketone	<990 L	<340 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-04-011420	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-21 1/2.7
Date Analyzed:	01/17/20	Data File:	011631.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<1.9	<1.1	1,1,1-Trichloroethane	<1.5	<0.27
Dichlorodifluoromethane	3.3	0.66	Carbon tetrachloride	<1.7	<0.27
Chloromethane	<5.6	<2.7	Benzene	<0.86	<0.27
Vinyl chloride	<0.69	<0.27	Cyclohexane	<19	<5.4
1,3-Butadiene	<0.06	<0.027	1,2-Dichloropropane	<0.62	<0.13
Chloroethane	<7.1	<2.7	Bromodichloromethane	<0.18	<0.027
Acrolein	<2.5	<1.1	Trichloroethene	<0.73	<0.13
Pentane	<8	<2.7	4-Methyl-2-pentanone	<11	<2.7
Trichlorofluoromethane	43	7.7	Toluene	<51	<13
2-Propanol	320 ve	130 ve	1,1,2-Trichloroethane	<0.29	<0.054
1,1-Dichloroethene	<1.1	<0.27	Tetrachloroethene	<18	<2.7
trans-1,2-Dichloroethene	<1.1	<0.27	1,2-Dibromoethane (EDB)	<0.21	<0.027
Methylene chloride	<230	<67	Ethylbenzene	<1.2	<0.27
CFC-113	<2.1	<0.27	m,p-Xylene	<2.3	<0.54
Carbon disulfide	<17	<5.4	o-Xylene	<1.2	<0.27
1,1-Dichloroethane	<1.1	<0.27	Styrene	<2.3	<0.54
cis-1,2-Dichloroethene	<1.1	<0.27	Benzyl chloride	<0.14	<0.027
Hexane	<9.5	<2.7	1,3,5-Trimethylbenzene	<6.6	<1.3
Chloroform	1.6	0.34	1,2,4-Trimethylbenzene	<6.6	<1.3
2-Butanone (MEK)	<8	<2.7	Naphthalene	<0.71	<0.13
1,2-Dichloroethane (EDC)	<0.11	<0.027	Hexachlorobutadiene	<0.58	<0.054
1,2,3-Trimethylbenzene	<130 L	<27 L			
1-Butanol	<81 L	<27 L			
Acetaldehyde	<240 L	<130 L			
Acetonitrile	<46 L	<27 L			
Acrylonitrile	<30 L	<14 L			
Chlorodifluoromethane	<95 L	<27 L			
Cyclopentane	<78 L	<27 L			
Isobutene	<62 L	<27 L			
Isoprene	<76 L	<27 L			
Methyl vinyl ketone	<78 L	<27 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-11-011420	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-22 1/3.1
Date Analyzed:	01/17/20	Data File:	011632.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	102	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<2.1	<1.2	1,1,1-Trichloroethane	<1.7	<0.31
Dichlorodifluoromethane	1.8	0.36	Carbon tetrachloride	<2	<0.31
Chloromethane	<6.4	<3.1	Benzene	2.4	0.76
Vinyl chloride	<0.79	<0.31	Cyclohexane	<21	<6.2
1,3-Butadiene	<0.069	<0.031	1,2-Dichloropropane	<0.72	<0.15
Chloroethane	<8.2	<3.1	Bromodichloromethane	<0.21	<0.031
Acrolein	<2.8	<1.2	Trichloroethene	2.5	0.47
Pentane	<9.1	<3.1	4-Methyl-2-pentanone	<13	<3.1
Trichlorofluoromethane	<7	<1.2	Toluene	<58	<15
2-Propanol	140	57	1,1,2-Trichloroethane	<0.34	<0.062
1,1-Dichloroethene	<1.2	<0.31	Tetrachloroethene	<21	<3.1
trans-1,2-Dichloroethene	<1.2	<0.31	1,2-Dibromoethane (EDB)	<0.24	<0.031
Methylene chloride	<270	<77	Ethylbenzene	<1.3	<0.31
CFC-113	<2.4	<0.31	m,p-Xylene	<2.7	<0.62
Carbon disulfide	<19	<6.2	o-Xylene	1.9	0.44
1,1-Dichloroethane	2.2	0.55	Styrene	<2.6	<0.62
cis-1,2-Dichloroethene	1.5	0.38	Benzyl chloride	<0.16	<0.031
Hexane	<11	<3.1	1,3,5-Trimethylbenzene	<7.6	<1.5
Chloroform	<0.15	<0.031	1,2,4-Trimethylbenzene	<7.6	<1.5
2-Butanone (MEK)	<9.1	<3.1	Naphthalene	<0.81	<0.15
1,2-Dichloroethane (EDC)	<0.13	<0.031	Hexachlorobutadiene	<0.66	<0.062
1,2,3-Trimethylbenzene	<150 L	<31 L			
1-Butanol	<93 L	<31 L			
Acetaldehyde	<280 L	<160 L			
Acetonitrile	<53 L	<31 L			
Acrylonitrile	<34 L	<16 L			
Chlorodifluoromethane	<110 L	<31 L			
Cyclopentane	<90 L	<31 L			
Isobutene	<71 L	<31 L			
Isoprene	<87 L	<31 L			
Methyl vinyl ketone	<90 L	<31 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-110-011420	Client:	Floyd-Snider
Date Received:	01/14/20	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	01/13/20	Lab ID:	001177-23 1/2.7
Date Analyzed:	01/17/20	Data File:	011633.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	104	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<1.9	<1.1	1,1,1-Trichloroethane	<1.5	<0.27
Dichlorodifluoromethane	1.8	0.37	Carbon tetrachloride	<1.7	<0.27
Chloromethane	<5.6	<2.7	Benzene	2.3	0.73
Vinyl chloride	<0.69	<0.27	Cyclohexane	<19	<5.4
1,3-Butadiene	<0.06	<0.027	1,2-Dichloropropane	<0.62	<0.13
Chloroethane	<7.1	<2.7	Bromodichloromethane	<0.18	<0.027
Acrolein	<2.5	<1.1	Trichloroethene	2.4	0.45
Pentane	<8	<2.7	4-Methyl-2-pentanone	<11	<2.7
Trichlorofluoromethane	<6.1	<1.1	Toluene	<51	<13
2-Propanol	140	56	1,1,2-Trichloroethane	<0.29	<0.054
1,1-Dichloroethene	<1.1	<0.27	Tetrachloroethene	<18	<2.7
trans-1,2-Dichloroethene	<1.1	<0.27	1,2-Dibromoethane (EDB)	<0.21	<0.027
Methylene chloride	<230	<67	Ethylbenzene	<1.2	<0.27
CFC-113	<2.1	<0.27	m,p-Xylene	2.3	0.54
Carbon disulfide	<17	<5.4	o-Xylene	2.0	0.45
1,1-Dichloroethane	2.2	0.55	Styrene	<2.3	<0.54
cis-1,2-Dichloroethene	1.5	0.37	Benzyl chloride	<0.14	<0.027
Hexane	<9.5	<2.7	1,3,5-Trimethylbenzene	<6.6	<1.3
Chloroform	<0.13	<0.027	1,2,4-Trimethylbenzene	<6.6	<1.3
2-Butanone (MEK)	<8	<2.7	Naphthalene	<0.71	<0.13
1,2-Dichloroethane (EDC)	<0.11	<0.027	Hexachlorobutadiene	<0.58	<0.054
1,2,3-Trimethylbenzene	<130 L	<27 L			
1-Butanol	<81 L	<27 L			
Acetaldehyde	<240 L	<130 L			
Acetonitrile	<46 L	<27 L			
Acrylonitrile	<30 L	<14 L			
Chlorodifluoromethane	<95 L	<27 L			
Cyclopentane	<78 L	<27 L			
Isobutene	<62 L	<27 L			
Isoprene	<76 L	<27 L			
Methyl vinyl ketone	<78 L	<27 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	Not Applicable	Lab ID:	00-0133 mb
Date Analyzed:	01/15/20	Data File:	011519.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	106	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Propene	<0.69	<0.4	1,1,1-Trichloroethane	<0.55	<0.1
Dichlorodifluoromethane	<0.49	<0.1	Carbon tetrachloride	<0.63	<0.1
Chloromethane	<2.1	<1	Benzene	<0.32	<0.1
Vinyl chloride	<0.26	<0.1	Cyclohexane	<6.9	<2
1,3-Butadiene	<0.022	<0.01	1,2-Dichloropropane	<0.23	<0.05
Chloroethane	<2.6	<1	Bromodichloromethane	<0.067	<0.01
Acrolein	<0.92	<0.4	Trichloroethene	<0.27	<0.05
Pentane	<3	<1	4-Methyl-2-pentanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Toluene	<19	<5
2-Propanol	<8.6	<3.5	1,1,2-Trichloroethane	<0.11	<0.02
1,1-Dichloroethene	<0.4	<0.1	Tetrachloroethene	<6.8	<1
trans-1,2-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methylene chloride	<87	<25	Ethylbenzene	<0.43	<0.1
CFC-113	<0.77	<0.1	m,p-Xylene	<0.87	<0.2
Carbon disulfide	<6.2	<2	o-Xylene	<0.43	<0.1
1,1-Dichloroethane	<0.4	<0.1	Styrene	<0.85	<0.2
cis-1,2-Dichloroethene	<0.4	<0.1	Benzyl chloride	<0.052	<0.01
Hexane	<3.5	<1	1,3,5-Trimethylbenzene	<2.5	<0.5
Chloroform	<0.049	<0.01	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	<2.9	<1	Naphthalene	<0.073	<0.014
1,2-Dichloroethane (EDC)	<0.04	<0.01	Hexachlorobutadiene	<0.21	<0.02
1,2,3-Trimethylbenzene	<49 L	<10 L			
1-Butanol	<30 L	<10 L			
Acetaldehyde	<90 L	<50 L			
Acetonitrile	<17 L	<10 L			
Acrylonitrile	<11 L	<5 L			
Chlorodifluoromethane	<35 L	<10 L			
Cyclopentane	<29 L	<10 L			
Isobutene	<23 L	<10 L			
Isoprene	<28 L	<10 L			
Methyl vinyl ketone	<29 L	<10 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55-Taylor Way, F&BI 001177
Date Collected:	Not Applicable	Lab ID:	00-0135 mb
Date Analyzed:	01/17/20	Data File:	011616.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	104	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<0.69	<0.4	1,1,1-Trichloroethane	<0.55	<0.1
Dichlorodifluoromethane	<0.49	<0.1	Carbon tetrachloride	<0.63	<0.1
Chloromethane	<2.1	<1	Benzene	<0.32	<0.1
Vinyl chloride	<0.26	<0.1	Cyclohexane	<6.9	<2
1,3-Butadiene	<0.022	<0.01	1,2-Dichloropropane	<0.23	<0.05
Chloroethane	<2.6	<1	Bromodichloromethane	<0.067	<0.01
Acrolein	<0.92	<0.4	Trichloroethene	<0.27	<0.05
Pentane	<3	<1	4-Methyl-2-pentanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Toluene	<19	<5
2-Propanol	<8.6	<3.5	1,1,2-Trichloroethane	<0.11	<0.02
1,1-Dichloroethene	<0.4	<0.1	Tetrachloroethene	<6.8	<1
trans-1,2-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methylene chloride	<87	<25	Ethylbenzene	<0.43	<0.1
CFC-113	<0.77	<0.1	m,p-Xylene	<0.87	<0.2
Carbon disulfide	<6.2	<2	o-Xylene	<0.43	<0.1
1,1-Dichloroethane	<0.4	<0.1	Styrene	<0.85	<0.2
cis-1,2-Dichloroethene	<0.4	<0.1	Benzyl chloride	<0.052	<0.01
Hexane	<3.5	<1	1,3,5-Trimethylbenzene	<2.5	<0.5
Chloroform	<0.049	<0.01	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	<2.9	<1	Naphthalene	<0.26	<0.05
1,2-Dichloroethane (EDC)	<0.04	<0.01	Hexachlorobutadiene	<0.21	<0.02
1,2,3-Trimethylbenzene	<49 L	<10 L			
1-Butanol	<30 L	<10 L			
Acetaldehyde	<90 L	<50 L			
Acetonitrile	<17 L	<10 L			
Acrylonitrile	<11 L	<5 L			
Chlorodifluoromethane	<35 L	<10 L			
Cyclopentane	<29 L	<10 L			
Isobutene	<23 L	<10 L			
Isoprene	<28 L	<10 L			
Methyl vinyl ketone	<29 L	<10 L			

Date of Report: 01/22/20
Date Received: 01/14/20
Project: Ave 55-Taylor Way 1514 Taylor Way Tacoma, WA, F&BI 001177

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD MA-APH

Laboratory Code: 001177-01 1/2.9 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	710	700	1
APH EC9-12 aliphatics	ug/m3	380	420	10
APH EC9-10 aromatics	ug/m3	<72	<72	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	23	86	70-130
APH EC9-12 aliphatics	ug/m3	23	122	70-130
APH EC9-10 aromatics	ug/m3	23	108	70-130

Date of Report: 01/22/20
Date Received: 01/14/20
Project: Ave 55-Taylor Way 1514 Taylor Way Tacoma, WA, F&BI 001177

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD MA-APH

Laboratory Code: 001177-23 1/2.7 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	620	660	6
APH EC9-12 aliphatics	ug/m3	1,600	1,600	0
APH EC9-10 aromatics	ug/m3	<67	<67	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	23	87	70-130
APH EC9-12 aliphatics	ug/m3	23	120	70-130
APH EC9-10 aromatics	ug/m3	23	103	70-130

Date of Report: 01/22/20
Date Received: 01/14/20
Project: Ave 55-Taylor Way 1514 Taylor Way Tacoma, WA, F&BI 001177

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 001177-01 1/2.9 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Propene	ppbv	11	10	10
Dichlorodifluoromethane	ppbv	2.5	2.4	3
Chloromethane	ppbv	<2.9	<2.9	nm
Vinyl chloride	ppbv	<0.29	<0.29	nm
1,3-Butadiene	ppbv	<0.027	<0.027	nm
Chloroethane	ppbv	<2.9	<2.9	nm
Acrolein	ppbv	<1.2	<1.2	nm
Pentane	ppbv	<2.9	<2.9	nm
Trichlorofluoromethane	ppbv	63	62	2
2-Propanol	ppbv	<10	<10	nm
1,1-Dichloroethene	ppbv	<0.29	<0.29	nm
trans-1,2-Dichloroethene	ppbv	<0.29	<0.29	nm
Methylene chloride	ppbv	<73	<73	nm
CFC-113	ppbv	<0.29	<0.29	nm
Carbon disulfide	ppbv	<5.8	<5.8	nm
1,1-Dichloroethane	ppbv	<0.29	<0.29	nm
cis-1,2-Dichloroethene	ppbv	<0.29	<0.29	nm
Hexane	ppbv	<2.9	<2.9	nm
Chloroform	ppbv	0.17	0.17	2
2-Butanone (MEK)	ppbv	<2.9	<2.9	nm
1,2-Dichloroethane (EDC)	ppbv	0.049	0.049	0
1,1,1-Trichloroethane	ppbv	1.3	1.2	2
Carbon tetrachloride	ppbv	<0.29	<0.29	nm
Benzene	ppbv	<0.29	<0.29	nm
Cyclohexane	ppbv	<5.8	<5.8	nm
1,2-Dichloropropane	ppbv	0.24	0.24	0
Bromodichloromethane	ppbv	<0.029	<0.029	nm
Trichloroethene	ppbv	0.32	0.32	0
4-Methyl-2-pentanone	ppbv	<2.9	<2.9	nm
Toluene	ppbv	<15	<15	nm
1,1,2-Trichloroethane	ppbv	<0.058	<0.058	nm
Tetrachloroethene	ppbv	<2.9	<2.9	nm
1,2-Dibromoethane (EDB)	ppbv	<0.029	<0.029	nm
Ethylbenzene	ppbv	<0.29	<0.29	nm
m,p-Xylene	ppbv	<0.58	<0.58	nm
o-Xylene	ppbv	<0.29	<0.29	nm
Styrene	ppbv	<0.58	<0.58	nm
Benzyl chloride	ppbv	<0.029	<0.029	nm
1,3,5-Trimethylbenzene	ppbv	<1.5	<1.5	nm
1,2,4-Trimethylbenzene	ppbv	<1.5	<1.5	nm
Naphthalene	ppbv	11	10	3
Hexachlorobutadiene	ppbv	2.5	2.4	3

Date of Report: 01/22/20
Date Received: 01/14/20
Project: Ave 55-Taylor Way 1514 Taylor Way Tacoma, WA, F&BI 001177

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Propene	ppbv	5	100	70-130
Dichlorodifluoromethane	ppbv	5	103	70-130
Chloromethane	ppbv	5	102	70-130
Vinyl chloride	ppbv	5	104	70-130
1,3-Butadiene	ppbv	5	112	70-130
Chloroethane	ppbv	5	103	70-130
Acrolein	ppbv	5	103	70-130
Pentane	ppbv	5	102	70-130
Trichlorofluoromethane	ppbv	5	103	70-130
2-Propanol	ppbv	5	101	70-130
1,1-Dichloroethene	ppbv	5	106	70-130
trans-1,2-Dichloroethene	ppbv	5	103	70-130
Methylene chloride	ppbv	5	94	70-130
CFC-113	ppbv	5	103	70-130
Carbon disulfide	ppbv	5	98	70-130
1,1-Dichloroethane	ppbv	5	101	70-130
cis-1,2-Dichloroethene	ppbv	5	103	70-130
Hexane	ppbv	5	117	70-130
Chloroform	ppbv	5	100	70-130
2-Butanone (MEK)	ppbv	5	99	70-130
1,2-Dichloroethane (EDC)	ppbv	5	104	70-130
1,1,1-Trichloroethane	ppbv	5	99	70-130
Carbon tetrachloride	ppbv	5	102	70-130
Benzene	ppbv	5	99	70-130
Cyclohexane	ppbv	5	97	70-130
1,2-Dichloropropane	ppbv	5	93	70-130
Bromodichloromethane	ppbv	5	91	70-130
Trichloroethene	ppbv	5	90	70-130
4-Methyl-2-pentanone	ppbv	5	102	70-130
Toluene	ppbv	5	99	70-130
1,1,2-Trichloroethane	ppbv	5	96	70-130
Tetrachloroethene	ppbv	5	92	70-130
1,2-Dibromoethane (EDB)	ppbv	5	98	70-130
Ethylbenzene	ppbv	5	98	70-130
m,p-Xylene	ppbv	10	102	70-130
o-Xylene	ppbv	5	98	70-130
Styrene	ppbv	5	105	70-130
Benzyl chloride	ppbv	5	103	70-130
1,3,5-Trimethylbenzene	ppbv	5	106	70-130
1,2,4-Trimethylbenzene	ppbv	5	112	70-130
Naphthalene	ppbv	5	98	70-130
Hexachlorobutadiene	ppbv	5	94	70-130

Date of Report: 01/22/20
Date Received: 01/14/20
Project: Ave 55-Taylor Way 1514 Taylor Way Tacoma, WA, F&BI 001177

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 001177-23 1/2.7 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Propene	ppbv	<1.1	<1.1	nm
Dichlorodifluoromethane	ppbv	0.37	0.39	6
Chloromethane	ppbv	<2.7	<2.7	nm
Vinyl chloride	ppbv	<0.27	<0.27	nm
1,3-Butadiene	ppbv	<0.027	<0.027	nm
Chloroethane	ppbv	<2.7	<2.7	nm
Acrolein	ppbv	<1.1	<1.1	nm
Pentane	ppbv	<2.7	<2.7	nm
Trichlorofluoromethane	ppbv	<1.1	<1.1	nm
2-Propanol	ppbv	56	54	2
1,1-Dichloroethene	ppbv	<0.27	<0.27	nm
trans-1,2-Dichloroethene	ppbv	<0.27	<0.27	nm
Methylene chloride	ppbv	<68	<68	nm
CFC-113	ppbv	<0.27	<0.27	nm
Carbon disulfide	ppbv	<5.4	<5.4	nm
1,1-Dichloroethane	ppbv	0.55	0.55	0
cis-1,2-Dichloroethene	ppbv	0.37	0.37	0
Hexane	ppbv	<2.7	<2.7	nm
Chloroform	ppbv	<0.027	<0.027	nm
2-Butanone (MEK)	ppbv	<2.7	<2.7	nm
1,2-Dichloroethane (EDC)	ppbv	<0.027	<0.027	nm
1,1,1-Trichloroethane	ppbv	<0.27	<0.27	nm
Carbon tetrachloride	ppbv	<0.27	<0.27	nm
Benzene	ppbv	0.73	0.74	1
Cyclohexane	ppbv	<5.4	<5.4	nm
1,2-Dichloropropane	ppbv	<0.14	<0.14	nm
Bromodichloromethane	ppbv	<0.027	<0.027	nm
Trichloroethene	ppbv	0.45	0.46	3
4-Methyl-2-pentanone	ppbv	<2.7	<2.7	nm
Toluene	ppbv	<14	<14	nm
1,1,2-Trichloroethane	ppbv	<0.054	<0.054	nm
Tetrachloroethene	ppbv	<2.7	<2.7	nm
1,2-Dibromoethane (EDB)	ppbv	<0.027	<0.027	nm
Ethylbenzene	ppbv	<0.27	<0.27	nm
m,p-Xylene	ppbv	0.54	<0.54	nm
o-Xylene	ppbv	0.45	0.42	7
Styrene	ppbv	<0.54	<0.54	nm
Benzyl chloride	ppbv	<0.027	<0.027	nm
1,3,5-Trimethylbenzene	ppbv	<1.4	<1.4	nm
1,2,4-Trimethylbenzene	ppbv	<1.4	<1.4	nm
Naphthalene	ppbv	<1.1	<1.1	nm
Hexachlorobutadiene	ppbv	0.37	0.39	6

Date of Report: 01/22/20
Date Received: 01/14/20
Project: Ave 55-Taylor Way 1514 Taylor Way Tacoma, WA, F&BI 001177

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Propene	ppbv	5	97	70-130
Dichlorodifluoromethane	ppbv	5	100	70-130
Chloromethane	ppbv	5	90	70-130
Vinyl chloride	ppbv	5	99	70-130
1,3-Butadiene	ppbv	5	108	70-130
Chloroethane	ppbv	5	99	70-130
Acrolein	ppbv	5	100	70-130
Pentane	ppbv	5	97	70-130
Trichlorofluoromethane	ppbv	5	98	70-130
2-Propanol	ppbv	5	98	70-130
1,1-Dichloroethene	ppbv	5	101	70-130
trans-1,2-Dichloroethene	ppbv	5	98	70-130
Methylene chloride	ppbv	5	88	70-130
CFC-113	ppbv	5	98	70-130
Carbon disulfide	ppbv	5	94	70-130
1,1-Dichloroethane	ppbv	5	97	70-130
cis-1,2-Dichloroethene	ppbv	5	100	70-130
Hexane	ppbv	5	115	70-130
Chloroform	ppbv	5	96	70-130
2-Butanone (MEK)	ppbv	5	94	70-130
1,2-Dichloroethane (EDC)	ppbv	5	100	70-130
1,1,1-Trichloroethane	ppbv	5	95	70-130
Carbon tetrachloride	ppbv	5	97	70-130
Benzene	ppbv	5	94	70-130
Cyclohexane	ppbv	5	91	70-130
1,2-Dichloropropane	ppbv	5	91	70-130
Bromodichloromethane	ppbv	5	89	70-130
Trichloroethene	ppbv	5	88	70-130
4-Methyl-2-pentanone	ppbv	5	104	70-130
Toluene	ppbv	5	96	70-130
1,1,2-Trichloroethane	ppbv	5	94	70-130
Tetrachloroethene	ppbv	5	89	70-130
1,2-Dibromoethane (EDB)	ppbv	5	95	70-130
Ethylbenzene	ppbv	5	106	70-130
m,p-Xylene	ppbv	10	98	70-130
o-Xylene	ppbv	5	94	70-130
Styrene	ppbv	5	101	70-130
Benzyl chloride	ppbv	5	101	70-130
1,3,5-Trimethylbenzene	ppbv	5	101	70-130
1,2,4-Trimethylbenzene	ppbv	5	107	70-130
Naphthalene	ppbv	5	98	70-130
Hexachlorobutadiene	ppbv	5	92	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

001177

SAMPLE CHAIN OF CUSTODY

ME 01-14-20

Page # 1 of 3

Report To Tom Colligan

Company Floyd Snider

Address 600 Union St. #601

City, State, ZIP Seattle, WA 98101

Phone 206.292.2078 Email Tom.Colligan@floydsnider.com

SAMPLERS (signature) Tyler Scott

PROJECT NAME & ADDRESS	PO #
Ave 55 - Taylor Way 1514 Taylor Way Tacoma, WA	Vapor

NOTES:	INVOICE TO
cc. Kristin Anderson	

TURNAROUND TIME
☒ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive Samples
☐ Other

SAMPLE INFORMATION / ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
VP-01-011320	01	3667	243	IA / [✓ SG]	01/13/20	28"	1004	2"	1010	~~X~~	~~X~~	KA ~~X~~	X			project-specific
VP-02-011320	02	2436	255	IA / [✓ SG]	1/13/20	30"	1041	2"	1048	X			X			list
VP-05-011320	03	2439	109	IA / [✓ SG]	1/13/20	29"	1136	2"	1140	X			X			
VP-07-011320	04	4177	242	IA / [✓ SG]	1/13/20	29"	1207	2"	1212	X			X			
VP-08-011320	05	4183	244	IA / [✓ SG]	1/13/20	29"	1231	2"	1236	X			X			
VP-13-011320	06	3671	07	IA / [✓ SG]	1/13/20	29"	1344	2"	1350	X			X			
VP-12-011320	07	2298	FB35	IA / [✓ SG]	1/13/20	28"	1410	2"	1417	X			X			
~~VP-120-011320~~		~~3230~~	~~229~~	~~IA / SG~~	~~1/13/20~~	~~30"~~	~~1410~~	~~2"~~	~~1421~~	~~X~~			~~X~~			KS

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COCTO-15.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Tyler Scott	Tyler Scott	F/S	1/14/20	1315
Received by:	Nhan Phan	FeB I	1/14/20	13:52
Relinquished by:				
Received by:		Samples received at 17 °C		

001177

SAMPLE CHAIN OF CUSTODY

ME 01-14-20

Page # 2 of 3

Report To Tom Colligan
Company Floyd Snider
Address 600 Union St. #601
City, State, ZIP Seattle, WA 98101
Phone 206.292.2078 Email

SAMPLERS (signature) Tyler Scott

PROJECT NAME & ADDRESS
Ave 55 - Taylor Way
1514 Taylor Way Tacoma WA

PO #

NOTES:
cc Kristin Anderson

INVOICE TO

TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive Samples
☐ Other

SAMPLE INFORMATION										ANALYSIS REQUESTED						
Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
VP-14-011320	08	4181	105	IA / [✓ SG]	1/13/20	30"	1452	2"	1458	X			X			Project-specific
VP-10-011320	09	2302	101	IA / [✓ SG]	1/13/20	29"	1519	2"	1525	X			X			list
VP-09-011320	10	2297	258	IA / [✓ SG]	1/13/20	29"	1543	2"	1549	X			X			
Ambient	11	18573	06607	[✓ IA] / SG	1/13/20	29"	0736	8"	1533	X			X			
IA-B2	12	20547	08183	[✓ IA] / SG	1/13/20	30"	0745	23"	1543	X			X			
IA-B1	13	20550	06606	[✓ IA] / SG	1/13/20	29"	0753	12"	1601	X			X			
IA-B3	14	20554	05354	[✓ IA] / SG	1/13/20	29"	0759	5"	1604	X			X			
IA-A2	15	20549	07852	[✓ IA] / SG	1/13/20	30"	0814	6"	1614	X			X			

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Tyler Scott	Tyler Scott	F/S	1/14/20	1350
Received by:	Nhan Phan	F&BI	1/14/20	1350
Relinquished by:				
Received by:		Samples received at 17 °C		

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001177

SAMPLE CHAIN OF CUSTODY

ME 01-14-20

Page # 3 of 3

Report To Tom Colligan
Company Floyd Snider
Address 600 Union St. #601
City, State, ZIP Seattle, WA 98101
Phone 206.292.2078 Email

SAMPLERS (*signature*) Tyler Scott

PROJECT NAME & ADDRESS
Ave 55 - Taylor Way
1514 Taylor Way Tacoma, WA

PO #

NOTES:
cc. Kristin Anderson

INVOICE TO

TURNAROUND TIME
☒ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive Samples
☐ Other

SAMPLE INFORMATION / ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
IA-A4	16	18571	08182	[✓ IA] / SG	1/13/20	30"	0820	7"	1621	X			X			
IA-A5	17	21442	06605	[✓ IA] / SG	1/13/20	30"	0839	9"	1626	X			X			
IA-A3	18	20556	05352	[✓ IA] / SG	1/13/20	29"	0845	8"	1633	X			X			
IA-A1	19	20542	07850	[✓ IA] / SG	1/13/20	29"	0853	7"	1641	X			X			
VP-03-011420	20	3287	117	IA / [✓ SG]	1/14/20	30"	1103	2"	1109	X			X			
VP-04-011420	21	2303	259	IA / [✓ SG]	1/14/20	29"	1132	2"	1138	X			X			
VP-11-011420	22	3386	106	IA / [✓ SG]	1/14/20	29"	1232	2"	1236	X			X			
VP-110-011420	23	3344	108	IA / [✓ SG]	1/14/20	29"	1232	2"	1237	X			X			Field Dup.

Friedman & Bruya, Inc.
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Seattle, WA 98119-2029
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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Tyler Scott	Tyler Scott	FS	1/14/20	1350
Received by:	Nhan Phan	FBI	1/14/20	1350
Relinquished by:				
Received by:		Samples received at 17 °C		

FORMS\COC\COCTO-15.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
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3012 16th Avenue West
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February 28, 2020

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on February 18, 2020 from the Ave 55 Taylor Way 1415 Taylor Way Tacoma WA, F&BI 002243 project. There are 8 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Kristin Anderson
FDS0228R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 18, 2020 by Friedman & Bruya, Inc. from the Floyd-Snider Ave 55 Taylor Way 1415 Taylor Way Tacoma WA, F&BI 002243 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
002243 -01	VP-3
002243 -02	VP-3-D

Non-petroleum compounds identified in the air phase hydrocarbon (APH) ranges were subtracted per the MA-APH method.

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-3	Client:	Floyd-Snider
Date Received:	02/18/20	Project:	Ave 55 Taylor Way 1415 Tacoma WA
Date Collected:	02/18/20	Lab ID:	002243-01 1/5.4
Date Analyzed:	02/21/20	Data File:	022029.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	103	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	240
APH EC9-12 aliphatics	310
APH EC9-10 aromatics	<130

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55 Taylor Way 1415 Tacoma WA
Date Collected:	Not Applicable	Lab ID:	00-0419 mb
Date Analyzed:	02/20/20	Data File:	022014.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<30
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-3	Client:	Floyd-Snider
Date Received:	02/18/20	Project:	Ave 55 Taylor Way 1415 Tacoma WA
Date Collected:	02/17/20	Lab ID:	002243-01 1/5.4
Date Analyzed:	02/21/20	Data File:	022029.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	101	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	7.0	4.1	1,1,1-Trichloroethane	<2.9	<0.54
Dichlorodifluoromethane	3.5	0.71	Carbon tetrachloride	<3.4	<0.54
Chloromethane	<11	<5.4	Benzene	<1.7	<0.54
Vinyl chloride	<1.4	<0.54	Cyclohexane	<37	<11
1,3-Butadiene	<0.12	<0.054	1,2-Dichloropropane	<1.2	<0.27
Chloroethane	<14	<5.4	Bromodichloromethane	<0.36	<0.054
Acrolein	<5	<2.2	Trichloroethene	<1.5	<0.27
Pentane	<16	<5.4	4-Methyl-2-pentanone	<22	<5.4
Trichlorofluoromethane	83	15	Toluene	<100	<27
2-Propanol	<46	<19	1,1,2-Trichloroethane	<0.59	<0.11
1,1-Dichloroethene	<2.1	<0.54	Tetrachloroethene	<37	<5.4
trans-1,2-Dichloroethene	<2.1	<0.54	1,2-Dibromoethane (EDB)	<0.41	<0.054
Methylene chloride	<470	<130	Ethylbenzene	<2.3	<0.54
CFC-113	<4.1	<0.54	m,p-Xylene	<4.7	<1.1
Carbon disulfide	<34	<11	o-Xylene	<2.3	<0.54
1,1-Dichloroethane	<2.2	<0.54	Styrene	<4.6	<1.1
cis-1,2-Dichloroethene	<2.1	<0.54	Benzyl chloride	<0.28	<0.054
Hexane	<19	<5.4	1,3,5-Trimethylbenzene	<13	<2.7
Chloroform	0.53	0.11	1,2,4-Trimethylbenzene	<13	<2.7
2-Butanone (MEK)	<16	<5.4	Naphthalene	<1.4	<0.27
1,2-Dichloroethane (EDC)	<0.22	<0.054	Hexachlorobutadiene	<1.2	<0.11
1,2,3-Trimethylbenzene	<260 L	<54 L			
1-Butanol	<160 L	<54 L			
Acetaldehyde	<490 L	<270 L			
Acetonitrile	<90 L	<54 L			
Acrylonitrile	<60 L	<27 L			
Chlorodifluoromethane	<190 L	<54 L			
Cyclopentane	<160 L	<54 L			
Isobutene	<120 L	<54 L			
Isoprene	<150 L	<54 L			
Methyl vinyl ketone	<160 L	<54 L			

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55 Taylor Way 1415 Tacoma WA
Date Collected:	Not Applicable	Lab ID:	00-0419 mb
Date Analyzed:	02/20/20	Data File:	022014.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	96	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Propene	<0.69	<0.4	1,1,1-Trichloroethane	<0.55	<0.1
Dichlorodifluoromethane	<0.49	<0.1	Carbon tetrachloride	<0.63	<0.1
Chloromethane	<2.1	<1	Benzene	<0.32	<0.1
Vinyl chloride	<0.26	<0.1	Cyclohexane	<6.9	<2
1,3-Butadiene	<0.022	<0.01	1,2-Dichloropropane	<0.23	<0.05
Chloroethane	<2.6	<1	Bromodichloromethane	<0.067	<0.01
Acrolein	<0.92	<0.4	Trichloroethene	<0.27	<0.05
Pentane	<3	<1	4-Methyl-2-pentanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Toluene	<19	<5
2-Propanol	<8.6	<3.5	1,1,2-Trichloroethane	<0.11	<0.02
1,1-Dichloroethene	<0.4	<0.1	Tetrachloroethene	<6.8	<1
trans-1,2-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methylene chloride	<87	<25	Ethylbenzene	<0.43	<0.1
CFC-113	<0.77	<0.1	m,p-Xylene	<0.87	<0.2
Carbon disulfide	<6.2	<2	o-Xylene	<0.43	<0.1
1,1-Dichloroethane	<0.4	<0.1	Styrene	<0.85	<0.2
cis-1,2-Dichloroethene	<0.4	<0.1	Benzyl chloride	<0.052	<0.01
Hexane	<3.5	<1	1,3,5-Trimethylbenzene	<2.5	<0.5
Chloroform	<0.049	<0.01	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	<2.9	<1	Naphthalene	<0.26	<0.05
1,2-Dichloroethane (EDC)	<0.04	<0.01	Hexachlorobutadiene	<0.21	<0.02
1,2,3-Trimethylbenzene	<49 L	<10 L			
1-Butanol	<30 L	<10 L			
Acetaldehyde	<90 L	<50 L			
Acetonitrile	<17 L	<10 L			
Acrylonitrile	<11 L	<5 L			
Chlorodifluoromethane	<35 L	<10 L			
Cyclopentane	<29 L	<10 L			
Isobutene	<23 L	<10 L			
Isoprene	<28 L	<10 L			
Methyl vinyl ketone	<29 L	<10 L			

Date of Report: 02/28/20
Date Received: 02/18/20
Project: Ave 55 Taylor Way 1415 Taylor Way Tacoma WA, F&BI 002243

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD MA-APH

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	73	70-130
APH EC9-12 aliphatics	ug/m3	67	106	70-130
APH EC9-10 aromatics	ug/m3	67	107	70-130

Date of Report: 02/28/20
Date Received: 02/18/20
Project: Ave 55 Taylor Way 1415 Taylor Way Tacoma WA, F&BI 002243

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Propene	ug/m3	23	97	70-130
Dichlorodifluoromethane	ug/m3	67	104	70-130
Chloromethane	ug/m3	28	102	70-130
Vinyl chloride	ug/m3	35	98	70-130
1,3-Butadiene	ug/m3	30	101	70-130
Chloroethane	ug/m3	36	100	70-130
Acrolein	ug/m3	31	98	70-130
Pentane	ug/m3	40	98	70-130
Trichlorofluoromethane	ug/m3	76	102	70-130
2-Propanol	ug/m3	33	100	70-130
1,1-Dichloroethene	ug/m3	54	102	70-130
trans-1,2-Dichloroethene	ug/m3	54	96	70-130
Methylene chloride	ug/m3	94	87	70-130
CFC-113	ug/m3	100	99	70-130
Carbon disulfide	ug/m3	42	97	70-130
1,1-Dichloroethane	ug/m3	55	96	70-130
cis-1,2-Dichloroethene	ug/m3	54	99	70-130
Hexane	ug/m3	48	104	70-130
Chloroform	ug/m3	66	97	70-130
2-Butanone (MEK)	ug/m3	40	105	70-130
1,2-Dichloroethane (EDC)	ug/m3	55	100	70-130
1,1,1-Trichloroethane	ug/m3	74	97	70-130
Carbon tetrachloride	ug/m3	85	102	70-130
Benzene	ug/m3	43	93	70-130
Cyclohexane	ug/m3	46	93	70-130
1,2-Dichloropropane	ug/m3	62	85	70-130
Bromodichloromethane	ug/m3	90	86	70-130
Trichloroethene	ug/m3	73	85	70-130
4-Methyl-2-pentanone	ug/m3	55	105	70-130
Toluene	ug/m3	51	92	70-130
1,1,2-Trichloroethane	ug/m3	74	90	70-130
Tetrachloroethene	ug/m3	92	86	70-130
1,2-Dibromoethane (EDB)	ug/m3	100	93	70-130
Ethylbenzene	ug/m3	59	73	70-130
m,p-Xylene	ug/m3	120	77	70-130
o-Xylene	ug/m3	59	73	70-130
Styrene	ug/m3	58	82	70-130
Benzyl chloride	ug/m3	70	90	70-130
1,3,5-Trimethylbenzene	ug/m3	66	80	70-130
1,2,4-Trimethylbenzene	ug/m3	66	88	70-130
Naphthalene	ug/m3	71	93	70-130
Hexachlorobutadiene	ug/m3	140	88	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

002243

SAMPLE CHAIN OF CUSTODY

ME 02/18/20

Page # 1 of —

Report To Tom Colligan
Company Floyd Snider
Address ~~600~~ 601 Union St. #600 Seattle, WA
City, State, ZIP Seattle, WA 98101
Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (signature) Tyler Scott

PROJECT NAME & ADDRESS
Ave 55 - Taylor Way
1415 Taylor Way Tacoma, WA

PO #

NOTES:
cc: Kristin.Anderson@floydsnider.com

INVOICE TO
Task 6

TURNAROUND TIME
☒ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Default: Clean after 3 days
☐ Archive (Fee may apply)

SAMPLE INFORMATION										ANALYSIS REQUESTED						
Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
VP-3	01	3540	102	IA / [✓ SG]	2-18-20	29	12:40	5	12:41			X	X			project specific TO-15
VP-3-D	02	3249	88	IA / [✓ SG]	2-18-20	29	13:15	5	13:21			~~X~~	~~X~~	HOLD		
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Tyler Scott	Tyler Scott	F/S	2-18-20	15:30
Received by:	HONG NGUYEN	FBI	✓	✓
Relinquished by:				
Received by:				

Samples received at 19 °C

FORMS\COC\COCTO-15.DOC

Attachment 5
Site-Specific MTCA Method B Cleanup Level Calculations

January 2020 Site-Specific TPH CUL Calculation

Default Inputs		
inhalation absorption fraction	ABS_i (unitless)	1
average body weight	ABW (kg)	16
averaging time	AT (yr)	6
attenuation factor	AF (unitless)	0.03
breathing rate	BR (m3/day)	10
compound cleanup level	CUL_i	(calc)
exposure duration	ED (yr)	6
esposure frequency	EF (unitless)	1
component fraction by weight	F_i (unitless)	(calc)
hazard index	HI (unitless)	1
target hazard quotient	HQ (unitless)	1
inhalation reference dose	RfD_i	(mg/ kg*day)
unit conversion factor	UCF (ug/mg)	1000

Equations

$$CUL_i = \frac{RfD_i \times ABW \times UCF \times HQ \times AT}{BR \times ABS_i \times ED \times EF}$$

$CUL_{tph} = 1/\mathrm{sum}(F_i/CUL_i)$

where F_i/CUL_i is summed for each TPH component compound below

Sub Slab SL = CUL_{tph}/AF

Bldg A Average Indoor Air CULt	**549**
Bldg B Average Indoor Air CULt	**636**
Minimum Average CULtph	549
Calculated Soil Vapor SL	**18316**

		IA-A1				
Analyte	**RfD_i**	result (µg/m$^{3)}$)	halfND	F_i	CUL_i	F_i/CUL_i
APH EC5-8 aliphatics	1.7	270	270	0.70445	2720	0.00026
APH EC9-10 aromatics	0.114	25 U	12.5	0.03261	182.4	0.00018
APH EC9-12 aliphatics	0.085	88	88	0.2296	136	0.00169
Benzene	0.00855	0.74	0.74	0.00193	13.68	0.00014
Toluene	1.4	19 U	9.5	0.02479	2240	1.1E-05
Ethylbenzene	0.286	0.44	0.44	0.00115	457.6	2.5E-06
Xylenes	0.029	1.9	1.9	0.00496	46.4	0.00011
Naphthalene	0.00086	0.2 J	0.2	0.00052	1.376	0.00038
					SUM (F_i/CUL_i)	0.00277
					CUL_{tph}	**361**

		IA-A2				
Analyte	**RfD_i**	result (µg/m$^{3)}$)	halfND	F_i	CUL_i	F_i/CUL_i
APH EC5-8 aliphatics	1.7	260	260	0.8066	2720	0.0003
APH EC9-10 aromatics	0.114	25 U	12.5	0.0388	182.4	0.00021
APH EC9-12 aliphatics	0.085	39	39	0.121	136	0.00089
Benzene	0.00855	0.61	0.61	0.0019	13.68	0.00014
Toluene	1.4	19 U	9.5	0.0295	2240	1.3E-05
Ethylbenzene	0.286	0.43 U	0.215	0.0007	457.6	1.5E-06
Xylenes	0.029	0.87 U	0.435	0.0013	46.4	2.9E-05
Naphthalene	0.00086	0.073 J	0.073	0.0002	1.376	0.00016
					SUM (F_i/CUL_i)	0.00175
					CUL_{tph}	**573**

		IA-A3				
Analyte	**RfD_i**	result (µg/m$^{3)}$)	halfND	F_i	CUL_i	F_i/CUL_i
APH EC5-8 aliphatics	1.7	350	350	0.793	2720	0.00029
APH EC9-10 aromatics	0.114	25 U	12.5	0.0283	182.4	0.00016
APH EC9-12 aliphatics	0.085	66	66	0.1495	136	0.0011
Benzene	0.00855	0.64	0.64	0.0015	13.68	0.00011
Toluene	1.4	19 U	9.5	0.0215	2240	9.6E-06
Ethylbenzene	0.286	0.46	0.46	0.001	457.6	2.3E-06
Xylenes	0.029	2.1	2.1	0.0048	46.4	0.0001
Naphthalene	0.00086	0.14 J	0.14	0.0003	1.376	0.00023
					SUM (F_i/CUL_i)	0.0020
					CUL_{tph}	**501**

		IA-A4				
Analyte	**RfD_i**	result (µg/m$^{3)}$)	halfND	F_i	CUL_i	F_i/CUL_i
APH EC5-8 aliphatics	1.7	260	260	0.8642	2720	0.00032
APH EC9-10 aromatics	0.114	25 U	12.5	0.0415	182.4	0.00023
APH EC9-12 aliphatics	0.085	35 U	17.5	0.0582	136	0.00043
Benzene	0.00855	0.66	0.66	0.0022	13.68	0.00016
Toluene	1.4	19 U	9.5	0.0316	2240	1.4E-05
Ethylbenzene	0.286	0.43 U	0.215	0.0007	457.6	1.6E-06
Xylenes	0.029	0.87 U	0.435	0.0014	46.4	3.1E-05
Naphthalene	0.00086	0.073 UJ	0.0365	0.0001	1.376	8.8E-05
					SUM (F_i/CUL_i)	0.00127
					CUL_{tph}	**788**

		IA-A5				
Analyte	**RfD_i**	result (µg/m$^{3)}$)	halfND	F_i	CUL_i	F_i/CUL_i
APH EC5-8 aliphatics	1.7	160	160	0.79421	2720	0.00029
APH EC9-10 aromatics	0.114	25 U	12.5	0.06205	182.4	0.00034
APH EC9-12 aliphatics	0.085	35 U	17.5	0.08687	136	0.00064
Benzene	0.00855	0.67	0.67	0.00333	13.68	0.00024
Toluene	1.4	19 U	9.5	0.04716	2240	2.1E-05
Ethylbenzene	0.286	0.43 U	0.215	0.00107	457.6	2.3E-06
Xylenes	0.029	1	1	0.00496	46.4	0.00011
Naphthalene	0.00086	0.073 J	0.073	0.00036	1.376	0.00026
					SUM (F_i/CUL_i)	0.0019
					CUL_{tph}	**524**

		IA-B1				
Analyte	**RfD_i**	result (µg/m$^{3)}$)	halfND	F_i	CUL_i	F_i/CUL_i
APH EC5-8 aliphatics	1.7	230	230	0.825	2720	0.0003
APH EC9-10 aromatics	0.114	30 U	15	0.0538	182.4	0.00029
APH EC9-12 aliphatics	0.085	42 U	21	0.0753	136	0.00055
Benzene	0.00855	0.5	0.5	0.0018	13.68	0.00013
Toluene	1.4	23 U	11.5	0.0412	2240	1.8E-05
Ethylbenzene	0.286	0.52 U	0.26	0.0009	457.6	2E-06
Xylenes	0.029	1 U	0.5	0.0018	46.4	3.9E-05
Naphthalene	0.00086	0.088 UJ	0.044	0.0002	1.376	0.00011
					SUM (F_i/CUL_i)	0.00146
					CUL_{tph}	**686**

		IA-B2				
Analyte	**RfD_i**	result (µg/m$^{3)}$)	halfND	F_i	CUL_i	F_i/CUL_i
APH EC5-8 aliphatics	1.7	250	250	0.6978	2720	0.00026
APH EC9-10 aromatics	0.114	67 U	33.5	0.0935	182.4	0.00051
APH EC9-12 aliphatics	0.085	94 U	47	0.1312	136	0.00096
Benzene	0.00855	0.86 U	0.43	0.0012	13.68	8.8E-05
Toluene	1.4	51 U	25.5	0.0712	2240	3.2E-05
Ethylbenzene	0.286	1.2 U	0.6	0.0017	457.6	3.7E-06
Xylenes	0.029	2.3 U	1.15	0.0032	46.4	6.9E-05
Naphthalene	0.00086	0.2 UJ	0.1	0.0003	1.376	0.0002
					SUM (F_i/CUL_i)	0.0021
					CUL_{tph}	**470**

		IA-B3				
Analyte	**RfD_i**	result (µg/m$^{3)}$)	halfND	F_i	CUL_i	F_i/CUL_i
APH EC5-8 aliphatics	1.7	230	230	0.8497	2720	0.00031
APH EC9-10 aromatics	0.114	25 U	12.5	0.0462	182.4	0.00025
APH EC9-12 aliphatics	0.085	35 U	17.5	0.0646	136	0.00048
Benzene	0.00855	0.51	0.51	0.0019	13.68	0.00014
Toluene	1.4	19 U	9.5	0.0351	2240	1.6E-05
Ethylbenzene	0.286	0.43 U	0.215	0.0008	457.6	1.7E-06
Xylenes	0.029	0.87 U	0.435	0.0016	46.4	3.5E-05
Naphthalene	0.00086	0.073 UJ	0.0365	0.0001	1.376	9.8E-05
					SUM (F_i/CUL_i)	0.00133
					CUL_{tph}	**753**

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE44057

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*
☐ Construction
☒ Decommission

Type of Well *("x in box)*
☒ Resource Protection
☐ Geotech Soil Boring

ORIGINAL INSTALLATION Notice *of Intent Number*: R066666

Consulting Firm

Unique Ecology Well IDTag No. AKL280 (PPIB)

Property Owner Port of Tacoma

Site Address 1514 Taylor Way

City Tacoma County Pierce

Location SE1/4-1/4 SW`1/4 Sec 26 Twn 21 R 03

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg ___ Min ___ Sec ___
Long Deg ___ Min ___ Sec ___

Tax Parcel No. 0321267005

Cased or Uncased Diameter 3/4" Static Level

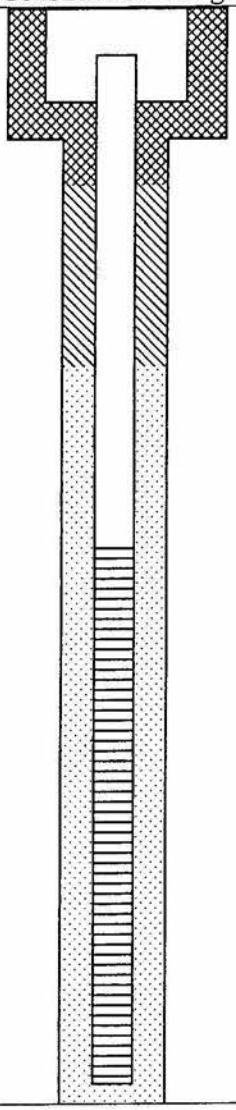
Work/Decommission Start Date 7/28/17

Work/Decommission Completed Date 7/28/17

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee
Name (Print Last, First Name) Don Harnden
Driller/Engineer /Trainee Signature
Driller or Trainee License No. 2914

If trainee, licensed driller's Signature and License Number:

Construction Design	Well Data	Formation Description
	MONUMENT TYPE: stand-up REMOVED MONUMENT: YES/[✓ NO] PVC BLANK: SCREEN: WELL DEPTH: 16'	FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED REMOVED MONUMENT: YES / [✓ NO] ☑ WELL WAS CHIPPED/[✓ GROUTED] IN PLACE ☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP Monuments will be removed when area gets excavated

SCALE: 1"= ___ PAGE 14 OF 14

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE44057

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*
☐ Construction
☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: R066666

Consulting Firm
Unique Ecology Well IDTag No. AKL282 (PP2B)

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

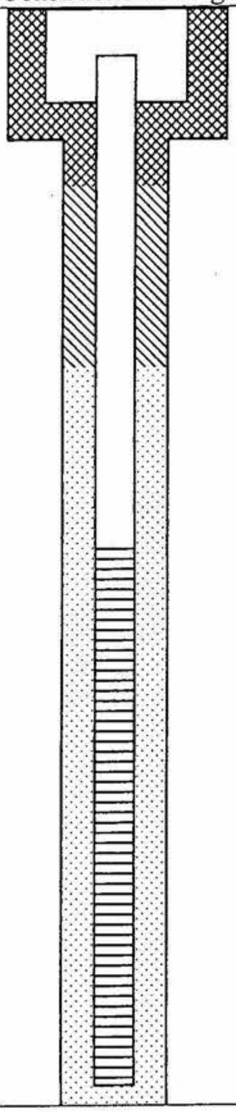
☒ Driller ☐ Engineer ☐ Trainee
Name (Print Last, First Name) Don Harnden
Driller/Engineer /Trainee Signature
Driller or Trainee License No. 2914

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*
☒ Resource Protection
☐ Geotech Soil Boring

Property Owner Port of Tacoma
Site Address 1514 Taylor Way
City Tacoma County Pierce
Location SE1/4-1/4 SW`1/4 Sec 26 Twn 21 R 03
EWM ☒ or WWM ☐
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____
Long Deg ____ Min ____ Sec ____
Tax Parcel No. 0321267005
Cased or Uncased Diameter 3/4" Static Level ____
Work/Decommission Start Date 7/28/17
Work/Decommission Completed Date 7/28/17

Construction Design



Well Data

MONUMENT TYPE: stand-up

REMOVED MONUMENT: YES/[✓ NO]

PVC BLANK: ____________

SCREEN: ____________

WELL DEPTH: 17'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES / [✓ NO]

☒ WELL WAS CHIPPED/[✓ GROUTED] IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

Monuments will be removed when area gets excavated

SCALE: 1"= ____ PAGE 12 OF 14

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE44057

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*
☐ Construction
☒ Decommission

Type of Well *("x in box)*
☒ Resource Protection
☐ Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number: R066666

Consulting Firm ______

Unique Ecology Well IDTag No. AKL 283 (PP2A)

Property Owner Port of Tacoma
Site Address 1514 Taylor Way
City Tacoma County Pierce
Location SE1/4-1/4 SW 1/4 Sec 26 Twn 21 R 03
EWM ☒ or WWM ☐
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____
Long Deg ____ Min ____ Sec ____
Tax Parcel No. 0321267005
Cased or Uncased Diameter 3/4" Static Level ____
Work/Decommission Start Date 7/28/17
Work/Decommission Completed Date 7/28/17

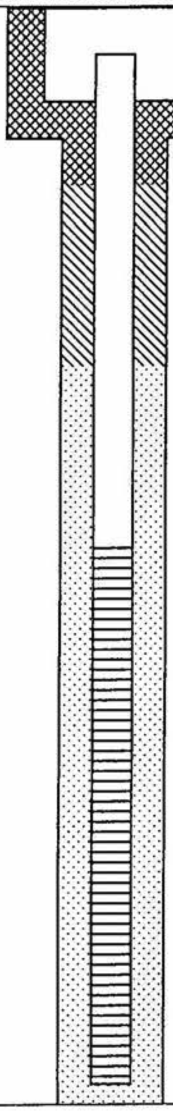
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☑ Driller ☐ Engineer ☐ Trainee
Name (Print Last, First Name) Don Harnden
Driller/Engineer /Trainee Signature
Driller or Trainee License No. 2914

If trainee, licensed driller's Signature and License Number:

______

Construction Design



Well Data

MONUMENT TYPE: stand-up

REMOVED MONUMENT: YES/[✓ NO]

PVC BLANK: ______

SCREEN: ______

WELL DEPTH: 8'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES / [✓ NO]

☑ WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

Monuments will be removed when area gets excavated

RECEIVED
AUG 28 2017
WA State Department of Ecology (SWRO)

SCALE: 1"= ____ PAGE 11 OF 14

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE44057

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*
☐ Construction
☒ Decommission

Type of Well *("x in box)*
☒ Resource Protection
☐ Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number: R066666

Consulting Firm ____

Unique Ecology Well IDTag No. AKL 284 (PMW 2B)

Property Owner Port of Tacoma

Site Address 1514 Taylor Way

City Tacoma County Pierce

Location SE1/4-1/4 SW`1/4 Sec 26 Twn 21 R 03

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____
Long Deg ____ Min ____ Sec ____

Tax Parcel No. 0321267005

Cased or Uncased Diameter 2" Static Level ____

Work/Decommission Start Date 7/21/17

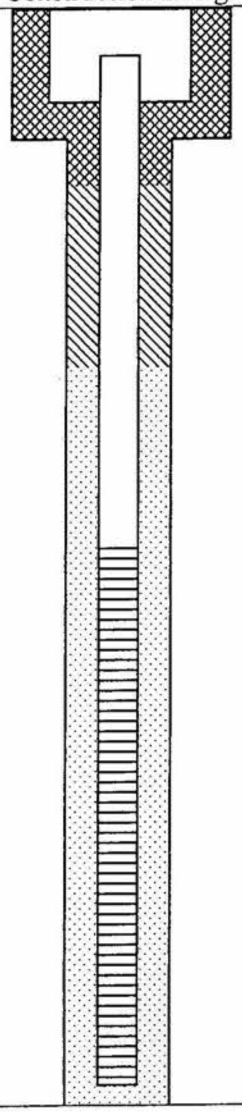
Work/Decommission Completed Date 7/21/17

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee
Name (Print Last, First Name) Don Harnden
Driller/Engineer /Trainee Signature ____
Driller or Trainee License No. 2914

If trainee, licensed driller's Signature and License Number: ____

Construction Design



Well Data

MONUMENT TYPE: stand-up

REMOVED MONUMENT: YES/ [✓ NO]

PVC BLANK: ____

SCREEN: ____

WELL DEPTH: 17'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES / [✓ NO]

☒ WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

Monuments will be removed when area gets excavated

RECEIVED
AUG 28 2017
WA State Department of Ecology (SWRO)

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE44057

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*
☐ Construction
☒ Decommission

Type of Well *("x in box)*
☒ Resource Protection
☐ Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number: R066666

Consulting Firm ____________

Unique Ecology Well IDTag No. AXL 288 (PMW 3B)

Property Owner Port of Tacoma

Site Address 1514 Taylor Way

City Tacoma County Pierce

Location SE1/4-1/4 SW 1/4 Sec 26 Twn 21 R 03

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg ______ Min ______ Sec ______
Long Deg ______ Min ______ Sec ______

Tax Parcel No. 0321267005

Cased or Uncased Diameter 2" Static Level ______

Work/Decommission Start Date 7/21/17

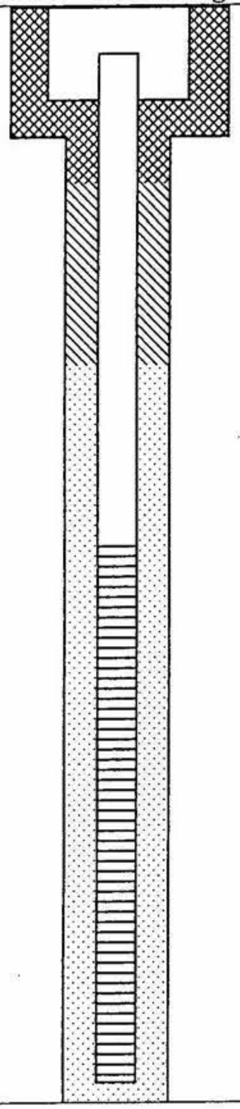
Work/Decommission Completed Date 7/21/17

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee
Name (Print Last, First Name) Don Harnden
Driller/Engineer /Trainee Signature ______
Driller or Trainee License No. 2914

If trainee, licensed driller's Signature and License Number:

____

Construction Design	Well Data	Formation Description
	MONUMENT TYPE: stand-up REMOVED MONUMENT: YES/[✓ NO] PVC BLANK: ______ SCREEN: ______ WELL DEPTH: 18'	FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED REMOVED MONUMENT: YES / [✓ NO] ☒ WELL WAS CHIPPED/GROUTED IN PLACE ☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP Monuments will be removed when area gets excavated

SCALE: 1"= ____ PAGE 6 OF 14

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE44057

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*
☐ Construction
☒ Decommission

Type of Well *("x in box)*
☒ Resource Protection
☐ Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number: R066666

Consulting Firm ____________

Unique Ecology Well IDTag No. AKL 281 (PP1A)

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

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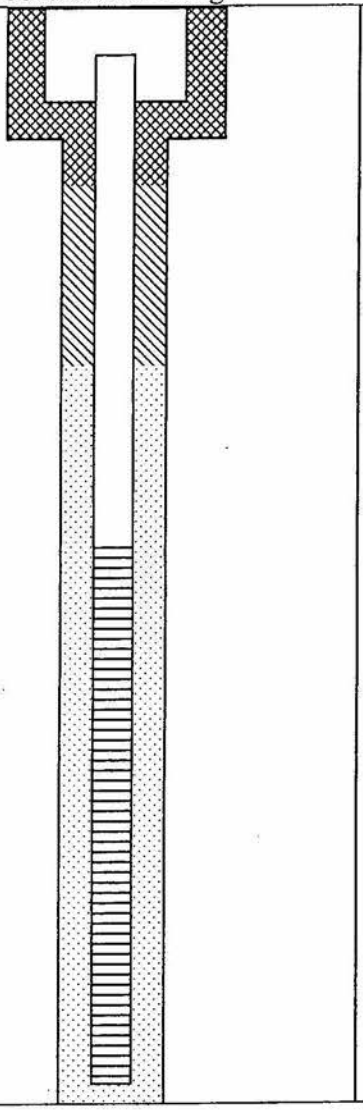
Driller/Engineer /Trainee Signature
Driller or Trainee License No. 2914

If trainee, licensed driller's Signature and License Number: ____________

Property Owner Port of Tacoma
Site Address 1514 Taylor Way
City Tacoma County Pierce
Location SE1/4-1/4 SW 1/4 Sec 26 Twn 21 R 03
EWM ☒ or WWM ☐
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____
Long Deg ____ Min ____ Sec ____
Tax Parcel No. 0321267005
Cased or Uncased Diameter 3/4" Static Level ____
Work/Decommission Start Date 7/28/17
Work/Decommission Completed Date 7/28/17

Construction Design	Well Data	Formation Description
	MONUMENT TYPE: stand-up REMOVED MONUMENT: YES [✓ NO] PVC BLANK: ____ SCREEN: ____ WELL DEPTH: 7'	FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED REMOVED MONUMENT: YES / [✓ NO] ☒ WELL WAS CHIPPED/[✓ GROUTED] IN PLACE ☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP Monuments will be removed when area gets excavated RECEIVED AUG 28 2017 WA State Department of Ecology (SWRO)

SCALE: 1"= ____ PAGE 13 OF 14

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE44057

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*
☐ Construction
☒ Decommission

Type of Well *("x in box)*
☒ Resource Protection
☐ Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number: R066666

Consulting Firm

Unique Ecology Well IDTag No. AKL292 (PMW4B)

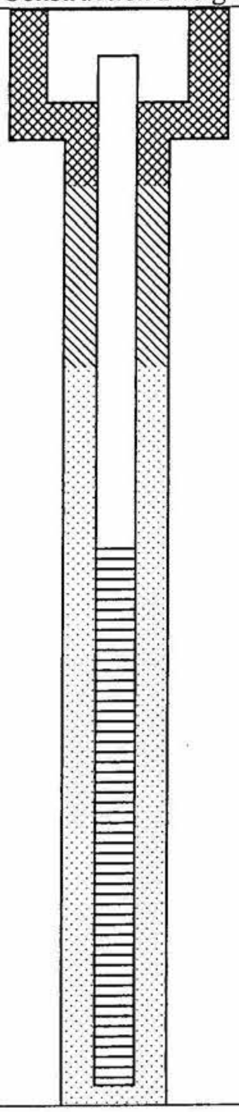
Property Owner Port of Tacoma
Site Address 1514 Taylor Way
City Tacoma County Pierce
Location SE1/4-1/4 SW`1/4 Sec 26 Twn 21 R 03
EWM ☒ or WWM ☐
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____
Long Deg ____ Min ____ Sec ____
Tax Parcel No.0321267005
Cased or Uncased Diameter 2" Static Level ____
Work/Decommission Start Date 7/21/17
Work/Decommission Completed Date 7/21/17

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☑ Driller ☐ Engineer ☐ Trainee
Name (Print Last, First Name) Don Harnden
Driller/Engineer /Trainee Signature
Driller or Trainee License No. 2914

If trainee, licensed driller's Signature and License Number:

Construction Design



Well Data

MONUMENT TYPE: stand-up

REMOVED MONUMENT: YES [✓ NO]

PVC BLANK: ____

SCREEN: ____

WELL DEPTH: 30'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES / [✓ NO]

☑ WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

Monuments will be removed when area gets excavated

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SCALE: 1"= ____ PAGE 10 OF 14

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE44057

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*
☐ Construction
☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: R066666

Consulting Firm

Unique Ecology Well IDTag No. AKL 285 (PMW2A)

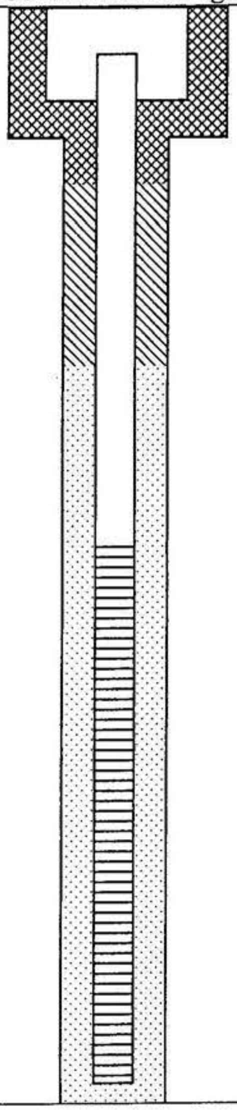
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee
Name (Print Last, First Name) Don Harnden
Driller/Engineer /Trainee Signature
Driller or Trainee License No. 2914

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*
☒ Resource Protection
☐ Geotech Soil Boring

Property Owner Port of Tacoma
Site Address 1514 Taylor Way
City Tacoma County Pierce
Location SE1/4-1/4 SW`1/4 Sec 26 Twn 21 R 03
EWM ☒ or WWM ☐
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____
Long Deg ____ Min ____ Sec ____
Tax Parcel No. 0321267005
Cased or Uncased Diameter 2" Static Level
Work/Decommission Start Date 7/21/17
Work/Decommission Completed Date 7/21/17

Construction Design	Well Data	Formation Description
	MONUMENT TYPE: stand-up REMOVED MONUMENT: YES [✓ NO] PVC BLANK: ____ SCREEN: ____ WELL DEPTH: 7'	FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED REMOVED MONUMENT: YES / [✓ NO] ☒ WELL WAS CHIPPED/GROUTED IN PLACE ☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP Monuments will be removed when area gets excavated RECEIVED AUG 28 2017 WA State Department of Ecology (SWRO)

SCALE: 1"= ____ PAGE 7 OF 14

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE44057

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*
☐ Construction
☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: R066666

Consulting Firm ____________

Unique Ecology Well IDTag No. AKL 293 (PMW 4A)

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

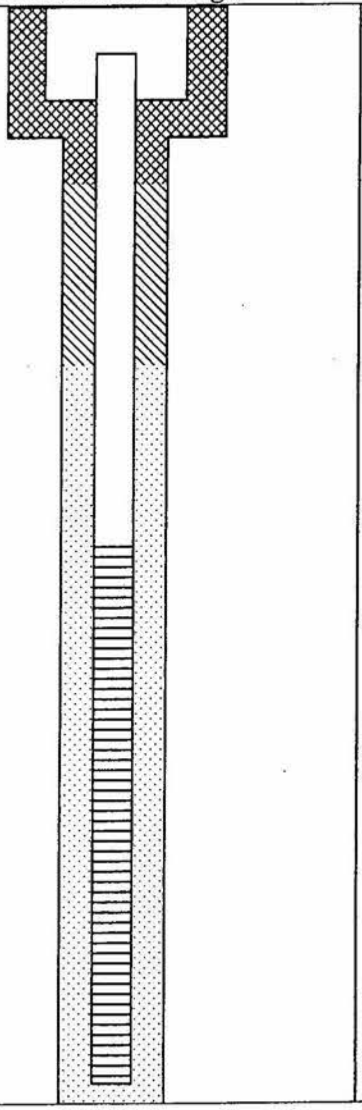
☑ Driller ☐ Engineer ☐ Trainee
Name (Print Last, First Name) Don Harnden
Driller/Engineer /Trainee Signature
Driller or Trainee License No. 2914

If trainee, licensed driller's Signature and License Number: ____________

Type of Well *("x in box)*
☒ Resource Protection
☐ Geotech Soil Boring

Property Owner Port of Tacoma
Site Address 1514 Taylor Way
City Tacoma County Pierce
Location SE1/4-1/4 SW 1/4 Sec 26 Twn 21 R 03
EWM ☒ or WWM ☐
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____
Long Deg ____ Min ____ Sec ____
Tax Parcel No. 0321267005
Cased or Uncased Diameter 2" Static Level ____
Work/Decommission Start Date 7/21/17
Work/Decommission Completed Date 7/21/14

Construction Design



Well Data

MONUMENT TYPE: stand-up

REMOVED MONUMENT: YES [✓ NO]

PVC BLANK: ____________

SCREEN: ____________

WELL DEPTH: 17'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES / [✓ NO]

☑ WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

Monuments will be removed when area gets excavated

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SCALE: 1"= ____ PAGE 9 OF 14

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE44057

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*
☐ Construction
☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: R066666

Consulting Firm

Unique Ecology Well IDTag No. AKL 290 (PMW 5B)

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

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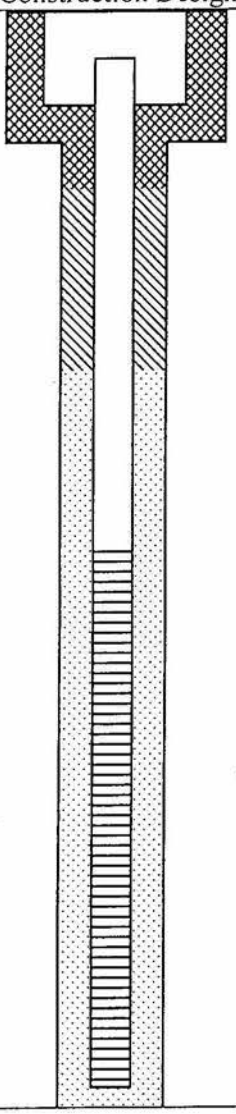
Name (Print Last, First Name) Don Harnden
Driller/Engineer /Trainee Signature
Driller or Trainee License No. 2914

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*
☒ Resource Protection
☐ Geotech Soil Boring

Property Owner Port of Tacoma
Site Address 1514 Taylor Way
City Tacoma County Pierce
Location SE1/4-1/4 SW`1/4 Sec 26 Twn 21 R 03
EWM ☒ or WWM ☐
Lat/Long (s, t, r still REQUIRED) Lat Deg ___ Min ___ Sec ___
Long Deg ___ Min ___ Sec ___
Tax Parcel No. 0321267005
Cased or Uncased Diameter 2" Static Level
Work/Decommission Start Date 7/21/17
Work/Decommission Completed Date 7/21/17

Construction Design



Well Data

MONUMENT TYPE: stand-up

REMOVED MONUMENT: YES/ [✓ NO]

PVC BLANK:__________

SCREEN:__________

WELL DEPTH:__________

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES / [✓ NO]

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Monuments will be removed when area gets excavated

SCALE: 1"= ____ PAGE 4 OF 14

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE44057

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*
☐ Construction
☒ Decommission

Type of Well *("x in box)*
☒ Resource Protection
☐ Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number: R066666

Consulting Firm ______

Unique Ecology Well IDTag No. AKL 287 (PMW1A)

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

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Property Owner Port of Tacoma
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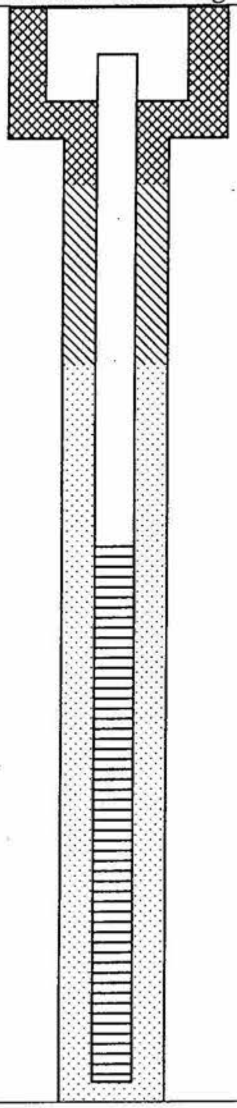
City Tacoma County Pierce
Location SE1/4-1/4 SW 1/4 Sec 26 Twn 21 R 03
EWM ☒ or WWM ☐
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____
Long Deg ____ Min ____ Sec ____
Tax Parcel No. 0321267005
Cased or Uncased Diameter 2" Static Level ______
Work/Decommission Start Date 7/21/17
Work/Decommission Completed Date 7/21/17

Construction Design	Well Data	Formation Description
	MONUMENT TYPE: stand-up REMOVED MONUMENT: YES [✓ NO] PVC BLANK: ______ SCREEN: ______ WELL DEPTH: 9'	FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED REMOVED MONUMENT: YES / [✓ NO] ☑ WELL WAS CHIPPED/GROUTED IN PLACE ☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP Monuments will be removed when area gets excavated RECEIVED AUG 28 2017 WA State Department of Ecology (SWRO)

SCALE: 1"= ____ PAGE 2 OF 14

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE44057

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*
☐ Construction
☒ Decommission

Type of Well *("x in box)*
☒ Resource Protection
☐ Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number: R066666

Consulting Firm
Unique Ecology Well IDTag No. AKL 286 (PMW1B)

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

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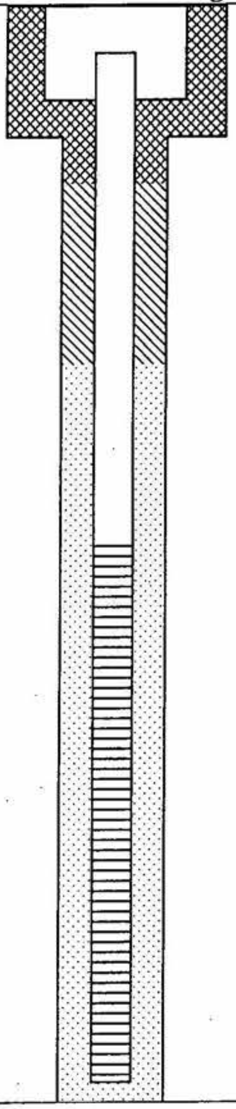
EWM ☒ or WWM ☐
Lat/Long (s, t, r still REQUIRED) Lat Deg Min Sec
Long Deg Min Sec
Tax Parcel No. 0321267005
Cased or Uncased Diameter 2" Static Level
Work/Decommission Start Date 7/21/17
Work/Decommission Completed Date 7/21/17

Construction Design



Well Data

MONUMENT TYPE: stand-up

REMOVED MONUMENT: YES [✓ NO]

PVC BLANK:

SCREEN:

WELL DEPTH: 18'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES / [✓ NO]

☒ WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

Monuments will be removed when area gets excavated

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WA State Department of Ecology (SWRO)

SCALE: 1"= PAGE 1 OF 14

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RESOURCE PROTECTION WELL REPORT

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Construction/Decommission *("x" in box)*
☐ Construction
☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: R066666

Consulting Firm

Unique Ecology Well IDTag No. AKL 289 (PMW3A)

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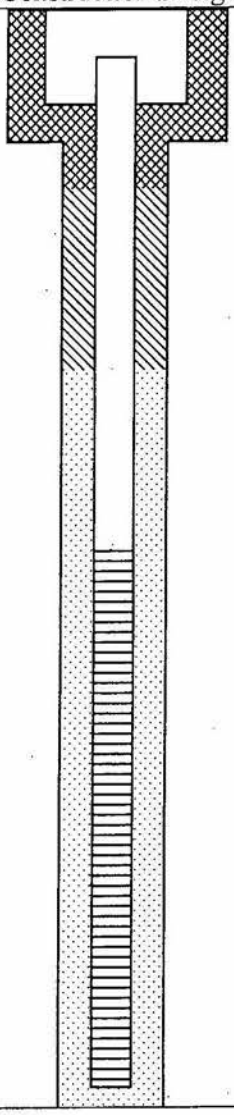
Driller/Engineer /Trainee Signature
Driller or Trainee License No. 2914

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*
☒ Resource Protection
☐ Geotech Soil Boring

Property Owner Port of Tacoma
Site Address 1514 Taylor Way
City Tacoma County Pierce
Location SE1/4-1/4 SW`1/4 Sec 26 Twn 21 R 03
EWM ☒ or WWM ☐
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____
Long Deg ____ Min ____ Sec ____
Tax Parcel No. 0321267005
Cased or Uncased Diameter 2" Static Level
Work/Decommission Start Date 7/21/17
Work/Decommission Completed Date 7/21/17

Construction Design	Well Data	Formation Description
	MONUMENT TYPE: stand-up REMOVED MONUMENT: YES/[✓ NO] PVC BLANK: ____ SCREEN: ____ WELL DEPTH: 7'	FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED REMOVED MONUMENT: YES / [✓ NO] ☑ WELL WAS CHIPPED/GROUTED IN PLACE ☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP Monuments will be removed when area gets excavated

SCALE: 1"= ____ PAGE 5 OF 14

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE44057

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*
☐ Construction
☒ Decommission

Type of Well *("x in box)*
☒ Resource Protection
☐ Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number: R066666

Consulting Firm

Unique Ecology Well IDTag No. AKL 291 (PMW5A)

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

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Name (Print Last, First Name) Don Harnden
Driller/Engineer /Trainee Signature
Driller or Trainee License No. 2914

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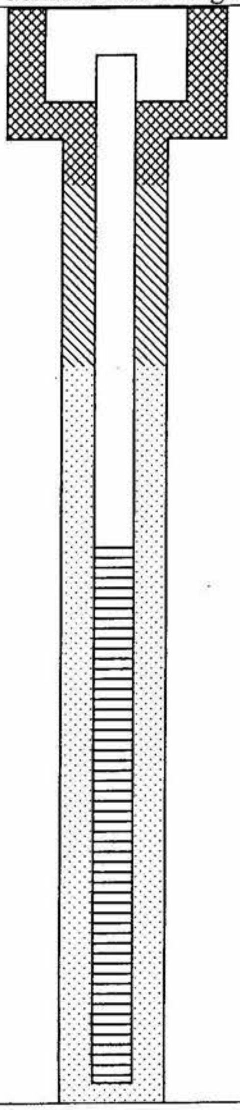
EWM ☒ or WWM ☐
Lat/Long (s, t, r still REQUIRED) Lat Deg Min Sec
Long Deg Min Sec
Tax Parcel No.0321267005
Cased or Uncased Diameter 2" Static Level
Work/Decommission Start Date 7/21/17
Work/Decommission Completed Date 7/21/17

Construction Design



Well Data

MONUMENT TYPE: stand-up

REMOVED MONUMENT: YES [✓ NO]

PVC BLANK:

SCREEN:

WELL DEPTH: 10'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES / [✓ NO]

☒ WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

Monuments will be removed when area gets excavated

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AUG 28 2017
WA State Department of Ecology (SWRO)

SCALE: 1"= PAGE 3 OF 14

ECY 050-12 (Rev. 7/06)

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Field Activities Report

Date:	8/16/17	**Project:**	1514 Taylor Way
Location:	1514 Taylor Way, Tacoma WA		
Project Activity:	Environmental meeting	**Project Manager:**	T. Colligan

Description of site work activities, work locations, equipment used, site conditions, field personnel and visitors, safety and work meetings, and other notable events/occurrences.

Tom Colligan on site to meet with Steve Teel of Ecology for site visit and to discuss stockpiling and sampling.

Also present on site for meeting- Drew Zaborowski, Avenue 55, and Jason Nix, Sierra, and two employees of the earth work contractor (AJ and other).

Also on site was Malcom Drilling, the contractor doing the deep dynamic compaction.

Surchage pile for Building B has already been constructed of soil existing on site and was being rolled. Settlement markers were being installed.

Prior to today FloydSnider had sampled 4 stockpiles of soil that had been brought in to the site from the Block 25W site in Seattle; as follows:

tockpile 1 and Stockpile 2: Together one larger pile totaling an estimated 550-650 truck cubic yards (22-32 truck loads). Four samples collected across perimeter of this larger pile. Sample IDs: SP-1, SP-1b, SP-2, SP-2b

Stockpile 3: One separate pile approx. 300-400 tcy in size. 2 samples collected. SP-3; SP-3b

Stockpile 4: One separate pile approx. 300-400 tcy in size. 2 samples collected. SP-4, SP-4b

Results were received just prior to the meeting with and everything non-detect. I gave OK to contractor that Stockpiles 1-4 could be moved to be used as fill with no conditions. Forwarded the lab report to Steve Teel.

Stockpile 5: One separate stockpile, approx. 350-400 tcy. This was sampled today, and one sample collected after it was decided with Ecology that one sample would be sufficient for stockpiles that were comprised of 20 truckloads of soil (which is approximately 400 tcy, which is roughly 330 in place bank cubic yards for the light sandy soil that has been imported). Results requested by end of day on 8/18 for CVOCs, cPAH, TPH-Dx, arsenic and lead.

Also discussed were options for discontinuing sampling of stockpiles and instead sample the building pad and surcharge after it was constructed. This could reduce need for quick turnaround. Ecology said that is a possibility if we prepare a work plan for their review and approval using Multi-incremental sampling (MIS) of that pile.

Action Items:

FS to prepare work plan for MIS sampling of Building A surcharge pile if we desire to lessen the testing required.

F|S Personnel (sign): Thomas Colligan **Print:** **Tom Colligan** **Date:** **8/18/17**

Attachments (list here):None

Fill Import Tracking Sheet

Project Location: 1514 Taylor Way, Tacoma WA
Prepared by TOM COLLIGAN, Floyd|Snider
Client: Avenue 55

Date Sampled	Quantity (truckloads)	Approx Bank Cubic Yards	Origin	Address	Stockpile ID	Date Submitted to Laboratory	Laboratory Report	Results (CVOCs, cPAH, TPH-Dx, Arsenic, Lead)
8/9/2017	15	242	Block 25	630 Boren Avenue North and 609 Faireview Avenue North	SP-1, Sp-1B	8/14/2017	Fbi 708260	Organics All ND, metals < MTCA
8/10/2017	16	258			Sp-2, Sp-2B	8/14/2017	Fbi 708260	Organics All ND, metals < MTCA
8/11/2017	10	161			SP-3, Sp-3B	8/14/2017	Fbi 708260	Organics All ND, metals < MTCA
8/14/2017	10	161			SP-4, SP-4B	8/14/2017	Fbi 708260	Organics All ND, metals < MTCA
8/15/2017	18	290			SP-5	8/16/2017	Fbi 708316	Organics All ND, metals < MTCA
8/21/2017	20	322			SP-6	8/22/2017	Fbi 708403	Organics All ND, metals < MTCA
8/21/2017	20	322			SP-7	8/22/2017	Fbi 708403	Organics All ND, metals < MTCA
8/21/2017	20	322			SP-8	8/22/2017	Fbi 708403	Organics All ND, metals < MTCA
8/22/2017	20	322			SP-9	8/23/2017	Fbi 708432	Organics All ND, metals < MTCA
8/22/2017	20	322			SP-10	8/23/2017	Fbi 708432	Organics All ND, metals < MTCA
8/22/2017	20	322			SP-11	8/23/2017	Fbi 708432	Organics All ND, metals < MTCA
8/22/2017	20	322			SP-12	8/23/2017	Fbi 708432	Organics All ND, metals < MTCA
8/22/2017	20	322			SP-13	8/23/2017	Fbi 708432	Organics All ND, metals < MTCA
8/23/2017	20	322			SP-14	8/24/2017	Fbi 708495	Organics All ND, metals < MTCA
8/23/2017	20	322			SP-15	8/24/2017	Fbi 708495	Organics All ND, metals < MTCA
8/23/2017	20	322			SP-16	8/24/2017	Fbi 708495	Organics All ND, metals < MTCA
8/25/2017	20	322			SP-17	8/28/2017	Fbi 708495	cPAH TEQ = 0.05 ppm. TPH and CVOCs ND, metals < MTCA
8/25/2017	20	322			SP-18	8/28/2017	Fbi 708495	Organics All ND, metals < MTCA
9/8/2017	21	338	Roosevelt	NE 66th and 12 Ave NE	SP-19	9/12/2017	Fbi 709185	HCID and VOCs all ND
9/8/2017	20	322			SP-20	9/12/2017	Fbi 709185	HCID and VOCs all ND
9/8/2017	20	322	Block 31	Adjacent to Block 25; Intersection of Mercer Street and Boren Ave	SP-21	9/12/2017	Fbi 709186	Organics All ND, metals < MTCA
9/8/2017	20	322			SP-22	9/12/2017	Fbi 709186	Organics All ND, metals < MTCA
9/8/2017	20	322			SP-23	9/12/2017	Fbi 709186	Organics All ND, metals < MTCA
9/8/2017	20	322			SP-24	9/12/2017	Fbi 709186	Organics All ND, metals < MTCA
9/8/2017	20	322			SP-25	9/12/2017	Fbi 709186	Organics All ND, metals < MTCA
9/8/2017	20	322			SP-26	9/12/2017	Fbi 709186	cPAH TEQ = 0.26 ppm. TPH and CVOCs ND, metals < MTCA
9/11/2017	20	322			SP-27	9/12/2017	Fbi 709186	Organics All ND, metals < MTCA
9/14/2017	20	322			SP-28	9/15/2017	Fbi 709262	Organics All ND, metals < MTCA

Fill Import Tracking Sheet

Project Location: 1514 Taylor Way, Tacoma WA
Prepared by TOM COLLIGAN, Floyd|Snider
Client: Avenue 55

Date Sampled	Quantity (truckloads)	Approx Bank Cubic Yards	Origin	Address	Stockpile ID	Date Submitted to Laboratory	Laboratory Report	Results (CVOCs, cPAH, TPH-Dx, Arsenic, Lead)
9/14/2017	20	322	Dexter	333 Dexter Avenue North	SP-29	9/14/2017	Fbi 709291	HCID, cPAH All ND, lead < MTCA
9/14/2017	20	322			SP-30	9/14/2017	Fbi 709291	HCID, cPAH All ND, lead < MTCA
9/14/2017	20	322			SP-31	9/14/2017	Fbi 709291	HCID, cPAH All ND, lead < MTCA
9/18/2017	20	322			SP-32	9/18/2017	Fbi 709291	HCID, cPAH All ND, lead < MTCA
9/18/2017	20	322			SP-33	9/18/2017	Fbi 709291	HCID ND, lead < MTCA
9/18/2017	20	322			SP-34	9/18/2017	Fbi 709291	HCID ND, lead < MTCA
9/18/2017	20	322			SP-35	9/18/2017	Fbi 709291	HCID ND, lead < MTCA
9/18/2017	20	322			SP-36	9/18/2017	Fbi 709291	HCID ND, lead < MTCA
9/18/2017	20	322			SP-37	9/18/2017	Fbi 709291	HCID ND, lead < MTCA
9/18/2017	20	322			SP-38	9/18/2017	Fbi 709291	HCID ND, lead < MTCA
9/18/2017	20	322			SP-39	9/18/2017	Fbi 709291	HCID ND, lead < MTCA
9/18/2017	20	322			SP-40	9/18/2017	Fbi 709291	HCID ND, lead < MTCA
9/19/2017	20	322			SP-41	9/19/2017	Fbi 709367	HCID ND, lead < MTCA
9/19/2017	20	322			SP-42	9/19/2017	Fbi 709367	HCID ND, lead < MTCA
9/19/2017	20	322			SP-43	9/19/2017	Fbi 709367	HCID ND, lead < MTCA
9/19/2017	20	322			SP-44	9/19/2017	Fbi 709367	HCID ND, lead < MTCA
9/19/2017	20	322			SP-45	9/19/2017	Fbi 709367	HCID ND, lead < MTCA
9/19/2017	20	322			SP-46	9/19/2017	Fbi 709367	HCID ND, lead < MTCA
TOTAL	890	14,329						

Field Activities Report

Date:	February 15, 2018	**Project:**	Ave 55-Taylor Way
Location:	1514 Taylor Way, Tacoma, WA		
Project Activity:	Soil Vapor Survey	**Project Manager:**	Tom Colligan

Description of site work activities, work locations, equipment used, site conditions, field personnel and visitors, safety and work meetings, and other notable events/occurrences.

Vapor sampling was performed on February 15, 2018. The sampling was preceded by 7 days of dry weather, followed by light rain approximately 24 hours prior to sampling. Barometric pressure was stable and the weather was dry on the day of sampling. Drilling was performed by ESN with oversight by Floyd|Snider.

Site conditions were muddy and maneuvering was difficult. However, standing water was present only in the designated stormwater pond. It is likely that survey locations in the main drive aisle (i.e. not on building pads) will not be under standing water and will be accessible for sampling (with minimal relocation) after similar dry weather stretches in the future.

Sampling was focused on building B, where surcharge loading has been completed and a building permit is forthcoming. Additional samples were collected in accessible areas of the building A pad where surcharge piles had already been removed (refer to attached field figure). At all locations, the depth to groundwater was measured by probing with closed point rods to 10 feet bgs and measuring the water level in the resulting borehole. Sample points were set 6 inches to 1 foot above the water table.

The building B pad height was approximately 5 feet above the surrounding ground surface. Groundwater was encountered between 4 and 4.5 feet bgs (9 to 9.5 feet below pad elevation); refer to the figure for groundwater depths. Methane survey sample points were collected via the post-run tubing methodology, with the post-run tubing point set 0.5 to 1 foot above the water table, sealed with hydrated bentonite, and allowed to equilibrate 2 hours prior to sampling. Helium leak detection was performed at one location (#17) per the work plan. Leak detection was performed by installing a tee in the sample tubing inside the shroud, downstream from the purge pump. After verifying that helium content was ~30% inside the shroud, the helium detector was used to measure helium at one outlet of the tee while the GEM 2000 landfill gas detector was used to measure methane at the other outlet. The soil vapor was also screened with a PID. Methane and VOCs were not detected at either survey location (refer to figure for results). At the designated VOC sample location, a screened implant was set one foot above the water table and constructed with a sand pack and bentonite/cement seal per the work plan. This location will be sampled after being allowed to equilibrate for the required time, as weather conditions permit.

The building A pad height was approximately 3 feet above the surrounding ground surface. Groundwater was encountered at depths ranging from 1 foot bgs in the middle-north portion of the pad to 6 feet bgs in the eastern portion. Methane survey samples were collected using the post-run tubing method at three locations in the central portion of the pad and a screened implant was installed at the designated VOC sample location. Due to time constraints, implants were also installed at the remaining two accessible methane survey points for future sampling. Methane and VOCs were not detected at any locations on Building A.

Unsatisfactory Conditions & Recommended Changes:

F|S Personnel (sign):

Print: **Kristin Anderson** **Date:** **2/16/2018**

Attachments (list here):

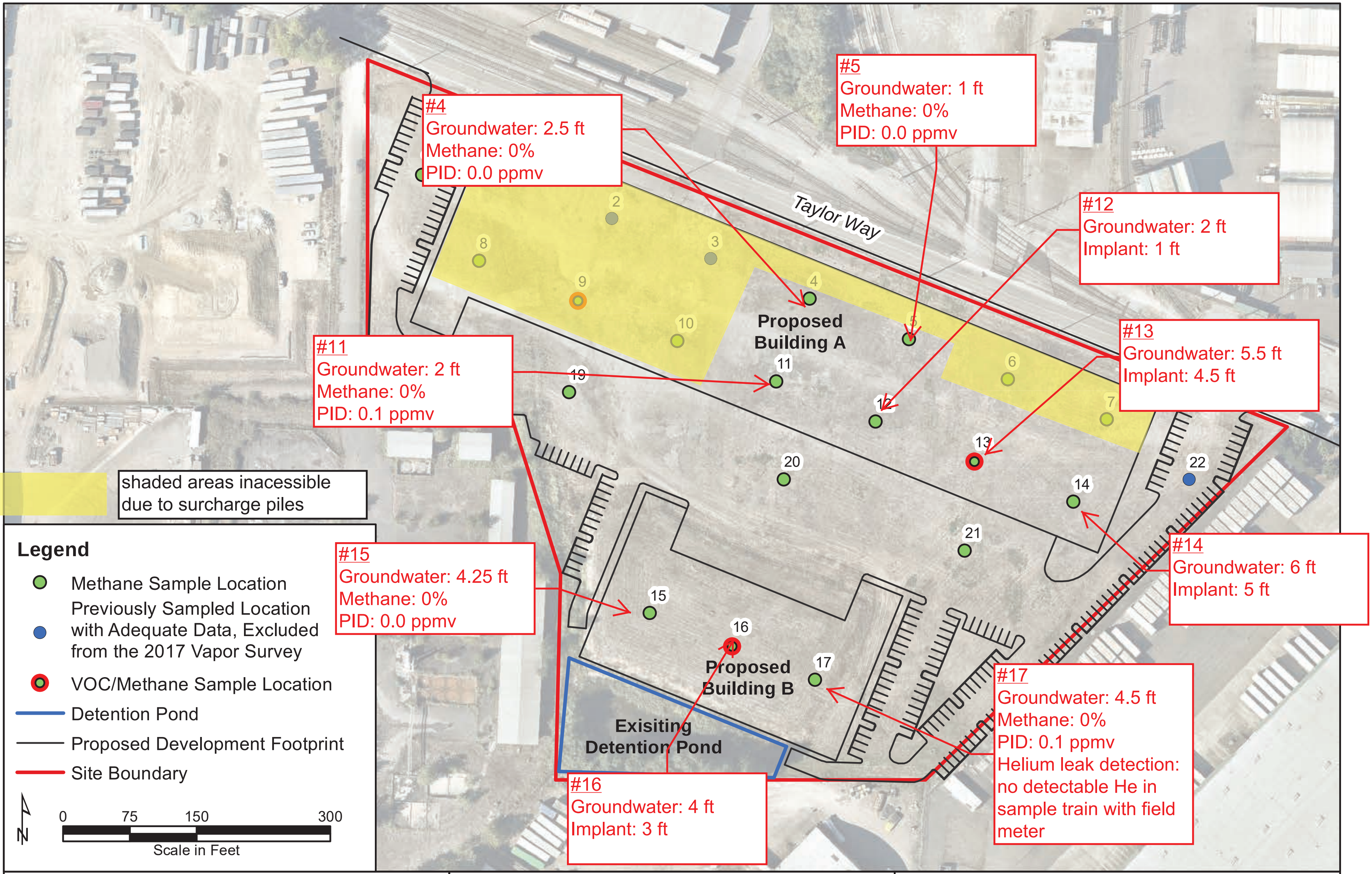
- Field Map Markup for 2.18.2018

Caption: Standing water in stormwater pond (photo taken on site visit 2/13)

Caption: Drilling on building B pad, muddy conditions

Caption: Capped surface tubing to vapor sample implant

Caption: Purging post-run tubing sample point with peristaltic pump



#4
Groundwater: 2.5 ft
Methane: 0%
PID: 0.0 ppmv

#5
Groundwater: 1 ft
Methane: 0%
PID: 0.0 ppmv

#12
Groundwater: 2 ft
Implant: 1 ft

#11
Groundwater: 2 ft
Methane: 0%
PID: 0.1 ppmv

#13
Groundwater: 5.5 ft
Implant: 4.5 ft

#14
Groundwater: 6 ft
Implant: 5 ft

#15
Groundwater: 4.25 ft
Methane: 0%
PID: 0.0 ppmv

#16
Groundwater: 4 ft
Implant: 3 ft

#17
Groundwater: 4.5 ft
Methane: 0%
PID: 0.1 ppmv
Helium leak detection: no detectable He in sample train with field meter

🟨 shaded areas inaccessible due to surcharge piles

Legend

- ● Methane Sample Location
- ● Previously Sampled Location with Adequate Data, Excluded from the 2017 Vapor Survey
- ◉ VOC/Methane Sample Location
- — Detention Pond
- — Proposed Development Footprint
- — Site Boundary

FLOYD | SNIDER
strategy ▪ science ▪ engineering

Proposed Sampling Plan for
the 1514 Taylor Way Site
1514 Taylor Way Development
Tacoma, Washington

Figure 1
Vapor Survey Sample Locations

I:\GIS\Projects\Ave55-TaylorWay\MXD\Figure 1 Vapor Survey Sample Locations.mxd
4/7/2017

Field Activities Report

Date:	September 10, 2018	**Project:**	Ave 55 – Taylor Way
Location:	1514 Taylor Way, Tacoma, Wa		
Project Activity:	Installation of Sub-Slab Vapor Pins in Buildings A and B	**Project Manager:**	Tom Colligan

Description of site work activities, work locations, equipment used, site conditions, field personnel and visitors, safety and work meetings, and other notable events/occurrences.

On September 10, 2018, 14 sub-slab Vapor Pins, VP-1 through VP-14, were installed at the site in order to assess vapor risk to occupants in the buildings. 8 soil vapor pins were installed in Building A and 6 were installed in building B (see field figures below). The slab varied in thickness from 7 to 9 inches thick. Stainless steel Vapor Pins were installed using a 1.5 extensions and capped with stainless steel secured covers that were installed to be flushed with the surrounding concrete surface.

The first Vapor Pin, VP-1, was installed at approximately 0910 am, and the last Vapor Pin VP-13 was installed at 1225pm. All Vapor Pin locations will be allowed to equilibrate for 48 hrs prior to sampling soil gas. The locations for four of the Vapor Pin (VP-9, VP-10, VP-12, and VP-13) were adjusted by Ecology. The attached figures show the final locations. All locations were in accordance with final Ecology approved locations, and no locations were needed to be adjusted in the field. The attached field figures show the final locations.

Floyd|Snider will be onsite September 12, 2018 to collect soil gas from all 14 vapor pin locations.

Unsatisfactory Conditions & Recommended Changes:

None.

F|S Personnel (sign): **Print:** **Gabriel Cisneros** **Date:** **09/11/2018**

Attachments:

Draft field maps that shows the vapor pin locations.

Photographs:

Side view of the slab in Building A with Vapor Pin for scale.

Installation of a Vapor Pin.

Hammering in Vapor Pin VP-14.

Vapor Pin VP-14 prior to capping and installing the flush-mounted cover.

Vapor Pin VP-10 in Ecology adjusted location with stainless-steel cover. VP-10 is adjacent to the northeast office room in Building B. Looking west-northwest

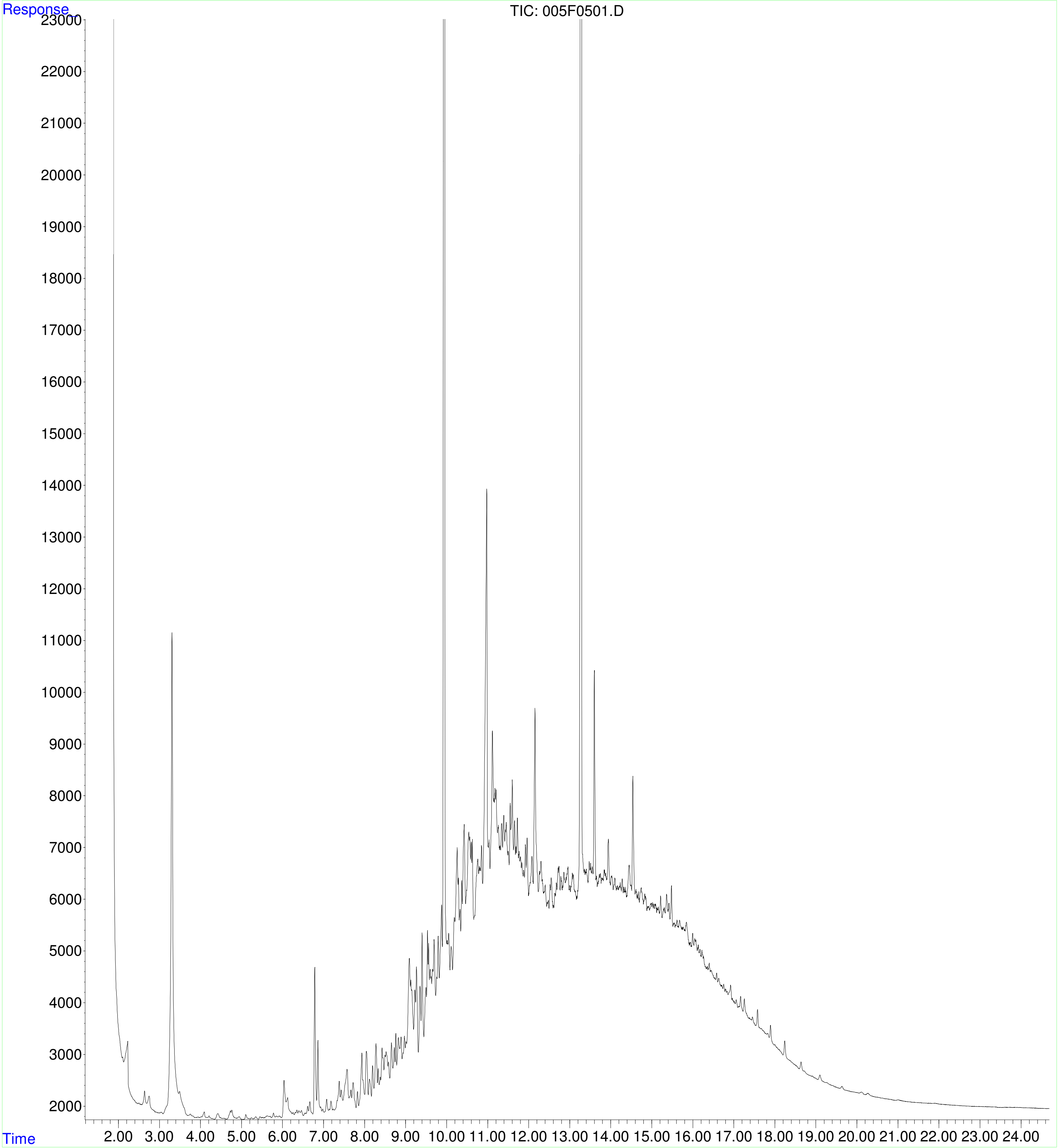
Vapor Pins VP-12 and VP-13 adjacent to northwest office in Building B in Ecology adjusted locations. Looking north-northwest

1514 Taylor Way Development

Interim Action Completion Report

Appendix B
Laboratory Reports

```
File       :C:\GC-23\Data\123016\GC-23123016 41\005F0501.D
Operator   : WC
Acquired   : 30-Dec-2016, 15:27:56 using AcqMethod DX020216.M
Instrument :   HP5890
Sample Name: 1612278-001B
Misc Info  :
Vial Number: 5
```



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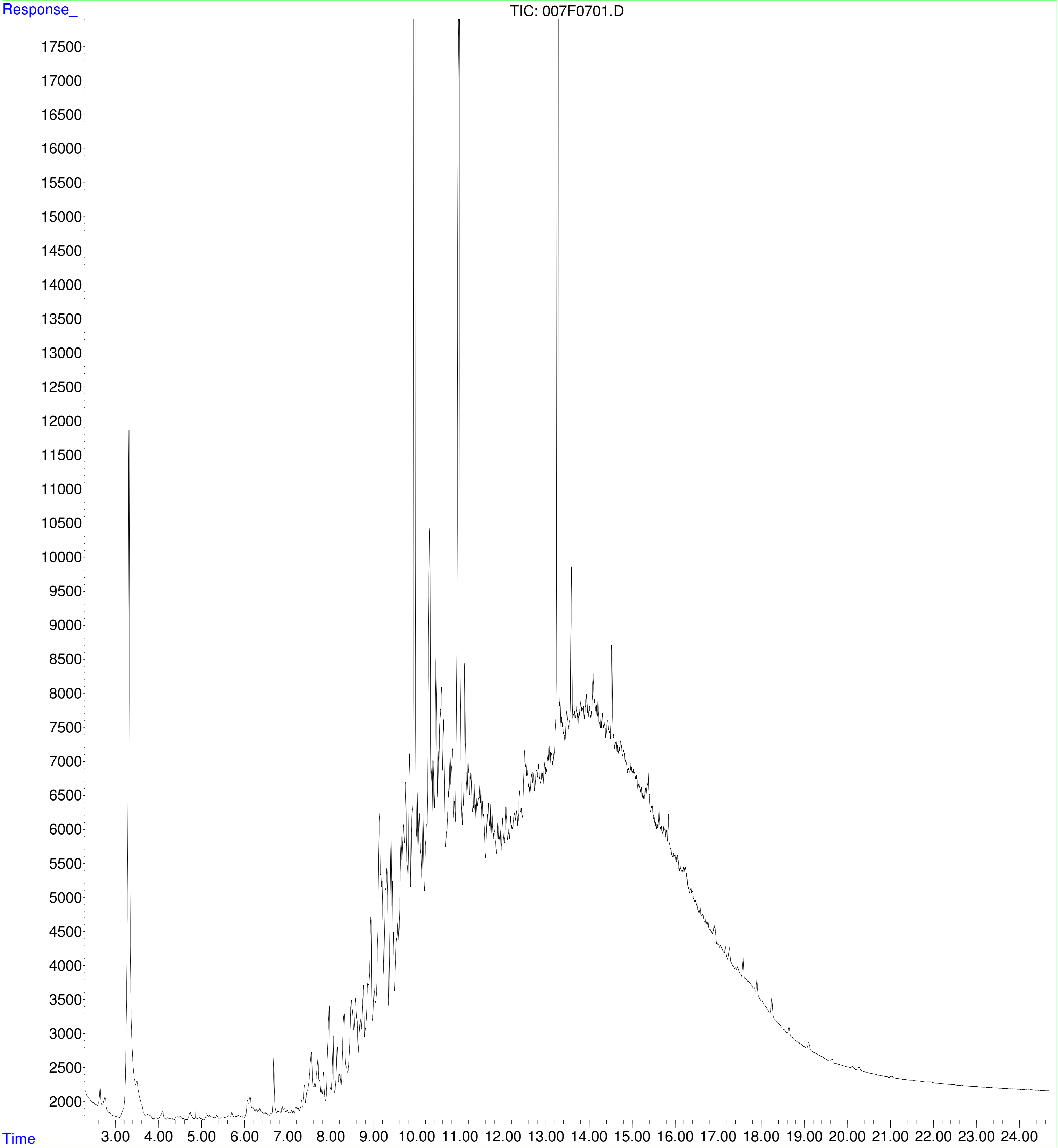
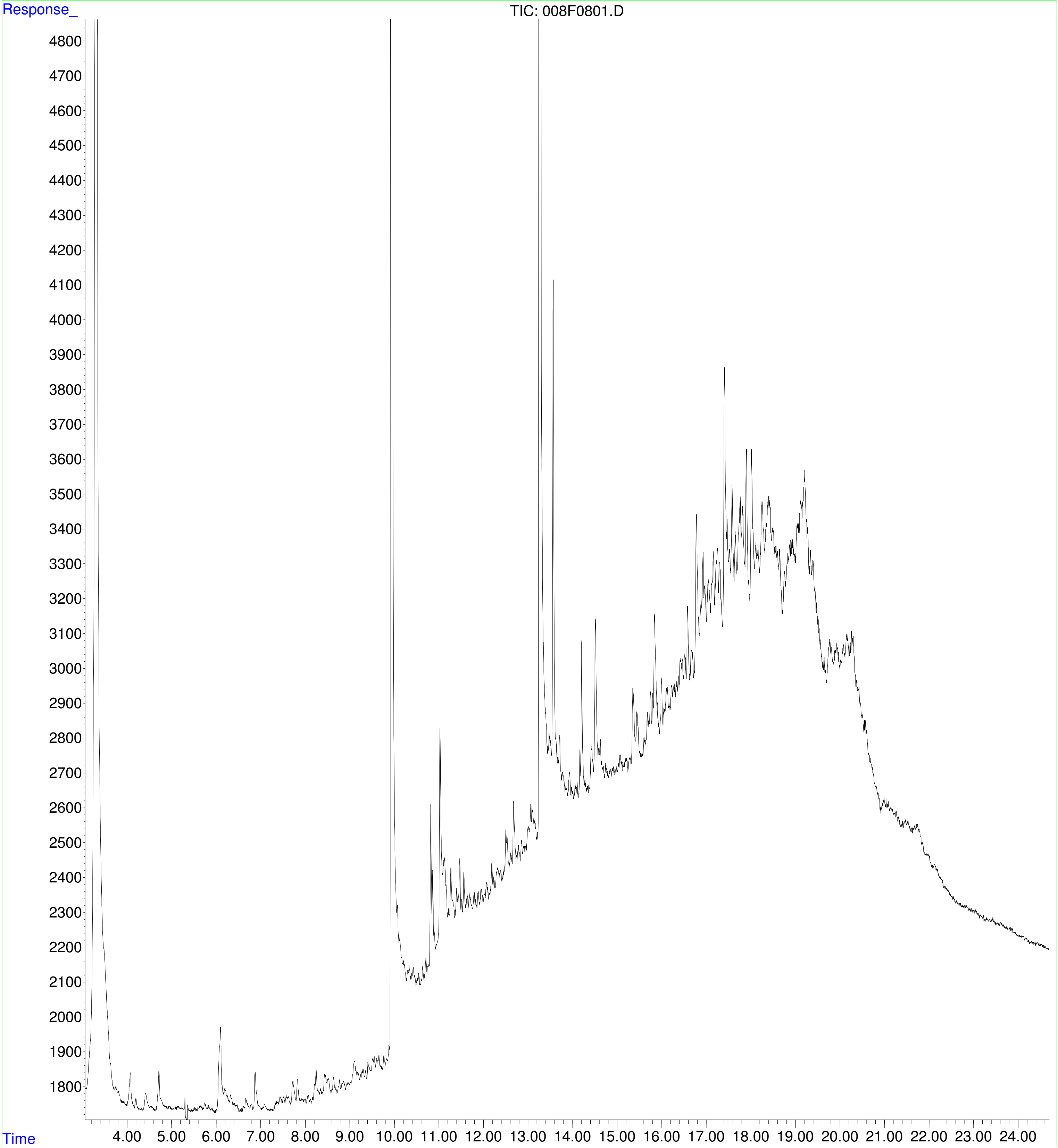
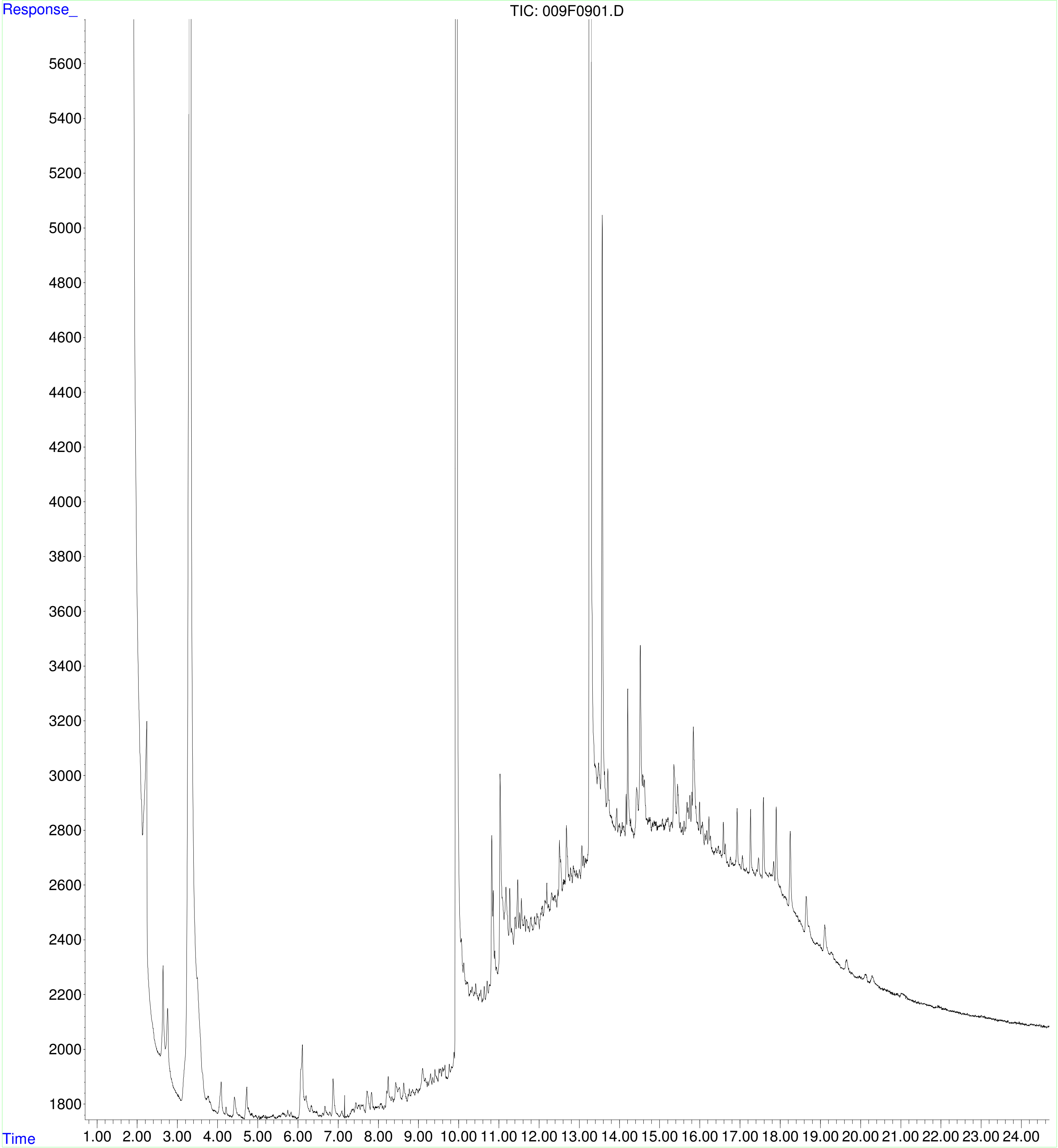
File       :C:\GC-23\Data\123016\GC-23123016 41\007F0701.D
Operator   : WC
Acquired   : 30-Dec-2016, 16:29:34 using AcqMethod DX020216.M
Instrument :   HP5890
Sample Name: 1612278-002B
Misc Info  :
Vial Number: 7
```



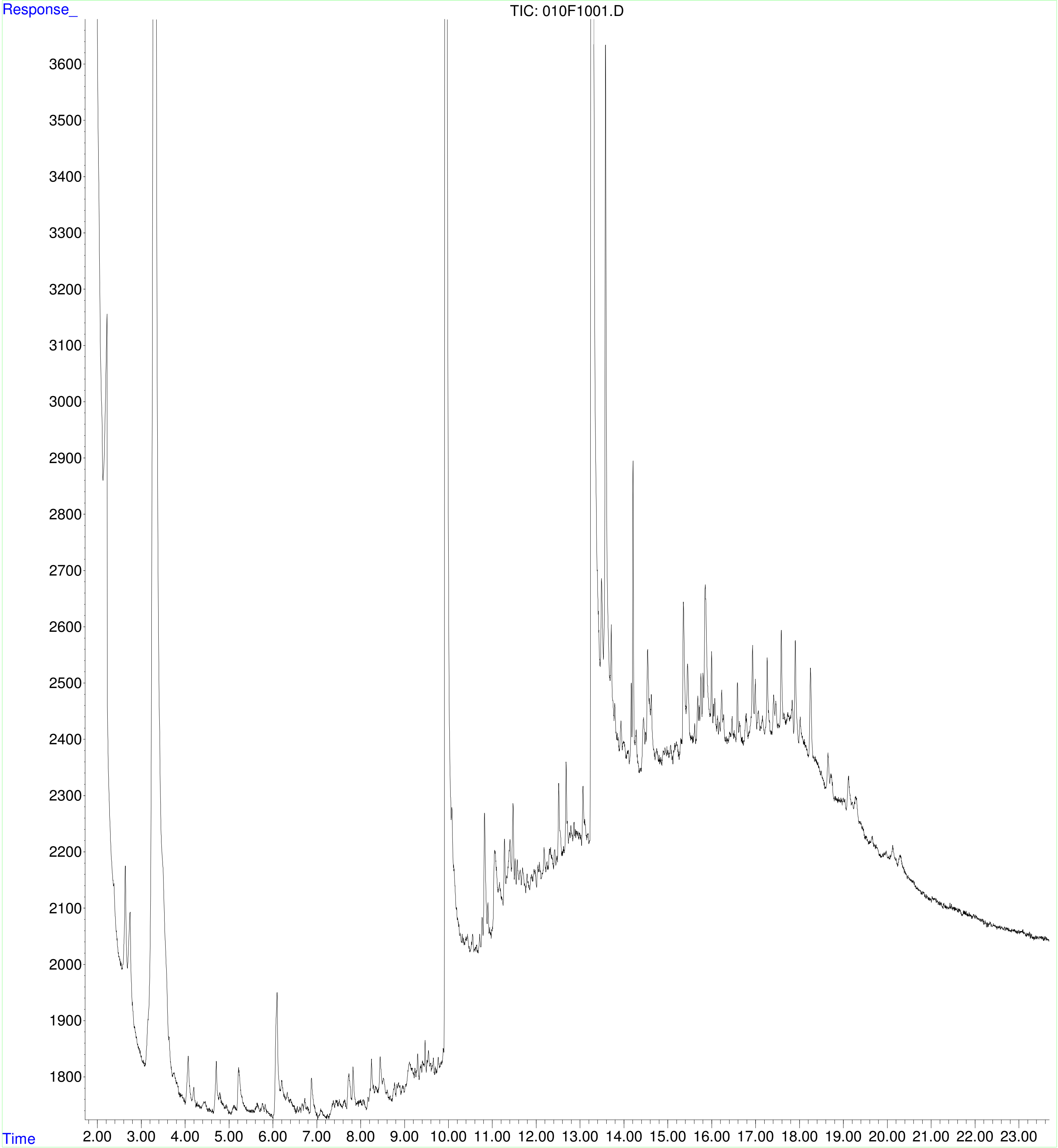
```
File       :C:\GC-23\Data\123016\GC-23123016 41\008F0801.D
Operator   : WC
Acquired   : 30-Dec-2016, 17:00:24 using AcqMethod DX020216.M
Instrument :   HP5890
Sample Name: 1612278-003B
Misc Info  :
Vial Number: 8
```



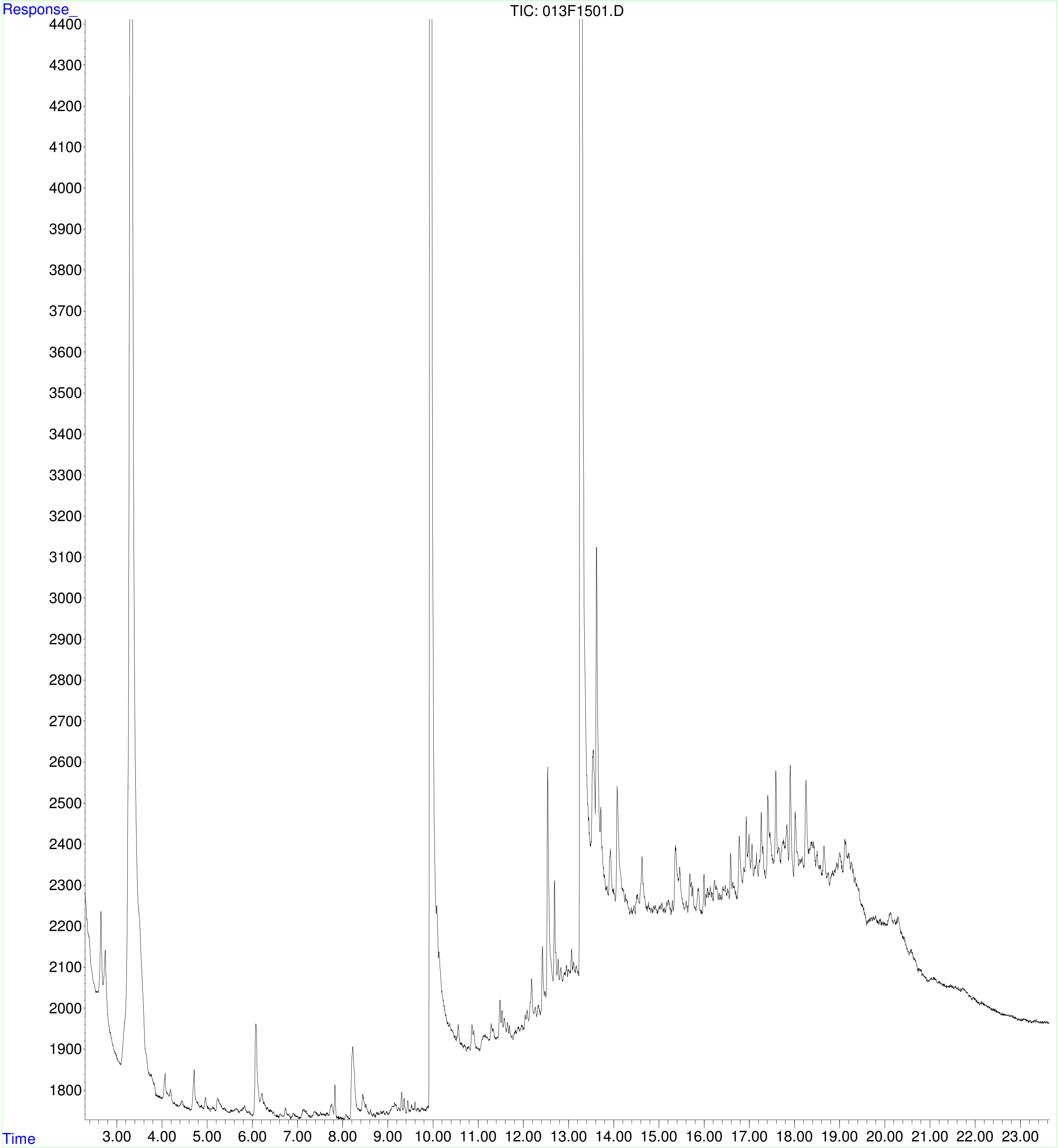
```
File       :C:\GC-23\Data\123016\GC-23123016 41\009F0901.D
Operator   : WC
Acquired   : 30-Dec-2016, 17:31:13 using AcqMethod DX020216.M
Instrument :   HP5890
Sample Name: 1612278-004B
Misc Info  :
Vial Number: 9
```



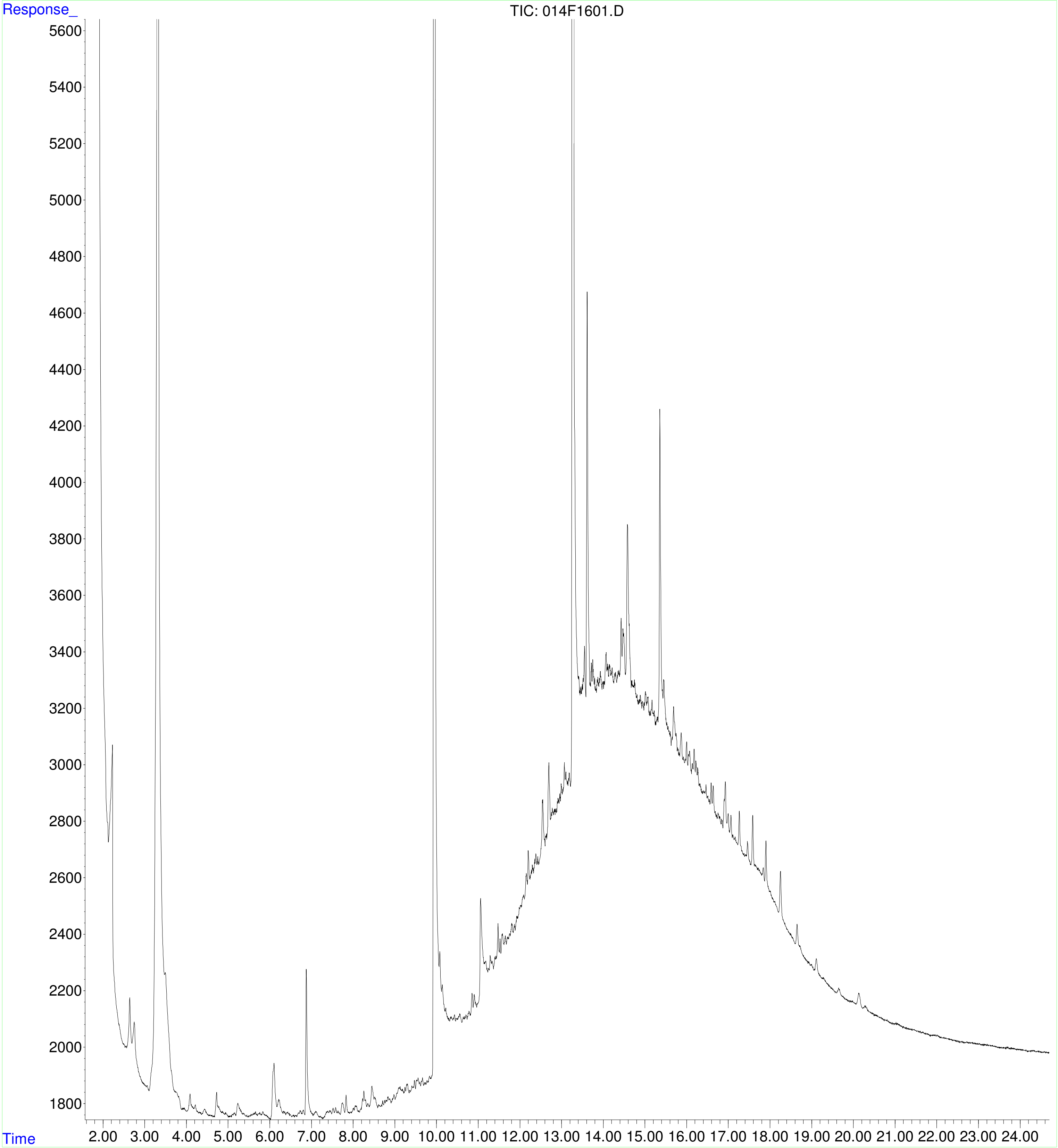
```
File        :C:\GC-23\Data\123016\GC-23123016 41\010F1001.D
Operator    : WC
Acquired    : 30-Dec-2016, 18:01:59 using AcqMethod DX020216.M
Instrument :   HP5890
Sample Name: 1612278-005B
Misc Info  :
Vial Number: 10
```



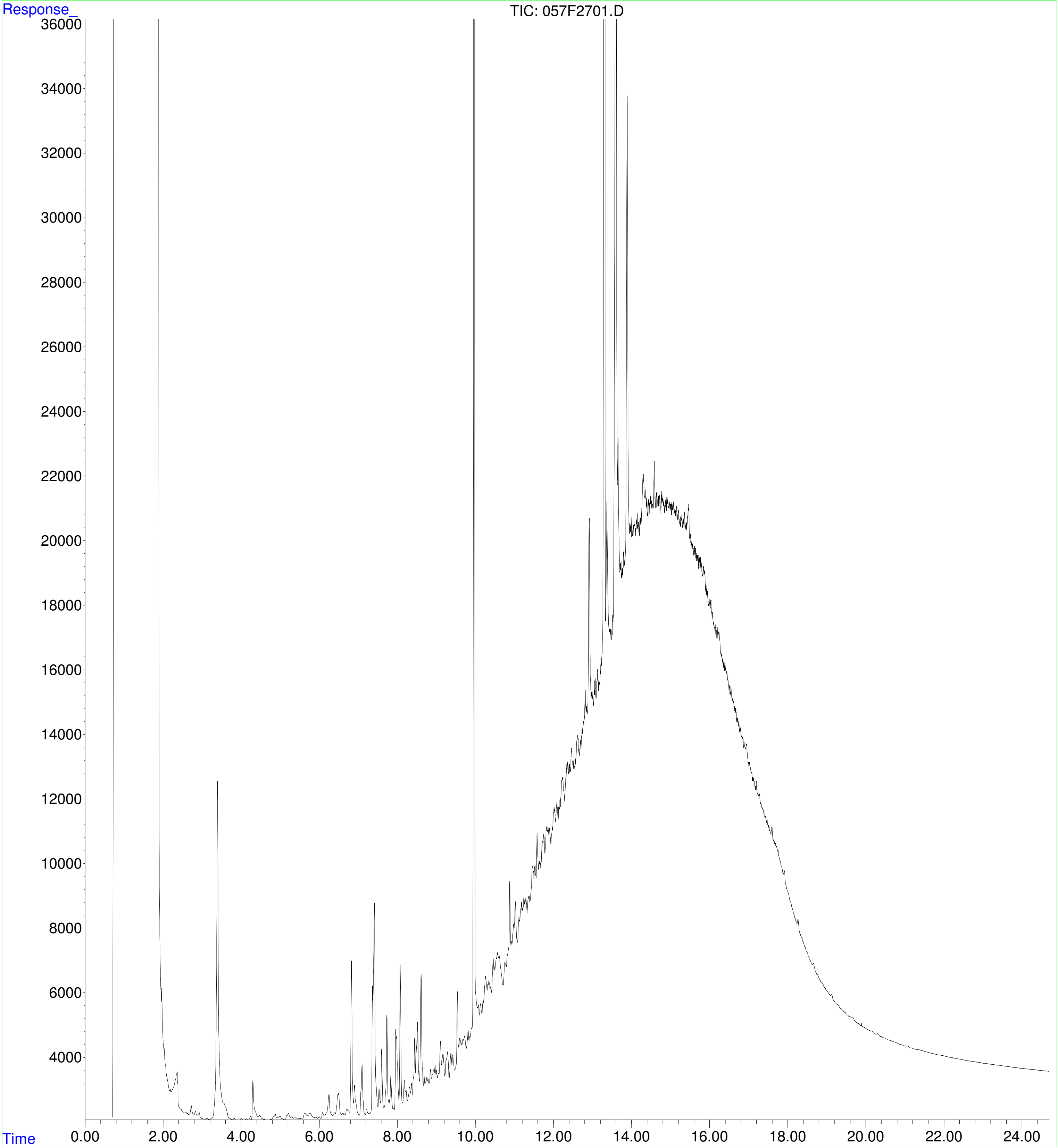
```
File        :C:\GC-23\Data\123016\GC-23123016 41\013F1501.D
Operator    : WC
Acquired    : 30-Dec-2016, 20:35:05 using AcqMethod DX020216.M
Instrument :   HP5890
Sample Name: 1612278-006B
Misc Info  :
Vial Number: 13
```



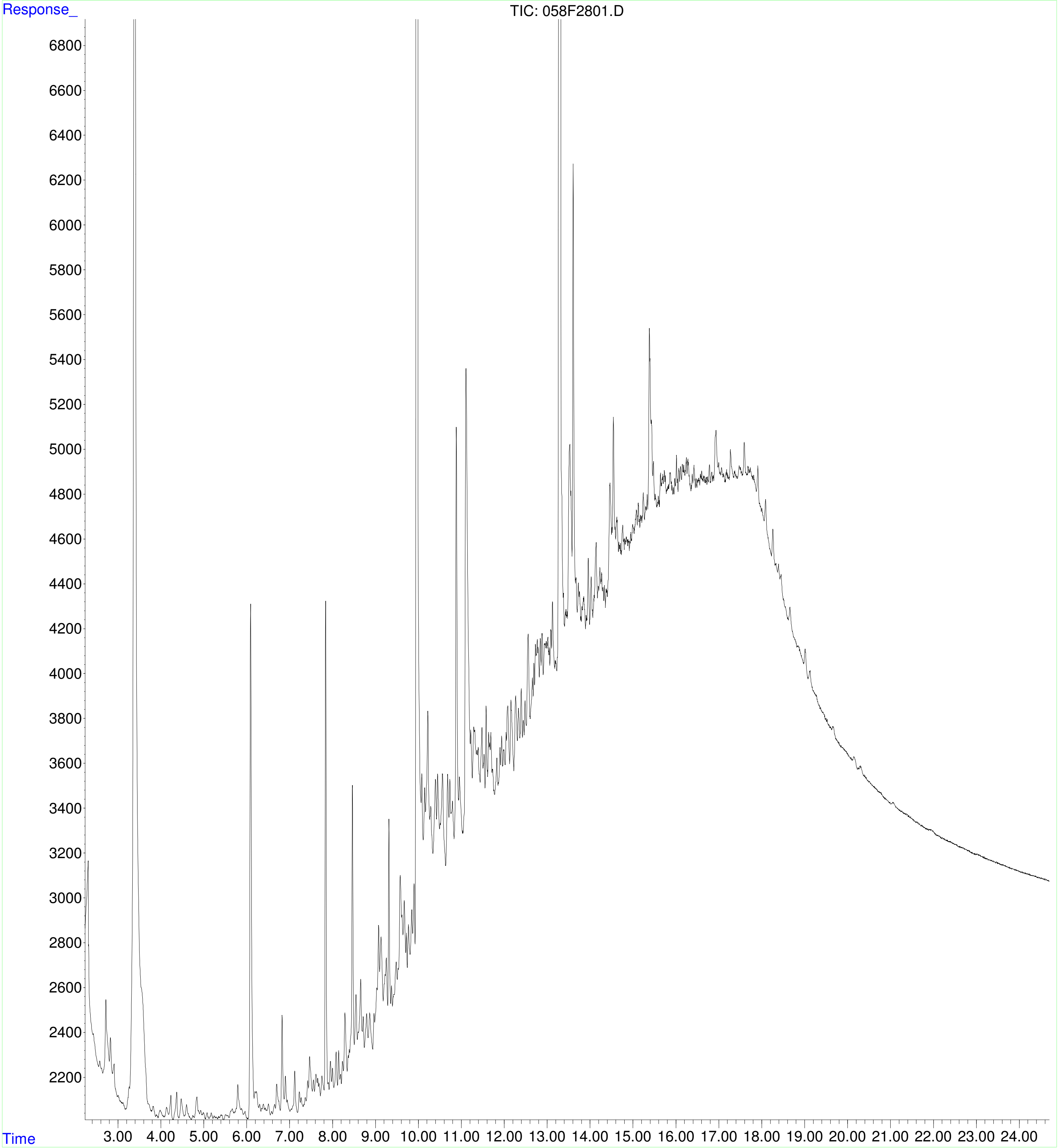
```
File       :C:\GC-23\Data\123016\GC-23123016 41\014F1601.D
Operator   : WC
Acquired   : 30-Dec-2016, 21:05:33 using AcqMethod DX020216.M
Instrument :   HP5890
Sample Name: 1612278-007B
Misc Info  :
Vial Number: 14
```



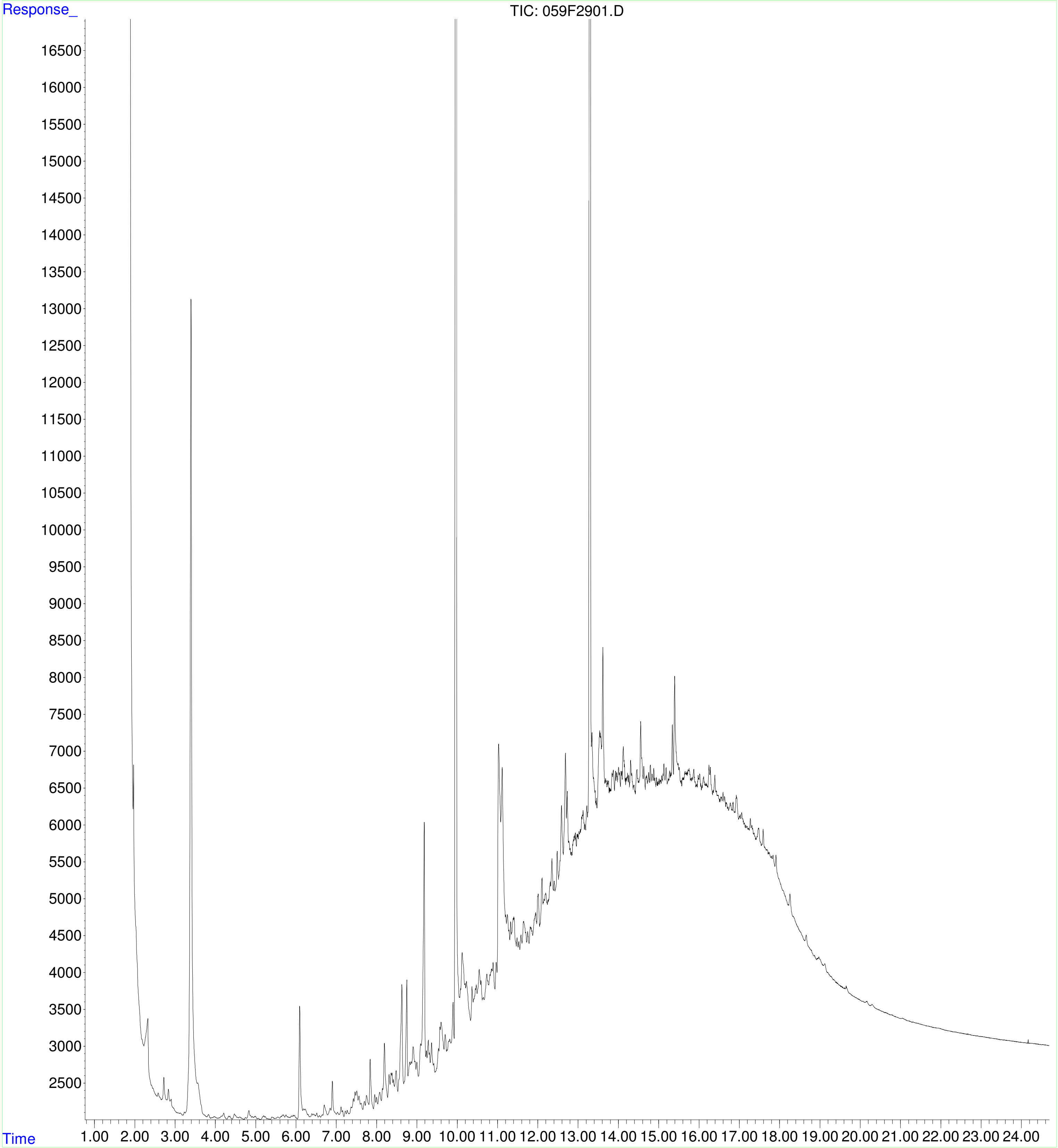
```
File       :C:\GC-23\Data\123016\GC-23010316 36\057F2701.D
Operator   : WC
Acquired   : 03-Jan-2017, 23:02:05 using AcqMethod DX020216.M
Instrument :   HP5890
Sample Name: 1612278-008B
Misc Info  :
Vial Number: 57
```



```
File        :C:\GC-23\Data\123016\GC-23010316 36\058F2801.D
Operator    : WC
Acquired    : 03-Jan-2017, 23:32:08 using AcqMethod DX020216.M
Instrument :   HP5890
Sample Name: 1612278-010B
Misc Info  :
Vial Number: 58
```



```
File        :C:\GC-23\Data\123016\GC-23010316 36\059F2901.D
Operator    : WC
Acquired    : 04-Jan-2017, 00:02:14 using AcqMethod DX020216.M
Instrument :   HP5890
Sample Name: 1612278-011B
Misc Info  :
Vial Number: 59
```



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

Floyd | Snider
Tom Colligan
601 Union St., Suite 600
Seattle, WA 98101

RE: Ave 55 - Taylor Way
Work Order Number: 1612278

January 09, 2017

Attention Tom Colligan:

Fremont Analytical, Inc. received 12 sample(s) on 12/28/2016 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Dissolved Gases by RSK-175
Dissolved Mercury by EPA Method 245.1
Dissolved Metals by EPA Method 200.8
Gasoline by NWTPH-Gx
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B
Semi-Volatile Organic Compounds by EPA Method 8270
Volatile Organic Compounds by EPA Method 8260C

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,

Michael C. Ridgeway

Mike Ridgeway
Laboratory Director

DoD/ELAP Certification #L2371, ISO/IEC 17025:2005
ORELAP Certification: WA 100009-007 (NELAP Recognized)

CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way
Work Order: 1612278

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1612278-001	TWP16-PMW1A	12/28/2016 10:20 AM	12/28/2016 5:24 PM
1612278-002	TWP16-PMW1B	12/28/2016 10:30 AM	12/28/2016 5:24 PM
1612278-003	TWP16-PMW2B	12/28/2016 12:00 PM	12/28/2016 5:24 PM
1612278-004	TWP16-PMW2X	12/28/2016 12:05 PM	12/28/2016 5:24 PM
1612278-005	TWP16-PMW2A	12/28/2016 12:00 PM	12/28/2016 5:24 PM
1612278-006	TWP16-PMW3A	12/28/2016 1:20 PM	12/28/2016 5:24 PM
1612278-007	TWP16-PMW3B	12/28/2016 1:15 PM	12/28/2016 5:24 PM
1612278-008	TWP16-PMW4A	12/28/2016 2:25 PM	12/28/2016 5:24 PM
1612278-009	TWP16-PMW4B	12/28/2016 2:45 PM	12/28/2016 5:24 PM
1612278-010	TWP16-PMW5A	12/28/2016 3:35 PM	12/28/2016 5:24 PM
1612278-011	TWP16-PMW5B	12/28/2016 4:00 PM	12/28/2016 5:24 PM
1612278-012	Trip Blank	12/20/2016 2:59 PM	12/28/2016 5:24 PM

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

Case Narrative

WO#: **1612278**
Date: **1/9/2017**

CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

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

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. 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 and the MS/MSD 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.

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 (<20%RSD, <20% Drift or minimum RRF)
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
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Fremont Analytical

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 10:20:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-001
Matrix: Groundwater
Client Sample ID: TWP16-PMW1A

Dissolved Gases by RSK-175

Batch ID: R33761 Analyst: BC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Methane	7.79	0.100	DE	mg/L	20	1/6/2017 12:01:00 PM

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	49.9		µg/L	1	12/30/2016 3:27:56 PM
Diesel Range Organics (C12-C24)	483	49.9		µg/L	1	12/30/2016 3:27:56 PM
Heavy Oil	943	99.7		µg/L	1	12/30/2016 3:27:56 PM
Surr: 2-Fluorobiphenyl	77.9	50-150		%Rec	1	12/30/2016 3:27:56 PM
Surr: o-Terphenyl	83.9	50-150		%Rec	1	12/30/2016 3:27:56 PM

NOTES:
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
2-Chlorophenol	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
1,3-Dichlorobenzene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
1,4-Dichlorobenzene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
1,2-Dichlorobenzene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Benzyl alcohol	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Bis(2-chloroethyl) ether	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
2-Methylphenol (o-cresol)	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Hexachloroethane	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
N-Nitrosodi-n-propylamine	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Nitrobenzene	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
Isophorone	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
4-Methylphenol (p-cresol)	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
2-Nitrophenol	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
2,4-Dimethylphenol	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Bis(2-chloroethoxy)methane	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
2,4-Dichlorophenol	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
1,2,4-Trichlorobenzene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Naphthalene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
4-Chloroaniline	ND	4.95		µg/L	1	1/5/2017 5:35:17 PM
Hexachlorobutadiene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
4-Chloro-3-methylphenol	ND	4.95		µg/L	1	1/5/2017 5:35:17 PM
2-Methylnaphthalene	0.593	0.495	Q	µg/L	1	1/5/2017 5:35:17 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 10:20:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-001
Matrix: Groundwater
Client Sample ID: **TWP16-PMW1A**

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825   Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1-Methylnaphthalene	0.777	0.495		µg/L	1	1/5/2017 5:35:17 PM
Hexachlorocyclopentadiene	ND	0.991	Q	µg/L	1	1/5/2017 5:35:17 PM
2,4,6-Trichlorophenol	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
2,4,5-Trichlorophenol	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
2-Chloronaphthalene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
2-Nitroaniline	ND	4.95		µg/L	1	1/5/2017 5:35:17 PM
Acenaphthene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Dimethylphthalate	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
2,6-Dinitrotoluene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Acenaphthylene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
2,4-Dinitrophenol	ND	1.98	Q	µg/L	1	1/5/2017 5:35:17 PM
Dibenzofuran	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
2,4-Dinitrotoluene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
4-Nitrophenol	ND	4.95		µg/L	1	1/5/2017 5:35:17 PM
Fluorene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
4-Chlorophenyl phenyl ether	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Diethylphthalate	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
4,6-Dinitro-2-methylphenol	ND	4.95	Q	µg/L	1	1/5/2017 5:35:17 PM
4-Bromophenyl phenyl ether	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Hexachlorobenzene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Pentachlorophenol	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
Phenanthrene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Anthracene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Carbazole	ND	4.95		µg/L	1	1/5/2017 5:35:17 PM
Di-n-butyl phthalate	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Fluoranthene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Pyrene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Benzyl Butylphthalate	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
bis(2-Ethylhexyl)adipate	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Benz[a]anthracene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Chrysene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Bis(2-ethylhexyl) phthalate	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Di-n-octyl phthalate	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Benzo (b) fluoranthene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Benzo (k) fluoranthene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Benzo[a]pyrene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Indeno (1,2,3-cd) pyrene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Dibenzo (a,h) anthracene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Benzo (g,h,I) perylene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 10:20:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-001
Matrix: Groundwater
Client Sample ID: TWP16-PMW1A

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Surr: 2,4,6-Tribromophenol	96.5	5-127		%Rec	1	1/5/2017 5:35:17 PM
Surr: 2-Fluorobiphenyl	61.1	24.1-139		%Rec	1	1/5/2017 5:35:17 PM
Surr: Nitrobenzene-d5	65.5	21.9-139		%Rec	1	1/5/2017 5:35:17 PM
Surr: Phenol-d6	62.3	10.3-128		%Rec	1	1/5/2017 5:35:17 PM
Surr: p-Terphenyl	60.4	25.2-132		%Rec	1	1/5/2017 5:35:17 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	55.1	50.0		µg/L	1	1/4/2017 1:40:34 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 1:40:34 PM
Surr: 4-Bromofluorobenzene	96.3	65-135		%Rec	1	1/4/2017 1:40:34 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 1:40:34 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 1:40:34 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 1:40:34 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 1:40:34 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-001
Client Sample ID: **TWP16-PMW1A**

Collection Date: 12/28/2016 10:20:00 AM
Matrix: Groundwater

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 1:40:34 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 1:40:34 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 1:40:34 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 1:40:34 PM
Surr: Dibromofluoromethane	101	45.4-152		%Rec	1	1/4/2017 1:40:34 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 1:40:34 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 10:20:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-001
Matrix: Groundwater
Client Sample ID: TWP16-PMW1A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by EPA Method 8260C				Batch ID: 15802		Analyst: NG
Surr: 1-Bromo-4-fluorobenzene	96.7	64.2-128		%Rec	1	1/4/2017 1:40:34 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:17:29 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	1.83	1.00		µg/L	1	1/3/2017 12:41:57 PM
Barium	357	0.500		µg/L	1	1/3/2017 12:41:57 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 12:41:57 PM
Chromium	0.614	0.500		µg/L	1	1/3/2017 12:41:57 PM
Copper	ND	0.500		µg/L	1	1/3/2017 12:41:57 PM
Lead	ND	0.500		µg/L	1	1/3/2017 12:41:57 PM
Nickel	ND	0.500		µg/L	1	1/3/2017 12:41:57 PM
Zinc	2.44	1.50		µg/L	1	1/3/2017 12:41:57 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:16:00 AM

Client: Floyd | Snider
Collection Date: 12/28/2016 10:30:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-002
Matrix: Groundwater
Client Sample ID: **TWP16-PMW1B**

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.3		µg/L	1	12/30/2016 4:29:34 PM
Diesel Range Organics (C12-C24)	416	50.3		µg/L	1	12/30/2016 4:29:34 PM
Heavy Oil	1,170	101		µg/L	1	12/30/2016 4:29:34 PM
Surr: 2-Fluorobiphenyl	71.2	50-150		%Rec	1	12/30/2016 4:29:34 PM
Surr: o-Terphenyl	70.9	50-150		%Rec	1	12/30/2016 4:29:34 PM

NOTES:
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
2-Chlorophenol	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
1,3-Dichlorobenzene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
1,4-Dichlorobenzene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
1,2-Dichlorobenzene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Benzyl alcohol	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Bis(2-chloroethyl) ether	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
2-Methylphenol (o-cresol)	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Hexachloroethane	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
N-Nitrosodi-n-propylamine	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Nitrobenzene	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
Isophorone	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
4-Methylphenol (p-cresol)	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
2-Nitrophenol	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
2,4-Dimethylphenol	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Bis(2-chloroethoxy)methane	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
2,4-Dichlorophenol	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
1,2,4-Trichlorobenzene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Naphthalene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
4-Chloroaniline	ND	4.96		µg/L	1	1/5/2017 5:56:17 PM
Hexachlorobutadiene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
4-Chloro-3-methylphenol	ND	4.96		µg/L	1	1/5/2017 5:56:17 PM
2-Methylnaphthalene	ND	0.496	Q	µg/L	1	1/5/2017 5:56:17 PM
1-Methylnaphthalene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Hexachlorocyclopentadiene	ND	0.992	Q	µg/L	1	1/5/2017 5:56:17 PM
2,4,6-Trichlorophenol	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
2,4,5-Trichlorophenol	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
2-Chloronaphthalene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
2-Nitroaniline	ND	4.96		µg/L	1	1/5/2017 5:56:17 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 10:30:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-002
Matrix: Groundwater
Client Sample ID: TWP16-PMW1B

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Acenaphthene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Dimethylphthalate	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
2,6-Dinitrotoluene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Acenaphthylene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
2,4-Dinitrophenol	ND	1.98	Q	µg/L	1	1/5/2017 5:56:17 PM
Dibenzofuran	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
2,4-Dinitrotoluene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
4-Nitrophenol	ND	4.96		µg/L	1	1/5/2017 5:56:17 PM
Fluorene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
4-Chlorophenyl phenyl ether	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Diethylphthalate	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
4,6-Dinitro-2-methylphenol	ND	4.96	Q	µg/L	1	1/5/2017 5:56:17 PM
4-Bromophenyl phenyl ether	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Hexachlorobenzene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Pentachlorophenol	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
Phenanthrene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Anthracene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Carbazole	ND	4.96		µg/L	1	1/5/2017 5:56:17 PM
Di-n-butyl phthalate	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Fluoranthene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Pyrene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Benzyl Butylphthalate	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
bis(2-Ethylhexyl)adipate	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Benz[a]anthracene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Chrysene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Bis(2-ethylhexyl) phthalate	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Di-n-octyl phthalate	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Benzo (b) fluoranthene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Benzo (k) fluoranthene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Benzo[a]pyrene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Indeno (1,2,3-cd) pyrene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Dibenzo (a,h) anthracene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Benzo (g,h,I) perylene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Surr: 2,4,6-Tribromophenol	67.7	5-127		%Rec	1	1/5/2017 5:56:17 PM
Surr: 2-Fluorobiphenyl	64.7	24.1-139		%Rec	1	1/5/2017 5:56:17 PM
Surr: Nitrobenzene-d5	77.6	21.9-139		%Rec	1	1/5/2017 5:56:17 PM
Surr: Phenol-d6	68.6	10.3-128		%Rec	1	1/5/2017 5:56:17 PM
Surr: p-Terphenyl	72.0	25.2-132		%Rec	1	1/5/2017 5:56:17 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 10:30:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-002
Matrix: Groundwater
Client Sample ID: **TWP16-PMW1B**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 2:09:50 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 2:09:50 PM
Surr: 4-Bromofluorobenzene	96.5	65-135		%Rec	1	1/4/2017 2:09:50 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 2:09:50 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 2:09:50 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Methyl tert-butyl ether (MTBE)	1.30	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 2:09:50 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 2:09:50 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM

Client: Floyd | Snider **Collection Date:** 12/28/2016 10:30:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-002 **Matrix:** Groundwater
Client Sample ID: **TWP16-PMW1B**

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 2:09:50 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 2:09:50 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 2:09:50 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 2:09:50 PM
Surr: Dibromofluoromethane	101	45.4-152		%Rec	1	1/4/2017 2:09:50 PM
Surr: Toluene-d8	103	40.1-139		%Rec	1	1/4/2017 2:09:50 PM
Surr: 1-Bromo-4-fluorobenzene	96.8	64.2-128		%Rec	1	1/4/2017 2:09:50 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Client: Floyd | Snider

Collection Date: 12/28/2016 10:30:00 AM

Project: Ave 55 - Taylor Way

Lab ID: 1612278-002

Matrix: Groundwater

Client Sample ID: **TWP16-PMW1B**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:19:11 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	6.02	1.00		µg/L	1	1/3/2017 12:45:33 PM
Barium	17.5	0.500		µg/L	1	1/3/2017 12:45:33 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 12:45:33 PM
Chromium	0.894	0.500		µg/L	1	1/3/2017 12:45:33 PM
Copper	ND	0.500		µg/L	1	1/3/2017 12:45:33 PM
Lead	ND	0.500		µg/L	1	1/3/2017 12:45:33 PM
Nickel	ND	0.500		µg/L	1	1/3/2017 12:45:33 PM
Zinc	ND	1.50		µg/L	1	1/3/2017 12:45:33 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:19:00 AM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 12:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-003
Matrix: Groundwater
Client Sample ID: TWP16-PMW2B

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.3		µg/L	1	12/30/2016 5:00:24 PM
Diesel Range Organics (C12-C24)	107	50.3		µg/L	1	12/30/2016 5:00:24 PM
Heavy Oil	ND	101		µg/L	1	12/30/2016 5:00:24 PM
Heavy Oil Range Organics	254	101		µg/L	1	12/30/2016 5:00:24 PM
Surr: 2-Fluorobiphenyl	67.1	50-150		%Rec	1	12/30/2016 5:00:24 PM
Surr: o-Terphenyl	77.3	50-150		%Rec	1	12/30/2016 5:00:24 PM

NOTES:

DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Heavy Oil Range Organics - Indicates the presence of unresolved compounds in the Lube Oil ranges.

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM
2-Chlorophenol	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
1,3-Dichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
1,4-Dichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
1,2-Dichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Benzyl alcohol	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Bis(2-chloroethyl) ether	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM
2-Methylphenol (o-cresol)	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Hexachloroethane	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
N-Nitrosodi-n-propylamine	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Nitrobenzene	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM
Isophorone	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
4-Methylphenol (p-cresol)	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
2-Nitrophenol	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM
2,4-Dimethylphenol	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Bis(2-chloroethoxy)methane	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
2,4-Dichlorophenol	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM
1,2,4-Trichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Naphthalene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
4-Chloroaniline	ND	5.04		µg/L	1	1/5/2017 6:17:20 PM
Hexachlorobutadiene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
4-Chloro-3-methylphenol	ND	5.04		µg/L	1	1/5/2017 6:17:20 PM
2-Methylnaphthalene	ND	0.504	Q	µg/L	1	1/5/2017 6:17:20 PM
1-Methylnaphthalene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Hexachlorocyclopentadiene	ND	1.01	Q	µg/L	1	1/5/2017 6:17:20 PM
2,4,6-Trichlorophenol	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM
2,4,5-Trichlorophenol	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 12:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-003
Matrix: Groundwater
Client Sample ID: **TWP16-PMW2B**

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
2-Chloronaphthalene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
2-Nitroaniline	ND	5.04		µg/L	1	1/5/2017 6:17:20 PM
Acenaphthene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Dimethylphthalate	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
2,6-Dinitrotoluene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Acenaphthylene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
2,4-Dinitrophenol	ND	2.02	Q	µg/L	1	1/5/2017 6:17:20 PM
Dibenzofuran	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
2,4-Dinitrotoluene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
4-Nitrophenol	ND	5.04		µg/L	1	1/5/2017 6:17:20 PM
Fluorene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
4-Chlorophenyl phenyl ether	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Diethylphthalate	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
4,6-Dinitro-2-methylphenol	ND	5.04	Q	µg/L	1	1/5/2017 6:17:20 PM
4-Bromophenyl phenyl ether	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Hexachlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Pentachlorophenol	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM
Phenanthrene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Anthracene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Carbazole	ND	5.04		µg/L	1	1/5/2017 6:17:20 PM
Di-n-butyl phthalate	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Fluoranthene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Pyrene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Benzyl Butylphthalate	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
bis(2-Ethylhexyl)adipate	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Benz[a]anthracene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Chrysene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Bis(2-ethylhexyl) phthalate	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Di-n-octyl phthalate	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Benzo (b) fluoranthene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Benzo (k) fluoranthene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Benzo[a]pyrene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Indeno (1,2,3-cd) pyrene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Dibenzo (a,h) anthracene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Benzo (g,h,I) perylene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Surr: 2,4,6-Tribromophenol	107	5-127		%Rec	1	1/5/2017 6:17:20 PM
Surr: 2-Fluorobiphenyl	60.3	24.1-139		%Rec	1	1/5/2017 6:17:20 PM
Surr: Nitrobenzene-d5	66.8	21.9-139		%Rec	1	1/5/2017 6:17:20 PM
Surr: Phenol-d6	68.3	10.3-128		%Rec	1	1/5/2017 6:17:20 PM

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-003
Client Sample ID: **TWP16-PMW2B**

Collection Date: 12/28/2016 12:00:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Semi-Volatile Organic Compounds by EPA Method 8270				Batch ID: 15825		Analyst: BT
Surr: p-Terphenyl	75.2	25.2-132		%Rec	1	1/5/2017 6:17:20 PM
NOTES: Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).						
Gasoline by NWTPH-Gx				Batch ID: 15802		Analyst: NG
Gasoline	ND	50.0		µg/L	1	1/4/2017 2:39:06 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 2:39:06 PM
Surr: 4-Bromofluorobenzene	96.5	65-135		%Rec	1	1/4/2017 2:39:06 PM
Volatile Organic Compounds by EPA Method 8260C				Batch ID: 15802		Analyst: NG
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 2:39:06 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 2:39:06 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 2:39:06 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 2:39:06 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-003
Matrix: Groundwater
Client Sample ID: TWP16-PMW2B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by EPA Method 8260C				Batch ID: 15802		Analyst: NG
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 2:39:06 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 2:39:06 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 2:39:06 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 2:39:06 PM
Surr: Dibromofluoromethane	104	45.4-152		%Rec	1	1/4/2017 2:39:06 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 2:39:06 PM
Surr: 1-Bromo-4-fluorobenzene	96.9	64.2-128		%Rec	1	1/4/2017 2:39:06 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-003
Client Sample ID: **TWP16-PMW2B**

Collection Date: 12/28/2016 12:00:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:20:53 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	ND	1.00		µg/L	1	1/3/2017 12:49:10 PM
Barium	161	0.500		µg/L	1	1/3/2017 12:49:10 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 12:49:10 PM
Chromium	ND	0.500		µg/L	1	1/3/2017 12:49:10 PM
Copper	ND	0.500		µg/L	1	1/3/2017 12:49:10 PM
Lead	ND	0.500		µg/L	1	1/3/2017 12:49:10 PM
Nickel	ND	0.500		µg/L	1	1/3/2017 12:49:10 PM
Zinc	ND	1.50		µg/L	1	1/3/2017 12:49:10 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:22:00 AM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:05:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-004
Matrix: Groundwater
Client Sample ID: **TWP16-PMW2X**

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.0		µg/L	1	12/30/2016 5:31:13 PM
Diesel Range Organics (C12-C24)	136	50.0		µg/L	1	12/30/2016 5:31:13 PM
Heavy Oil	ND	100		µg/L	1	12/30/2016 5:31:13 PM
Heavy Oil Range Organics	133	100		µg/L	1	12/30/2016 5:31:13 PM
Surr: 2-Fluorobiphenyl	77.4	50-150		%Rec	1	12/30/2016 5:31:13 PM
Surr: o-Terphenyl	91.6	50-150		%Rec	1	12/30/2016 5:31:13 PM

NOTES:
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).
Heavy Oil Range Organics - Indicates the presence of unresolved compounds in the Lube+ Oil ranges.

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM
2-Chlorophenol	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
1,3-Dichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
1,4-Dichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
1,2-Dichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Benzyl alcohol	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Bis(2-chloroethyl) ether	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM
2-Methylphenol (o-cresol)	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Hexachloroethane	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
N-Nitrosodi-n-propylamine	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Nitrobenzene	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM
Isophorone	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
4-Methylphenol (p-cresol)	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
2-Nitrophenol	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM
2,4-Dimethylphenol	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Bis(2-chloroethoxy)methane	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
2,4-Dichlorophenol	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM
1,2,4-Trichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Naphthalene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
4-Chloroaniline	ND	5.04		µg/L	1	1/5/2017 6:38:27 PM
Hexachlorobutadiene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
4-Chloro-3-methylphenol	ND	5.04		µg/L	1	1/5/2017 6:38:27 PM
2-Methylnaphthalene	ND	0.504	Q	µg/L	1	1/5/2017 6:38:27 PM
1-Methylnaphthalene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Hexachlorocyclopentadiene	ND	1.01	Q	µg/L	1	1/5/2017 6:38:27 PM
2,4,6-Trichlorophenol	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM
2,4,5-Trichlorophenol	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 12:05:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-004
Matrix: Groundwater
Client Sample ID: **TWP16-PMW2X**

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
2-Chloronaphthalene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
2-Nitroaniline	ND	5.04		µg/L	1	1/5/2017 6:38:27 PM
Acenaphthene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Dimethylphthalate	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
2,6-Dinitrotoluene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Acenaphthylene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
2,4-Dinitrophenol	ND	2.01	Q	µg/L	1	1/5/2017 6:38:27 PM
Dibenzofuran	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
2,4-Dinitrotoluene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
4-Nitrophenol	ND	5.04		µg/L	1	1/5/2017 6:38:27 PM
Fluorene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
4-Chlorophenyl phenyl ether	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Diethylphthalate	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
4,6-Dinitro-2-methylphenol	ND	5.04	Q	µg/L	1	1/5/2017 6:38:27 PM
4-Bromophenyl phenyl ether	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Hexachlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Pentachlorophenol	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM
Phenanthrene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Anthracene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Carbazole	ND	5.04		µg/L	1	1/5/2017 6:38:27 PM
Di-n-butyl phthalate	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Fluoranthene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Pyrene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Benzyl Butylphthalate	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
bis(2-Ethylhexyl)adipate	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Benz[a]anthracene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Chrysene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Bis(2-ethylhexyl) phthalate	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Di-n-octyl phthalate	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Benzo (b) fluoranthene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Benzo (k) fluoranthene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Benzo[a]pyrene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Indeno (1,2,3-cd) pyrene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Dibenzo (a,h) anthracene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Benzo (g,h,I) perylene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Surr: 2,4,6-Tribromophenol	99.3	5-127		%Rec	1	1/5/2017 6:38:27 PM
Surr: 2-Fluorobiphenyl	59.9	24.1-139		%Rec	1	1/5/2017 6:38:27 PM
Surr: Nitrobenzene-d5	71.0	21.9-139		%Rec	1	1/5/2017 6:38:27 PM
Surr: Phenol-d6	62.0	10.3-128		%Rec	1	1/5/2017 6:38:27 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:05:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-004
Matrix: Groundwater
Client Sample ID: **TWP16-PMW2X**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Surr: p-Terphenyl	66.7	25.2-132		%Rec	1	1/5/2017 6:38:27 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 3:08:27 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 3:08:27 PM
Surr: 4-Bromofluorobenzene	95.8	65-135		%Rec	1	1/4/2017 3:08:27 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 3:08:27 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 3:08:27 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 3:08:27 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 3:08:27 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:05:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-004
Matrix: Groundwater
Client Sample ID: **TWP16-PMW2X**

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 3:08:27 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 3:08:27 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 3:08:27 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 3:08:27 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	1/4/2017 3:08:27 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 3:08:27 PM
Surr: 1-Bromo-4-fluorobenzene	96.2	64.2-128		%Rec	1	1/4/2017 3:08:27 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-004
Client Sample ID: **TWP16-PMW2X**

Collection Date: 12/28/2016 12:05:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:22:36 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	ND	1.00		µg/L	1	1/3/2017 12:52:46 PM
Barium	165	0.500		µg/L	1	1/3/2017 12:52:46 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 12:52:46 PM
Chromium	ND	0.500		µg/L	1	1/3/2017 12:52:46 PM
Copper	ND	0.500		µg/L	1	1/3/2017 12:52:46 PM
Lead	ND	0.500		µg/L	1	1/3/2017 12:52:46 PM
Nickel	ND	0.500		µg/L	1	1/3/2017 12:52:46 PM
Zinc	ND	1.50		µg/L	1	1/3/2017 12:52:46 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:26:00 AM

Client: Floyd | Snider

Collection Date: 12/28/2016 12:00:00 PM

Project: Ave 55 - Taylor Way

Lab ID: 1612278-005

Matrix: Groundwater

Client Sample ID: **TWP16-PMW2A**

Dissolved Gases by RSK-175

Batch ID: R33761 Analyst: BC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Methane	0.191	0.00500		mg/L	1	1/6/2017 11:51:00 AM

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.2		µg/L	1	12/30/2016 6:01:59 PM
Diesel Range Organics (C12-C24)	82.1	50.2		µg/L	1	12/30/2016 6:01:59 PM
Heavy Oil	ND	100		µg/L	1	12/30/2016 6:01:59 PM
Heavy Oil Range Organics	109	100		µg/L	1	12/30/2016 6:01:59 PM
Surr: 2-Fluorobiphenyl	72.8	50-150		%Rec	1	12/30/2016 6:01:59 PM
Surr: o-Terphenyl	87.8	50-150		%Rec	1	12/30/2016 6:01:59 PM

NOTES:

DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Heavy Oil Range Organics - Indicates the presence of unresolved compounds in the Lube+ Oil ranges.

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
2-Chlorophenol	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Benzyl alcohol	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Bis(2-chloroethyl) ether	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
2-Methylphenol (o-cresol)	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Hexachloroethane	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
N-Nitrosodi-n-propylamine	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Nitrobenzene	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
Isophorone	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
4-Methylphenol (p-cresol)	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
2-Nitrophenol	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
2,4-Dimethylphenol	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Bis(2-chloroethoxy)methane	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
2,4-Dichlorophenol	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
1,2,4-Trichlorobenzene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Naphthalene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
4-Chloroaniline	ND	5.02		µg/L	1	1/5/2017 6:59:28 PM
Hexachlorobutadiene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
4-Chloro-3-methylphenol	ND	5.02		µg/L	1	1/5/2017 6:59:28 PM
2-Methylnaphthalene	ND	0.502	Q	µg/L	1	1/5/2017 6:59:28 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-005
Matrix: Groundwater
Client Sample ID: **TWP16-PMW2A**

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1-Methylnaphthalene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Hexachlorocyclopentadiene	ND	1.00	Q	µg/L	1	1/5/2017 6:59:28 PM
2,4,6-Trichlorophenol	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
2,4,5-Trichlorophenol	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
2-Chloronaphthalene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
2-Nitroaniline	ND	5.02		µg/L	1	1/5/2017 6:59:28 PM
Acenaphthene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Dimethylphthalate	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
2,6-Dinitrotoluene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Acenaphthylene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
2,4-Dinitrophenol	ND	2.01	Q	µg/L	1	1/5/2017 6:59:28 PM
Dibenzofuran	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
2,4-Dinitrotoluene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
4-Nitrophenol	ND	5.02		µg/L	1	1/5/2017 6:59:28 PM
Fluorene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
4-Chlorophenyl phenyl ether	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Diethylphthalate	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
4,6-Dinitro-2-methylphenol	ND	5.02	Q	µg/L	1	1/5/2017 6:59:28 PM
4-Bromophenyl phenyl ether	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Hexachlorobenzene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Pentachlorophenol	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
Phenanthrene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Anthracene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Carbazole	ND	5.02		µg/L	1	1/5/2017 6:59:28 PM
Di-n-butyl phthalate	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Fluoranthene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Pyrene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Benzyl Butylphthalate	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
bis(2-Ethylhexyl)adipate	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Benz[a]anthracene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Chrysene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Bis(2-ethylhexyl) phthalate	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Di-n-octyl phthalate	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Benzo (b) fluoranthene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Benzo (k) fluoranthene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Benzo[a]pyrene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Indeno (1,2,3-cd) pyrene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Dibenzo (a,h) anthracene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Benzo (g,h,I) perylene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-005
Matrix: Groundwater
Client Sample ID: **TWP16-PMW2A**

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Surr: 2,4,6-Tribromophenol	88.0	5-127		%Rec	1	1/5/2017 6:59:28 PM
Surr: 2-Fluorobiphenyl	59.2	24.1-139		%Rec	1	1/5/2017 6:59:28 PM
Surr: Nitrobenzene-d5	74.5	21.9-139		%Rec	1	1/5/2017 6:59:28 PM
Surr: Phenol-d6	64.9	10.3-128		%Rec	1	1/5/2017 6:59:28 PM
Surr: p-Terphenyl	65.3	25.2-132		%Rec	1	1/5/2017 6:59:28 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 3:37:49 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 3:37:49 PM
Surr: 4-Bromofluorobenzene	97.2	65-135		%Rec	1	1/4/2017 3:37:49 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 3:37:49 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 3:37:49 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 3:37:49 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 3:37:49 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-005
Matrix: Groundwater
Client Sample ID: **TWP16-PMW2A**

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 3:37:49 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 3:37:49 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 3:37:49 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 3:37:49 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	1/4/2017 3:37:49 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 3:37:49 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 12:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-005
Matrix: Groundwater
Client Sample ID: **TWP16-PMW2A**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by EPA Method 8260C				Batch ID: 15802		Analyst: NG
Surr: 1-Bromo-4-fluorobenzene	97.5	64.2-128		%Rec	1	1/4/2017 3:37:49 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:24:19 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	1.65	1.00		µg/L	1	1/3/2017 12:20:18 PM
Barium	235	0.500		µg/L	1	1/3/2017 12:20:18 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 12:20:18 PM
Chromium	ND	0.500		µg/L	1	1/3/2017 12:20:18 PM
Copper	0.695	0.500		µg/L	1	1/3/2017 12:20:18 PM
Lead	ND	0.500		µg/L	1	1/3/2017 12:20:18 PM
Nickel	1.09	0.500		µg/L	1	1/3/2017 12:20:18 PM
Zinc	24.0	1.50		µg/L	1	1/3/2017 12:20:18 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:30:00 AM

Client: Floyd | Snider
Collection Date: 12/28/2016 1:20:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-006
Matrix: Groundwater
Client Sample ID: TWP16-PMW3A

Dissolved Gases by RSK-175

Batch ID: R33761 Analyst: BC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Methane	0.171	0.00500		mg/L	1	1/6/2017 11:54:00 AM

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.1		µg/L	1	12/30/2016 8:35:05 PM
Diesel Range Organics (C12-C24)	78.9	50.1		µg/L	1	12/30/2016 8:35:05 PM
Heavy Oil	ND	100		µg/L	1	12/30/2016 8:35:05 PM
Surr: 2-Fluorobiphenyl	71.7	50-150		%Rec	1	12/30/2016 8:35:05 PM
Surr: o-Terphenyl	81.0	50-150		%Rec	1	12/30/2016 8:35:05 PM

NOTES:
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
2-Chlorophenol	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
1,3-Dichlorobenzene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
1,4-Dichlorobenzene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
1,2-Dichlorobenzene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Benzyl alcohol	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Bis(2-chloroethyl) ether	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
2-Methylphenol (o-cresol)	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Hexachloroethane	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
N-Nitrosodi-n-propylamine	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Nitrobenzene	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
Isophorone	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
4-Methylphenol (p-cresol)	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
2-Nitrophenol	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
2,4-Dimethylphenol	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Bis(2-chloroethoxy)methane	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
2,4-Dichlorophenol	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
1,2,4-Trichlorobenzene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Naphthalene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
4-Chloroaniline	ND	4.98		µg/L	1	1/5/2017 7:20:28 PM
Hexachlorobutadiene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
4-Chloro-3-methylphenol	ND	4.98		µg/L	1	1/5/2017 7:20:28 PM
2-Methylnaphthalene	ND	0.498	Q	µg/L	1	1/5/2017 7:20:28 PM
1-Methylnaphthalene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Hexachlorocyclopentadiene	ND	0.997	Q	µg/L	1	1/5/2017 7:20:28 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-006
Client Sample ID: **TWP16-PMW3A**

Collection Date: 12/28/2016 1:20:00 PM
Matrix: Groundwater

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
2,4,6-Trichlorophenol	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
2,4,5-Trichlorophenol	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
2-Chloronaphthalene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
2-Nitroaniline	ND	4.98		µg/L	1	1/5/2017 7:20:28 PM
Acenaphthene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Dimethylphthalate	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
2,6-Dinitrotoluene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Acenaphthylene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
2,4-Dinitrophenol	ND	1.99	Q	µg/L	1	1/5/2017 7:20:28 PM
Dibenzofuran	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
2,4-Dinitrotoluene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
4-Nitrophenol	ND	4.98		µg/L	1	1/5/2017 7:20:28 PM
Fluorene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
4-Chlorophenyl phenyl ether	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Diethylphthalate	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
4,6-Dinitro-2-methylphenol	ND	4.98	Q	µg/L	1	1/5/2017 7:20:28 PM
4-Bromophenyl phenyl ether	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Hexachlorobenzene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Pentachlorophenol	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
Phenanthrene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Anthracene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Carbazole	ND	4.98		µg/L	1	1/5/2017 7:20:28 PM
Di-n-butyl phthalate	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Fluoranthene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Pyrene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Benzyl Butylphthalate	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
bis(2-Ethylhexyl)adipate	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Benz[a]anthracene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Chrysene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Bis(2-ethylhexyl) phthalate	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Di-n-octyl phthalate	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Benzo (b) fluoranthene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Benzo (k) fluoranthene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Benzo[a]pyrene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Indeno (1,2,3-cd) pyrene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Dibenzo (a,h) anthracene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Benzo (g,h,I) perylene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Surr: 2,4,6-Tribromophenol	71.6	5-127		%Rec	1	1/5/2017 7:20:28 PM
Surr: 2-Fluorobiphenyl	57.5	24.1-139		%Rec	1	1/5/2017 7:20:28 PM

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-006
Client Sample ID: **TWP16-PMW3A**

Collection Date: 12/28/2016 1:20:00 PM
Matrix: Groundwater

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Surr: Nitrobenzene-d5	54.7	21.9-139		%Rec	1	1/5/2017 7:20:28 PM
Surr: Phenol-d6	44.6	10.3-128		%Rec	1	1/5/2017 7:20:28 PM
Surr: p-Terphenyl	70.6	25.2-132		%Rec	1	1/5/2017 7:20:28 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 4:07:10 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 4:07:10 PM
Surr: 4-Bromofluorobenzene	96.5	65-135		%Rec	1	1/4/2017 4:07:10 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 4:07:10 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 4:07:10 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 4:07:10 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 4:07:10 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 1:20:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-006
Matrix: Groundwater
Client Sample ID: **TWP16-PMW3A**

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Toluene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 4:07:10 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 4:07:10 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 4:07:10 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 4:07:10 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	1/4/2017 4:07:10 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 4:07:10 PM
Surr: 1-Bromo-4-fluorobenzene	97.0	64.2-128		%Rec	1	1/4/2017 4:07:10 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-006
Client Sample ID: **TWP16-PMW3A**

Collection Date: 12/28/2016 1:20:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by EPA Method 8260C				Batch ID: 15802		Analyst: NG
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:34:27 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	2.02	1.00		µg/L	1	1/3/2017 12:56:22 PM
Barium	22.7	0.500		µg/L	1	1/3/2017 12:56:22 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 12:56:22 PM
Chromium	ND	0.500		µg/L	1	1/3/2017 12:56:22 PM
Copper	ND	0.500		µg/L	1	1/3/2017 12:56:22 PM
Lead	ND	0.500		µg/L	1	1/3/2017 12:56:22 PM
Nickel	11.7	0.500		µg/L	1	1/3/2017 12:56:22 PM
Zinc	4.41	1.50		µg/L	1	1/3/2017 12:56:22 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:33:00 AM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-007
Client Sample ID: **TWP16-PMW3B**
Collection Date: 12/28/2016 1:15:00 PM
Matrix: Groundwater

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	49.7		µg/L	1	12/30/2016 9:05:33 PM
Heavy Oil	ND	99.4		µg/L	1	12/30/2016 9:05:33 PM
Heavy Oil Range Organics	491	99.4		µg/L	1	12/30/2016 9:05:33 PM
Surr: 2-Fluorobiphenyl	64.0	50-150		%Rec	1	12/30/2016 9:05:33 PM
Surr: o-Terphenyl	65.1	50-150		%Rec	1	12/30/2016 9:05:33 PM

NOTES:
Heavy Oil Range Organics - Indicates the presence of unresolved compounds in the Lube+ Oil ranges.

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
2-Chlorophenol	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
1,3-Dichlorobenzene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
1,4-Dichlorobenzene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
1,2-Dichlorobenzene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Benzyl alcohol	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Bis(2-chloroethyl) ether	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
2-Methylphenol (o-cresol)	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Hexachloroethane	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
N-Nitrosodi-n-propylamine	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Nitrobenzene	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
Isophorone	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
4-Methylphenol (p-cresol)	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
2-Nitrophenol	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
2,4-Dimethylphenol	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Bis(2-chloroethoxy)methane	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
2,4-Dichlorophenol	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
1,2,4-Trichlorobenzene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Naphthalene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
4-Chloroaniline	ND	4.99		µg/L	1	1/5/2017 7:41:31 PM
Hexachlorobutadiene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
4-Chloro-3-methylphenol	ND	4.99		µg/L	1	1/5/2017 7:41:31 PM
2-Methylnaphthalene	ND	0.499	Q	µg/L	1	1/5/2017 7:41:31 PM
1-Methylnaphthalene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Hexachlorocyclopentadiene	ND	0.998	Q	µg/L	1	1/5/2017 7:41:31 PM
2,4,6-Trichlorophenol	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
2,4,5-Trichlorophenol	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
2-Chloronaphthalene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
2-Nitroaniline	ND	4.99		µg/L	1	1/5/2017 7:41:31 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 1:15:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-007
Matrix: Groundwater
Client Sample ID: **TWP16-PMW3B**

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Acenaphthene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Dimethylphthalate	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
2,6-Dinitrotoluene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Acenaphthylene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
2,4-Dinitrophenol	ND	2.00	Q	µg/L	1	1/5/2017 7:41:31 PM
Dibenzofuran	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
2,4-Dinitrotoluene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
4-Nitrophenol	ND	4.99		µg/L	1	1/5/2017 7:41:31 PM
Fluorene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
4-Chlorophenyl phenyl ether	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Diethylphthalate	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
4,6-Dinitro-2-methylphenol	ND	4.99	Q	µg/L	1	1/5/2017 7:41:31 PM
4-Bromophenyl phenyl ether	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Hexachlorobenzene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Pentachlorophenol	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
Phenanthrene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Anthracene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Carbazole	ND	4.99		µg/L	1	1/5/2017 7:41:31 PM
Di-n-butyl phthalate	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Fluoranthene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Pyrene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Benzyl Butylphthalate	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
bis(2-Ethylhexyl)adipate	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Benz[a]anthracene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Chrysene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Bis(2-ethylhexyl) phthalate	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Di-n-octyl phthalate	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Benzo (b) fluoranthene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Benzo (k) fluoranthene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Benzo[a]pyrene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Indeno (1,2,3-cd) pyrene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Dibenzo (a,h) anthracene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Benzo (g,h,I) perylene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Surr: 2,4,6-Tribromophenol	113	5-127		%Rec	1	1/5/2017 7:41:31 PM
Surr: 2-Fluorobiphenyl	55.7	24.1-139		%Rec	1	1/5/2017 7:41:31 PM
Surr: Nitrobenzene-d5	64.2	21.9-139		%Rec	1	1/5/2017 7:41:31 PM
Surr: Phenol-d6	61.0	10.3-128		%Rec	1	1/5/2017 7:41:31 PM
Surr: p-Terphenyl	75.4	25.2-132		%Rec	1	1/5/2017 7:41:31 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 1:15:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-007
Matrix: Groundwater
Client Sample ID: **TWP16-PMW3B**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 4:36:32 PM
Surr: Toluene-d8	102	65-135		%Rec	1	1/4/2017 4:36:32 PM
Surr: 4-Bromofluorobenzene	96.4	65-135		%Rec	1	1/4/2017 4:36:32 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 4:36:32 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 4:36:32 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 4:36:32 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 4:36:32 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 1:15:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-007
Matrix: Groundwater
Client Sample ID: TWP16-PMW3B

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 4:36:32 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 4:36:32 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 4:36:32 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 4:36:32 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	1/4/2017 4:36:32 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 4:36:32 PM
Surr: 1-Bromo-4-fluorobenzene	96.8	64.2-128		%Rec	1	1/4/2017 4:36:32 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 1:15:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-007
Matrix: Groundwater
Client Sample ID: TWP16-PMW3B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:36:09 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	25.1	1.00		µg/L	1	1/3/2017 12:59:59 PM
Barium	16.1	0.500		µg/L	1	1/3/2017 12:59:59 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 12:59:59 PM
Chromium	ND	0.500		µg/L	1	1/3/2017 12:59:59 PM
Copper	ND	0.500		µg/L	1	1/3/2017 12:59:59 PM
Lead	ND	0.500		µg/L	1	1/3/2017 12:59:59 PM
Nickel	1.05	0.500		µg/L	1	1/3/2017 12:59:59 PM
Zinc	ND	1.50		µg/L	1	1/3/2017 12:59:59 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	0.0642	0.0500		mg/L	1	12/29/2016 9:37:00 AM

Client: Floyd | Snider
Collection Date: 12/28/2016 2:25:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-008
Matrix: Groundwater
Client Sample ID: **TWP16-PMW4A**

Dissolved Gases by RSK-175

Batch ID: R33761 Analyst: BC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Methane	14.6	0.100	DE	mg/L	20	1/6/2017 12:03:00 PM

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.3		µg/L	1	1/3/2017 11:02:05 PM
Heavy Oil	3,750	101		µg/L	1	1/3/2017 11:02:05 PM
Surr: 2-Fluorobiphenyl	74.6	50-150		%Rec	1	1/3/2017 11:02:05 PM
Surr: o-Terphenyl	78.5	50-150		%Rec	1	1/3/2017 11:02:05 PM

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
2-Chlorophenol	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Benzyl alcohol	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Bis(2-chloroethyl) ether	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
2-Methylphenol (o-cresol)	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Hexachloroethane	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
N-Nitrosodi-n-propylamine	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Nitrobenzene	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
Isophorone	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
4-Methylphenol (p-cresol)	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
2-Nitrophenol	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
2,4-Dimethylphenol	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Bis(2-chloroethoxy)methane	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
2,4-Dichlorophenol	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
1,2,4-Trichlorobenzene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Naphthalene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
4-Chloroaniline	ND	5.00		µg/L	1	1/5/2017 8:02:25 PM
Hexachlorobutadiene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
4-Chloro-3-methylphenol	ND	5.00		µg/L	1	1/5/2017 8:02:25 PM
2-Methylnaphthalene	ND	0.500	Q	µg/L	1	1/5/2017 8:02:25 PM
1-Methylnaphthalene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Hexachlorocyclopentadiene	ND	1.00	Q	µg/L	1	1/5/2017 8:02:25 PM
2,4,6-Trichlorophenol	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
2,4,5-Trichlorophenol	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
2-Chloronaphthalene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 2:25:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-008
Matrix: Groundwater
Client Sample ID: **TWP16-PMW4A**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Semi-Volatile Organic Compounds by EPA Method 8270				Batch ID: 15825		Analyst: BT
2-Nitroaniline	ND	5.00		µg/L	1	1/5/2017 8:02:25 PM
Acenaphthene	1.57	0.500		µg/L	1	1/5/2017 8:02:25 PM
Dimethylphthalate	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
2,6-Dinitrotoluene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Acenaphthylene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
2,4-Dinitrophenol	ND	2.00	Q	µg/L	1	1/5/2017 8:02:25 PM
Dibenzofuran	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
2,4-Dinitrotoluene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
4-Nitrophenol	ND	5.00		µg/L	1	1/5/2017 8:02:25 PM
Fluorene	0.808	0.500		µg/L	1	1/5/2017 8:02:25 PM
4-Chlorophenyl phenyl ether	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Diethylphthalate	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
4,6-Dinitro-2-methylphenol	ND	5.00	Q	µg/L	1	1/5/2017 8:02:25 PM
4-Bromophenyl phenyl ether	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Hexachlorobenzene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Pentachlorophenol	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
Phenanthrene	0.631	0.500		µg/L	1	1/5/2017 8:02:25 PM
Anthracene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Carbazole	ND	5.00		µg/L	1	1/5/2017 8:02:25 PM
Di-n-butyl phthalate	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Fluoranthene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Pyrene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Benzyl Butylphthalate	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
bis(2-Ethylhexyl)adipate	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Benz[a]anthracene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Chrysene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Bis(2-ethylhexyl) phthalate	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Di-n-octyl phthalate	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Benzo (b) fluoranthene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Benzo (k) fluoranthene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Benzo[a]pyrene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Indeno (1,2,3-cd) pyrene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Dibenzo (a,h) anthracene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Benzo (g,h,I) perylene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Surr: 2,4,6-Tribromophenol	106	5-127		%Rec	1	1/5/2017 8:02:25 PM
Surr: 2-Fluorobiphenyl	63.3	24.1-139		%Rec	1	1/5/2017 8:02:25 PM
Surr: Nitrobenzene-d5	62.4	21.9-139		%Rec	1	1/5/2017 8:02:25 PM
Surr: Phenol-d6	58.6	10.3-128		%Rec	1	1/5/2017 8:02:25 PM
Surr: p-Terphenyl	54.8	25.2-132		%Rec	1	1/5/2017 8:02:25 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 2:25:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-008
Matrix: Groundwater
Client Sample ID: **TWP16-PMW4A**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	189	50.0		µg/L	1	1/4/2017 5:05:48 PM
Surr: Toluene-d8	102	65-135		%Rec	1	1/4/2017 5:05:48 PM
Surr: 4-Bromofluorobenzene	98.5	65-135		%Rec	1	1/4/2017 5:05:48 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 5:05:48 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 5:05:48 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 5:05:48 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 5:05:48 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 2:25:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-008
Matrix: Groundwater
Client Sample ID: **TWP16-PMW4A**

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 5:05:48 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 5:05:48 PM
sec-Butylbenzene	1.00	1.00		µg/L	1	1/4/2017 5:05:48 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 5:05:48 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 5:05:48 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	1/4/2017 5:05:48 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 5:05:48 PM
Surr: 1-Bromo-4-fluorobenzene	98.3	64.2-128		%Rec	1	1/4/2017 5:05:48 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-008
Client Sample ID: **TWP16-PMW4A**

Collection Date: 12/28/2016 2:25:00 PM
Matrix: Groundwater

Analyses	**Result**	**RL**	**Qual**	**Units**	**DF**	**Date Analyzed**
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:37:51 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	3.78	1.00		µg/L	1	1/3/2017 1:03:35 PM
Barium	38.5	0.500		µg/L	1	1/3/2017 1:03:35 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 1:03:35 PM
Chromium	ND	0.500		µg/L	1	1/3/2017 1:03:35 PM
Copper	ND	0.500		µg/L	1	1/3/2017 1:03:35 PM
Lead	ND	0.500		µg/L	1	1/3/2017 1:03:35 PM
Nickel	1.15	0.500		µg/L	1	1/3/2017 1:03:35 PM
Zinc	1.92	1.50		µg/L	1	1/3/2017 1:03:35 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:40:00 AM

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-009
Client Sample ID: **TWP16-PMW4B**

Collection Date: 12/28/2016 2:45:00 PM
Matrix: Groundwater

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 5:35:04 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 5:35:04 PM
Surr: 4-Bromofluorobenzene	96.3	65-135		%Rec	1	1/4/2017 5:35:04 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 5:35:04 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 5:35:04 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 5:35:04 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 5:35:04 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 5:35:04 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 2:45:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-009
Matrix: Groundwater
Client Sample ID: **TWP16-PMW4B**

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 5:35:04 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 5:35:04 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 5:35:04 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	1/4/2017 5:35:04 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 5:35:04 PM
Surr: 1-Bromo-4-fluorobenzene	96.8	64.2-128		%Rec	1	1/4/2017 5:35:04 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Client: Floyd | Snider
Collection Date: 12/28/2016 3:35:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-010
Matrix: Groundwater
Client Sample ID: **TWP16-PMW5A**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R33761		Analyst: BC
Methane	4.15	0.100	D	mg/L	20	1/6/2017 12:05:00 PM
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 15795		Analyst: WC
Diesel (Fuel Oil)	ND	50.3		µg/L	1	1/3/2017 11:32:08 PM
Diesel Range Organics (C12-C24)	128	50.3		µg/L	1	1/3/2017 11:32:08 PM
Heavy Oil	668	101		µg/L	1	1/3/2017 11:32:08 PM
Surr: 2-Fluorobiphenyl	77.3	50-150		%Rec	1	1/3/2017 11:32:08 PM
Surr: o-Terphenyl	80.6	50-150		%Rec	1	1/3/2017 11:32:08 PM

NOTES:
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Semi-Volatile Organic Compounds by EPA Method 8270				Batch ID: 15825		Analyst: BT
Phenol	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
2-Chlorophenol	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
1,3-Dichlorobenzene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
1,4-Dichlorobenzene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
1,2-Dichlorobenzene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Benzyl alcohol	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Bis(2-chloroethyl) ether	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
2-Methylphenol (o-cresol)	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Hexachloroethane	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
N-Nitrosodi-n-propylamine	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Nitrobenzene	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
Isophorone	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
4-Methylphenol (p-cresol)	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
2-Nitrophenol	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
2,4-Dimethylphenol	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Bis(2-chloroethoxy)methane	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
2,4-Dichlorophenol	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
1,2,4-Trichlorobenzene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Naphthalene	1.03	0.499		µg/L	1	1/5/2017 8:23:19 PM
4-Chloroaniline	ND	4.99		µg/L	1	1/5/2017 8:23:19 PM
Hexachlorobutadiene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
4-Chloro-3-methylphenol	ND	4.99		µg/L	1	1/5/2017 8:23:19 PM
2-Methylnaphthalene	ND	0.499	Q	µg/L	1	1/5/2017 8:23:19 PM
1-Methylnaphthalene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Hexachlorocyclopentadiene	ND	0.999	Q	µg/L	1	1/5/2017 8:23:19 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 3:35:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-010
Matrix: Groundwater
Client Sample ID: **TWP16-PMW5A**

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
2,4,6-Trichlorophenol	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
2,4,5-Trichlorophenol	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
2-Chloronaphthalene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
2-Nitroaniline	ND	4.99		µg/L	1	1/5/2017 8:23:19 PM
Acenaphthene	0.807	0.499		µg/L	1	1/5/2017 8:23:19 PM
Dimethylphthalate	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
2,6-Dinitrotoluene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Acenaphthylene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
2,4-Dinitrophenol	ND	2.00	Q	µg/L	1	1/5/2017 8:23:19 PM
Dibenzofuran	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
2,4-Dinitrotoluene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
4-Nitrophenol	ND	4.99		µg/L	1	1/5/2017 8:23:19 PM
Fluorene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
4-Chlorophenyl phenyl ether	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Diethylphthalate	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
4,6-Dinitro-2-methylphenol	ND	4.99	Q	µg/L	1	1/5/2017 8:23:19 PM
4-Bromophenyl phenyl ether	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Hexachlorobenzene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Pentachlorophenol	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
Phenanthrene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Anthracene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Carbazole	ND	4.99		µg/L	1	1/5/2017 8:23:19 PM
Di-n-butyl phthalate	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Fluoranthene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Pyrene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Benzyl Butylphthalate	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
bis(2-Ethylhexyl)adipate	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Benz[a]anthracene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Chrysene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Bis(2-ethylhexyl) phthalate	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Di-n-octyl phthalate	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Benzo (b) fluoranthene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Benzo (k) fluoranthene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Benzo[a]pyrene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Indeno (1,2,3-cd) pyrene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Dibenzo (a,h) anthracene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Benzo (g,h,I) perylene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Surr: 2,4,6-Tribromophenol	96.2	5-127		%Rec	1	1/5/2017 8:23:19 PM
Surr: 2-Fluorobiphenyl	52.5	24.1-139		%Rec	1	1/5/2017 8:23:19 PM

Client: Floyd | Snider **Collection Date:** 12/28/2016 3:35:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-010 **Matrix:** Groundwater
Client Sample ID: TWP16-PMW5A

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Surr: Nitrobenzene-d5	66.3	21.9-139		%Rec	1	1/5/2017 8:23:19 PM
Surr: Phenol-d6	62.6	10.3-128		%Rec	1	1/5/2017 8:23:19 PM
Surr: p-Terphenyl	53.5	25.2-132		%Rec	1	1/5/2017 8:23:19 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 6:04:21 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 6:04:21 PM
Surr: 4-Bromofluorobenzene	97.4	65-135		%Rec	1	1/4/2017 6:04:21 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 6:04:21 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 6:04:21 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 6:04:21 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 6:04:21 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 3:35:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-010
Matrix: Groundwater
Client Sample ID: **TWP16-PMW5A**

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Toluene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 6:04:21 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 6:04:21 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 6:04:21 PM
Naphthalene	2.23	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 6:04:21 PM
Surr: Dibromofluoromethane	104	45.4-152		%Rec	1	1/4/2017 6:04:21 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 6:04:21 PM
Surr: 1-Bromo-4-fluorobenzene	97.7	64.2-128		%Rec	1	1/4/2017 6:04:21 PM

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-010
Client Sample ID: TWP16-PMW5A

Collection Date: 12/28/2016 3:35:00 PM

Matrix: Groundwater

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Dissolved Mercury by EPA Method 245.1

Batch ID: 15826 Analyst: WF

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Mercury	ND	0.100		µg/L	1	1/3/2017 3:39:34 PM

Dissolved Metals by EPA Method 200.8

Batch ID: 15820 Analyst: TN

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Arsenic	ND	1.00		µg/L	1	1/3/2017 1:07:11 PM
Barium	47.0	0.500		µg/L	1	1/3/2017 1:07:11 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 1:07:11 PM
Chromium	1.34	0.500		µg/L	1	1/3/2017 1:07:11 PM
Copper	1.06	0.500		µg/L	1	1/3/2017 1:07:11 PM
Lead	ND	0.500		µg/L	1	1/3/2017 1:07:11 PM
Nickel	0.963	0.500		µg/L	1	1/3/2017 1:07:11 PM
Zinc	5.57	1.50		µg/L	1	1/3/2017 1:07:11 PM

Hexavalent Chromium by EPA 7196 / SM 3500 Cr B

Batch ID: R33688 Analyst: KT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:44:00 AM

Client: Floyd | Snider
Collection Date: 12/28/2016 4:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-011
Matrix: Groundwater
Client Sample ID: **TWP16-PMW5B**

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.3		µg/L	1	1/4/2017 12:02:14 AM
Diesel Range Organics (C12-C24)	125	50.3		µg/L	1	1/4/2017 12:02:14 AM
Heavy Oil	1,210	101		µg/L	1	1/4/2017 12:02:14 AM
Surr: 2-Fluorobiphenyl	69.6	50-150		%Rec	1	1/4/2017 12:02:14 AM
Surr: o-Terphenyl	59.9	50-150		%Rec	1	1/4/2017 12:02:14 AM

NOTES:
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
2-Chlorophenol	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
1,3-Dichlorobenzene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
1,4-Dichlorobenzene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
1,2-Dichlorobenzene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Benzyl alcohol	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Bis(2-chloroethyl) ether	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
2-Methylphenol (o-cresol)	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Hexachloroethane	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
N-Nitrosodi-n-propylamine	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Nitrobenzene	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
Isophorone	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
4-Methylphenol (p-cresol)	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
2-Nitrophenol	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
2,4-Dimethylphenol	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Bis(2-chloroethoxy)methane	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
2,4-Dichlorophenol	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
1,2,4-Trichlorobenzene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Naphthalene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
4-Chloroaniline	ND	4.98		µg/L	1	1/5/2017 8:44:19 PM
Hexachlorobutadiene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
4-Chloro-3-methylphenol	ND	4.98		µg/L	1	1/5/2017 8:44:19 PM
2-Methylnaphthalene	ND	0.498	Q	µg/L	1	1/5/2017 8:44:19 PM
1-Methylnaphthalene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Hexachlorocyclopentadiene	ND	0.997	Q	µg/L	1	1/5/2017 8:44:19 PM
2,4,6-Trichlorophenol	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
2,4,5-Trichlorophenol	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
2-Chloronaphthalene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
2-Nitroaniline	ND	4.98		µg/L	1	1/5/2017 8:44:19 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 4:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-011
Matrix: Groundwater
Client Sample ID: **TWP16-PMW5B**

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Acenaphthene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Dimethylphthalate	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
2,6-Dinitrotoluene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Acenaphthylene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
2,4-Dinitrophenol	ND	1.99	Q	µg/L	1	1/5/2017 8:44:19 PM
Dibenzofuran	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
2,4-Dinitrotoluene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
4-Nitrophenol	ND	4.98		µg/L	1	1/5/2017 8:44:19 PM
Fluorene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
4-Chlorophenyl phenyl ether	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Diethylphthalate	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
4,6-Dinitro-2-methylphenol	ND	4.98	Q	µg/L	1	1/5/2017 8:44:19 PM
4-Bromophenyl phenyl ether	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Hexachlorobenzene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Pentachlorophenol	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
Phenanthrene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Anthracene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Carbazole	ND	4.98		µg/L	1	1/5/2017 8:44:19 PM
Di-n-butyl phthalate	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Fluoranthene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Pyrene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Benzyl Butylphthalate	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
bis(2-Ethylhexyl)adipate	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Benz[a]anthracene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Chrysene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Bis(2-ethylhexyl) phthalate	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Di-n-octyl phthalate	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Benzo (b) fluoranthene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Benzo (k) fluoranthene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Benzo[a]pyrene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Indeno (1,2,3-cd) pyrene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Dibenzo (a,h) anthracene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Benzo (g,h,I) perylene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Surr: 2,4,6-Tribromophenol	110	5-127		%Rec	1	1/5/2017 8:44:19 PM
Surr: 2-Fluorobiphenyl	60.7	24.1-139		%Rec	1	1/5/2017 8:44:19 PM
Surr: Nitrobenzene-d5	79.7	21.9-139		%Rec	1	1/5/2017 8:44:19 PM
Surr: Phenol-d6	70.3	10.3-128		%Rec	1	1/5/2017 8:44:19 PM
Surr: p-Terphenyl	59.1	25.2-132		%Rec	1	1/5/2017 8:44:19 PM

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-011
Client Sample ID: TWP16-PMW5B

Collection Date: 12/28/2016 4:00:00 PM
Matrix: Groundwater

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 6:33:38 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 6:33:38 PM
Surr: 4-Bromofluorobenzene	97.0	65-135		%Rec	1	1/4/2017 6:33:38 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 6:33:38 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 6:33:38 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 6:33:38 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 6:33:38 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 4:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-011
Matrix: Groundwater
Client Sample ID: **TWP16-PMW5B**

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 6:33:38 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 6:33:38 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 6:33:38 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 6:33:38 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	1/4/2017 6:33:38 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 6:33:38 PM
Surr: 1-Bromo-4-fluorobenzene	97.3	64.2-128		%Rec	1	1/4/2017 6:33:38 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-011
Client Sample ID: **TWP16-PMW5B**
Collection Date: 12/28/2016 4:00:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:41:15 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	2.41	1.00		µg/L	1	1/3/2017 1:10:48 PM
Barium	3.43	0.500		µg/L	1	1/3/2017 1:10:48 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 1:10:48 PM
Chromium	4.58	0.500		µg/L	1	1/3/2017 1:10:48 PM
Copper	ND	0.500		µg/L	1	1/3/2017 1:10:48 PM
Lead	ND	0.500		µg/L	1	1/3/2017 1:10:48 PM
Nickel	0.706	0.500		µg/L	1	1/3/2017 1:10:48 PM
Zinc	ND	1.50		µg/L	1	1/3/2017 1:10:48 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	0.0557	0.0500		mg/L	1	12/29/2016 10:21:00 AM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-012
Client Sample ID: Trip Blank

Collection Date: 12/20/2016 2:59:00 PM

Matrix: Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline by NWTPH-Gx				Batch ID: 15802		Analyst: NG
Gasoline	ND	50.0	H	µg/L	1	1/4/2017 10:46:10 AM
Surr: Toluene-d8	101	65-135	H	%Rec	1	1/4/2017 10:46:10 AM
Surr: 4-Bromofluorobenzene	96.0	65-135	H	%Rec	1	1/4/2017 10:46:10 AM
Volatile Organic Compounds by EPA Method 8260C				Batch ID: 15802		Analyst: NG
Dichlorodifluoromethane (CFC-12)	ND	1.00	QH	µg/L	1	1/4/2017 10:46:10 AM
Chloromethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Vinyl chloride	ND	0.200	H	µg/L	1	1/4/2017 10:46:10 AM
Bromomethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Trichlorofluoromethane (CFC-11)	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Chloroethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,1-Dichloroethene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Methylene chloride	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
trans-1,2-Dichloroethene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Methyl tert-butyl ether (MTBE)	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,1-Dichloroethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
2,2-Dichloropropane	ND	2.00	QH	µg/L	1	1/4/2017 10:46:10 AM
cis-1,2-Dichloroethene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Chloroform	3.67	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,1,1-Trichloroethane (TCA)	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,1-Dichloropropene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Carbon tetrachloride	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,2-Dichloroethane (EDC)	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Benzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Trichloroethene (TCE)	ND	0.500	H	µg/L	1	1/4/2017 10:46:10 AM
1,2-Dichloropropane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Bromodichloromethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Dibromomethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
cis-1,3-Dichloropropene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Toluene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
trans-1,3-Dichloropropylene	ND	1.00	QH	µg/L	1	1/4/2017 10:46:10 AM
1,1,2-Trichloroethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,3-Dichloropropane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Tetrachloroethene (PCE)	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Dibromochloromethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,2-Dibromoethane (EDB)	ND	0.0600	H	µg/L	1	1/4/2017 10:46:10 AM
Chlorobenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,1,1,2-Tetrachloroethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/20/2016 2:59:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-012
Matrix: Water
Client Sample ID: Trip Blank

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
m,p-Xylene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
o-Xylene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Styrene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Isopropylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Bromoform	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,1,2,2-Tetrachloroethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
n-Propylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Bromobenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,3,5-Trimethylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
2-Chlorotoluene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
4-Chlorotoluene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
tert-Butylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,2,3-Trichloropropane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,2,4-Trichlorobenzene	ND	2.00	H	µg/L	1	1/4/2017 10:46:10 AM
sec-Butylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
4-Isopropyltoluene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,3-Dichlorobenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,4-Dichlorobenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
n-Butylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,2-Dichlorobenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,2-Dibromo-3-chloropropane	ND	1.00	QH	µg/L	1	1/4/2017 10:46:10 AM
1,2,4-Trimethylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Hexachloro-1,3-butadiene	ND	4.00	H	µg/L	1	1/4/2017 10:46:10 AM
Naphthalene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,2,3-Trichlorobenzene	ND	4.00	H	µg/L	1	1/4/2017 10:46:10 AM
Surr: Dibromofluoromethane	100	45.4-152	H	%Rec	1	1/4/2017 10:46:10 AM
Surr: Toluene-d8	103	40.1-139	H	%Rec	1	1/4/2017 10:46:10 AM
Surr: 1-Bromo-4-fluorobenzene	95.9	64.2-128	H	%Rec	1	1/4/2017 10:46:10 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Date: *1/9/2017*

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Hexavalent Chromium by EPA 7196 / SM 3500 Cr B

Sample ID **MB-R33688** SampType: **MBLK** Units: **mg/L** Prep Date: **12/29/2016** RunNo: **33688**
Client ID: **MBLKW** Batch ID: **R33688** Analysis Date: **12/29/2016** SeqNo: **639409**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	0.0500									

Sample ID **LCS-R33688** SampType: **LCS** Units: **mg/L** Prep Date: **12/29/2016** RunNo: **33688**
Client ID: **LCSW** Batch ID: **R33688** Analysis Date: **12/29/2016** SeqNo: **639411**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.223	0.0500	0.2500	0	89.1	80	120				

Sample ID **1612278-001EDUP** SampType: **DUP** Units: **mg/L** Prep Date: **12/29/2016** RunNo: **33688**
Client ID: **TWP16-PMW1A** Batch ID: **R33688** Analysis Date: **12/29/2016** SeqNo: **639393**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	0.0500						0		30	

Sample ID **1612278-001EMS** SampType: **MS** Units: **mg/L** Prep Date: **12/29/2016** RunNo: **33688**
Client ID: **TWP16-PMW1A** Batch ID: **R33688** Analysis Date: **12/29/2016** SeqNo: **639395**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.0228	0.0500	0.2500	0.009700	5.24	65	135				S

NOTES:
S - Spike recovery indicates a possible matrix effect. The method is in control as indicated by the Laboratory Control Sample (LCS).

Sample ID **1612278-001EMSD** SampType: **MSD** Units: **mg/L** Prep Date: **12/29/2016** RunNo: **33688**
Client ID: **TWP16-PMW1A** Batch ID: **R33688** Analysis Date: **12/29/2016** SeqNo: **639397**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.0209	0.0500	0.2500	0.009700	4.48	65	135	0		30	S

NOTES:
S - Spike recovery indicates a possible matrix effect. The method is in control as indicated by the Laboratory Control Sample (LCS).

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Hexavalent Chromium by EPA 7196 / SM 3500 Cr B

Sample ID **1612278-003EMS** SampType: **MS** Units: **mg/L** Prep Date: **12/29/2016** RunNo: **33688**
Client ID: **TWP16-PMW2B** Batch ID: **R33688** Analysis Date: **12/29/2016** SeqNo: **639399**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.192	0.0500	0.2500	0	76.8	65	135				

Sample ID **1612278-003EMSD** SampType: **MSD** Units: **mg/L** Prep Date: **12/29/2016** RunNo: **33688**
Client ID: **TWP16-PMW2B** Batch ID: **R33688** Analysis Date: **12/29/2016** SeqNo: **639400**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.182	0.0500	0.2500	0	72.7	65	135	0.1920	5.46	30	

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID **MB-15816FB** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **MBLKW** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639666**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Barium	ND	0.500									
Cadmium	ND	0.200									
Chromium	ND	0.500									
Copper	ND	0.500									
Lead	ND	0.500									
Nickel	ND	0.500									
Zinc	ND	1.50									

NOTES:
Filter Blank

Sample ID **MB-15820** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **MBLKW** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639667**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Barium	ND	0.500									
Cadmium	ND	0.200									
Chromium	ND	0.500									
Copper	ND	0.500									
Lead	ND	0.500									
Nickel	ND	0.500									
Zinc	ND	1.50									

Sample ID **LCS-15820** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **LCSW** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639668**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	95.9	1.00	100.0	0	95.9	85	115				
Barium	97.2	0.500	100.0	0	97.2	85	115				
Cadmium	4.81	0.200	5.000	0	96.2	85	115				

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID **LCS-15820** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **LCSW** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639668**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	99.2	0.500	100.0	0	99.2	85	115				
Copper	98.8	0.500	100.0	0	98.8	85	115				
Lead	49.2	0.500	50.00	0	98.4	85	115				
Nickel	98.3	0.500	100.0	0	98.3	85	115				
Zinc	104	1.50	100.0	0	104	85	115				

Sample ID **1612278-005DDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **TWP16-PMW2A** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639670**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.76	1.00						1.650	6.71	30	
Barium	220	0.500						235.0	6.37	30	
Cadmium	ND	0.200						0		30	
Chromium	ND	0.500						0		30	
Copper	0.510	0.500						0.6950	30.7	30	
Lead	ND	0.500						0		30	
Nickel	0.867	0.500						1.092	22.9	30	
Zinc	21.5	1.50						23.98	10.8	30	

Sample ID **1612278-005DMS** SampType: **MS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **TWP16-PMW2A** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639671**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	507	1.00	500.0	1.650	101	70	130				
Barium	723	0.500	500.0	235.0	97.6	70	130				
Cadmium	26.3	0.200	25.00	0.02850	105	70	130				
Chromium	502	0.500	500.0	0.09950	100	70	130				
Copper	470	0.500	500.0	0.6950	93.8	70	130				
Lead	229	0.500	250.0	0.1060	91.6	70	130				
Nickel	485	0.500	500.0	1.092	96.7	70	130				

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID **1612278-005DMS** SampType: **MS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **TWP16-PMW2A** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639671**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	527	1.50	500.0	23.98	101	70	130				

Sample ID **1612278-005DMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **TWP16-PMW2A** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639672**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	521	1.00	500.0	1.650	104	70	130	506.8	2.74	30	
Barium	721	0.500	500.0	235.0	97.1	70	130	723.0	0.341	30	
Cadmium	26.3	0.200	25.00	0.02850	105	70	130	26.33	0.198	30	
Chromium	500	0.500	500.0	0.09950	100	70	130	502.3	0.477	30	
Copper	477	0.500	500.0	0.6950	95.3	70	130	469.8	1.59	30	
Lead	225	0.500	250.0	0.1060	89.9	70	130	229.1	1.80	30	
Nickel	484	0.500	500.0	1.092	96.5	70	130	484.7	0.223	30	
Zinc	542	1.50	500.0	23.98	104	70	130	527.4	2.69	30	

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Dissolved Mercury by EPA Method 245.1

Sample ID **MB-15826** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33698**
Client ID: **MBLKW** Batch ID: **15826** Analysis Date: **1/3/2017** SeqNo: **639816**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.100									

Sample ID **LCS-15826** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33698**
Client ID: **LCSW** Batch ID: **15826** Analysis Date: **1/3/2017** SeqNo: **639817**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.67	0.100	2.500	0	107	85	115				

Sample ID **1612278-005DDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33698**
Client ID: **TWP16-PMW2A** Batch ID: **15826** Analysis Date: **1/3/2017** SeqNo: **639823**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.100						0		20	

Sample ID **1612278-005DMS** SampType: **MS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33698**
Client ID: **TWP16-PMW2A** Batch ID: **15826** Analysis Date: **1/3/2017** SeqNo: **639824**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.66	0.100	2.500	0	106	80	120				

Sample ID **1612278-005DMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33698**
Client ID: **TWP16-PMW2A** Batch ID: **15826** Analysis Date: **1/3/2017** SeqNo: **639825**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.63	0.100	2.500	0	105	80	120	2.660	1.13	20	

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Dissolved Mercury by EPA Method 245.1

Sample ID **MB-15816FB**	SampType: **MBLK**			Units: **µg/L**		Prep Date: **1/3/2017**			RunNo: **33698**		
Client ID: **MBLKW**	Batch ID: **15826**					Analysis Date: **1/3/2017**			SeqNo: **639833**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.100									

NOTES:
Filter Blank

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID **MB-15795** SampType: **MBLK** Units: **µg/L** Prep Date: **12/29/2016** RunNo: **33723**
Client ID: **MBLKW** Batch ID: **15795** Analysis Date: **12/30/2016** SeqNo: **640128**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	50.0									
Heavy Oil	ND	100									
Surr: 2-Fluorobiphenyl	43.9		80.07		54.8	50	150				
Surr: o-Terphenyl	52.2		80.07		65.2	50	150				

Sample ID **LCS-15795** SampType: **LCS** Units: **µg/L** Prep Date: **12/29/2016** RunNo: **33723**
Client ID: **LCSW** Batch ID: **15795** Analysis Date: **12/30/2016** SeqNo: **640127**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	774	50.0	999.7	0	77.5	65	135				
Surr: 2-Fluorobiphenyl	66.8		79.97		83.6	50	150				
Surr: o-Terphenyl	77.2		79.97		96.6	50	150				

Sample ID **1612278-001BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **12/29/2016** RunNo: **33723**
Client ID: **TWP16-PMW1A** Batch ID: **15795** Analysis Date: **12/30/2016** SeqNo: **640108**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	49.8						0		30	
Diesel Range Organics (C12-C24)	480	49.8						482.5	0.467	30	
Heavy Oil	1,080	99.5						943.2	13.6	30	
Surr: 2-Fluorobiphenyl	61.7		79.62		77.5	50	150		0		
Surr: o-Terphenyl	69.6		79.62		87.4	50	150		0		

NOTES:
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Sample ID **1612278-005BMS** SampType: **MS** Units: **µg/L** Prep Date: **12/29/2016** RunNo: **33723**
Client ID: **TWP16-PMW2A** Batch ID: **15795** Analysis Date: **12/30/2016** SeqNo: **640113**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	695	50.3	1,005	0	69.1	65	135				

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID **1612278-005BMS**	SampType: **MS**			Units: **µg/L**	Prep Date: **12/29/2016**			RunNo: **33723**		
Client ID: **TWP16-PMW2A**	Batch ID: **15795**				Analysis Date: **12/30/2016**			SeqNo: **640113**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	64.6		80.43		80.3	50	150				
Surr: o-Terphenyl	70.2		80.43		87.3	50	150				

Sample ID **1612278-005BMSD**	SampType: **MSD**			Units: **µg/L**	Prep Date: **12/29/2016**			RunNo: **33723**			
Client ID: **TWP16-PMW2A**	Batch ID: **15795**				Analysis Date: **12/30/2016**			SeqNo: **640114**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	663	50.1	1,002	0	66.1	65	135	694.8	4.77	30	
Surr: 2-Fluorobiphenyl	60.4		80.14		75.4	50	150		0		
Surr: o-Terphenyl	62.9		80.14		78.5	50	150		0		

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID **LCS-R33761**	SampType: **LCS**			Units: **mg/L**		Prep Date: **1/6/2017**			RunNo: **33761**		
Client ID: **LCSW**	Batch ID: **R33761**					Analysis Date: **1/6/2017**			SeqNo: **641164**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	0.410	0.00500	0.5000	0	82.0	80	120				

Sample ID **MB-R33761**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **1/6/2017**			RunNo: **33761**		
Client ID: **MBLKW**	Batch ID: **R33761**					Analysis Date: **1/6/2017**			SeqNo: **641166**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500									

Sample ID **1612278-001AREP**	SampType: **REP**			Units: **mg/L**		Prep Date: **1/6/2017**			RunNo: **33761**		
Client ID: **TWP16-PMW1A**	Batch ID: **R33761**					Analysis Date: **1/6/2017**			SeqNo: **641148**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	6.29	0.00500						6.293	0.119	30	E

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **MB-15825** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **MBLKW** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641337**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diphenylamine	ND	4.96									
Phenol	ND	1.98									
2-Chlorophenol	ND	0.992									
N-Nitrosodiphenylamine	ND	4.96									
1,3-Dichlorobenzene	ND	0.992									
1,4-Dichlorobenzene	ND	0.992									
1,2-Dichlorobenzene	ND	0.992									
Benzyl alcohol	ND	0.992									
Bis(2-chloroethyl) ether	ND	1.98									
2-Methylphenol (o-cresol)	ND	0.992									
Hexachloroethane	ND	0.992									
N-Nitrosodi-n-propylamine	ND	0.992									
Nitrobenzene	ND	1.98									
Isophorone	ND	0.992									
4-Methylphenol (p-cresol)	ND	0.992									
2-Nitrophenol	ND	1.98									
2,4-Dimethylphenol	ND	0.992									
Bis(2-chloroethoxy)methane	ND	0.992									
2,4-Dichlorophenol	ND	1.98									
1,2,4-Trichlorobenzene	ND	0.992									
Naphthalene	ND	0.496									
4-Chloroaniline	ND	4.96									
Hexachlorobutadiene	ND	0.992									
4-Chloro-3-methylphenol	ND	4.96									
2-Methylnaphthalene	ND	0.496									Q
1-Methylnaphthalene	ND	0.496									
Hexachlorocyclopentadiene	ND	0.992									Q
2,4,6-Trichlorophenol	ND	1.98									
2,4,5-Trichlorophenol	ND	1.98									
2-Chloronaphthalene	ND	0.992									
2-Nitroaniline	ND	4.96									

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **MB-15825** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **MBLKW** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641337**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.496									
Dimethylphthalate	ND	0.992									
2,6-Dinitrotoluene	ND	0.992									
Acenaphthylene	ND	0.496									
2,4-Dinitrophenol	ND	1.98									Q
Dibenzofuran	ND	0.992									
2,4-Dinitrotoluene	ND	0.992									
4-Nitrophenol	ND	4.96									
Fluorene	ND	0.496									
4-Chlorophenyl phenyl ether	ND	0.992									
Diethylphthalate	ND	0.992									
4,6-Dinitro-2-methylphenol	ND	4.96									Q
4-Bromophenyl phenyl ether	ND	0.992									
Hexachlorobenzene	ND	0.992									
Pentachlorophenol	ND	1.98									
Phenanthrene	ND	0.496									
Anthracene	ND	0.496									
Carbazole	ND	4.96									
Di-n-butyl phthalate	ND	0.992									
Fluoranthene	ND	0.496									
Pyrene	ND	0.496									
Benzyl Butylphthalate	ND	0.992									
bis(2-Ethylhexyl)adipate	ND	0.992									
Benz[a]anthracene	ND	0.496									
Chrysene	ND	0.496									
Bis(2-ethylhexyl) phthalate	ND	0.992									
Di-n-octyl phthalate	ND	0.992									
Benzo (b) fluoranthene	ND	0.496									
Benzo (k) fluoranthene	ND	0.496									
Benzo[a]pyrene	ND	0.496									
Indeno (1,2,3-cd) pyrene	ND	0.496									

Work Order: 1612278
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QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **MB-15825** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **MBLKW** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641337**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibenzo (a,h) anthracene	ND	0.496									
Benzo (g,h,I) perylene	ND	0.496									
Surr: 2,4,6-Tribromophenol	3.18		3.967		80.2	5	127				
Surr: 2-Fluorobiphenyl	1.26		1.983		63.5	24.1	139				
Surr: Nitrobenzene-d5	1.52		1.983		76.8	21.9	139				
Surr: Phenol-d6	2.36		3.967		59.4	10.3	128				
Surr: p-Terphenyl	1.37		1.983		68.9	25.2	132				

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID **LCS-15825** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **LCSW** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641338**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diphenylamine	2.70	5.02	4.012	0	67.3	25	94.9				
Phenol	1.48	2.01	4.012	0	36.8	10	63.1				
2-Chlorophenol	2.04	1.00	4.012	0	50.8	25	112				
N-Nitrosodiphenylamine	N/A	5.02	4.012	0	0	25	94.9				S
1,3-Dichlorobenzene	2.16	1.00	4.012	0	53.7	25	108				
1,4-Dichlorobenzene	2.17	1.00	4.012	0	54.1	25	110				
1,2-Dichlorobenzene	2.18	1.00	4.012	0	54.3	25	109				
Benzyl alcohol	2.05	1.00	4.012	0	51.1	20	96.5				
Bis(2-chloroethyl) ether	2.39	2.01	4.012	0	59.5	25	111				
2-Methylphenol (o-cresol)	1.95	1.00	4.012	0	48.5	25	101				
Hexachloroethane	2.19	1.00	4.012	0	54.6	25	109				
N-Nitrosodi-n-propylamine	2.98	1.00	4.012	0	74.4	25	122				
Nitrobenzene	2.43	2.01	4.012	0	60.7	25	110				
Isophorone	2.58	1.00	4.012	0	64.2	25	126				
4-Methylphenol (p-cresol)	1.02	1.00	2.006	0	51.0	5	100				
2-Nitrophenol	1.93	2.01	4.012	0	48.0	25	126				
2,4-Dimethylphenol	2.38	1.00	4.012	0	59.4	25	124				

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Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **LCS-15825** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **LCSW** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641338**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bis(2-chloroethoxy)methane	2.49	1.00	4.012	0	62.2	25	121				
2,4-Dichlorophenol	2.51	2.01	4.012	0	62.6	29.1	110				
1,2,4-Trichlorobenzene	2.22	1.00	4.012	0	55.3	25	113				
Naphthalene	2.45	0.502	4.012	0	61.1	25	115				
4-Chloroaniline	2.15	5.02	4.012	0	53.6	10	113				
Hexachlorobutadiene	2.32	1.00	4.012	0	57.7	25	111				
4-Chloro-3-methylphenol	3.51	5.02	4.012	0	87.5	32.3	122				
2-Methylnaphthalene	2.59	0.502	4.012	0	64.6	25	119				
1-Methylnaphthalene	2.50	0.502	4.012	0	62.3	25	117				
Hexachlorocyclopentadiene	2.53	1.00	4.012	0	63.0	25	125				
2,4,6-Trichlorophenol	2.48	2.01	4.012	0	61.7	25	133				
2,4,5-Trichlorophenol	2.86	2.01	4.012	0	71.3	25	125				
2-Chloronaphthalene	2.59	1.00	4.012	0	64.5	25	121				
2-Nitroaniline	3.38	5.02	4.012	0	84.3	25	121				
Acenaphthene	2.72	0.502	4.012	0	67.8	25	120				
Dimethylphthalate	2.86	1.00	4.012	0	71.4	25	133				
2,6-Dinitrotoluene	3.05	1.00	4.012	0	76.1	25	131				
Acenaphthylene	2.67	0.502	4.012	0	66.5	25	128				
2,4-Dinitrophenol	3.25	2.01	8.025	0	40.5	10	121				
Dibenzofuran	2.76	1.00	4.012	0	68.8	25	121				
2,4-Dinitrotoluene	3.17	1.00	4.012	0	79.0	25	132				
4-Nitrophenol	2.55	5.02	4.012	0	63.6	5	141				
Fluorene	2.70	0.502	4.012	0	67.3	25	127				
4-Chlorophenyl phenyl ether	2.66	1.00	4.012	0	66.3	25	124				
Diethylphthalate	3.02	1.00	4.012	0	75.3	31.3	142				
4,6-Dinitro-2-methylphenol	2.72	5.02	4.012	0	67.7	10	118				
4-Bromophenyl phenyl ether	2.63	1.00	4.012	0	65.5	25	130				
Hexachlorobenzene	2.82	1.00	4.012	0	70.3	29	120				
Pentachlorophenol	2.55	2.01	4.012	0	63.6	10	117				
Phenanthrene	2.91	0.502	4.012	0	72.5	32.6	104				
Anthracene	2.81	0.502	4.012	0	69.9	27.7	134				

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Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **LCS-15825** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **LCSW** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641338**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbazole	3.06	5.02	4.012	0	76.2	27.9	150				
Di-n-butyl phthalate	3.30	1.00	4.012	0	82.3	28.6	121				
Fluoranthene	3.04	0.502	4.012	0	75.8	34.8	143				
Pyrene	2.99	0.502	4.012	0	74.5	31.9	109				
Benzyl Butylphthalate	3.56	1.00	4.012	0	88.8	43.8	119				
bis(2-Ethylhexyl)adipate	3.20	1.00	4.012	0	79.7	38.1	140				
Benz[a]anthracene	3.17	0.502	4.012	0	78.9	27.2	132				
Chrysene	3.05	0.502	4.012	0	75.9	31.3	107				
Bis(2-ethylhexyl) phthalate	3.35	1.00	4.012	0	83.6	36.2	123				
Di-n-octyl phthalate	3.49	1.00	4.012	0	87.0	40.1	149				
Benzo (b) fluoranthene	3.47	0.502	4.012	0	86.4	32.5	119				
Benzo (k) fluoranthene	3.46	0.502	4.012	0	86.3	25	144				
Benzo[a]pyrene	3.58	0.502	4.012	0	89.3	24.9	125				
Indeno (1,2,3-cd) pyrene	3.40	0.502	4.012	0	84.6	25	127				
Dibenzo (a,h) anthracene	3.50	0.502	4.012	0	87.1	25	132				
Benzo (g,h,I) perylene	3.68	0.502	4.012	0	91.8	25	133				
Surr: 2,4,6-Tribromophenol	3.52		4.012		87.7	5	127				
Surr: 2-Fluorobiphenyl	1.06		2.006		52.7	24.1	139				
Surr: Nitrobenzene-d5	0.996		2.006		49.7	21.9	139				
Surr: Phenol-d6	1.89		4.012		47.2	10.3	128				
Surr: p-Terphenyl	1.16		2.006		57.7	25.2	132				

NOTES:

N/A - N-nitrosodiphenylamine decomposes to Diphenylamine (mix component) in the injector. Please refer to Spike recoveries for Diphenylamine.

Sample ID **1612293-001FDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641343**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diphenylamine	ND	5.02						0		50	
2-Chlorophenol	ND	1.00						0		50	
N-Nitrosodiphenylamine	ND	5.02						0		50	

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Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **1612293-001FDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641343**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dichlorobenzene	ND	1.00						0		50	
1,4-Dichlorobenzene	ND	1.00						0		50	
1,2-Dichlorobenzene	ND	1.00						0		50	
Benzyl alcohol	ND	1.00						0		50	
Bis(2-chloroethyl) ether	ND	2.01						0		50	
2-Methylphenol (o-cresol)	ND	1.00						0		50	
Hexachloroethane	ND	1.00						0		50	
N-Nitrosodi-n-propylamine	ND	1.00						0		50	
Nitrobenzene	4.67	2.01						5.506	16.4	50	
Isophorone	1.55	1.00						1.631	5.34	50	
4-Methylphenol (p-cresol)	ND	1.00						0		50	
2-Nitrophenol	ND	2.01						0		50	
2,4-Dimethylphenol	ND	1.00						0		50	
Bis(2-chloroethoxy)methane	ND	1.00						0		50	
2,4-Dichlorophenol	ND	2.01						0		50	
1,2,4-Trichlorobenzene	ND	1.00						0		50	
Naphthalene	ND	0.502						0		50	
4-Chloroaniline	ND	5.02						0		50	
Hexachlorobutadiene	ND	1.00						0		50	
4-Chloro-3-methylphenol	ND	5.02						0		50	
2-Methylnaphthalene	0.820	0.502						1.016	21.4	50	Q
1-Methylnaphthalene	ND	0.502						0.6932	40.8	50	
Hexachlorocyclopentadiene	ND	1.00						0		50	Q
2,4,6-Trichlorophenol	ND	2.01						0		50	
2,4,5-Trichlorophenol	ND	2.01						0		50	
2-Chloronaphthalene	ND	1.00						0		50	
2-Nitroaniline	ND	5.02						0		50	
Acenaphthene	ND	0.502						0		50	
Dimethylphthalate	3.15	1.00						3.280	4.11	50	
2,6-Dinitrotoluene	ND	1.00						0		50	
Acenaphthylene	ND	0.502						0		50	

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QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID	**1612293-001FDUP**	SampType:	**DUP**	Units:	**µg/L**	Prep Date:	**1/3/2017**	RunNo:	**33768**
Client ID:	**BATCH**	Batch ID:	**15825**			Analysis Date:	**1/5/2017**	SeqNo:	**641343**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-Dinitrophenol	ND	2.01						0		50	Q
Dibenzofuran	ND	1.00						0		50	
2,4-Dinitrotoluene	ND	1.00						0		50	
4-Nitrophenol	ND	5.02						0		50	
Fluorene	ND	0.502						0		50	
4-Chlorophenyl phenyl ether	ND	1.00						0		50	
Diethylphthalate	3.13	1.00						3.684	16.3	50	
4,6-Dinitro-2-methylphenol	ND	5.02						0		50	Q
4-Bromophenyl phenyl ether	ND	1.00						0		50	
Hexachlorobenzene	ND	1.00						0		50	
Pentachlorophenol	ND	2.01						0		50	
Phenanthrene	1.23	0.502						1.365	10.0	50	
Anthracene	ND	0.502						0		50	
Carbazole	ND	5.02						0		50	
Di-n-butyl phthalate	ND	1.00						0		50	
Fluoranthene	1.25	0.502						1.344	7.46	50	
Pyrene	1.03	0.502						1.039	0.893	50	
Benzyl Butylphthalate	ND	1.00						0		50	
bis(2-Ethylhexyl)adipate	ND	1.00						0		50	
Benz[a]anthracene	ND	0.502						0		50	
Chrysene	ND	0.502						0		50	
Di-n-octyl phthalate	1.41	1.00						1.261	11.4	50	
Benzo (b) fluoranthene	ND	0.502						0		50	
Benzo (k) fluoranthene	ND	0.502						0		50	
Benzo[a]pyrene	ND	0.502						0		50	
Indeno (1,2,3-cd) pyrene	ND	0.502						0		50	
Dibenzo (a,h) anthracene	ND	0.502						0		50	
Benzo (g,h,I) perylene	ND	0.502						0		50	
Surr: 2,4,6-Tribromophenol	4.13		4.019		103	5	127		0		
Surr: 2-Fluorobiphenyl	1.31		2.009		65.1	24.1	139		0		
Surr: Nitrobenzene-d5	1.57		2.009		77.9	21.9	139		0		

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CLIENT: Floyd | Snider
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QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **1612293-001FDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641343**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Phenol-d6	4.31		4.019		107	10.3	128		0		
Surr: p-Terphenyl	1.48		2.009		73.4	25.2	132		0		

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID **1612293-003FMS** SampType: **MS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641345**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diphenylamine	3.75	5.03	4.025	0.2076	87.9	5	159				
Phenol	24.6	2.01	4.025	21.53	77.1	5	94.5				
2-Chlorophenol	3.16	1.01	4.025	0	78.4	10.4	100				
N-Nitrosodiphenylamine	N/A	5.03	4.025	0	0	5	66.4				S
1,3-Dichlorobenzene	2.92	1.01	4.025	0	72.5	23	94.8				
1,4-Dichlorobenzene	2.82	1.01	4.025	0	70.1	23.8	95.2				
1,2-Dichlorobenzene	2.84	1.01	4.025	0	70.6	25.5	96.9				
Benzyl alcohol	4.23	1.01	4.025	0	105	5	139				
Bis(2-chloroethyl) ether	4.08	2.01	4.025	0	101	22	109				
2-Methylphenol (o-cresol)	4.33	1.01	4.025	0	107	5	106				S
Hexachloroethane	2.83	1.01	4.025	0	70.4	9.62	104				
N-Nitrosodi-n-propylamine	5.01	1.01	4.025	0	125	23.7	124				S
Nitrobenzene	8.89	2.01	4.025	5.032	95.9	10.6	137				
Isophorone	5.31	1.01	4.025	1.400	97.1	22.9	124				
4-Methylphenol (p-cresol)	0.883	1.01	2.012	0	43.9	5	119				
2-Nitrophenol	3.68	2.01	4.025	0	91.4	13.6	125				
2,4-Dimethylphenol	5.78	1.01	4.025	0	144	5	126				S
Bis(2-chloroethoxy)methane	3.72	1.01	4.025	0	92.4	27	115				
2,4-Dichlorophenol	0.261	2.01	4.025	0	6.49	12.1	126				S
1,2,4-Trichlorobenzene	3.00	1.01	4.025	0.01534	74.2	25	110				
Naphthalene	4.72	0.503	4.025	0	117	23.5	108				S
4-Chloroaniline	1.36	5.03	4.025	0	33.8	5	110				

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Sample ID **1612293-003FMS** SampType: **MS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641345**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexachlorobutadiene	3.07	1.01	4.025	0	76.4	23.6	98.8				
4-Chloro-3-methylphenol	1.72	5.03	4.025	0	42.8	5	139				
2-Methylnaphthalene	3.49	0.503	4.025	0.5083	74.2	26.1	118				
1-Methylnaphthalene	3.43	0.503	4.025	0.3337	76.9	27.5	116				
Hexachlorocyclopentadiene	ND	1.01	4.025	0	0	5	126				S
2,4,6-Trichlorophenol	3.71	2.01	4.025	0	92.3	10.5	124				
2,4,5-Trichlorophenol	4.06	2.01	4.025	0	101	5	144				
2-Chloronaphthalene	3.29	1.01	4.025	0	81.8	27	117				
2-Nitroaniline	4.94	5.03	4.025	0	123	5.48	142				
Acenaphthene	3.81	0.503	4.025	0	94.7	29.3	117				
Dimethylphthalate	6.15	1.01	4.025	2.846	82.0	24	132				
2,6-Dinitrotoluene	3.80	1.01	4.025	0	94.4	22	129				
Acenaphthylene	3.18	0.503	4.025	0	79.0	25.1	121				
2,4-Dinitrophenol	ND	2.01	8.049	0	0	5	172				S
Dibenzofuran	3.85	1.01	4.025	0	95.7	27.8	116				
2,4-Dinitrotoluene	4.10	1.01	4.025	0	102	24.4	124				
4-Nitrophenol	ND	5.03	4.025	0	0	5	120				S
Fluorene	3.65	0.503	4.025	0.1396	87.2	27.6	123				
4-Chlorophenyl phenyl ether	3.59	1.01	4.025	0	89.3	28.6	117				
Diethylphthalate	7.43	1.01	4.025	3.324	102	27.4	137				
4,6-Dinitro-2-methylphenol	1.92	5.03	4.025	0	47.7	5	134				
4-Bromophenyl phenyl ether	3.81	1.01	4.025	0	94.7	32.2	120				
Hexachlorobenzene	3.54	1.01	4.025	0	87.8	28.3	114				
Pentachlorophenol	6.12	2.01	4.025	0	152	5	153				
Phenanthrene	3.80	0.503	4.025	0.2654	87.9	29.7	120				
Anthracene	3.67	0.503	4.025	0	91.2	22.1	125				
Carbazole	3.89	5.03	4.025	0.1863	92.1	31	133				
Di-n-butyl phthalate	4.87	1.01	4.025	0.8816	99.0	34.3	138				
Fluoranthene	3.70	0.503	4.025	0.3242	83.9	33.3	137				
Pyrene	3.55	0.503	4.025	0.1698	83.9	31.4	132				
Benzyl Butylphthalate	4.28	1.01	4.025	0	106	37.7	159				

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Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **1612293-003FMS** SampType: **MS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641345**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
bis(2-Ethylhexyl)adipate	3.05	1.01	4.025	0	75.7	5	159				
Benz[a]anthracene	3.52	0.503	4.025	0.08903	85.1	26.5	136				
Chrysene	3.29	0.503	4.025	0.1221	78.8	22.2	126				
Bis(2-ethylhexyl) phthalate	7.11	1.01	4.025	4.277	70.3	5	162				
Di-n-octyl phthalate	3.86	1.01	4.025	0.3835	86.3	5	175				
Benzo (b) fluoranthene	3.86	0.503	4.025	0.08677	93.7	20	139				
Benzo (k) fluoranthene	3.17	0.503	4.025	0.09953	76.3	13	134				
Benzo[a]pyrene	3.48	0.503	4.025	0.06363	84.9	5	144				
Indeno (1,2,3-cd) pyrene	2.70	0.503	4.025	0.03918	66.2	5	144				
Dibenzo (a,h) anthracene	2.75	0.503	4.025	0.02940	67.6	10.3	145				
Benzo (g,h,I) perylene	2.68	0.503	4.025	0.04867	65.3	5	135				
Surr: 2,4,6-Tribromophenol	4.49		4.025		112	5	127				
Surr: 2-Fluorobiphenyl	1.21		2.012		60.3	24.1	139				
Surr: Nitrobenzene-d5	1.91		2.012		95.1	21.9	139				
Surr: Phenol-d6	4.42		4.025		110	10.3	128				
Surr: p-Terphenyl	1.31		2.012		65.1	25.2	132				

NOTES:

N/A - N-nitrosodiphenylamine decomposes to Diphenylamine (mix component) in the injector. Please refer to Spike recoveries for Diphenylamine.

S - Spike recovery indicates a possible matrix effect. The method is in control as indicated by the Laboratory Control Sample (LCS).

Sample ID **1612293-003FMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641346**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diphenylamine	3.45	4.95	3.959	0.2076	82.0	5	159	0		0	
Phenol	24.1	1.98	3.959	21.53	64.8	5	94.5	24.63	2.20	50	
2-Chlorophenol	2.89	0.990	3.959	0	73.1	10.4	100	3.156	8.67	50	
N-Nitrosodiphenylamine	N/A	4.95	3.959	0	0	5	66.4	0		0	S
1,3-Dichlorobenzene	2.58	0.990	3.959	0	65.2	23	94.8	2.920	12.3	50	
1,4-Dichlorobenzene	2.42	0.990	3.959	0	61.1	23.8	95.2	2.821	15.3	50	
1,2-Dichlorobenzene	2.48	0.990	3.959	0	62.7	25.5	96.9	2.841	13.4	50	

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **1612293-003FMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641346**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzyl alcohol	3.99	0.990	3.959	0	101	5	139	4.230	5.72	50	
Bis(2-chloroethyl) ether	4.48	1.98	3.959	0	113	22	109	4.078	9.40	50	S
2-Methylphenol (o-cresol)	3.88	0.990	3.959	0	98.0	5	106	4.326	10.9	50	
Hexachloroethane	2.46	0.990	3.959	0	62.2	9.62	104	2.834	14.1	50	
N-Nitrosodi-n-propylamine	4.70	0.990	3.959	0	119	23.7	124	5.013	6.53	50	
Nitrobenzene	8.51	1.98	3.959	5.032	87.9	10.6	137	8.892	4.35	50	
Isophorone	4.54	0.990	3.959	1.400	79.2	22.9	124	5.309	15.7	50	
4-Methylphenol (p-cresol)	0.868	0.990	1.979	0	43.8	5	119	0		50	
2-Nitrophenol	3.27	1.98	3.959	0	82.6	13.6	125	3.677	11.7	50	
2,4-Dimethylphenol	5.03	0.990	3.959	0	127	5	126	5.777	13.8	50	S
Bis(2-chloroethoxy)methane	3.45	0.990	3.959	0	87.2	27	115	3.719	7.47	50	
2,4-Dichlorophenol	0.190	1.98	3.959	0	4.81	12.1	126	0		50	S
1,2,4-Trichlorobenzene	2.67	0.990	3.959	0.01534	67.1	25	110	3.004	11.6	50	
Naphthalene	3.94	0.495	3.959	0	99.6	23.5	108	4.716	17.9	50	
4-Chloroaniline	1.10	4.95	3.959	0	27.7	5	110	0		50	
Hexachlorobutadiene	2.87	0.990	3.959	0	72.4	23.6	98.8	3.073	6.98	50	
4-Chloro-3-methylphenol	1.21	4.95	3.959	0	30.5	5	139	0		50	
2-Methylnaphthalene	3.22	0.495	3.959	0.5083	68.6	26.1	118	3.493	8.05	50	
1-Methylnaphthalene	3.39	0.495	3.959	0.3337	77.2	27.5	116	3.430	1.19	50	
Hexachlorocyclopentadiene	ND	0.990	3.959	0	0	5	126	0		50	S
2,4,6-Trichlorophenol	3.77	1.98	3.959	0	95.2	10.5	124	3.714	1.46	50	
2,4,5-Trichlorophenol	3.89	1.98	3.959	0	98.3	5	144	4.065	4.41	50	
2-Chloronaphthalene	2.97	0.990	3.959	0	75.1	27	117	3.292	10.2	50	
2-Nitroaniline	5.02	4.95	3.959	0	127	5.48	142	4.940	1.52	50	
Acenaphthene	3.61	0.495	3.959	0	91.1	29.3	117	3.812	5.56	50	
Dimethylphthalate	6.08	0.990	3.959	2.846	81.8	24	132	6.146	1.04	50	
2,6-Dinitrotoluene	3.87	0.990	3.959	0	97.7	22	129	3.800	1.79	50	
Acenaphthylene	2.84	0.495	3.959	0	71.6	25.1	121	3.180	11.4	50	
2,4-Dinitrophenol	ND	1.98	7.917	0	0	5	172	0		50	S
Dibenzofuran	3.38	0.990	3.959	0	85.3	27.8	116	3.852	13.2	50	
2,4-Dinitrotoluene	3.90	0.990	3.959	0	98.5	24.4	124	4.096	4.88	50	

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **1612293-003FMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641346**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4-Nitrophenol	ND	4.95	3.959	0	0	5	120	0		50	S
Fluorene	3.10	0.495	3.959	0.1396	74.8	27.6	123	3.648	16.2	50	
4-Chlorophenyl phenyl ether	2.96	0.990	3.959	0	74.8	28.6	117	3.593	19.3	50	
Diethylphthalate	6.57	0.990	3.959	3.324	82.0	27.4	137	7.434	12.4	50	
4,6-Dinitro-2-methylphenol	1.08	4.95	3.959	0	27.3	5	134	0		50	
4-Bromophenyl phenyl ether	3.35	0.990	3.959	0	84.6	32.2	120	3.810	12.8	50	
Hexachlorobenzene	3.07	0.990	3.959	0	77.6	28.3	114	3.535	14.0	50	
Pentachlorophenol	4.89	1.98	3.959	0	124	5	153	6.118	22.3	50	
Phenanthrene	3.66	0.495	3.959	0.2654	85.8	29.7	120	3.801	3.78	50	
Anthracene	3.33	0.495	3.959	0	84.1	22.1	125	3.669	9.68	50	
Carbazole	3.47	4.95	3.959	0.1863	82.9	31	133	0		50	
Di-n-butyl phthalate	4.22	0.990	3.959	0.8816	84.3	34.3	138	4.866	14.3	50	
Fluoranthene	3.51	0.495	3.959	0.3242	80.5	33.3	137	3.700	5.24	50	
Pyrene	3.36	0.495	3.959	0.1698	80.5	31.4	132	3.547	5.55	50	
Benzyl Butylphthalate	3.91	0.990	3.959	0	98.9	37.7	159	4.278	8.87	50	
bis(2-Ethylhexyl)adipate	2.82	0.990	3.959	0	71.3	5	159	3.047	7.68	50	
Benz[a]anthracene	3.32	0.495	3.959	0.08903	81.6	26.5	136	3.515	5.73	50	
Chrysene	3.09	0.495	3.959	0.1221	74.9	22.2	126	3.294	6.56	50	
Bis(2-ethylhexyl) phthalate	6.86	0.990	3.959	4.277	65.3	5	162	7.105	3.46	50	
Di-n-octyl phthalate	3.47	0.990	3.959	0.3835	78.0	5	175	3.858	10.6	50	
Benzo (b) fluoranthene	3.36	0.495	3.959	0.08677	82.6	20	139	3.859	13.9	50	
Benzo (k) fluoranthene	2.84	0.495	3.959	0.09953	69.2	13	134	3.171	11.0	50	
Benzo[a]pyrene	3.36	0.495	3.959	0.06363	83.2	5	144	3.479	3.59	50	
Indeno (1,2,3-cd) pyrene	2.21	0.495	3.959	0.03918	54.7	5	144	2.702	20.2	50	
Dibenzo (a,h) anthracene	2.26	0.495	3.959	0.02940	56.2	10.3	145	2.750	19.7	50	
Benzo (g,h,I) perylene	1.96	0.495	3.959	0.04867	48.2	5	135	2.676	31.1	50	
Surr: 2,4,6-Tribromophenol	4.15		3.959		105	5	127		0		
Surr: 2-Fluorobiphenyl	1.24		1.979		62.6	24.1	139		0		
Surr: Nitrobenzene-d5	1.87		1.979		94.6	21.9	139		0		
Surr: Phenol-d6	4.19		3.959		106	10.3	128		0		
Surr: p-Terphenyl	1.34		1.979		67.5	25.2	132		0		

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **1612293-003FMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641346**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
N/A - N-nitrosodiphenylamine decomposes to Diphenylamine (mix component) in the injector. Please refer to Spike recoveries for Diphenylamine.
S - Spike recovery indicates a possible matrix effect. The method is in control as indicated by the Laboratory Control Sample (LCS).

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Sample ID **LCS-15802** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33734**
Client ID: **LCSW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640498**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	523	50.0	500.0	0	105	65	135				
Surr: Toluene-d8	25.4		25.00		101	65	135				
Surr: 4-Bromofluorobenzene	24.6		25.00		98.3	65	135				

Sample ID **LCSD-15802** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33734**
Client ID: **LCSW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640499**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	505	50.0	500.0	0	101	65	135				
Surr: Toluene-d8	25.5		25.00		102	65	135				
Surr: 4-Bromofluorobenzene	24.5		25.00		97.9	65	135				

Sample ID **MB-15802** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33734**
Client ID: **MBLKW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640500**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	50.0									
Surr: Toluene-d8	25.6		25.00		102	65	135				
Surr: 4-Bromofluorobenzene	23.9		25.00		95.5	65	135				

Sample ID **1612278-011ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33734**
Client ID: **TWP16-PMW5B** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640491**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	50.0						0		30	
Surr: Toluene-d8	25.1		25.00		100	65	135		0		
Surr: 4-Bromofluorobenzene	24.3		25.00		97.1	65	135		0		

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Sample ID **1612283-002BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33734**
Client ID: **BATCH** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640494**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	50.0						0		30	
Surr: Toluene-d8	25.3		25.00		101	65	135		0		
Surr: 4-Bromofluorobenzene	24.1		25.00		96.5	65	135		0		

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **LCS-15802** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **LCSW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640458**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	16.2	1.00	20.00	0	80.8	43	136				
Chloromethane	19.7	1.00	20.00	0	98.7	43.9	139				
Vinyl chloride	20.8	0.200	20.00	0	104	53.6	139				
Bromomethane	23.3	1.00	20.00	0	116	42.5	152				
Trichlorofluoromethane (CFC-11)	20.7	1.00	20.00	0	103	43.5	149				
Chloroethane	22.1	1.00	20.00	0	111	53	141				
1,1-Dichloroethene	21.6	1.00	20.00	0	108	65.6	136				
Methylene chloride	22.1	1.00	20.00	0	110	67.1	131				
trans-1,2-Dichloroethene	21.9	1.00	20.00	0	109	71.7	129				
Methyl tert-butyl ether (MTBE)	17.6	1.00	20.00	0	88.0	67.7	131				
1,1-Dichloroethane	22.2	1.00	20.00	0	111	67.9	134				
2,2-Dichloropropane	13.6	2.00	20.00	0	67.8	33.7	152				
cis-1,2-Dichloroethene	21.8	1.00	20.00	0	109	70.2	139				
Chloroform	21.5	1.00	20.00	0	108	66.3	131				
1,1,1-Trichloroethane (TCA)	20.5	1.00	20.00	0	103	71	131				
1,1-Dichloropropene	22.0	1.00	20.00	0	110	69.9	124				
Carbon tetrachloride	19.8	1.00	20.00	0	98.9	66.2	134				
1,2-Dichloroethane (EDC)	21.0	1.00	20.00	0	105	67	126				
Benzene	22.2	1.00	20.00	0	111	69.3	132				
Trichloroethene (TCE)	22.0	0.500	20.00	0	110	65.2	136				
1,2-Dichloropropane	22.3	1.00	20.00	0	112	70.5	130				
Bromodichloromethane	19.4	1.00	20.00	0	97.0	67.2	137				
Dibromomethane	19.6	1.00	20.00	0	98.0	75.5	126				
cis-1,3-Dichloropropene	18.1	1.00	20.00	0	90.5	62.6	137				
Toluene	22.3	1.00	20.00	0	111	61.3	145				
trans-1,3-Dichloropropylene	16.0	1.00	20.00	0	80.2	56.5	163				
1,1,2-Trichloroethane	21.4	1.00	20.00	0	107	71.7	131				
1,3-Dichloropropane	20.6	1.00	20.00	0	103	73.5	127				
Tetrachloroethene (PCE)	21.3	1.00	20.00	0	107	47.5	147				
Dibromochloromethane	17.4	1.00	20.00	0	87.2	67.2	134				
1,2-Dibromoethane (EDB)	19.4	0.0600	20.00	0	96.9	73.6	125				

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **LCS-15802** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **LCSW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640458**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	21.1	1.00	20.00	0	106	73.9	126				
1,1,1,2-Tetrachloroethane	19.6	1.00	20.00	0	97.9	76.8	124				
Ethylbenzene	21.9	1.00	20.00	0	109	72	130				
m,p-Xylene	42.8	1.00	40.00	0	107	70.3	134				
o-Xylene	21.3	1.00	20.00	0	107	72.1	131				
Styrene	21.0	1.00	20.00	0	105	64.3	140				
Isopropylbenzene	21.5	1.00	20.00	0	107	73.9	128				
Bromoform	17.0	1.00	20.00	0	85.2	55.3	141				
1,1,2,2-Tetrachloroethane	18.6	1.00	20.00	0	93.0	62.9	132				
n-Propylbenzene	21.6	1.00	20.00	0	108	74.5	127				
Bromobenzene	20.1	1.00	20.00	0	101	71	131				
1,3,5-Trimethylbenzene	21.1	1.00	20.00	0	106	73.1	128				
2-Chlorotoluene	21.4	1.00	20.00	0	107	70.8	130				
4-Chlorotoluene	21.1	1.00	20.00	0	106	70.1	131				
tert-Butylbenzene	21.1	1.00	20.00	0	105	68.2	131				
1,2,3-Trichloropropane	18.5	1.00	20.00	0	92.6	67.7	131				
1,2,4-Trichlorobenzene	19.5	2.00	20.00	0	97.4	51.8	152				
sec-Butylbenzene	21.2	1.00	20.00	0	106	72	129				
4-Isopropyltoluene	20.2	1.00	20.00	0	101	69.2	130				
1,3-Dichlorobenzene	21.5	1.00	20.00	0	107	71	115				
1,4-Dichlorobenzene	21.3	1.00	20.00	0	106	66.8	119				
n-Butylbenzene	21.0	1.00	20.00	0	105	73.8	127				
1,2-Dichlorobenzene	21.1	1.00	20.00	0	105	69.7	119				
1,2-Dibromo-3-chloropropane	14.3	1.00	20.00	0	71.6	63.1	136				
1,2,4-Trimethylbenzene	21.1	1.00	20.00	0	105	73.4	127				
Hexachloro-1,3-butadiene	20.2	4.00	20.00	0	101	58.6	138				
Naphthalene	19.0	1.00	20.00	0	95.2	41.8	165				
1,2,3-Trichlorobenzene	19.4	4.00	20.00	0	97.0	48.7	156				
Surr: Dibromofluoromethane	25.4		25.00		101	45.4	152				
Surr: Toluene-d8	25.5		25.00		102	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	25.3		25.00		101	64.2	128				

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **LCS-15802**	SampType: **LCS**	Units: **µg/L**	Prep Date: **1/3/2017**	RunNo: **33733**	
Client ID: **LCSW**	Batch ID: **15802**		Analysis Date: **1/4/2017**	SeqNo: **640458**	

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID **LCSD-15802**	SampType: **LCS**	Units: **µg/L**	Prep Date: **1/3/2017**	RunNo: **33733**	
Client ID: **LCSW**	Batch ID: **15802**		Analysis Date: **1/4/2017**	SeqNo: **640459**	

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	14.7	1.00	20.00	0	73.4	43	136				
Chloromethane	19.5	1.00	20.00	0	97.7	43.9	139				
Vinyl chloride	19.9	0.200	20.00	0	99.5	53.6	139				
Bromomethane	23.3	1.00	20.00	0	116	42.5	152				
Trichlorofluoromethane (CFC-11)	20.1	1.00	20.00	0	101	43.5	149				
Chloroethane	21.9	1.00	20.00	0	109	53	141				
1,1-Dichloroethene	21.3	1.00	20.00	0	107	65.6	136				
Methylene chloride	22.1	1.00	20.00	0	111	67.1	131				
trans-1,2-Dichloroethene	21.7	1.00	20.00	0	108	71.7	129				
Methyl tert-butyl ether (MTBE)	17.4	1.00	20.00	0	86.9	67.7	131				
1,1-Dichloroethane	22.1	1.00	20.00	0	110	67.9	134				
2,2-Dichloropropane	13.3	2.00	20.00	0	66.7	33.7	152				
cis-1,2-Dichloroethene	21.9	1.00	20.00	0	110	70.2	139				
Chloroform	21.6	1.00	20.00	0	108	66.3	131				
1,1,1-Trichloroethane (TCA)	20.5	1.00	20.00	0	102	71	131				
1,1-Dichloropropene	21.9	1.00	20.00	0	110	69.9	124				
Carbon tetrachloride	19.9	1.00	20.00	0	99.5	66.2	134				
1,2-Dichloroethane (EDC)	20.9	1.00	20.00	0	104	67	126				
Benzene	22.3	1.00	20.00	0	112	69.3	132				
Trichloroethene (TCE)	21.6	0.500	20.00	0	108	65.2	136				
1,2-Dichloropropane	22.4	1.00	20.00	0	112	70.5	130				
Bromodichloromethane	19.7	1.00	20.00	0	98.6	67.2	137				
Dibromomethane	19.5	1.00	20.00	0	97.3	75.5	126				
cis-1,3-Dichloropropene	18.1	1.00	20.00	0	90.6	62.6	137				
Toluene	22.1	1.00	20.00	0	110	61.3	145				

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **LCSD-15802** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **LCSW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640459**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
trans-1,3-Dichloropropylene	16.0	1.00	20.00	0	80.2	56.5	163				
1,1,2-Trichloroethane	21.1	1.00	20.00	0	105	71.7	131				
1,3-Dichloropropane	20.4	1.00	20.00	0	102	73.5	127				
Tetrachloroethene (PCE)	21.1	1.00	20.00	0	106	47.5	147				
Dibromochloromethane	17.6	1.00	20.00	0	88.2	67.2	134				
1,2-Dibromoethane (EDB)	19.5	0.0600	20.00	0	97.3	73.6	125				
Chlorobenzene	21.0	1.00	20.00	0	105	73.9	126				
1,1,1,2-Tetrachloroethane	19.5	1.00	20.00	0	97.7	76.8	124				
Ethylbenzene	21.8	1.00	20.00	0	109	72	130				
m,p-Xylene	42.6	1.00	40.00	0	106	70.3	134				
o-Xylene	21.4	1.00	20.00	0	107	72.1	131				
Styrene	21.1	1.00	20.00	0	106	64.3	140				
Isopropylbenzene	21.3	1.00	20.00	0	107	73.9	128				
Bromoform	17.3	1.00	20.00	0	86.4	55.3	141				
1,1,2,2-Tetrachloroethane	18.7	1.00	20.00	0	93.3	62.9	132				
n-Propylbenzene	21.5	1.00	20.00	0	107	74.5	127				
Bromobenzene	20.1	1.00	20.00	0	101	71	131				
1,3,5-Trimethylbenzene	21.1	1.00	20.00	0	105	73.1	128				
2-Chlorotoluene	21.4	1.00	20.00	0	107	70.8	130				
4-Chlorotoluene	21.1	1.00	20.00	0	106	70.1	131				
tert-Butylbenzene	20.9	1.00	20.00	0	104	68.2	131				
1,2,3-Trichloropropane	17.7	1.00	20.00	0	88.6	67.7	131				
1,2,4-Trichlorobenzene	19.3	2.00	20.00	0	96.6	51.8	152				
sec-Butylbenzene	21.0	1.00	20.00	0	105	72	129				
4-Isopropyltoluene	20.0	1.00	20.00	0	100	69.2	130				
1,3-Dichlorobenzene	21.6	1.00	20.00	0	108	71	115				
1,4-Dichlorobenzene	21.1	1.00	20.00	0	106	66.8	119				
n-Butylbenzene	20.8	1.00	20.00	0	104	73.8	127				
1,2-Dichlorobenzene	21.0	1.00	20.00	0	105	69.7	119				
1,2-Dibromo-3-chloropropane	14.7	1.00	20.00	0	73.6	63.1	136				
1,2,4-Trimethylbenzene	21.0	1.00	20.00	0	105	73.4	127				

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **LCSD-15802** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **LCSW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640459**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexachloro-1,3-butadiene	19.6	4.00	20.00	0	98.2	58.6	138				
Naphthalene	19.1	1.00	20.00	0	95.6	41.8	165				
1,2,3-Trichlorobenzene	19.4	4.00	20.00	0	97.2	48.7	156				
Surr: Dibromofluoromethane	25.6		25.00		103	45.4	152				
Surr: Toluene-d8	25.5		25.00		102	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	25.2		25.00		101	64.2	128				

Sample ID **MB-15802** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **MBLKW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640460**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	1.00									Q
Chloromethane	ND	1.00									
Vinyl chloride	ND	0.200									
Bromomethane	ND	1.00									
Trichlorofluoromethane (CFC-11)	ND	1.00									
Chloroethane	ND	1.00									
1,1-Dichloroethene	ND	1.00									
Methylene chloride	ND	1.00									
trans-1,2-Dichloroethene	ND	1.00									
Methyl tert-butyl ether (MTBE)	ND	1.00									
1,1-Dichloroethane	ND	1.00									
2,2-Dichloropropane	ND	2.00									Q
cis-1,2-Dichloroethene	ND	1.00									
Chloroform	ND	1.00									
1,1,1-Trichloroethane (TCA)	ND	1.00									
1,1-Dichloropropene	ND	1.00									
Carbon tetrachloride	ND	1.00									
1,2-Dichloroethane (EDC)	ND	1.00									
Benzene	ND	1.00									

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **MB-15802**	SampType: **MBLK**	Units: **µg/L**	Prep Date: **1/3/2017**	RunNo: **33733**	
Client ID: **MBLKW**	Batch ID: **15802**		Analysis Date: **1/4/2017**	SeqNo: **640460**	

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichloroethene (TCE)	ND	0.500									
1,2-Dichloropropane	ND	1.00									
Bromodichloromethane	ND	1.00									
Dibromomethane	ND	1.00									
cis-1,3-Dichloropropene	ND	1.00									
Toluene	ND	1.00									
trans-1,3-Dichloropropylene	ND	1.00									Q
1,1,2-Trichloroethane	ND	1.00									
1,3-Dichloropropane	ND	1.00									
Tetrachloroethene (PCE)	ND	1.00									
Dibromochloromethane	ND	1.00									
1,2-Dibromoethane (EDB)	ND	0.0600									
Chlorobenzene	ND	1.00									
1,1,1,2-Tetrachloroethane	ND	1.00									
Ethylbenzene	ND	1.00									
m,p-Xylene	ND	1.00									
o-Xylene	ND	1.00									
Styrene	ND	1.00									
Isopropylbenzene	ND	1.00									
Bromoform	ND	1.00									
1,1,2,2-Tetrachloroethane	ND	1.00									
n-Propylbenzene	ND	1.00									
Bromobenzene	ND	1.00									
1,3,5-Trimethylbenzene	ND	1.00									
2-Chlorotoluene	ND	1.00									
4-Chlorotoluene	ND	1.00									
tert-Butylbenzene	ND	1.00									
1,2,3-Trichloropropane	ND	1.00									
1,2,4-Trichlorobenzene	ND	2.00									
sec-Butylbenzene	ND	1.00									
4-Isopropyltoluene	ND	1.00									

Work Order: 1612278
CLIENT: Floyd | Snider
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QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **MB-15802** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **MBLKW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640460**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dichlorobenzene	ND	1.00									
1,4-Dichlorobenzene	ND	1.00									
n-Butylbenzene	ND	1.00									
1,2-Dichlorobenzene	ND	1.00									
1,2-Dibromo-3-chloropropane	ND	1.00									Q
1,2,4-Trimethylbenzene	ND	1.00									
Hexachloro-1,3-butadiene	ND	4.00									
Naphthalene	ND	1.00									
1,2,3-Trichlorobenzene	ND	4.00									
Surr: Dibromofluoromethane	24.3		25.00		97.2	45.4	152				
Surr: Toluene-d8	25.3		25.00		101	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	23.7		25.00		94.9	64.2	128				

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID **1612278-011ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **TWP16-PMW5B** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640449**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	1.00						0		30	Q
Chloromethane	ND	1.00						0		30	
Vinyl chloride	ND	0.200						0		30	
Bromomethane	ND	1.00						0		30	
Trichlorofluoromethane (CFC-11)	ND	1.00						0		30	
Chloroethane	ND	1.00						0		30	
1,1-Dichloroethene	ND	1.00						0		30	
Methylene chloride	ND	1.00						0		30	
trans-1,2-Dichloroethene	ND	1.00						0		30	
Methyl tert-butyl ether (MTBE)	ND	1.00						0		30	
1,1-Dichloroethane	ND	1.00						0		30	
2,2-Dichloropropane	ND	2.00						0		30	Q

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **1612278-011ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **TWP16-PMW5B** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640449**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,2-Dichloroethene	ND	1.00						0		30	
Chloroform	ND	1.00						0		30	
1,1,1-Trichloroethane (TCA)	ND	1.00						0		30	
1,1-Dichloropropene	ND	1.00						0		30	
Carbon tetrachloride	ND	1.00						0		30	
1,2-Dichloroethane (EDC)	ND	1.00						0		30	
Benzene	ND	1.00						0		30	
Trichloroethene (TCE)	ND	0.500						0		30	
1,2-Dichloropropane	ND	1.00						0		30	
Bromodichloromethane	ND	1.00						0		30	
Dibromomethane	ND	1.00						0		30	
cis-1,3-Dichloropropene	ND	1.00						0		30	
Toluene	ND	1.00						0		30	
trans-1,3-Dichloropropylene	ND	1.00						0		30	
1,1,2-Trichloroethane	ND	1.00						0		30	
1,3-Dichloropropane	ND	1.00						0		30	
Tetrachloroethene (PCE)	ND	1.00						0		30	
Dibromochloromethane	ND	1.00						0		30	
1,2-Dibromoethane (EDB)	ND	0.0600						0		30	
Chlorobenzene	ND	1.00						0		30	
1,1,1,2-Tetrachloroethane	ND	1.00						0		30	
Ethylbenzene	ND	1.00						0		30	
m,p-Xylene	ND	1.00						0		30	
o-Xylene	ND	1.00						0		30	
Styrene	ND	1.00						0		30	
Isopropylbenzene	ND	1.00						0		30	
Bromoform	ND	1.00						0		30	
1,1,2,2-Tetrachloroethane	ND	1.00						0		30	
n-Propylbenzene	ND	1.00						0		30	
Bromobenzene	ND	1.00						0		30	
1,3,5-Trimethylbenzene	ND	1.00						0		30	

Work Order: 1612278
CLIENT: Floyd | Snider
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QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **1612278-011ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **TWP16-PMW5B** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640449**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Chlorotoluene	ND	1.00						0		30	
4-Chlorotoluene	ND	1.00						0		30	
tert-Butylbenzene	ND	1.00						0		30	
1,2,3-Trichloropropane	ND	1.00						0		30	
1,2,4-Trichlorobenzene	ND	2.00						0		30	
sec-Butylbenzene	ND	1.00						0		30	
4-Isopropyltoluene	ND	1.00						0		30	
1,3-Dichlorobenzene	ND	1.00						0		30	
1,4-Dichlorobenzene	ND	1.00						0		30	
n-Butylbenzene	ND	1.00						0		30	
1,2-Dichlorobenzene	ND	1.00						0		30	
1,2-Dibromo-3-chloropropane	ND	1.00						0		30	
1,2,4-Trimethylbenzene	ND	1.00						0		30	
Hexachloro-1,3-butadiene	ND	4.00						0		30	
Naphthalene	ND	1.00						0		30	
1,2,3-Trichlorobenzene	ND	4.00						0		30	
Surr: Dibromofluoromethane	25.8		25.00		103	45.4	152		0		
Surr: Toluene-d8	25.7		25.00		103	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene	24.3		25.00		97.4	64.2	128		0		

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID **1612283-002BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **BATCH** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640453**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	1.00						0		30	Q
Chloromethane	ND	1.00						0		30	
Vinyl chloride	ND	0.200						0		30	
Bromomethane	ND	1.00						0		30	
Trichlorofluoromethane (CFC-11)	ND	1.00						0		30	

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **1612283-002BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **BATCH** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640453**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloroethane	ND	1.00						0		30	
1,1-Dichloroethene	ND	1.00						0		30	
Methylene chloride	ND	1.00						0		30	
trans-1,2-Dichloroethene	ND	1.00						0		30	
Methyl tert-butyl ether (MTBE)	ND	1.00						0		30	
1,1-Dichloroethane	ND	1.00						0		30	
2,2-Dichloropropane	ND	2.00						0		30	Q
cis-1,2-Dichloroethene	ND	1.00						0		30	
Chloroform	ND	1.00						0		30	
1,1,1-Trichloroethane (TCA)	ND	1.00						0		30	
1,1-Dichloropropene	ND	1.00						0		30	
Carbon tetrachloride	ND	1.00						0		30	
1,2-Dichloroethane (EDC)	ND	1.00						0		30	
Benzene	ND	1.00						0		30	
Trichloroethene (TCE)	ND	0.500						0		30	
1,2-Dichloropropane	ND	1.00						0		30	
Bromodichloromethane	ND	1.00						0		30	
Dibromomethane	ND	1.00						0		30	
cis-1,3-Dichloropropene	ND	1.00						0		30	
Toluene	ND	1.00						0		30	
trans-1,3-Dichloropropylene	ND	1.00						0		30	
1,1,2-Trichloroethane	ND	1.00						0		30	
1,3-Dichloropropane	ND	1.00						0		30	
Tetrachloroethene (PCE)	ND	1.00						0		30	
Dibromochloromethane	ND	1.00						0		30	
1,2-Dibromoethane (EDB)	ND	0.0600						0		30	
Chlorobenzene	ND	1.00						0		30	
1,1,1,2-Tetrachloroethane	ND	1.00						0		30	
Ethylbenzene	ND	1.00						0		30	
m,p-Xylene	ND	1.00						0		30	
o-Xylene	ND	1.00						0		30	

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **1612283-002BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **BATCH** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640453**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Styrene	ND	1.00						0		30	
Isopropylbenzene	ND	1.00						0		30	
Bromoform	ND	1.00						0		30	
1,1,2,2-Tetrachloroethane	ND	1.00						0		30	
n-Propylbenzene	ND	1.00						0		30	
Bromobenzene	ND	1.00						0		30	
1,3,5-Trimethylbenzene	ND	1.00						0		30	
2-Chlorotoluene	ND	1.00						0		30	
4-Chlorotoluene	ND	1.00						0		30	
tert-Butylbenzene	ND	1.00						0		30	
1,2,3-Trichloropropane	ND	1.00						0		30	
1,2,4-Trichlorobenzene	ND	2.00						0		30	
sec-Butylbenzene	ND	1.00						0		30	
4-Isopropyltoluene	ND	1.00						0		30	
1,3-Dichlorobenzene	ND	1.00						0		30	
1,4-Dichlorobenzene	ND	1.00						0		30	
n-Butylbenzene	ND	1.00						0		30	
1,2-Dichlorobenzene	ND	1.00						0		30	
1,2-Dibromo-3-chloropropane	ND	1.00						0		30	
1,2,4-Trimethylbenzene	ND	1.00						0		30	
Hexachloro-1,3-butadiene	ND	4.00						0		30	
Naphthalene	ND	1.00						0		30	
1,2,3-Trichlorobenzene	ND	4.00						0		30	
Surr: Dibromofluoromethane	25.5		25.00		102	45.4	152		0		
Surr: Toluene-d8	25.6		25.00		102	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene	24.2		25.00		96.7	64.2	128		0		

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Fremont Analytical

Sample Log-In Check List

Client Name: **FS** Work Order Number: **1612278**
Logged by: **Chelsea Ward** Date Received: **12/28/2016 5:24:00 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 ☐
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 Required ☑
6. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
7. Were all items received at a temperature of >0°C to 10.0°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: Erin Murray Date: 12/28/2016
By Whom: Chelsea Ward Via: ☑ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: Missing bottles and Total/Dissolved Metals
Client Instructions: Only run VOCs/Gx on sample -009 and Dissolved Metals

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	2.4
Cooler 2	1.7
Cooler 3	0.5
Sample 1	0.7
Sample 2	1.9

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

Sample Log-In Check List

Client Name:	**FS**	Work Order Number:	**1612278**
Logged by:	**Chelsea Ward**	Date Received:	**12/28/2016 5:24:00 PM**

Item #	Temp ºC
Sample 3	2.8
Temp Blank 1	0.2
Temp Blank 2	1.7
Temp Blank 3	1.6

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

Fremont Analytical

3600 Fremont Ave N.
Seattle, WA 98103

Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record and Laboratory Services Agreement

Date: 12/28/16

Laboratory Project No (internal): 1612278

Page: 1 of: 2

Client: Floyd Snider
Address: 601 Union Suite 600
City, State, Zip: Seattle, WA 98101
Telephone: 206·292·2078
Fax:

Project Name: Ave 55 - Taylor Way
Project No:
Collected by: L. Wacter & E. Murray
Location: Tacoma, WA
Report To (PM): Tom Colligan
PM Email: tom.colligan@floydsnider.com

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM / 625)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Diss.	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	Hx Chromium				Comments
1 TWP16-PMW1A	12/28/16	1020	GW	X	X	~~####~~		~~X~~	X	X			X	D			X				
2 TWP16-PMW1B		1030		X	X			~~X~~	X	X			X				X				
3 TWP16-PMW2B		1200		X	X		GM	~~X~~	X	X			X				X				
4 TWP16-PMW2X		1205		X	X			~~X~~	X	X			X				X				
5 TWP16-PMW2A		1200		X	X			~~X~~	X	X			X				X				
6 TWP16-PMW3A		1320		X	X			~~X~~	X	X			X				X				
7 TWP16-PMW3B		1315		X	X			~~X~~	X	X			X				X				
8 TWP16-PMW4A		1425		X	X			~~X~~	X	X			X				X				
9 TWP16-PMW4B		1445		X	X				~~X~~	~~X~~			~~X~~				~~X~~				Only VOC/Gx per E. Murray 12/29 EW
10 TWP16-PMW5A		1535		X	X				X	X			X	↓			X				

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al [✓ As] B [✓ Ba] Be Ca [✓ Cd] Co [✓ Cr] [✓ Cu] Fe [✓ Hg] K Mg Mn Mo Na [✓ Ni] [✓ Pb] Sb Se Sr Sn Ti Tl U V [✓ Zn]

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around times for samples received after 4:00pm will begin on the following business day.

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (Samples will be held for 30 days unless otherwise noted. A fee may be assessed if samples are retained after 30 days.)

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 x
Date/Time 12/28/16 1724
Received x
Date/Time 12/28/16 17:24

Relinquished x
Date/Time
Received x
Date/Time

TAT → SameDay^ NextDay^ 2 Day 3 Day [✓ STD]

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

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Fremont Analytical

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Seattle, WA 98103

Tel: 206-352-3790
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Chain of Custody Record and Laboratory Services Agreement

Date: 12/28/16

Laboratory Project No (internal): 1612278

Page: 2 of: 2

Client: Floyd / Snider

Address: Same AS First

City, State, Zip:

Telephone:

Fax:

Project Name: Ave 55 - Taylor

Project No:

Collected by:

Location:

Report To (PM):

PM Email:

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM / 625)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Dis	Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	Hex Chromium				Comments
1	TWP16-PMW5B	12/28/16	1600	W	X	X		[illegible]	SM	X	X			X	D			X				
2	Trip Blank			W	X	X																
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al [✓ As] B [✓ Ba] Be Ca [✓ Cd] Co [✓ Cr] [✓ Cu] Fe [✓ Hg] K Mg Mn Mo Na [✓ Ni] [✓ Pb] Sb Se Sr Sn Ti Tl U V [✓ Zn]

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Relinquished	Date/Time	Received	Date/Time
x	12/28/16 1724	x	12/28/16 1724
x		x	

TAT → SameDay^ NextDay^ 2 Day 3 Day [✓ STD]

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

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COC 1.1 - 4.5.16 - 1 of 2

Fremont Analytical

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Chain of Custody Record and Laboratory Services Agreement

Date: 12/28/16

Laboratory Project No (internal): 1612278

Page: 1 of: 2

Client: Floyd Snider
Address: 601 Union Suite 600
City, State, Zip: Seattle, WA 98101
Telephone: 206.292.2078
Fax:

Project Name: Ave 55 - Taylor Way
Project No:
Collected by: L. Wacter & E. Murray
Location: Tacoma, WA
Report To (PM): Tom Colligan
PM Email: tom.colligan@floydsnider.com

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM / 625)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Diss.	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	Hex chromium			Methane	Comments
1 TWP16PMW1A	12/28/16	1020	GW	X	X	~~X~~		X	X	X			X	D			X			ⓧ	ⓧ Add Analysis 12/30/16 STANDARD TAT
2 TWP16-PMW1B	|	1030	|	X	X			X	X	X			X	|			X				
3 TWP16 - PMW2B	|	1200	|	X	X		4M	X	X	X			X	|			X				
4 TWP16 - PMW2X	|	1205	|	X	X			X	X	X			X	|			X				
5 TWP16 - PMW2A	|	1200	|	X	X			X	X	X			X	|			X			ⓧ	
6 TWP16 - PMW3A	|	1320	|	X	X			X	X	X			X	|			X			ⓧ	
7 TWP16 - PMW3B	|	1315	|	X	X			X	X	X			X	|			X				
8 TWP16 - PMW4A	|	1425	|	X	X			X	X	X			X	|			X			ⓧ	
9 TWP16 - PMW4B	|	1445	|	X	X				~~X~~	~~X~~			~~X~~	|			~~X~~				Only VOC/Gx per E. Murray 12/29 EW
10 TWP16 - PMW5A	|	1535	|	X	X				X	X			X	↓			X			ⓧ	

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al [✓ As] B [✓ Ba] Be Ca [✓ Cd] Co [✓ Cr] [✓ Cu] Fe [✓ Hg] K Mg Mn Mo Na [✓ Ni] [✓ Pb] Sb Se Sr Sn Ti Tl U V [✓ Zn]

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x	12/28/16 1724	x	12/28/16 17:24
x		x	

TAT → SameDay^ NextDay^ 2 Day 3 Day [✓ STD]

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Distribution: White - Lab, Yellow - File, Pink - Originator

www.fremontanalytical.com

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

Floyd | Snider
Tom Colligan
601 Union St., Suite 600
Seattle, WA 98101

RE: Ave 55 - Taylor Way
Work Order Number: 1612278

January 09, 2017

Attention Tom Colligan:

Fremont Analytical, Inc. received 12 sample(s) on 12/28/2016 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Dissolved Gases by RSK-175
Dissolved Mercury by EPA Method 245.1
Dissolved Metals by EPA Method 200.8
Gasoline by NWTPH-Gx
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B
Semi-Volatile Organic Compounds by EPA Method 8270
Volatile Organic Compounds by EPA Method 8260C

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,

Mike Ridgeway
Laboratory Director

DoD/ELAP Certification #L2371, ISO/IEC 17025:2005
ORELAP Certification: WA 100009-007 (NELAP Recognized)

Date: *02/06/2017*

CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way
Work Order: 1612278

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1612278-001	TWP16-PMW1A	12/28/2016 10:20 AM	12/28/2016 5:24 PM
1612278-002	TWP16-PMW1B	12/28/2016 10:30 AM	12/28/2016 5:24 PM
1612278-003	TWP16-PMW2B	12/28/2016 12:00 PM	12/28/2016 5:24 PM
1612278-004	TWP16-PMW2X	12/28/2016 12:05 PM	12/28/2016 5:24 PM
1612278-005	TWP16-PMW2A	12/28/2016 12:00 PM	12/28/2016 5:24 PM
1612278-006	TWP16-PMW3A	12/28/2016 1:20 PM	12/28/2016 5:24 PM
1612278-007	TWP16-PMW3B	12/28/2016 1:15 PM	12/28/2016 5:24 PM
1612278-008	TWP16-PMW4A	12/28/2016 2:25 PM	12/28/2016 5:24 PM
1612278-009	TWP16-PMW4B	12/28/2016 2:45 PM	12/28/2016 5:24 PM
1612278-010	TWP16-PMW5A	12/28/2016 3:35 PM	12/28/2016 5:24 PM
1612278-011	TWP16-PMW5B	12/28/2016 4:00 PM	12/28/2016 5:24 PM
1612278-012	Trip Blank	12/20/2016 2:59 PM	12/28/2016 5:24 PM

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

Case Narrative

WO#: **1612278**

Date: **1/9/2017**

CLIENT: Floyd | Snider

Project: Ave 55 - Taylor Way

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

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. 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 and the MS/MSD 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.

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 (<20%RSD, <20% Drift or minimum RRF)
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
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Fremont Analytical

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-001
Client Sample ID: TWP16-PMW1A

Collection Date: 12/28/2016 10:20:00 AM
Matrix: Groundwater

Dissolved Gases by RSK-175

Batch ID: R33761 Analyst: BC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Methane	7.79	0.100	DE	mg/L	20	1/6/2017 12:01:00 PM

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	49.9		µg/L	1	12/30/2016 3:27:56 PM
Diesel Range Organics (C12-C24)	483	49.9		µg/L	1	12/30/2016 3:27:56 PM
Heavy Oil	943	99.7		µg/L	1	12/30/2016 3:27:56 PM
Surr: 2-Fluorobiphenyl	77.9	50-150		%Rec	1	12/30/2016 3:27:56 PM
Surr: o-Terphenyl	83.9	50-150		%Rec	1	12/30/2016 3:27:56 PM

NOTES:
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
2-Chlorophenol	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
1,3-Dichlorobenzene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
1,4-Dichlorobenzene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
1,2-Dichlorobenzene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Benzyl alcohol	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Bis(2-chloroethyl) ether	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
2-Methylphenol (o-cresol)	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Hexachloroethane	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
N-Nitrosodi-n-propylamine	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Nitrobenzene	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
Isophorone	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
4-Methylphenol (p-cresol)	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
2-Nitrophenol	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
2,4-Dimethylphenol	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Bis(2-chloroethoxy)methane	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
2,4-Dichlorophenol	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
1,2,4-Trichlorobenzene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Naphthalene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
4-Chloroaniline	ND	4.95		µg/L	1	1/5/2017 5:35:17 PM
Hexachlorobutadiene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
4-Chloro-3-methylphenol	ND	4.95		µg/L	1	1/5/2017 5:35:17 PM
2-Methylnaphthalene	0.593	0.495	Q	µg/L	1	1/5/2017 5:35:17 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 10:20:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-001
Matrix: Groundwater
Client Sample ID: TWP16-PMW1A

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1-Methylnaphthalene	0.777	0.495		µg/L	1	1/5/2017 5:35:17 PM
Hexachlorocyclopentadiene	ND	0.991	Q	µg/L	1	1/5/2017 5:35:17 PM
2,4,6-Trichlorophenol	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
2,4,5-Trichlorophenol	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
2-Chloronaphthalene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
2-Nitroaniline	ND	4.95		µg/L	1	1/5/2017 5:35:17 PM
Acenaphthene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Dimethylphthalate	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
2,6-Dinitrotoluene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Acenaphthylene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
2,4-Dinitrophenol	ND	1.98	Q	µg/L	1	1/5/2017 5:35:17 PM
Dibenzofuran	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
2,4-Dinitrotoluene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
4-Nitrophenol	ND	4.95		µg/L	1	1/5/2017 5:35:17 PM
Fluorene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
4-Chlorophenyl phenyl ether	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Diethylphthalate	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
4,6-Dinitro-2-methylphenol	ND	4.95	Q	µg/L	1	1/5/2017 5:35:17 PM
4-Bromophenyl phenyl ether	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Hexachlorobenzene	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Pentachlorophenol	ND	1.98		µg/L	1	1/5/2017 5:35:17 PM
Phenanthrene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Anthracene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Carbazole	ND	4.95		µg/L	1	1/5/2017 5:35:17 PM
Di-n-butyl phthalate	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Fluoranthene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Pyrene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Benzyl Butylphthalate	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
bis(2-Ethylhexyl)adipate	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Benz[a]anthracene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Chrysene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Bis(2-ethylhexyl) phthalate	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Di-n-octyl phthalate	ND	0.991		µg/L	1	1/5/2017 5:35:17 PM
Benzo (b) fluoranthene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Benzo (k) fluoranthene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Benzo[a]pyrene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Indeno (1,2,3-cd) pyrene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Dibenzo (a,h) anthracene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM
Benzo (g,h,I) perylene	ND	0.495		µg/L	1	1/5/2017 5:35:17 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 10:20:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-001
Matrix: Groundwater
Client Sample ID: TWP16-PMW1A

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Surr: 2,4,6-Tribromophenol	96.5	5-127		%Rec	1	1/5/2017 5:35:17 PM
Surr: 2-Fluorobiphenyl	61.1	24.1-139		%Rec	1	1/5/2017 5:35:17 PM
Surr: Nitrobenzene-d5	65.5	21.9-139		%Rec	1	1/5/2017 5:35:17 PM
Surr: Phenol-d6	62.3	10.3-128		%Rec	1	1/5/2017 5:35:17 PM
Surr: p-Terphenyl	60.4	25.2-132		%Rec	1	1/5/2017 5:35:17 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	55.1	50.0		µg/L	1	1/4/2017 1:40:34 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 1:40:34 PM
Surr: 4-Bromofluorobenzene	96.3	65-135		%Rec	1	1/4/2017 1:40:34 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 1:40:34 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 1:40:34 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 1:40:34 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 1:40:34 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 10:20:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-001
Matrix: Groundwater
Client Sample ID: **TWP16-PMW1A**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by EPA Method 8260C				Batch ID: 15802		Analyst: NG
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 1:40:34 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 1:40:34 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 1:40:34 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 1:40:34 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 1:40:34 PM
Surr: Dibromofluoromethane	101	45.4-152		%Rec	1	1/4/2017 1:40:34 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 1:40:34 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 10:20:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-001
Matrix: Groundwater
Client Sample ID: TWP16-PMW1A

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Surr: 1-Bromo-4-fluorobenzene	96.7	64.2-128		%Rec	1	1/4/2017 1:40:34 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Dissolved Mercury by EPA Method 245.1

Batch ID: 15826 Analyst: WF

Mercury	ND	0.100		µg/L	1	1/3/2017 3:17:29 PM

Dissolved Metals by EPA Method 200.8

Batch ID: 15820 Analyst: TN

Arsenic	1.83	1.00		µg/L	1	1/3/2017 12:41:57 PM
Barium	357	0.500		µg/L	1	1/3/2017 12:41:57 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 12:41:57 PM
Chromium	0.614	0.500		µg/L	1	1/3/2017 12:41:57 PM
Copper	ND	0.500		µg/L	1	1/3/2017 12:41:57 PM
Lead	ND	0.500		µg/L	1	1/3/2017 12:41:57 PM
Nickel	ND	0.500		µg/L	1	1/3/2017 12:41:57 PM
Zinc	2.44	1.50		µg/L	1	1/3/2017 12:41:57 PM

Hexavalent Chromium by EPA 7196 / SM 3500 Cr B

Batch ID: R33688 Analyst: KT

Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:16:00 AM

Client: Floyd | Snider **Collection Date:** 12/28/2016 10:30:00 AM

Project: Ave 55 - Taylor Way

Lab ID: 1612278-002 **Matrix:** Groundwater

Client Sample ID: TWP16-PMW1B

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.3		µg/L	1	12/30/2016 4:29:34 PM
Diesel Range Organics (C12-C24)	416	50.3		µg/L	1	12/30/2016 4:29:34 PM
Heavy Oil	1,170	101		µg/L	1	12/30/2016 4:29:34 PM
Surr: 2-Fluorobiphenyl	71.2	50-150		%Rec	1	12/30/2016 4:29:34 PM
Surr: o-Terphenyl	70.9	50-150		%Rec	1	12/30/2016 4:29:34 PM

NOTES:

DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
2-Chlorophenol	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
1,3-Dichlorobenzene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
1,4-Dichlorobenzene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
1,2-Dichlorobenzene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Benzyl alcohol	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Bis(2-chloroethyl) ether	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
2-Methylphenol (o-cresol)	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Hexachloroethane	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
N-Nitrosodi-n-propylamine	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Nitrobenzene	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
Isophorone	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
4-Methylphenol (p-cresol)	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
2-Nitrophenol	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
2,4-Dimethylphenol	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Bis(2-chloroethoxy)methane	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
2,4-Dichlorophenol	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
1,2,4-Trichlorobenzene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Naphthalene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
4-Chloroaniline	ND	4.96		µg/L	1	1/5/2017 5:56:17 PM
Hexachlorobutadiene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
4-Chloro-3-methylphenol	ND	4.96		µg/L	1	1/5/2017 5:56:17 PM
2-Methylnaphthalene	ND	0.496	Q	µg/L	1	1/5/2017 5:56:17 PM
1-Methylnaphthalene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Hexachlorocyclopentadiene	ND	0.992	Q	µg/L	1	1/5/2017 5:56:17 PM
2,4,6-Trichlorophenol	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
2,4,5-Trichlorophenol	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
2-Chloronaphthalene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
2-Nitroaniline	ND	4.96		µg/L	1	1/5/2017 5:56:17 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 10:30:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-002
Matrix: Groundwater
Client Sample ID: **TWP16-PMW1B**

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Acenaphthene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Dimethylphthalate	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
2,6-Dinitrotoluene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Acenaphthylene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
2,4-Dinitrophenol	ND	1.98	Q	µg/L	1	1/5/2017 5:56:17 PM
Dibenzofuran	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
2,4-Dinitrotoluene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
4-Nitrophenol	ND	4.96		µg/L	1	1/5/2017 5:56:17 PM
Fluorene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
4-Chlorophenyl phenyl ether	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Diethylphthalate	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
4,6-Dinitro-2-methylphenol	ND	4.96	Q	µg/L	1	1/5/2017 5:56:17 PM
4-Bromophenyl phenyl ether	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Hexachlorobenzene	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Pentachlorophenol	ND	1.98		µg/L	1	1/5/2017 5:56:17 PM
Phenanthrene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Anthracene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Carbazole	ND	4.96		µg/L	1	1/5/2017 5:56:17 PM
Di-n-butyl phthalate	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Fluoranthene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Pyrene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Benzyl Butylphthalate	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
bis(2-Ethylhexyl)adipate	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Benz[a]anthracene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Chrysene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Bis(2-ethylhexyl) phthalate	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Di-n-octyl phthalate	ND	0.992		µg/L	1	1/5/2017 5:56:17 PM
Benzo (b) fluoranthene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Benzo (k) fluoranthene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Benzo[a]pyrene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Indeno (1,2,3-cd) pyrene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Dibenzo (a,h) anthracene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Benzo (g,h,I) perylene	ND	0.496		µg/L	1	1/5/2017 5:56:17 PM
Surr: 2,4,6-Tribromophenol	67.7	5-127		%Rec	1	1/5/2017 5:56:17 PM
Surr: 2-Fluorobiphenyl	64.7	24.1-139		%Rec	1	1/5/2017 5:56:17 PM
Surr: Nitrobenzene-d5	77.6	21.9-139		%Rec	1	1/5/2017 5:56:17 PM
Surr: Phenol-d6	68.6	10.3-128		%Rec	1	1/5/2017 5:56:17 PM
Surr: p-Terphenyl	72.0	25.2-132		%Rec	1	1/5/2017 5:56:17 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 10:30:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-002
Matrix: Groundwater
Client Sample ID: **TWP16-PMW1B**

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 2:09:50 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 2:09:50 PM
Surr: 4-Bromofluorobenzene	96.5	65-135		%Rec	1	1/4/2017 2:09:50 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 2:09:50 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 2:09:50 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Methyl tert-butyl ether (MTBE)	1.30	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 2:09:50 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 2:09:50 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 10:30:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-002
Matrix: Groundwater
Client Sample ID: **TWP16-PMW1B**

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 2:09:50 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 2:09:50 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 2:09:50 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 2:09:50 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 2:09:50 PM
Surr: Dibromofluoromethane	101	45.4-152		%Rec	1	1/4/2017 2:09:50 PM
Surr: Toluene-d8	103	40.1-139		%Rec	1	1/4/2017 2:09:50 PM
Surr: 1-Bromo-4-fluorobenzene	96.8	64.2-128		%Rec	1	1/4/2017 2:09:50 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 10:30:00 AM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-002
Matrix: Groundwater
Client Sample ID: **TWP16-PMW1B**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:19:11 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	6.02	1.00		µg/L	1	1/3/2017 12:45:33 PM
Barium	17.5	0.500		µg/L	1	1/3/2017 12:45:33 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 12:45:33 PM
Chromium	0.894	0.500		µg/L	1	1/3/2017 12:45:33 PM
Copper	ND	0.500		µg/L	1	1/3/2017 12:45:33 PM
Lead	ND	0.500		µg/L	1	1/3/2017 12:45:33 PM
Nickel	ND	0.500		µg/L	1	1/3/2017 12:45:33 PM
Zinc	ND	1.50		µg/L	1	1/3/2017 12:45:33 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:19:00 AM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-003
Matrix: Groundwater
Client Sample ID: TWP16-PMW2B

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.3		µg/L	1	12/30/2016 5:00:24 PM
Diesel Range Organics (C12-C24)	107	50.3		µg/L	1	12/30/2016 5:00:24 PM
Heavy Oil	ND	101		µg/L	1	12/30/2016 5:00:24 PM
Heavy Oil Range Organics	254	101		µg/L	1	12/30/2016 5:00:24 PM
Surr: 2-Fluorobiphenyl	67.1	50-150		%Rec	1	12/30/2016 5:00:24 PM
Surr: o-Terphenyl	77.3	50-150		%Rec	1	12/30/2016 5:00:24 PM

NOTES:

DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Heavy Oil Range Organics - Indicates the presence of unresolved compounds in the Lube Oil ranges.

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM
2-Chlorophenol	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
1,3-Dichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
1,4-Dichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
1,2-Dichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Benzyl alcohol	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Bis(2-chloroethyl) ether	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM
2-Methylphenol (o-cresol)	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Hexachloroethane	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
N-Nitrosodi-n-propylamine	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Nitrobenzene	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM
Isophorone	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
4-Methylphenol (p-cresol)	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
2-Nitrophenol	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM
2,4-Dimethylphenol	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Bis(2-chloroethoxy)methane	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
2,4-Dichlorophenol	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM
1,2,4-Trichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Naphthalene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
4-Chloroaniline	ND	5.04		µg/L	1	1/5/2017 6:17:20 PM
Hexachlorobutadiene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
4-Chloro-3-methylphenol	ND	5.04		µg/L	1	1/5/2017 6:17:20 PM
2-Methylnaphthalene	ND	0.504	Q	µg/L	1	1/5/2017 6:17:20 PM
1-Methylnaphthalene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Hexachlorocyclopentadiene	ND	1.01	Q	µg/L	1	1/5/2017 6:17:20 PM
2,4,6-Trichlorophenol	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM
2,4,5-Trichlorophenol	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM

Client: Floyd | Snider

Collection Date: 12/28/2016 12:00:00 PM

Project: Ave 55 - Taylor Way

Lab ID: 1612278-003

Matrix: Groundwater

Client Sample ID: TWP16-PMW2B

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
2-Chloronaphthalene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
2-Nitroaniline	ND	5.04		µg/L	1	1/5/2017 6:17:20 PM
Acenaphthene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Dimethylphthalate	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
2,6-Dinitrotoluene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Acenaphthylene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
2,4-Dinitrophenol	ND	2.02	Q	µg/L	1	1/5/2017 6:17:20 PM
Dibenzofuran	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
2,4-Dinitrotoluene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
4-Nitrophenol	ND	5.04		µg/L	1	1/5/2017 6:17:20 PM
Fluorene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
4-Chlorophenyl phenyl ether	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Diethylphthalate	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
4,6-Dinitro-2-methylphenol	ND	5.04	Q	µg/L	1	1/5/2017 6:17:20 PM
4-Bromophenyl phenyl ether	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Hexachlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Pentachlorophenol	ND	2.02		µg/L	1	1/5/2017 6:17:20 PM
Phenanthrene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Anthracene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Carbazole	ND	5.04		µg/L	1	1/5/2017 6:17:20 PM
Di-n-butyl phthalate	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Fluoranthene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Pyrene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Benzyl Butylphthalate	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
bis(2-Ethylhexyl)adipate	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Benz[a]anthracene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Chrysene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Bis(2-ethylhexyl) phthalate	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Di-n-octyl phthalate	ND	1.01		µg/L	1	1/5/2017 6:17:20 PM
Benzo (b) fluoranthene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Benzo (k) fluoranthene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Benzo[a]pyrene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Indeno (1,2,3-cd) pyrene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Dibenzo (a,h) anthracene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Benzo (g,h,I) perylene	ND	0.504		µg/L	1	1/5/2017 6:17:20 PM
Surr: 2,4,6-Tribromophenol	107	5-127		%Rec	1	1/5/2017 6:17:20 PM
Surr: 2-Fluorobiphenyl	60.3	24.1-139		%Rec	1	1/5/2017 6:17:20 PM
Surr: Nitrobenzene-d5	66.8	21.9-139		%Rec	1	1/5/2017 6:17:20 PM
Surr: Phenol-d6	68.3	10.3-128		%Rec	1	1/5/2017 6:17:20 PM

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-003
Client Sample ID: **TWP16-PMW2B**

Collection Date: 12/28/2016 12:00:00 PM
Matrix: Groundwater

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Surr: p-Terphenyl	75.2	25.2-132		%Rec	1	1/5/2017 6:17:20 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 2:39:06 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 2:39:06 PM
Surr: 4-Bromofluorobenzene	96.5	65-135		%Rec	1	1/4/2017 2:39:06 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 2:39:06 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 2:39:06 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 2:39:06 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 2:39:06 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-003
Matrix: Groundwater
Client Sample ID: TWP16-PMW2B

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 2:39:06 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 2:39:06 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 2:39:06 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 2:39:06 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 2:39:06 PM
Surr: Dibromofluoromethane	104	45.4-152		%Rec	1	1/4/2017 2:39:06 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 2:39:06 PM
Surr: 1-Bromo-4-fluorobenzene	96.9	64.2-128		%Rec	1	1/4/2017 2:39:06 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-003
Client Sample ID: **TWP16-PMW2B**

Collection Date: 12/28/2016 12:00:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:20:53 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	ND	1.00		µg/L	1	1/3/2017 12:49:10 PM
Barium	161	0.500		µg/L	1	1/3/2017 12:49:10 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 12:49:10 PM
Chromium	ND	0.500		µg/L	1	1/3/2017 12:49:10 PM
Copper	ND	0.500		µg/L	1	1/3/2017 12:49:10 PM
Lead	ND	0.500		µg/L	1	1/3/2017 12:49:10 PM
Nickel	ND	0.500		µg/L	1	1/3/2017 12:49:10 PM
Zinc	ND	1.50		µg/L	1	1/3/2017 12:49:10 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:22:00 AM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 12:05:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-004
Matrix: Groundwater
Client Sample ID: TWP16-PMW2X

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.0		µg/L	1	12/30/2016 5:31:13 PM
Diesel Range Organics (C12-C24)	136	50.0		µg/L	1	12/30/2016 5:31:13 PM
Heavy Oil	ND	100		µg/L	1	12/30/2016 5:31:13 PM
Heavy Oil Range Organics	133	100		µg/L	1	12/30/2016 5:31:13 PM
Surr: 2-Fluorobiphenyl	77.4	50-150		%Rec	1	12/30/2016 5:31:13 PM
Surr: o-Terphenyl	91.6	50-150		%Rec	1	12/30/2016 5:31:13 PM

NOTES:

DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Heavy Oil Range Organics - Indicates the presence of unresolved compounds in the Lube+ Oil ranges.

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM
2-Chlorophenol	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
1,3-Dichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
1,4-Dichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
1,2-Dichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Benzyl alcohol	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Bis(2-chloroethyl) ether	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM
2-Methylphenol (o-cresol)	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Hexachloroethane	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
N-Nitrosodi-n-propylamine	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Nitrobenzene	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM
Isophorone	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
4-Methylphenol (p-cresol)	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
2-Nitrophenol	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM
2,4-Dimethylphenol	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Bis(2-chloroethoxy)methane	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
2,4-Dichlorophenol	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM
1,2,4-Trichlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Naphthalene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
4-Chloroaniline	ND	5.04		µg/L	1	1/5/2017 6:38:27 PM
Hexachlorobutadiene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
4-Chloro-3-methylphenol	ND	5.04		µg/L	1	1/5/2017 6:38:27 PM
2-Methylnaphthalene	ND	0.504	Q	µg/L	1	1/5/2017 6:38:27 PM
1-Methylnaphthalene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Hexachlorocyclopentadiene	ND	1.01	Q	µg/L	1	1/5/2017 6:38:27 PM
2,4,6-Trichlorophenol	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM
2,4,5-Trichlorophenol	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM

Client: Floyd | Snider **Collection Date:** 12/28/2016 12:05:00 PM

Project: Ave 55 - Taylor Way

Lab ID: 1612278-004 **Matrix:** Groundwater

Client Sample ID: TWP16-PMW2X

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Semi-Volatile Organic Compounds by EPA Method 8270				Batch ID: 15825		Analyst: BT
2-Chloronaphthalene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
2-Nitroaniline	ND	5.04		µg/L	1	1/5/2017 6:38:27 PM
Acenaphthene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Dimethylphthalate	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
2,6-Dinitrotoluene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Acenaphthylene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
2,4-Dinitrophenol	ND	2.01	Q	µg/L	1	1/5/2017 6:38:27 PM
Dibenzofuran	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
2,4-Dinitrotoluene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
4-Nitrophenol	ND	5.04		µg/L	1	1/5/2017 6:38:27 PM
Fluorene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
4-Chlorophenyl phenyl ether	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Diethylphthalate	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
4,6-Dinitro-2-methylphenol	ND	5.04	Q	µg/L	1	1/5/2017 6:38:27 PM
4-Bromophenyl phenyl ether	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Hexachlorobenzene	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Pentachlorophenol	ND	2.01		µg/L	1	1/5/2017 6:38:27 PM
Phenanthrene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Anthracene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Carbazole	ND	5.04		µg/L	1	1/5/2017 6:38:27 PM
Di-n-butyl phthalate	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Fluoranthene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Pyrene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Benzyl Butylphthalate	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
bis(2-Ethylhexyl)adipate	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Benz[a]anthracene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Chrysene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Bis(2-ethylhexyl) phthalate	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Di-n-octyl phthalate	ND	1.01		µg/L	1	1/5/2017 6:38:27 PM
Benzo (b) fluoranthene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Benzo (k) fluoranthene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Benzo[a]pyrene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Indeno (1,2,3-cd) pyrene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Dibenzo (a,h) anthracene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Benzo (g,h,I) perylene	ND	0.504		µg/L	1	1/5/2017 6:38:27 PM
Surr: 2,4,6-Tribromophenol	99.3	5-127		%Rec	1	1/5/2017 6:38:27 PM
Surr: 2-Fluorobiphenyl	59.9	24.1-139		%Rec	1	1/5/2017 6:38:27 PM
Surr: Nitrobenzene-d5	71.0	21.9-139		%Rec	1	1/5/2017 6:38:27 PM
Surr: Phenol-d6	62.0	10.3-128		%Rec	1	1/5/2017 6:38:27 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:05:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-004
Matrix: Groundwater
Client Sample ID: TWP16-PMW2X

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Surr: p-Terphenyl	66.7	25.2-132		%Rec	1	1/5/2017 6:38:27 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 3:08:27 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 3:08:27 PM
Surr: 4-Bromofluorobenzene	95.8	65-135		%Rec	1	1/4/2017 3:08:27 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 3:08:27 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 3:08:27 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 3:08:27 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 3:08:27 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 12:05:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-004
Matrix: Groundwater
Client Sample ID: TWP16-PMW2X

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 3:08:27 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 3:08:27 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 3:08:27 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 3:08:27 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 3:08:27 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	1/4/2017 3:08:27 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 3:08:27 PM
Surr: 1-Bromo-4-fluorobenzene	96.2	64.2-128		%Rec	1	1/4/2017 3:08:27 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-004
Client Sample ID: **TWP16-PMW2X**

Collection Date: 12/28/2016 12:05:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:22:36 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	ND	1.00		µg/L	1	1/3/2017 12:52:46 PM
Barium	165	0.500		µg/L	1	1/3/2017 12:52:46 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 12:52:46 PM
Chromium	ND	0.500		µg/L	1	1/3/2017 12:52:46 PM
Copper	ND	0.500		µg/L	1	1/3/2017 12:52:46 PM
Lead	ND	0.500		µg/L	1	1/3/2017 12:52:46 PM
Nickel	ND	0.500		µg/L	1	1/3/2017 12:52:46 PM
Zinc	ND	1.50		µg/L	1	1/3/2017 12:52:46 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:26:00 AM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-005
Matrix: Groundwater
Client Sample ID: TWP16-PMW2A

Dissolved Gases by RSK-175

Batch ID: R33761 Analyst: BC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Methane	0.191	0.00500		mg/L	1	1/6/2017 11:51:00 AM

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.2		µg/L	1	12/30/2016 6:01:59 PM
Diesel Range Organics (C12-C24)	82.1	50.2		µg/L	1	12/30/2016 6:01:59 PM
Heavy Oil	ND	100		µg/L	1	12/30/2016 6:01:59 PM
Heavy Oil Range Organics	109	100		µg/L	1	12/30/2016 6:01:59 PM
Surr: 2-Fluorobiphenyl	72.8	50-150		%Rec	1	12/30/2016 6:01:59 PM
Surr: o-Terphenyl	87.8	50-150		%Rec	1	12/30/2016 6:01:59 PM

NOTES:

DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Heavy Oil Range Organics - Indicates the presence of unresolved compounds in the Lube+ Oil ranges.

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
2-Chlorophenol	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Benzyl alcohol	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Bis(2-chloroethyl) ether	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
2-Methylphenol (o-cresol)	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Hexachloroethane	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
N-Nitrosodi-n-propylamine	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Nitrobenzene	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
Isophorone	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
4-Methylphenol (p-cresol)	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
2-Nitrophenol	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
2,4-Dimethylphenol	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Bis(2-chloroethoxy)methane	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
2,4-Dichlorophenol	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
1,2,4-Trichlorobenzene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Naphthalene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
4-Chloroaniline	ND	5.02		µg/L	1	1/5/2017 6:59:28 PM
Hexachlorobutadiene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
4-Chloro-3-methylphenol	ND	5.02		µg/L	1	1/5/2017 6:59:28 PM
2-Methylnaphthalene	ND	0.502	Q	µg/L	1	1/5/2017 6:59:28 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-005
Matrix: Groundwater
Client Sample ID: **TWP16-PMW2A**

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1-Methylnaphthalene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Hexachlorocyclopentadiene	ND	1.00	Q	µg/L	1	1/5/2017 6:59:28 PM
2,4,6-Trichlorophenol	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
2,4,5-Trichlorophenol	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
2-Chloronaphthalene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
2-Nitroaniline	ND	5.02		µg/L	1	1/5/2017 6:59:28 PM
Acenaphthene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Dimethylphthalate	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
2,6-Dinitrotoluene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Acenaphthylene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
2,4-Dinitrophenol	ND	2.01	Q	µg/L	1	1/5/2017 6:59:28 PM
Dibenzofuran	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
2,4-Dinitrotoluene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
4-Nitrophenol	ND	5.02		µg/L	1	1/5/2017 6:59:28 PM
Fluorene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
4-Chlorophenyl phenyl ether	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Diethylphthalate	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
4,6-Dinitro-2-methylphenol	ND	5.02	Q	µg/L	1	1/5/2017 6:59:28 PM
4-Bromophenyl phenyl ether	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Hexachlorobenzene	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Pentachlorophenol	ND	2.01		µg/L	1	1/5/2017 6:59:28 PM
Phenanthrene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Anthracene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Carbazole	ND	5.02		µg/L	1	1/5/2017 6:59:28 PM
Di-n-butyl phthalate	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Fluoranthene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Pyrene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Benzyl Butylphthalate	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
bis(2-Ethylhexyl)adipate	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Benz[a]anthracene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Chrysene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Bis(2-ethylhexyl) phthalate	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Di-n-octyl phthalate	ND	1.00		µg/L	1	1/5/2017 6:59:28 PM
Benzo (b) fluoranthene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Benzo (k) fluoranthene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Benzo[a]pyrene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Indeno (1,2,3-cd) pyrene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Dibenzo (a,h) anthracene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM
Benzo (g,h,I) perylene	ND	0.502		µg/L	1	1/5/2017 6:59:28 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-005
Matrix: Groundwater
Client Sample ID: TWP16-PMW2A

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Surr: 2,4,6-Tribromophenol	88.0	5-127		%Rec	1	1/5/2017 6:59:28 PM
Surr: 2-Fluorobiphenyl	59.2	24.1-139		%Rec	1	1/5/2017 6:59:28 PM
Surr: Nitrobenzene-d5	74.5	21.9-139		%Rec	1	1/5/2017 6:59:28 PM
Surr: Phenol-d6	64.9	10.3-128		%Rec	1	1/5/2017 6:59:28 PM
Surr: p-Terphenyl	65.3	25.2-132		%Rec	1	1/5/2017 6:59:28 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 3:37:49 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 3:37:49 PM
Surr: 4-Bromofluorobenzene	97.2	65-135		%Rec	1	1/4/2017 3:37:49 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 3:37:49 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 3:37:49 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 3:37:49 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 3:37:49 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-005
Matrix: Groundwater
Client Sample ID: **TWP16-PMW2A**

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 3:37:49 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 3:37:49 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 3:37:49 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 3:37:49 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 3:37:49 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	1/4/2017 3:37:49 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 3:37:49 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 12:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-005
Matrix: Groundwater
Client Sample ID: TWP16-PMW2A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by EPA Method 8260C				Batch ID: 15802		Analyst: NG
Surr: 1-Bromo-4-fluorobenzene	97.5	64.2-128		%Rec	1	1/4/2017 3:37:49 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:24:19 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	1.65	1.00		µg/L	1	1/3/2017 12:20:18 PM
Barium	235	0.500		µg/L	1	1/3/2017 12:20:18 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 12:20:18 PM
Chromium	ND	0.500		µg/L	1	1/3/2017 12:20:18 PM
Copper	0.695	0.500		µg/L	1	1/3/2017 12:20:18 PM
Lead	ND	0.500		µg/L	1	1/3/2017 12:20:18 PM
Nickel	1.09	0.500		µg/L	1	1/3/2017 12:20:18 PM
Zinc	24.0	1.50		µg/L	1	1/3/2017 12:20:18 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:30:00 AM

Analytical Report

Client: Floyd | Snider
Collection Date: 12/28/2016 1:20:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-006
Matrix: Groundwater
Client Sample ID: **TWP16-PMW3A**

Dissolved Gases by RSK-175

Batch ID: R33761 Analyst: BC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Methane	0.171	0.00500		mg/L	1	1/6/2017 11:54:00 AM

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.1		µg/L	1	12/30/2016 8:35:05 PM
Diesel Range Organics (C12-C24)	78.9	50.1		µg/L	1	12/30/2016 8:35:05 PM
Heavy Oil	ND	100		µg/L	1	12/30/2016 8:35:05 PM
Surr: 2-Fluorobiphenyl	71.7	50-150		%Rec	1	12/30/2016 8:35:05 PM
Surr: o-Terphenyl	81.0	50-150		%Rec	1	12/30/2016 8:35:05 PM

NOTES:

DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
2-Chlorophenol	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
1,3-Dichlorobenzene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
1,4-Dichlorobenzene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
1,2-Dichlorobenzene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Benzyl alcohol	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Bis(2-chloroethyl) ether	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
2-Methylphenol (o-cresol)	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Hexachloroethane	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
N-Nitrosodi-n-propylamine	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Nitrobenzene	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
Isophorone	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
4-Methylphenol (p-cresol)	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
2-Nitrophenol	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
2,4-Dimethylphenol	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Bis(2-chloroethoxy)methane	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
2,4-Dichlorophenol	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
1,2,4-Trichlorobenzene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Naphthalene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
4-Chloroaniline	ND	4.98		µg/L	1	1/5/2017 7:20:28 PM
Hexachlorobutadiene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
4-Chloro-3-methylphenol	ND	4.98		µg/L	1	1/5/2017 7:20:28 PM
2-Methylnaphthalene	ND	0.498	Q	µg/L	1	1/5/2017 7:20:28 PM
1-Methylnaphthalene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Hexachlorocyclopentadiene	ND	0.997	Q	µg/L	1	1/5/2017 7:20:28 PM

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-006
Client Sample ID: **TWP16-PMW3A**

Collection Date: 12/28/2016 1:20:00 PM
Matrix: Groundwater

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
2,4,6-Trichlorophenol	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
2,4,5-Trichlorophenol	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
2-Chloronaphthalene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
2-Nitroaniline	ND	4.98		µg/L	1	1/5/2017 7:20:28 PM
Acenaphthene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Dimethylphthalate	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
2,6-Dinitrotoluene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Acenaphthylene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
2,4-Dinitrophenol	ND	1.99	Q	µg/L	1	1/5/2017 7:20:28 PM
Dibenzofuran	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
2,4-Dinitrotoluene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
4-Nitrophenol	ND	4.98		µg/L	1	1/5/2017 7:20:28 PM
Fluorene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
4-Chlorophenyl phenyl ether	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Diethylphthalate	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
4,6-Dinitro-2-methylphenol	ND	4.98	Q	µg/L	1	1/5/2017 7:20:28 PM
4-Bromophenyl phenyl ether	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Hexachlorobenzene	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Pentachlorophenol	ND	1.99		µg/L	1	1/5/2017 7:20:28 PM
Phenanthrene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Anthracene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Carbazole	ND	4.98		µg/L	1	1/5/2017 7:20:28 PM
Di-n-butyl phthalate	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Fluoranthene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Pyrene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Benzyl Butylphthalate	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
bis(2-Ethylhexyl)adipate	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Benz[a]anthracene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Chrysene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Bis(2-ethylhexyl) phthalate	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Di-n-octyl phthalate	ND	0.997		µg/L	1	1/5/2017 7:20:28 PM
Benzo (b) fluoranthene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Benzo (k) fluoranthene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Benzo[a]pyrene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Indeno (1,2,3-cd) pyrene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Dibenzo (a,h) anthracene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Benzo (g,h,I) perylene	ND	0.498		µg/L	1	1/5/2017 7:20:28 PM
Surr: 2,4,6-Tribromophenol	71.6	5-127		%Rec	1	1/5/2017 7:20:28 PM
Surr: 2-Fluorobiphenyl	57.5	24.1-139		%Rec	1	1/5/2017 7:20:28 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 1:20:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-006
Matrix: Groundwater
Client Sample ID: **TWP16-PMW3A**

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Surr: Nitrobenzene-d5	54.7	21.9-139		%Rec	1	1/5/2017 7:20:28 PM
Surr: Phenol-d6	44.6	10.3-128		%Rec	1	1/5/2017 7:20:28 PM
Surr: p-Terphenyl	70.6	25.2-132		%Rec	1	1/5/2017 7:20:28 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 4:07:10 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 4:07:10 PM
Surr: 4-Bromofluorobenzene	96.5	65-135		%Rec	1	1/4/2017 4:07:10 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 4:07:10 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 4:07:10 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 4:07:10 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 4:07:10 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 1:20:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-006
Matrix: Groundwater
Client Sample ID: TWP16-PMW3A

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Toluene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 4:07:10 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 4:07:10 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 4:07:10 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 4:07:10 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 4:07:10 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	1/4/2017 4:07:10 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 4:07:10 PM
Surr: 1-Bromo-4-fluorobenzene	97.0	64.2-128		%Rec	1	1/4/2017 4:07:10 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 1:20:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-006
Matrix: Groundwater
Client Sample ID: TWP16-PMW3A

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Dissolved Mercury by EPA Method 245.1

Batch ID: 15826 Analyst: WF

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Mercury	ND	0.100		µg/L	1	1/3/2017 3:34:27 PM

Dissolved Metals by EPA Method 200.8

Batch ID: 15820 Analyst: TN

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Arsenic	2.02	1.00		µg/L	1	1/3/2017 12:56:22 PM
Barium	22.7	0.500		µg/L	1	1/3/2017 12:56:22 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 12:56:22 PM
Chromium	ND	0.500		µg/L	1	1/3/2017 12:56:22 PM
Copper	ND	0.500		µg/L	1	1/3/2017 12:56:22 PM
Lead	ND	0.500		µg/L	1	1/3/2017 12:56:22 PM
Nickel	11.7	0.500		µg/L	1	1/3/2017 12:56:22 PM
Zinc	4.41	1.50		µg/L	1	1/3/2017 12:56:22 PM

Hexavalent Chromium by EPA 7196 / SM 3500 Cr B

Batch ID: R33688 Analyst: KT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:33:00 AM

Client: Floyd | Snider
Collection Date: 12/28/2016 1:15:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-007
Matrix: Groundwater
Client Sample ID: **TWP16-PMW3B**

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	49.7		µg/L	1	12/30/2016 9:05:33 PM
Heavy Oil	ND	99.4		µg/L	1	12/30/2016 9:05:33 PM
Heavy Oil Range Organics	491	99.4		µg/L	1	12/30/2016 9:05:33 PM
Surr: 2-Fluorobiphenyl	64.0	50-150		%Rec	1	12/30/2016 9:05:33 PM
Surr: o-Terphenyl	65.1	50-150		%Rec	1	12/30/2016 9:05:33 PM

NOTES:
Heavy Oil Range Organics - Indicates the presence of unresolved compounds in the Lube+ Oil ranges.

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
2-Chlorophenol	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
1,3-Dichlorobenzene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
1,4-Dichlorobenzene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
1,2-Dichlorobenzene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Benzyl alcohol	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Bis(2-chloroethyl) ether	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
2-Methylphenol (o-cresol)	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Hexachloroethane	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
N-Nitrosodi-n-propylamine	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Nitrobenzene	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
Isophorone	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
4-Methylphenol (p-cresol)	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
2-Nitrophenol	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
2,4-Dimethylphenol	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Bis(2-chloroethoxy)methane	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
2,4-Dichlorophenol	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
1,2,4-Trichlorobenzene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Naphthalene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
4-Chloroaniline	ND	4.99		µg/L	1	1/5/2017 7:41:31 PM
Hexachlorobutadiene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
4-Chloro-3-methylphenol	ND	4.99		µg/L	1	1/5/2017 7:41:31 PM
2-Methylnaphthalene	ND	0.499	Q	µg/L	1	1/5/2017 7:41:31 PM
1-Methylnaphthalene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Hexachlorocyclopentadiene	ND	0.998	Q	µg/L	1	1/5/2017 7:41:31 PM
2,4,6-Trichlorophenol	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
2,4,5-Trichlorophenol	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
2-Chloronaphthalene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
2-Nitroaniline	ND	4.99		µg/L	1	1/5/2017 7:41:31 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 1:15:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-007
Matrix: Groundwater
Client Sample ID: TWP16-PMW3B

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Acenaphthene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Dimethylphthalate	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
2,6-Dinitrotoluene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Acenaphthylene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
2,4-Dinitrophenol	ND	2.00	Q	µg/L	1	1/5/2017 7:41:31 PM
Dibenzofuran	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
2,4-Dinitrotoluene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
4-Nitrophenol	ND	4.99		µg/L	1	1/5/2017 7:41:31 PM
Fluorene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
4-Chlorophenyl phenyl ether	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Diethylphthalate	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
4,6-Dinitro-2-methylphenol	ND	4.99	Q	µg/L	1	1/5/2017 7:41:31 PM
4-Bromophenyl phenyl ether	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Hexachlorobenzene	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Pentachlorophenol	ND	2.00		µg/L	1	1/5/2017 7:41:31 PM
Phenanthrene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Anthracene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Carbazole	ND	4.99		µg/L	1	1/5/2017 7:41:31 PM
Di-n-butyl phthalate	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Fluoranthene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Pyrene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Benzyl Butylphthalate	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
bis(2-Ethylhexyl)adipate	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Benz[a]anthracene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Chrysene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Bis(2-ethylhexyl) phthalate	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Di-n-octyl phthalate	ND	0.998		µg/L	1	1/5/2017 7:41:31 PM
Benzo (b) fluoranthene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Benzo (k) fluoranthene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Benzo[a]pyrene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Indeno (1,2,3-cd) pyrene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Dibenzo (a,h) anthracene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Benzo (g,h,I) perylene	ND	0.499		µg/L	1	1/5/2017 7:41:31 PM
Surr: 2,4,6-Tribromophenol	113	5-127		%Rec	1	1/5/2017 7:41:31 PM
Surr: 2-Fluorobiphenyl	55.7	24.1-139		%Rec	1	1/5/2017 7:41:31 PM
Surr: Nitrobenzene-d5	64.2	21.9-139		%Rec	1	1/5/2017 7:41:31 PM
Surr: Phenol-d6	61.0	10.3-128		%Rec	1	1/5/2017 7:41:31 PM
Surr: p-Terphenyl	75.4	25.2-132		%Rec	1	1/5/2017 7:41:31 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 1:15:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-007
Matrix: Groundwater
Client Sample ID: TWP16-PMW3B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Semi-Volatile Organic Compounds by EPA Method 8270				Batch ID: 15825		Analyst: BT

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline by NWTPH-Gx				Batch ID: 15802		Analyst: NG
Gasoline	ND	50.0		µg/L	1	1/4/2017 4:36:32 PM
Surr: Toluene-d8	102	65-135		%Rec	1	1/4/2017 4:36:32 PM
Surr: 4-Bromofluorobenzene	96.4	65-135		%Rec	1	1/4/2017 4:36:32 PM
Volatile Organic Compounds by EPA Method 8260C				Batch ID: 15802		Analyst: NG
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 4:36:32 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 4:36:32 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 4:36:32 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 4:36:32 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 1:15:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-007
Matrix: Groundwater
Client Sample ID: TWP16-PMW3B

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 4:36:32 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 4:36:32 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 4:36:32 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 4:36:32 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 4:36:32 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	1/4/2017 4:36:32 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 4:36:32 PM
Surr: 1-Bromo-4-fluorobenzene	96.8	64.2-128		%Rec	1	1/4/2017 4:36:32 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 1:15:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-007
Matrix: Groundwater
Client Sample ID: TWP16-PMW3B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:36:09 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	25.1	1.00		µg/L	1	1/3/2017 12:59:59 PM
Barium	16.1	0.500		µg/L	1	1/3/2017 12:59:59 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 12:59:59 PM
Chromium	ND	0.500		µg/L	1	1/3/2017 12:59:59 PM
Copper	ND	0.500		µg/L	1	1/3/2017 12:59:59 PM
Lead	ND	0.500		µg/L	1	1/3/2017 12:59:59 PM
Nickel	1.05	0.500		µg/L	1	1/3/2017 12:59:59 PM
Zinc	ND	1.50		µg/L	1	1/3/2017 12:59:59 PM

NOTES:
Chromium results should be considered an estimated value. Potential matrix effect prevents accurate quantitation.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	0.0642	0.0500		mg/L	1	12/29/2016 9:37:00 AM

NOTES:
Chromium results should be considered an estimated value. Potential matrix effect prevents accurate quantitation.

Client: Floyd | Snider
Collection Date: 12/28/2016 2:25:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-008
Matrix: Groundwater
Client Sample ID: **TWP16-PMW4A**

Dissolved Gases by RSK-175

Batch ID: R33761 Analyst: BC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Methane	14.6	0.100	DE	mg/L	20	1/6/2017 12:03:00 PM

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.3		µg/L	1	1/3/2017 11:02:05 PM
Heavy Oil	3,750	101		µg/L	1	1/3/2017 11:02:05 PM
Surr: 2-Fluorobiphenyl	74.6	50-150		%Rec	1	1/3/2017 11:02:05 PM
Surr: o-Terphenyl	78.5	50-150		%Rec	1	1/3/2017 11:02:05 PM

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
2-Chlorophenol	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Benzyl alcohol	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Bis(2-chloroethyl) ether	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
2-Methylphenol (o-cresol)	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Hexachloroethane	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
N-Nitrosodi-n-propylamine	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Nitrobenzene	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
Isophorone	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
4-Methylphenol (p-cresol)	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
2-Nitrophenol	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
2,4-Dimethylphenol	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Bis(2-chloroethoxy)methane	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
2,4-Dichlorophenol	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
1,2,4-Trichlorobenzene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Naphthalene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
4-Chloroaniline	ND	5.00		µg/L	1	1/5/2017 8:02:25 PM
Hexachlorobutadiene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
4-Chloro-3-methylphenol	ND	5.00		µg/L	1	1/5/2017 8:02:25 PM
2-Methylnaphthalene	ND	0.500	Q	µg/L	1	1/5/2017 8:02:25 PM
1-Methylnaphthalene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Hexachlorocyclopentadiene	ND	1.00	Q	µg/L	1	1/5/2017 8:02:25 PM
2,4,6-Trichlorophenol	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
2,4,5-Trichlorophenol	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
2-Chloronaphthalene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 2:25:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-008
Matrix: Groundwater
Client Sample ID: TWP16-PMW4A

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
2-Nitroaniline	ND	5.00		µg/L	1	1/5/2017 8:02:25 PM
Acenaphthene	1.57	0.500		µg/L	1	1/5/2017 8:02:25 PM
Dimethylphthalate	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
2,6-Dinitrotoluene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Acenaphthylene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
2,4-Dinitrophenol	ND	2.00	Q	µg/L	1	1/5/2017 8:02:25 PM
Dibenzofuran	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
2,4-Dinitrotoluene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
4-Nitrophenol	ND	5.00		µg/L	1	1/5/2017 8:02:25 PM
Fluorene	0.808	0.500		µg/L	1	1/5/2017 8:02:25 PM
4-Chlorophenyl phenyl ether	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Diethylphthalate	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
4,6-Dinitro-2-methylphenol	ND	5.00	Q	µg/L	1	1/5/2017 8:02:25 PM
4-Bromophenyl phenyl ether	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Hexachlorobenzene	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Pentachlorophenol	ND	2.00		µg/L	1	1/5/2017 8:02:25 PM
Phenanthrene	0.631	0.500		µg/L	1	1/5/2017 8:02:25 PM
Anthracene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Carbazole	ND	5.00		µg/L	1	1/5/2017 8:02:25 PM
Di-n-butyl phthalate	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Fluoranthene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Pyrene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Benzyl Butylphthalate	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
bis(2-Ethylhexyl)adipate	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Benz[a]anthracene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Chrysene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Bis(2-ethylhexyl) phthalate	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Di-n-octyl phthalate	ND	1.00		µg/L	1	1/5/2017 8:02:25 PM
Benzo (b) fluoranthene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Benzo (k) fluoranthene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Benzo[a]pyrene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Indeno (1,2,3-cd) pyrene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Dibenzo (a,h) anthracene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Benzo (g,h,I) perylene	ND	0.500		µg/L	1	1/5/2017 8:02:25 PM
Surr: 2,4,6-Tribromophenol	106	5-127		%Rec	1	1/5/2017 8:02:25 PM
Surr: 2-Fluorobiphenyl	63.3	24.1-139		%Rec	1	1/5/2017 8:02:25 PM
Surr: Nitrobenzene-d5	62.4	21.9-139		%Rec	1	1/5/2017 8:02:25 PM
Surr: Phenol-d6	58.6	10.3-128		%Rec	1	1/5/2017 8:02:25 PM
Surr: p-Terphenyl	54.8	25.2-132		%Rec	1	1/5/2017 8:02:25 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 2:25:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-008
Matrix: Groundwater
Client Sample ID: TWP16-PMW4A

Analyses	**Result**	**RL**	**Qual**	**Units**	**DF**	**Date Analyzed**

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	189	50.0		µg/L	1	1/4/2017 5:05:48 PM
Surr: Toluene-d8	102	65-135		%Rec	1	1/4/2017 5:05:48 PM
Surr: 4-Bromofluorobenzene	98.5	65-135		%Rec	1	1/4/2017 5:05:48 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 5:05:48 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 5:05:48 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 5:05:48 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 5:05:48 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 2:25:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-008
Matrix: Groundwater
Client Sample ID: TWP16-PMW4A

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 5:05:48 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 5:05:48 PM
sec-Butylbenzene	1.00	1.00		µg/L	1	1/4/2017 5:05:48 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 5:05:48 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 5:05:48 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 5:05:48 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	1/4/2017 5:05:48 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 5:05:48 PM
Surr: 1-Bromo-4-fluorobenzene	98.3	64.2-128		%Rec	1	1/4/2017 5:05:48 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 2:25:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-008
Matrix: Groundwater
Client Sample ID: **TWP16-PMW4A**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:37:51 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	3.78	1.00		µg/L	1	1/3/2017 1:03:35 PM
Barium	38.5	0.500		µg/L	1	1/3/2017 1:03:35 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 1:03:35 PM
Chromium	ND	0.500		µg/L	1	1/3/2017 1:03:35 PM
Copper	ND	0.500		µg/L	1	1/3/2017 1:03:35 PM
Lead	ND	0.500		µg/L	1	1/3/2017 1:03:35 PM
Nickel	1.15	0.500		µg/L	1	1/3/2017 1:03:35 PM
Zinc	1.92	1.50		µg/L	1	1/3/2017 1:03:35 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:40:00 AM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-009
Client Sample ID: **TWP16-PMW4B**

Collection Date: 12/28/2016 2:45:00 PM
Matrix: Groundwater

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 5:35:04 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 5:35:04 PM
Surr: 4-Bromofluorobenzene	96.3	65-135		%Rec	1	1/4/2017 5:35:04 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 5:35:04 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 5:35:04 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 5:35:04 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 5:35:04 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 5:35:04 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 2:45:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-009
Matrix: Groundwater
Client Sample ID: **TWP16-PMW4B**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by EPA Method 8260C				Batch ID: 15802		Analyst: NG
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 5:35:04 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 5:35:04 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 5:35:04 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 5:35:04 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	1/4/2017 5:35:04 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 5:35:04 PM
Surr: 1-Bromo-4-fluorobenzene	96.8	64.2-128		%Rec	1	1/4/2017 5:35:04 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Client: Floyd | Snider
Collection Date: 12/28/2016 3:35:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-010
Matrix: Groundwater
Client Sample ID: **TWP16-PMW5A**

Dissolved Gases by RSK-175

Batch ID: R33761 Analyst: BC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Methane	4.15	0.100	D	mg/L	20	1/6/2017 12:05:00 PM

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.3		µg/L	1	1/3/2017 11:32:08 PM
Diesel Range Organics (C12-C24)	128	50.3		µg/L	1	1/3/2017 11:32:08 PM
Heavy Oil	668	101		µg/L	1	1/3/2017 11:32:08 PM
Surr: 2-Fluorobiphenyl	77.3	50-150		%Rec	1	1/3/2017 11:32:08 PM
Surr: o-Terphenyl	80.6	50-150		%Rec	1	1/3/2017 11:32:08 PM

NOTES:

DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
2-Chlorophenol	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
1,3-Dichlorobenzene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
1,4-Dichlorobenzene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
1,2-Dichlorobenzene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Benzyl alcohol	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Bis(2-chloroethyl) ether	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
2-Methylphenol (o-cresol)	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Hexachloroethane	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
N-Nitrosodi-n-propylamine	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Nitrobenzene	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
Isophorone	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
4-Methylphenol (p-cresol)	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
2-Nitrophenol	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
2,4-Dimethylphenol	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Bis(2-chloroethoxy)methane	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
2,4-Dichlorophenol	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
1,2,4-Trichlorobenzene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Naphthalene	1.03	0.499		µg/L	1	1/5/2017 8:23:19 PM
4-Chloroaniline	ND	4.99		µg/L	1	1/5/2017 8:23:19 PM
Hexachlorobutadiene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
4-Chloro-3-methylphenol	ND	4.99		µg/L	1	1/5/2017 8:23:19 PM
2-Methylnaphthalene	ND	0.499	Q	µg/L	1	1/5/2017 8:23:19 PM
1-Methylnaphthalene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Hexachlorocyclopentadiene	ND	0.999	Q	µg/L	1	1/5/2017 8:23:19 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 3:35:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-010
Matrix: Groundwater
Client Sample ID: TWP16-PMW5A

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
2,4,6-Trichlorophenol	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
2,4,5-Trichlorophenol	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
2-Chloronaphthalene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
2-Nitroaniline	ND	4.99		µg/L	1	1/5/2017 8:23:19 PM
Acenaphthene	0.807	0.499		µg/L	1	1/5/2017 8:23:19 PM
Dimethylphthalate	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
2,6-Dinitrotoluene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Acenaphthylene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
2,4-Dinitrophenol	ND	2.00	Q	µg/L	1	1/5/2017 8:23:19 PM
Dibenzofuran	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
2,4-Dinitrotoluene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
4-Nitrophenol	ND	4.99		µg/L	1	1/5/2017 8:23:19 PM
Fluorene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
4-Chlorophenyl phenyl ether	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Diethylphthalate	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
4,6-Dinitro-2-methylphenol	ND	4.99	Q	µg/L	1	1/5/2017 8:23:19 PM
4-Bromophenyl phenyl ether	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Hexachlorobenzene	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Pentachlorophenol	ND	2.00		µg/L	1	1/5/2017 8:23:19 PM
Phenanthrene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Anthracene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Carbazole	ND	4.99		µg/L	1	1/5/2017 8:23:19 PM
Di-n-butyl phthalate	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Fluoranthene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Pyrene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Benzyl Butylphthalate	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
bis(2-Ethylhexyl)adipate	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Benz[a]anthracene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Chrysene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Bis(2-ethylhexyl) phthalate	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Di-n-octyl phthalate	ND	0.999		µg/L	1	1/5/2017 8:23:19 PM
Benzo (b) fluoranthene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Benzo (k) fluoranthene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Benzo[a]pyrene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Indeno (1,2,3-cd) pyrene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Dibenzo (a,h) anthracene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Benzo (g,h,I) perylene	ND	0.499		µg/L	1	1/5/2017 8:23:19 PM
Surr: 2,4,6-Tribromophenol	96.2	5-127		%Rec	1	1/5/2017 8:23:19 PM
Surr: 2-Fluorobiphenyl	52.5	24.1-139		%Rec	1	1/5/2017 8:23:19 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 3:35:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-010
Matrix: Groundwater
Client Sample ID: TWP16-PMW5A

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Surr: Nitrobenzene-d5	66.3	21.9-139		%Rec	1	1/5/2017 8:23:19 PM
Surr: Phenol-d6	62.6	10.3-128		%Rec	1	1/5/2017 8:23:19 PM
Surr: p-Terphenyl	53.5	25.2-132		%Rec	1	1/5/2017 8:23:19 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Gasoline by NWTPH-Gx

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline	ND	50.0		µg/L	1	1/4/2017 6:04:21 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 6:04:21 PM
Surr: 4-Bromofluorobenzene	97.4	65-135		%Rec	1	1/4/2017 6:04:21 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 6:04:21 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 6:04:21 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 6:04:21 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 6:04:21 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 3:35:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-010
Matrix: Groundwater
Client Sample ID: **TWP16-PMW5A**

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Toluene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 6:04:21 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 6:04:21 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 6:04:21 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 6:04:21 PM
Naphthalene	2.23	1.00		µg/L	1	1/4/2017 6:04:21 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 6:04:21 PM
Surr: Dibromofluoromethane	104	45.4-152		%Rec	1	1/4/2017 6:04:21 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 6:04:21 PM
Surr: 1-Bromo-4-fluorobenzene	97.7	64.2-128		%Rec	1	1/4/2017 6:04:21 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 3:35:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-010
Matrix: Groundwater
Client Sample ID: TWP16-PMW5A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by EPA Method 8260C				Batch ID: 15802		Analyst: NG
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:39:34 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	ND	1.00		µg/L	1	1/3/2017 1:07:11 PM
Barium	47.0	0.500		µg/L	1	1/3/2017 1:07:11 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 1:07:11 PM
Chromium	1.34	0.500		µg/L	1	1/3/2017 1:07:11 PM
Copper	1.06	0.500		µg/L	1	1/3/2017 1:07:11 PM
Lead	ND	0.500		µg/L	1	1/3/2017 1:07:11 PM
Nickel	0.963	0.500		µg/L	1	1/3/2017 1:07:11 PM
Zinc	5.57	1.50		µg/L	1	1/3/2017 1:07:11 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	ND	0.0500		mg/L	1	12/29/2016 9:44:00 AM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 4:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-011
Matrix: Groundwater
Client Sample ID: **TWP16-PMW5B**

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15795 Analyst: WC

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel (Fuel Oil)	ND	50.3		µg/L	1	1/4/2017 12:02:14 AM
Diesel Range Organics (C12-C24)	125	50.3		µg/L	1	1/4/2017 12:02:14 AM
Heavy Oil	1,210	101		µg/L	1	1/4/2017 12:02:14 AM
Surr: 2-Fluorobiphenyl	69.6	50-150		%Rec	1	1/4/2017 12:02:14 AM
Surr: o-Terphenyl	59.9	50-150		%Rec	1	1/4/2017 12:02:14 AM

NOTES:
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Phenol	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
2-Chlorophenol	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
1,3-Dichlorobenzene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
1,4-Dichlorobenzene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
1,2-Dichlorobenzene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Benzyl alcohol	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Bis(2-chloroethyl) ether	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
2-Methylphenol (o-cresol)	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Hexachloroethane	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
N-Nitrosodi-n-propylamine	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Nitrobenzene	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
Isophorone	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
4-Methylphenol (p-cresol)	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
2-Nitrophenol	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
2,4-Dimethylphenol	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Bis(2-chloroethoxy)methane	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
2,4-Dichlorophenol	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
1,2,4-Trichlorobenzene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Naphthalene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
4-Chloroaniline	ND	4.98		µg/L	1	1/5/2017 8:44:19 PM
Hexachlorobutadiene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
4-Chloro-3-methylphenol	ND	4.98		µg/L	1	1/5/2017 8:44:19 PM
2-Methylnaphthalene	ND	0.498	Q	µg/L	1	1/5/2017 8:44:19 PM
1-Methylnaphthalene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Hexachlorocyclopentadiene	ND	0.997	Q	µg/L	1	1/5/2017 8:44:19 PM
2,4,6-Trichlorophenol	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
2,4,5-Trichlorophenol	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
2-Chloronaphthalene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
2-Nitroaniline	ND	4.98		µg/L	1	1/5/2017 8:44:19 PM

Client: Floyd | Snider
Collection Date: 12/28/2016 4:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-011
Matrix: Groundwater
Client Sample ID: **TWP16-PMW5B**

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 15825 Analyst: BT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Acenaphthene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Dimethylphthalate	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
2,6-Dinitrotoluene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Acenaphthylene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
2,4-Dinitrophenol	ND	1.99	Q	µg/L	1	1/5/2017 8:44:19 PM
Dibenzofuran	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
2,4-Dinitrotoluene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
4-Nitrophenol	ND	4.98		µg/L	1	1/5/2017 8:44:19 PM
Fluorene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
4-Chlorophenyl phenyl ether	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Diethylphthalate	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
4,6-Dinitro-2-methylphenol	ND	4.98	Q	µg/L	1	1/5/2017 8:44:19 PM
4-Bromophenyl phenyl ether	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Hexachlorobenzene	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Pentachlorophenol	ND	1.99		µg/L	1	1/5/2017 8:44:19 PM
Phenanthrene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Anthracene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Carbazole	ND	4.98		µg/L	1	1/5/2017 8:44:19 PM
Di-n-butyl phthalate	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Fluoranthene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Pyrene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Benzyl Butylphthalate	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
bis(2-Ethylhexyl)adipate	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Benz[a]anthracene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Chrysene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Bis(2-ethylhexyl) phthalate	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Di-n-octyl phthalate	ND	0.997		µg/L	1	1/5/2017 8:44:19 PM
Benzo (b) fluoranthene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Benzo (k) fluoranthene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Benzo[a]pyrene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Indeno (1,2,3-cd) pyrene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Dibenzo (a,h) anthracene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Benzo (g,h,I) perylene	ND	0.498		µg/L	1	1/5/2017 8:44:19 PM
Surr: 2,4,6-Tribromophenol	110	5-127		%Rec	1	1/5/2017 8:44:19 PM
Surr: 2-Fluorobiphenyl	60.7	24.1-139		%Rec	1	1/5/2017 8:44:19 PM
Surr: Nitrobenzene-d5	79.7	21.9-139		%Rec	1	1/5/2017 8:44:19 PM
Surr: Phenol-d6	70.3	10.3-128		%Rec	1	1/5/2017 8:44:19 PM
Surr: p-Terphenyl	59.1	25.2-132		%Rec	1	1/5/2017 8:44:19 PM

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 4:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-011
Matrix: Groundwater
Client Sample ID: TWP16-PMW5B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Semi-Volatile Organic Compounds by EPA Method 8270		Batch ID: 15825			Analyst: BT	
Gasoline by NWTPH-Gx		Batch ID: 15802			Analyst: NG	
Gasoline	ND	50.0		µg/L	1	1/4/2017 6:33:38 PM
Surr: Toluene-d8	101	65-135		%Rec	1	1/4/2017 6:33:38 PM
Surr: 4-Bromofluorobenzene	97.0	65-135		%Rec	1	1/4/2017 6:33:38 PM
Volatile Organic Compounds by EPA Method 8260C		Batch ID: 15802			Analyst: NG	
Dichlorodifluoromethane (CFC-12)	ND	1.00	Q	µg/L	1	1/4/2017 6:33:38 PM
Chloromethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Vinyl chloride	ND	0.200		µg/L	1	1/4/2017 6:33:38 PM
Bromomethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Chloroethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Methylene chloride	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	1/4/2017 6:33:38 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Chloroform	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Benzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	1/4/2017 6:33:38 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Dibromomethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Toluene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Collection Date: 12/28/2016 4:00:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-011
Matrix: Groundwater
Client Sample ID: **TWP16-PMW5B**

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,3-Dichloropropane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	1/4/2017 6:33:38 PM
Chlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Ethylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
m,p-Xylene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
o-Xylene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Styrene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Bromoform	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Bromobenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	1/4/2017 6:33:38 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	1/4/2017 6:33:38 PM
Naphthalene	ND	1.00		µg/L	1	1/4/2017 6:33:38 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	1/4/2017 6:33:38 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	1/4/2017 6:33:38 PM
Surr: Toluene-d8	102	40.1-139		%Rec	1	1/4/2017 6:33:38 PM
Surr: 1-Bromo-4-fluorobenzene	97.3	64.2-128		%Rec	1	1/4/2017 6:33:38 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Analytical Report

Work Order: **1612278**
Date Reported: **1/9/2017**

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-011
Client Sample ID: **TWP16-PMW5B**
Collection Date: 12/28/2016 4:00:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Mercury by EPA Method 245.1				Batch ID: 15826		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/3/2017 3:41:15 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 15820		Analyst: TN
Arsenic	2.41	1.00		µg/L	1	1/3/2017 1:10:48 PM
Barium	3.43	0.500		µg/L	1	1/3/2017 1:10:48 PM
Cadmium	ND	0.200		µg/L	1	1/3/2017 1:10:48 PM
Chromium	4.58	0.500		µg/L	1	1/3/2017 1:10:48 PM
Copper	ND	0.500		µg/L	1	1/3/2017 1:10:48 PM
Lead	ND	0.500		µg/L	1	1/3/2017 1:10:48 PM
Nickel	0.706	0.500		µg/L	1	1/3/2017 1:10:48 PM
Zinc	ND	1.50		µg/L	1	1/3/2017 1:10:48 PM
Hexavalent Chromium by EPA 7196 / SM 3500 Cr B				Batch ID: R33688		Analyst: KT
Chromium, Hexavalent	0.0557	0.0500		mg/L	1	12/29/2016 10:21:00 AM

Client: Floyd | Snider
Project: Ave 55 - Taylor Way
Lab ID: 1612278-012
Client Sample ID: **Trip Blank**

Collection Date: 12/20/2016 2:59:00 PM
Matrix: Water

Analyses	**Result**	**RL**	**Qual**	**Units**	**DF**	**Date Analyzed**
Gasoline by NWTPH-Gx				Batch ID: 15802		Analyst: NG
Gasoline	ND	50.0	H	µg/L	1	1/4/2017 10:46:10 AM
Surr: Toluene-d8	101	65-135	H	%Rec	1	1/4/2017 10:46:10 AM
Surr: 4-Bromofluorobenzene	96.0	65-135	H	%Rec	1	1/4/2017 10:46:10 AM
Volatile Organic Compounds by EPA Method 8260C				Batch ID: 15802		Analyst: NG
Dichlorodifluoromethane (CFC-12)	ND	1.00	QH	µg/L	1	1/4/2017 10:46:10 AM
Chloromethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Vinyl chloride	ND	0.200	H	µg/L	1	1/4/2017 10:46:10 AM
Bromomethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Trichlorofluoromethane (CFC-11)	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Chloroethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,1-Dichloroethene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Methylene chloride	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
trans-1,2-Dichloroethene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Methyl tert-butyl ether (MTBE)	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,1-Dichloroethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
2,2-Dichloropropane	ND	2.00	QH	µg/L	1	1/4/2017 10:46:10 AM
cis-1,2-Dichloroethene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Chloroform	3.67	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,1,1-Trichloroethane (TCA)	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,1-Dichloropropene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Carbon tetrachloride	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,2-Dichloroethane (EDC)	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Benzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Trichloroethene (TCE)	ND	0.500	H	µg/L	1	1/4/2017 10:46:10 AM
1,2-Dichloropropane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Bromodichloromethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Dibromomethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
cis-1,3-Dichloropropene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Toluene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
trans-1,3-Dichloropropylene	ND	1.00	QH	µg/L	1	1/4/2017 10:46:10 AM
1,1,2-Trichloroethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,3-Dichloropropane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Tetrachloroethene (PCE)	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Dibromochloromethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,2-Dibromoethane (EDB)	ND	0.0600	H	µg/L	1	1/4/2017 10:46:10 AM
Chlorobenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,1,1,2-Tetrachloroethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM

Client: Floyd | Snider
Collection Date: 12/20/2016 2:59:00 PM
Project: Ave 55 - Taylor Way
Lab ID: 1612278-012
Matrix: Water
Client Sample ID: **Trip Blank**

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15802 Analyst: NG

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
m,p-Xylene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
o-Xylene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Styrene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Isopropylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Bromoform	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,1,2,2-Tetrachloroethane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
n-Propylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Bromobenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,3,5-Trimethylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
2-Chlorotoluene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
4-Chlorotoluene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
tert-Butylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,2,3-Trichloropropane	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,2,4-Trichlorobenzene	ND	2.00	H	µg/L	1	1/4/2017 10:46:10 AM
sec-Butylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
4-Isopropyltoluene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,3-Dichlorobenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,4-Dichlorobenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
n-Butylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,2-Dichlorobenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,2-Dibromo-3-chloropropane	ND	1.00	QH	µg/L	1	1/4/2017 10:46:10 AM
1,2,4-Trimethylbenzene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
Hexachloro-1,3-butadiene	ND	4.00	H	µg/L	1	1/4/2017 10:46:10 AM
Naphthalene	ND	1.00	H	µg/L	1	1/4/2017 10:46:10 AM
1,2,3-Trichlorobenzene	ND	4.00	H	µg/L	1	1/4/2017 10:46:10 AM
Surr: Dibromofluoromethane	100	45.4-152	H	%Rec	1	1/4/2017 10:46:10 AM
Surr: Toluene-d8	103	40.1-139	H	%Rec	1	1/4/2017 10:46:10 AM
Surr: 1-Bromo-4-fluorobenzene	95.9	64.2-128	H	%Rec	1	1/4/2017 10:46:10 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Hexavalent Chromium by EPA 7196 / SM 3500 Cr B

Sample ID **MB-R33688** SampType: **MBLK** Units: **mg/L** Prep Date: **12/29/2016** RunNo: **33688**
Client ID: **MBLKW** Batch ID: **R33688** Analysis Date: **12/29/2016** SeqNo: **639409**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	0.0500									

Sample ID **LCS-R33688** SampType: **LCS** Units: **mg/L** Prep Date: **12/29/2016** RunNo: **33688**
Client ID: **LCSW** Batch ID: **R33688** Analysis Date: **12/29/2016** SeqNo: **639411**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.223	0.0500	0.2500	0	89.1	80	120				

Sample ID **1612278-001EDUP** SampType: **DUP** Units: **mg/L** Prep Date: **12/29/2016** RunNo: **33688**
Client ID: **TWP16-PMW1A** Batch ID: **R33688** Analysis Date: **12/29/2016** SeqNo: **639393**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	0.0500						0		30	

Sample ID **1612278-001EMS** SampType: **MS** Units: **mg/L** Prep Date: **12/29/2016** RunNo: **33688**
Client ID: **TWP16-PMW1A** Batch ID: **R33688** Analysis Date: **12/29/2016** SeqNo: **639395**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.0228	0.0500	0.2500	0.009700	5.24	65	135				S

NOTES:
S - Spike recovery indicates a possible matrix effect. The method is in control as indicated by the Laboratory Control Sample (LCS).

Sample ID **1612278-001EMSD** SampType: **MSD** Units: **mg/L** Prep Date: **12/29/2016** RunNo: **33688**
Client ID: **TWP16-PMW1A** Batch ID: **R33688** Analysis Date: **12/29/2016** SeqNo: **639397**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.0209	0.0500	0.2500	0.009700	4.48	65	135	0		30	S

NOTES:
S - Spike recovery indicates a possible matrix effect. The method is in control as indicated by the Laboratory Control Sample (LCS).

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Hexavalent Chromium by EPA 7196 / SM 3500 Cr B

Sample ID **1612278-003EMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **12/29/2016**			RunNo: **33688**		
Client ID: **TWP16-PMW2B**	Batch ID: **R33688**					Analysis Date: **12/29/2016**			SeqNo: **639399**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.192	0.0500	0.2500	0	76.8	65	135				

Sample ID **1612278-003EMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **12/29/2016**			RunNo: **33688**		
Client ID: **TWP16-PMW2B**	Batch ID: **R33688**					Analysis Date: **12/29/2016**			SeqNo: **639400**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.182	0.0500	0.2500	0	72.7	65	135	0.1920	5.46	30	

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID **MB-15816FB** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **MBLKW** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639666**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Barium	ND	0.500									
Cadmium	ND	0.200									
Chromium	ND	0.500									
Copper	ND	0.500									
Lead	ND	0.500									
Nickel	ND	0.500									
Zinc	ND	1.50									

NOTES:
Filter Blank

Sample ID **MB-15820** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **MBLKW** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639667**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Barium	ND	0.500									
Cadmium	ND	0.200									
Chromium	ND	0.500									
Copper	ND	0.500									
Lead	ND	0.500									
Nickel	ND	0.500									
Zinc	ND	1.50									

Sample ID **LCS-15820** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **LCSW** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639668**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	95.9	1.00	100.0	0	95.9	85	115				
Barium	97.2	0.500	100.0	0	97.2	85	115				
Cadmium	4.81	0.200	5.000	0	96.2	85	115				

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID **LCS-15820** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **LCSW** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639668**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	99.2	0.500	100.0	0	99.2	85	115				
Copper	98.8	0.500	100.0	0	98.8	85	115				
Lead	49.2	0.500	50.00	0	98.4	85	115				
Nickel	98.3	0.500	100.0	0	98.3	85	115				
Zinc	104	1.50	100.0	0	104	85	115				

Sample ID **1612278-005DDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **TWP16-PMW2A** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639670**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.76	1.00						1.650	6.71	30	
Barium	220	0.500						235.0	6.37	30	
Cadmium	ND	0.200						0		30	
Chromium	ND	0.500						0		30	
Copper	0.510	0.500						0.6950	30.7	30	
Lead	ND	0.500						0		30	
Nickel	0.867	0.500						1.092	22.9	30	
Zinc	21.5	1.50						23.98	10.8	30	

Sample ID **1612278-005DMS** SampType: **MS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **TWP16-PMW2A** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639671**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	507	1.00	500.0	1.650	101	70	130				
Barium	723	0.500	500.0	235.0	97.6	70	130				
Cadmium	26.3	0.200	25.00	0.02850	105	70	130				
Chromium	502	0.500	500.0	0.09950	100	70	130				
Copper	470	0.500	500.0	0.6950	93.8	70	130				
Lead	229	0.500	250.0	0.1060	91.6	70	130				
Nickel	485	0.500	500.0	1.092	96.7	70	130				

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID **1612278-005DMS** SampType: **MS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **TWP16-PMW2A** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639671**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	527	1.50	500.0	23.98	101	70	130				

Sample ID **1612278-005DMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33704**
Client ID: **TWP16-PMW2A** Batch ID: **15820** Analysis Date: **1/3/2017** SeqNo: **639672**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	521	1.00	500.0	1.650	104	70	130	506.8	2.74	30	
Barium	721	0.500	500.0	235.0	97.1	70	130	723.0	0.341	30	
Cadmium	26.3	0.200	25.00	0.02850	105	70	130	26.33	0.198	30	
Chromium	500	0.500	500.0	0.09950	100	70	130	502.3	0.477	30	
Copper	477	0.500	500.0	0.6950	95.3	70	130	469.8	1.59	30	
Lead	225	0.500	250.0	0.1060	89.9	70	130	229.1	1.80	30	
Nickel	484	0.500	500.0	1.092	96.5	70	130	484.7	0.223	30	
Zinc	542	1.50	500.0	23.98	104	70	130	527.4	2.69	30	

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Dissolved Mercury by EPA Method 245.1

Sample ID **MB-15826** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33698**
Client ID: **MBLKW** Batch ID: **15826** Analysis Date: **1/3/2017** SeqNo: **639816**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.100									

Sample ID **LCS-15826** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33698**
Client ID: **LCSW** Batch ID: **15826** Analysis Date: **1/3/2017** SeqNo: **639817**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.67	0.100	2.500	0	107	85	115				

Sample ID **1612278-005DDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33698**
Client ID: **TWP16-PMW2A** Batch ID: **15826** Analysis Date: **1/3/2017** SeqNo: **639823**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.100						0		20	

Sample ID **1612278-005DMS** SampType: **MS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33698**
Client ID: **TWP16-PMW2A** Batch ID: **15826** Analysis Date: **1/3/2017** SeqNo: **639824**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.66	0.100	2.500	0	106	80	120				

Sample ID **1612278-005DMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33698**
Client ID: **TWP16-PMW2A** Batch ID: **15826** Analysis Date: **1/3/2017** SeqNo: **639825**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.63	0.100	2.500	0	105	80	120	2.660	1.13	20	

Work Order: 1612278

CLIENT: Floyd | Snider

Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Dissolved Mercury by EPA Method 245.1

Sample ID **MB-15816FB** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33698**

Client ID: **MBLKW** Batch ID: **15826** Analysis Date: **1/3/2017** SeqNo: **639833**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.100									

NOTES:

Filter Blank

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID **MB-15795** SampType: **MBLK** Units: **µg/L** Prep Date: **12/29/2016** RunNo: **33723**
Client ID: **MBLKW** Batch ID: **15795** Analysis Date: **12/30/2016** SeqNo: **640128**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	50.0									
Heavy Oil	ND	100									
Surr: 2-Fluorobiphenyl	43.9		80.07		54.8	50	150				
Surr: o-Terphenyl	52.2		80.07		65.2	50	150				

Sample ID **LCS-15795** SampType: **LCS** Units: **µg/L** Prep Date: **12/29/2016** RunNo: **33723**
Client ID: **LCSW** Batch ID: **15795** Analysis Date: **12/30/2016** SeqNo: **640127**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	774	50.0	999.7	0	77.5	65	135				
Surr: 2-Fluorobiphenyl	66.8		79.97		83.6	50	150				
Surr: o-Terphenyl	77.2		79.97		96.6	50	150				

Sample ID **1612278-001BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **12/29/2016** RunNo: **33723**
Client ID: **TWP16-PMW1A** Batch ID: **15795** Analysis Date: **12/30/2016** SeqNo: **640108**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	49.8						0		30	
Diesel Range Organics (C12-C24)	480	49.8						482.5	0.467	30	
Heavy Oil	1,080	99.5						943.2	13.6	30	
Surr: 2-Fluorobiphenyl	61.7		79.62		77.5	50	150		0		
Surr: o-Terphenyl	69.6		79.62		87.4	50	150		0		

NOTES:
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Sample ID **1612278-005BMS** SampType: **MS** Units: **µg/L** Prep Date: **12/29/2016** RunNo: **33723**
Client ID: **TWP16-PMW2A** Batch ID: **15795** Analysis Date: **12/30/2016** SeqNo: **640113**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	695	50.3	1,005	0	69.1	65	135				

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID **1612278-005BMS** SampType: **MS** Units: **µg/L** Prep Date: **12/29/2016** RunNo: **33723**
Client ID: **TWP16-PMW2A** Batch ID: **15795** Analysis Date: **12/30/2016** SeqNo: **640113**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	64.6		80.43		80.3	50	150				
Surr: o-Terphenyl	70.2		80.43		87.3	50	150				

Sample ID **1612278-005BMSD** SampType: **MSD** Units: **µg/L** Prep Date: **12/29/2016** RunNo: **33723**
Client ID: **TWP16-PMW2A** Batch ID: **15795** Analysis Date: **12/30/2016** SeqNo: **640114**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	663	50.1	1,002	0	66.1	65	135	694.8	4.77	30	
Surr: 2-Fluorobiphenyl	60.4		80.14		75.4	50	150		0		
Surr: o-Terphenyl	62.9		80.14		78.5	50	150		0		

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID **LCS-R33761** SampType: **LCS** Units: **mg/L** Prep Date: **1/6/2017** RunNo: **33761**
Client ID: **LCSW** Batch ID: **R33761** Analysis Date: **1/6/2017** SeqNo: **641164**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	0.410	0.00500	0.5000	0	82.0	80	120				

Sample ID **MB-R33761** SampType: **MBLK** Units: **mg/L** Prep Date: **1/6/2017** RunNo: **33761**
Client ID: **MBLKW** Batch ID: **R33761** Analysis Date: **1/6/2017** SeqNo: **641166**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500									

Sample ID **1612278-001AREP** SampType: **REP** Units: **mg/L** Prep Date: **1/6/2017** RunNo: **33761**
Client ID: **TWP16-PMW1A** Batch ID: **R33761** Analysis Date: **1/6/2017** SeqNo: **641148**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	6.29	0.00500						6.293	0.119	30	E

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **MB-15825** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **MBLKW** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641337**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diphenylamine	ND	4.96									
Phenol	ND	1.98									
2-Chlorophenol	ND	0.992									
N-Nitrosodiphenylamine	ND	4.96									
1,3-Dichlorobenzene	ND	0.992									
1,4-Dichlorobenzene	ND	0.992									
1,2-Dichlorobenzene	ND	0.992									
Benzyl alcohol	ND	0.992									
Bis(2-chloroethyl) ether	ND	1.98									
2-Methylphenol (o-cresol)	ND	0.992									
Hexachloroethane	ND	0.992									
N-Nitrosodi-n-propylamine	ND	0.992									
Nitrobenzene	ND	1.98									
Isophorone	ND	0.992									
4-Methylphenol (p-cresol)	ND	0.992									
2-Nitrophenol	ND	1.98									
2,4-Dimethylphenol	ND	0.992									
Bis(2-chloroethoxy)methane	ND	0.992									
2,4-Dichlorophenol	ND	1.98									
1,2,4-Trichlorobenzene	ND	0.992									
Naphthalene	ND	0.496									
4-Chloroaniline	ND	4.96									
Hexachlorobutadiene	ND	0.992									
4-Chloro-3-methylphenol	ND	4.96									
2-Methylnaphthalene	ND	0.496									Q
1-Methylnaphthalene	ND	0.496									
Hexachlorocyclopentadiene	ND	0.992									Q
2,4,6-Trichlorophenol	ND	1.98									
2,4,5-Trichlorophenol	ND	1.98									
2-Chloronaphthalene	ND	0.992									
2-Nitroaniline	ND	4.96									

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **MB-15825** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **MBLKW** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641337**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.496									
Dimethylphthalate	ND	0.992									
2,6-Dinitrotoluene	ND	0.992									
Acenaphthylene	ND	0.496									
2,4-Dinitrophenol	ND	1.98									Q
Dibenzofuran	ND	0.992									
2,4-Dinitrotoluene	ND	0.992									
4-Nitrophenol	ND	4.96									
Fluorene	ND	0.496									
4-Chlorophenyl phenyl ether	ND	0.992									
Diethylphthalate	ND	0.992									
4,6-Dinitro-2-methylphenol	ND	4.96									Q
4-Bromophenyl phenyl ether	ND	0.992									
Hexachlorobenzene	ND	0.992									
Pentachlorophenol	ND	1.98									
Phenanthrene	ND	0.496									
Anthracene	ND	0.496									
Carbazole	ND	4.96									
Di-n-butyl phthalate	ND	0.992									
Fluoranthene	ND	0.496									
Pyrene	ND	0.496									
Benzyl Butylphthalate	ND	0.992									
bis(2-Ethylhexyl)adipate	ND	0.992									
Benz[a]anthracene	ND	0.496									
Chrysene	ND	0.496									
Bis(2-ethylhexyl) phthalate	ND	0.992									
Di-n-octyl phthalate	ND	0.992									
Benzo (b) fluoranthene	ND	0.496									
Benzo (k) fluoranthene	ND	0.496									
Benzo[a]pyrene	ND	0.496									
Indeno (1,2,3-cd) pyrene	ND	0.496									

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **MB-15825** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **MBLKW** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641337**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibenzo (a,h) anthracene	ND	0.496									
Benzo (g,h,I) perylene	ND	0.496									
Surr: 2,4,6-Tribromophenol	3.18		3.967		80.2	5	127				
Surr: 2-Fluorobiphenyl	1.26		1.983		63.5	24.1	139				
Surr: Nitrobenzene-d5	1.52		1.983		76.8	21.9	139				
Surr: Phenol-d6	2.36		3.967		59.4	10.3	128				
Surr: p-Terphenyl	1.37		1.983		68.9	25.2	132				

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID **LCS-15825** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **LCSW** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641338**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diphenylamine	2.70	5.02	4.012	0	67.3	25	94.9				
Phenol	1.48	2.01	4.012	0	36.8	10	63.1				
2-Chlorophenol	2.04	1.00	4.012	0	50.8	25	112				
N-Nitrosodiphenylamine	N/A	5.02	4.012	0	0	25	94.9				S
1,3-Dichlorobenzene	2.16	1.00	4.012	0	53.7	25	108				
1,4-Dichlorobenzene	2.17	1.00	4.012	0	54.1	25	110				
1,2-Dichlorobenzene	2.18	1.00	4.012	0	54.3	25	109				
Benzyl alcohol	2.05	1.00	4.012	0	51.1	20	96.5				
Bis(2-chloroethyl) ether	2.39	2.01	4.012	0	59.5	25	111				
2-Methylphenol (o-cresol)	1.95	1.00	4.012	0	48.5	25	101				
Hexachloroethane	2.19	1.00	4.012	0	54.6	25	109				
N-Nitrosodi-n-propylamine	2.98	1.00	4.012	0	74.4	25	122				
Nitrobenzene	2.43	2.01	4.012	0	60.7	25	110				
Isophorone	2.58	1.00	4.012	0	64.2	25	126				
4-Methylphenol (p-cresol)	1.02	1.00	2.006	0	51.0	5	100				
2-Nitrophenol	1.93	2.01	4.012	0	48.0	25	126				
2,4-Dimethylphenol	2.38	1.00	4.012	0	59.4	25	124				

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **LCS-15825** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **LCSW** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641338**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bis(2-chloroethoxy)methane	2.49	1.00	4.012	0	62.2	25	121				
2,4-Dichlorophenol	2.51	2.01	4.012	0	62.6	29.1	110				
1,2,4-Trichlorobenzene	2.22	1.00	4.012	0	55.3	25	113				
Naphthalene	2.45	0.502	4.012	0	61.1	25	115				
4-Chloroaniline	2.15	5.02	4.012	0	53.6	10	113				
Hexachlorobutadiene	2.32	1.00	4.012	0	57.7	25	111				
4-Chloro-3-methylphenol	3.51	5.02	4.012	0	87.5	32.3	122				
2-Methylnaphthalene	2.59	0.502	4.012	0	64.6	25	119				
1-Methylnaphthalene	2.50	0.502	4.012	0	62.3	25	117				
Hexachlorocyclopentadiene	2.53	1.00	4.012	0	63.0	25	125				
2,4,6-Trichlorophenol	2.48	2.01	4.012	0	61.7	25	133				
2,4,5-Trichlorophenol	2.86	2.01	4.012	0	71.3	25	125				
2-Chloronaphthalene	2.59	1.00	4.012	0	64.5	25	121				
2-Nitroaniline	3.38	5.02	4.012	0	84.3	25	121				
Acenaphthene	2.72	0.502	4.012	0	67.8	25	120				
Dimethylphthalate	2.86	1.00	4.012	0	71.4	25	133				
2,6-Dinitrotoluene	3.05	1.00	4.012	0	76.1	25	131				
Acenaphthylene	2.67	0.502	4.012	0	66.5	25	128				
2,4-Dinitrophenol	3.25	2.01	8.025	0	40.5	10	121				
Dibenzofuran	2.76	1.00	4.012	0	68.8	25	121				
2,4-Dinitrotoluene	3.17	1.00	4.012	0	79.0	25	132				
4-Nitrophenol	2.55	5.02	4.012	0	63.6	5	141				
Fluorene	2.70	0.502	4.012	0	67.3	25	127				
4-Chlorophenyl phenyl ether	2.66	1.00	4.012	0	66.3	25	124				
Diethylphthalate	3.02	1.00	4.012	0	75.3	31.3	142				
4,6-Dinitro-2-methylphenol	2.72	5.02	4.012	0	67.7	10	118				
4-Bromophenyl phenyl ether	2.63	1.00	4.012	0	65.5	25	130				
Hexachlorobenzene	2.82	1.00	4.012	0	70.3	29	120				
Pentachlorophenol	2.55	2.01	4.012	0	63.6	10	117				
Phenanthrene	2.91	0.502	4.012	0	72.5	32.6	104				
Anthracene	2.81	0.502	4.012	0	69.9	27.7	134				

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Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **LCS-15825** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **LCSW** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641338**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbazole	3.06	5.02	4.012	0	76.2	27.9	150				
Di-n-butyl phthalate	3.30	1.00	4.012	0	82.3	28.6	121				
Fluoranthene	3.04	0.502	4.012	0	75.8	34.8	143				
Pyrene	2.99	0.502	4.012	0	74.5	31.9	109				
Benzyl Butylphthalate	3.56	1.00	4.012	0	88.8	43.8	119				
bis(2-Ethylhexyl)adipate	3.20	1.00	4.012	0	79.7	38.1	140				
Benz[a]anthracene	3.17	0.502	4.012	0	78.9	27.2	132				
Chrysene	3.05	0.502	4.012	0	75.9	31.3	107				
Bis(2-ethylhexyl) phthalate	3.35	1.00	4.012	0	83.6	36.2	123				
Di-n-octyl phthalate	3.49	1.00	4.012	0	87.0	40.1	149				
Benzo (b) fluoranthene	3.47	0.502	4.012	0	86.4	32.5	119				
Benzo (k) fluoranthene	3.46	0.502	4.012	0	86.3	25	144				
Benzo[a]pyrene	3.58	0.502	4.012	0	89.3	24.9	125				
Indeno (1,2,3-cd) pyrene	3.40	0.502	4.012	0	84.6	25	127				
Dibenzo (a,h) anthracene	3.50	0.502	4.012	0	87.1	25	132				
Benzo (g,h,I) perylene	3.68	0.502	4.012	0	91.8	25	133				
Surr: 2,4,6-Tribromophenol	3.52		4.012		87.7	5	127				
Surr: 2-Fluorobiphenyl	1.06		2.006		52.7	24.1	139				
Surr: Nitrobenzene-d5	0.996		2.006		49.7	21.9	139				
Surr: Phenol-d6	1.89		4.012		47.2	10.3	128				
Surr: p-Terphenyl	1.16		2.006		57.7	25.2	132				

NOTES:
N/A - N-nitrosodiphenylamine decomposes to Diphenylamine (mix component) in the injector. Please refer to Spike recoveries for Diphenylamine.

Sample ID **1612293-001FDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641343**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diphenylamine	ND	5.02						0		50	
Phenol	23.5	2.01						24.15	2.81	50	E
2-Chlorophenol	ND	1.00						0		50	

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Sample ID **1612293-001FDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641343**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodiphenylamine	ND	5.02						0		50	
1,3-Dichlorobenzene	ND	1.00						0		50	
1,4-Dichlorobenzene	ND	1.00						0		50	
1,2-Dichlorobenzene	ND	1.00						0		50	
Benzyl alcohol	ND	1.00						0		50	
Bis(2-chloroethyl) ether	ND	2.01						0		50	
2-Methylphenol (o-cresol)	ND	1.00						0		50	
Hexachloroethane	ND	1.00						0		50	
N-Nitrosodi-n-propylamine	ND	1.00						0		50	
Nitrobenzene	4.67	2.01						5.506	16.4	50	
Isophorone	1.55	1.00						1.631	5.34	50	
4-Methylphenol (p-cresol)	ND	1.00						0		50	
2-Nitrophenol	ND	2.01						0		50	
2,4-Dimethylphenol	ND	1.00						0		50	
Bis(2-chloroethoxy)methane	ND	1.00						0		50	
2,4-Dichlorophenol	ND	2.01						0		50	
1,2,4-Trichlorobenzene	ND	1.00						0		50	
Naphthalene	ND	0.502						0		50	
4-Chloroaniline	ND	5.02						0		50	
Hexachlorobutadiene	ND	1.00						0		50	
4-Chloro-3-methylphenol	ND	5.02						0		50	
2-Methylnaphthalene	0.820	0.502						1.016	21.4	50	Q
1-Methylnaphthalene	ND	0.502						0.6932	40.8	50	
Hexachlorocyclopentadiene	ND	1.00						0		50	Q
2,4,6-Trichlorophenol	ND	2.01						0		50	
2,4,5-Trichlorophenol	ND	2.01						0		50	
2-Chloronaphthalene	ND	1.00						0		50	
2-Nitroaniline	ND	5.02						0		50	
Acenaphthene	ND	0.502						0		50	
Dimethylphthalate	3.15	1.00						3.280	4.11	50	
2,6-Dinitrotoluene	ND	1.00						0		50	

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Sample ID **1612293-001FDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641343**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthylene	ND	0.502						0		50	
2,4-Dinitrophenol	ND	2.01						0		50	Q
Dibenzofuran	ND	1.00						0		50	
2,4-Dinitrotoluene	ND	1.00						0		50	
4-Nitrophenol	ND	5.02						0		50	
Fluorene	ND	0.502						0		50	
4-Chlorophenyl phenyl ether	ND	1.00						0		50	
Diethylphthalate	3.13	1.00						3.684	16.3	50	
4,6-Dinitro-2-methylphenol	ND	5.02						0		50	Q
4-Bromophenyl phenyl ether	ND	1.00						0		50	
Hexachlorobenzene	ND	1.00						0		50	
Pentachlorophenol	ND	2.01						0		50	
Phenanthrene	1.23	0.502						1.365	10.0	50	
Anthracene	ND	0.502						0		50	
Carbazole	ND	5.02						0		50	
Di-n-butyl phthalate	ND	1.00						0		50	
Fluoranthene	1.25	0.502						1.344	7.46	50	
Pyrene	1.03	0.502						1.039	0.893	50	
Benzyl Butylphthalate	ND	1.00						0		50	
bis(2-Ethylhexyl)adipate	ND	1.00						0		50	
Benz[a]anthracene	ND	0.502						0		50	
Chrysene	ND	0.502						0		50	
Di-n-octyl phthalate	1.41	1.00						1.261	11.4	50	
Benzo (b) fluoranthene	ND	0.502						0		50	
Benzo (k) fluoranthene	ND	0.502						0		50	
Benzo[a]pyrene	ND	0.502						0		50	
Indeno (1,2,3-cd) pyrene	ND	0.502						0		50	
Dibenzo (a,h) anthracene	ND	0.502						0		50	
Benzo (g,h,I) perylene	ND	0.502						0		50	
Surr: 2,4,6-Tribromophenol	4.13		4.019		103	5	127		0		
Surr: 2-Fluorobiphenyl	1.31		2.009		65.1	24.1	139		0		

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Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **1612293-001FDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641343**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	1.57		2.009		77.9	21.9	139		0		
Surr: Phenol-d6	4.31		4.019		107	10.3	128		0		
Surr: p-Terphenyl	1.48		2.009		73.4	25.2	132		0		

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID **1612293-003FMS** SampType: **MS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641345**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diphenylamine	3.75	5.03	4.025	0.2076	87.9	5	159				
Phenol	24.6	2.01	4.025	21.53	77.1	5	94.5				
2-Chlorophenol	3.16	1.01	4.025	0	78.4	10.4	100				
N-Nitrosodiphenylamine	N/A	5.03	4.025	0	0	5	66.4				S
1,3-Dichlorobenzene	2.92	1.01	4.025	0	72.5	23	94.8				
1,4-Dichlorobenzene	2.82	1.01	4.025	0	70.1	23.8	95.2				
1,2-Dichlorobenzene	2.84	1.01	4.025	0	70.6	25.5	96.9				
Benzyl alcohol	4.23	1.01	4.025	0	105	5	139				
Bis(2-chloroethyl) ether	4.08	2.01	4.025	0	101	22	109				
2-Methylphenol (o-cresol)	4.33	1.01	4.025	0	107	5	106				S
Hexachloroethane	2.83	1.01	4.025	0	70.4	9.62	104				
N-Nitrosodi-n-propylamine	5.01	1.01	4.025	0	125	23.7	124				S
Nitrobenzene	8.89	2.01	4.025	5.032	95.9	10.6	137				
Isophorone	5.31	1.01	4.025	1.400	97.1	22.9	124				
4-Methylphenol (p-cresol)	0.883	1.01	2.012	0	43.9	5	119				
2-Nitrophenol	3.68	2.01	4.025	0	91.4	13.6	125				
2,4-Dimethylphenol	5.78	1.01	4.025	0	144	5	126				S
Bis(2-chloroethoxy)methane	3.72	1.01	4.025	0	92.4	27	115				
2,4-Dichlorophenol	0.261	2.01	4.025	0	6.49	12.1	126				S
1,2,4-Trichlorobenzene	3.00	1.01	4.025	0.01534	74.2	25	110				
Naphthalene	4.72	0.503	4.025	0	117	23.5	108				S

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Sample ID	**1612293-003FMS**	SampType: **MS**	Units: **µg/L**	Prep Date:	**1/3/2017**	RunNo:	**33768**
Client ID:	**BATCH**	Batch ID: **15825**		Analysis Date:	**1/5/2017**	SeqNo:	**641345**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4-Chloroaniline	1.36	5.03	4.025	0	33.8	5	110				
Hexachlorobutadiene	3.07	1.01	4.025	0	76.4	23.6	98.8				
4-Chloro-3-methylphenol	1.72	5.03	4.025	0	42.8	5	139				
2-Methylnaphthalene	3.49	0.503	4.025	0.5083	74.2	26.1	118				
1-Methylnaphthalene	3.43	0.503	4.025	0.3337	76.9	27.5	116				
Hexachlorocyclopentadiene	ND	1.01	4.025	0	0	5	126				S
2,4,6-Trichlorophenol	3.71	2.01	4.025	0	92.3	10.5	124				
2,4,5-Trichlorophenol	4.06	2.01	4.025	0	101	5	144				
2-Chloronaphthalene	3.29	1.01	4.025	0	81.8	27	117				
2-Nitroaniline	4.94	5.03	4.025	0	123	5.48	142				
Acenaphthene	3.81	0.503	4.025	0	94.7	29.3	117				
Dimethylphthalate	6.15	1.01	4.025	2.846	82.0	24	132				
2,6-Dinitrotoluene	3.80	1.01	4.025	0	94.4	22	129				
Acenaphthylene	3.18	0.503	4.025	0	79.0	25.1	121				
2,4-Dinitrophenol	ND	2.01	8.049	0	0	5	172				S
Dibenzofuran	3.85	1.01	4.025	0	95.7	27.8	116				
2,4-Dinitrotoluene	4.10	1.01	4.025	0	102	24.4	124				
4-Nitrophenol	ND	5.03	4.025	0	0	5	120				S
Fluorene	3.65	0.503	4.025	0.1396	87.2	27.6	123				
4-Chlorophenyl phenyl ether	3.59	1.01	4.025	0	89.3	28.6	117				
Diethylphthalate	7.43	1.01	4.025	3.324	102	27.4	137				
4,6-Dinitro-2-methylphenol	1.92	5.03	4.025	0	47.7	5	134				
4-Bromophenyl phenyl ether	3.81	1.01	4.025	0	94.7	32.2	120				
Hexachlorobenzene	3.54	1.01	4.025	0	87.8	28.3	114				
Pentachlorophenol	6.12	2.01	4.025	0	152	5	153				
Phenanthrene	3.80	0.503	4.025	0.2654	87.9	29.7	120				
Anthracene	3.67	0.503	4.025	0	91.2	22.1	125				
Carbazole	3.89	5.03	4.025	0.1863	92.1	31	133				
Di-n-butyl phthalate	4.87	1.01	4.025	0.8816	99.0	34.3	138				
Fluoranthene	3.70	0.503	4.025	0.3242	83.9	33.3	137				
Pyrene	3.55	0.503	4.025	0.1698	83.9	31.4	132				

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Sample ID **1612293-003FMS** SampType: **MS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641345**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzyl Butylphthalate	4.28	1.01	4.025	0	106	37.7	159				
bis(2-Ethylhexyl)adipate	3.05	1.01	4.025	0	75.7	5	159				
Benz[a]anthracene	3.52	0.503	4.025	0.08903	85.1	26.5	136				
Chrysene	3.29	0.503	4.025	0.1221	78.8	22.2	126				
Bis(2-ethylhexyl) phthalate	7.11	1.01	4.025	4.277	70.3	5	162				
Di-n-octyl phthalate	3.86	1.01	4.025	0.3835	86.3	5	175				
Benzo (b) fluoranthene	3.86	0.503	4.025	0.08677	93.7	20	139				
Benzo (k) fluoranthene	3.17	0.503	4.025	0.09953	76.3	13	134				
Benzo[a]pyrene	3.48	0.503	4.025	0.06363	84.9	5	144				
Indeno (1,2,3-cd) pyrene	2.70	0.503	4.025	0.03918	66.2	5	144				
Dibenzo (a,h) anthracene	2.75	0.503	4.025	0.02940	67.6	10.3	145				
Benzo (g,h,I) perylene	2.68	0.503	4.025	0.04867	65.3	5	135				
Surr: 2,4,6-Tribromophenol	4.49		4.025		112	5	127				
Surr: 2-Fluorobiphenyl	1.21		2.012		60.3	24.1	139				
Surr: Nitrobenzene-d5	1.91		2.012		95.1	21.9	139				
Surr: Phenol-d6	4.42		4.025		110	10.3	128				
Surr: p-Terphenyl	1.31		2.012		65.1	25.2	132				

NOTES:

N/A - N-nitrosodiphenylamine decomposes to Diphenylamine (mix component) in the injector. Please refer to Spike recoveries for Diphenylamine.

S - Spike recovery indicates a possible matrix effect. The method is in control as indicated by the Laboratory Control Sample (LCS).

Sample ID **1612293-003FMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641346**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diphenylamine	3.45	4.95	3.959	0.2076	82.0	5	159	0		0	
Phenol	24.1	1.98	3.959	21.53	64.8	5	94.5	24.63	2.20	50	
2-Chlorophenol	2.89	0.990	3.959	0	73.1	10.4	100	3.156	8.67	50	
N-Nitrosodiphenylamine	N/A	4.95	3.959	0	0	5	66.4	0		0	S
1,3-Dichlorobenzene	2.58	0.990	3.959	0	65.2	23	94.8	2.920	12.3	50	
1,4-Dichlorobenzene	2.42	0.990	3.959	0	61.1	23.8	95.2	2.821	15.3	50	

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Sample ID **1612293-003FMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641346**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichlorobenzene	2.48	0.990	3.959	0	62.7	25.5	96.9	2.841	13.4	50	
Benzyl alcohol	3.99	0.990	3.959	0	101	5	139	4.230	5.72	50	
Bis(2-chloroethyl) ether	4.48	1.98	3.959	0	113	22	109	4.078	9.40	50	S
2-Methylphenol (o-cresol)	3.88	0.990	3.959	0	98.0	5	106	4.326	10.9	50	
Hexachloroethane	2.46	0.990	3.959	0	62.2	9.62	104	2.834	14.1	50	
N-Nitrosodi-n-propylamine	4.70	0.990	3.959	0	119	23.7	124	5.013	6.53	50	
Nitrobenzene	8.51	1.98	3.959	5.032	87.9	10.6	137	8.892	4.35	50	
Isophorone	4.54	0.990	3.959	1.400	79.2	22.9	124	5.309	15.7	50	
4-Methylphenol (p-cresol)	0.868	0.990	1.979	0	43.8	5	119	0		50	
2-Nitrophenol	3.27	1.98	3.959	0	82.6	13.6	125	3.677	11.7	50	
2,4-Dimethylphenol	5.03	0.990	3.959	0	127	5	126	5.777	13.8	50	S
Bis(2-chloroethoxy)methane	3.45	0.990	3.959	0	87.2	27	115	3.719	7.47	50	
2,4-Dichlorophenol	0.190	1.98	3.959	0	4.81	12.1	126	0		50	S
1,2,4-Trichlorobenzene	2.67	0.990	3.959	0.01534	67.1	25	110	3.004	11.6	50	
Naphthalene	3.94	0.495	3.959	0	99.6	23.5	108	4.716	17.9	50	
4-Chloroaniline	1.10	4.95	3.959	0	27.7	5	110	0		50	
Hexachlorobutadiene	2.87	0.990	3.959	0	72.4	23.6	98.8	3.073	6.98	50	
4-Chloro-3-methylphenol	1.21	4.95	3.959	0	30.5	5	139	0		50	
2-Methylnaphthalene	3.22	0.495	3.959	0.5083	68.6	26.1	118	3.493	8.05	50	
1-Methylnaphthalene	3.39	0.495	3.959	0.3337	77.2	27.5	116	3.430	1.19	50	
Hexachlorocyclopentadiene	ND	0.990	3.959	0	0	5	126	0		50	S
2,4,6-Trichlorophenol	3.77	1.98	3.959	0	95.2	10.5	124	3.714	1.46	50	
2,4,5-Trichlorophenol	3.89	1.98	3.959	0	98.3	5	144	4.065	4.41	50	
2-Chloronaphthalene	2.97	0.990	3.959	0	75.1	27	117	3.292	10.2	50	
2-Nitroaniline	5.02	4.95	3.959	0	127	5.48	142	4.940	1.52	50	
Acenaphthene	3.61	0.495	3.959	0	91.1	29.3	117	3.812	5.56	50	
Dimethylphthalate	6.08	0.990	3.959	2.846	81.8	24	132	6.146	1.04	50	
2,6-Dinitrotoluene	3.87	0.990	3.959	0	97.7	22	129	3.800	1.79	50	
Acenaphthylene	2.84	0.495	3.959	0	71.6	25.1	121	3.180	11.4	50	
2,4-Dinitrophenol	ND	1.98	7.917	0	0	5	172	0		50	S
Dibenzofuran	3.38	0.990	3.959	0	85.3	27.8	116	3.852	13.2	50	

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **1612293-003FMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**
Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641346**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	3.90	0.990	3.959	0	98.5	24.4	124	4.096	4.88	50	
4-Nitrophenol	ND	4.95	3.959	0	0	5	120	0		50	S
Fluorene	3.10	0.495	3.959	0.1396	74.8	27.6	123	3.648	16.2	50	
4-Chlorophenyl phenyl ether	2.96	0.990	3.959	0	74.8	28.6	117	3.593	19.3	50	
Diethylphthalate	6.57	0.990	3.959	3.324	82.0	27.4	137	7.434	12.4	50	
4,6-Dinitro-2-methylphenol	1.08	4.95	3.959	0	27.3	5	134	0		50	
4-Bromophenyl phenyl ether	3.35	0.990	3.959	0	84.6	32.2	120	3.810	12.8	50	
Hexachlorobenzene	3.07	0.990	3.959	0	77.6	28.3	114	3.535	14.0	50	
Pentachlorophenol	4.89	1.98	3.959	0	124	5	153	6.118	22.3	50	
Phenanthrene	3.66	0.495	3.959	0.2654	85.8	29.7	120	3.801	3.78	50	
Anthracene	3.33	0.495	3.959	0	84.1	22.1	125	3.669	9.68	50	
Carbazole	3.47	4.95	3.959	0.1863	82.9	31	133	0		50	
Di-n-butyl phthalate	4.22	0.990	3.959	0.8816	84.3	34.3	138	4.866	14.3	50	
Fluoranthene	3.51	0.495	3.959	0.3242	80.5	33.3	137	3.700	5.24	50	
Pyrene	3.36	0.495	3.959	0.1698	80.5	31.4	132	3.547	5.55	50	
Benzyl Butylphthalate	3.91	0.990	3.959	0	98.9	37.7	159	4.278	8.87	50	
bis(2-Ethylhexyl)adipate	2.82	0.990	3.959	0	71.3	5	159	3.047	7.68	50	
Benz[a]anthracene	3.32	0.495	3.959	0.08903	81.6	26.5	136	3.515	5.73	50	
Chrysene	3.09	0.495	3.959	0.1221	74.9	22.2	126	3.294	6.56	50	
Bis(2-ethylhexyl) phthalate	6.86	0.990	3.959	4.277	65.3	5	162	7.105	3.46	50	
Di-n-octyl phthalate	3.47	0.990	3.959	0.3835	78.0	5	175	3.858	10.6	50	
Benzo (b) fluoranthene	3.36	0.495	3.959	0.08677	82.6	20	139	3.859	13.9	50	
Benzo (k) fluoranthene	2.84	0.495	3.959	0.09953	69.2	13	134	3.171	11.0	50	
Benzo[a]pyrene	3.36	0.495	3.959	0.06363	83.2	5	144	3.479	3.59	50	
Indeno (1,2,3-cd) pyrene	2.21	0.495	3.959	0.03918	54.7	5	144	2.702	20.2	50	
Dibenzo (a,h) anthracene	2.26	0.495	3.959	0.02940	56.2	10.3	145	2.750	19.7	50	
Benzo (g,h,I) perylene	1.96	0.495	3.959	0.04867	48.2	5	135	2.676	31.1	50	
Surr: 2,4,6-Tribromophenol	4.15		3.959		105	5	127		0		
Surr: 2-Fluorobiphenyl	1.24		1.979		62.6	24.1	139		0		
Surr: Nitrobenzene-d5	1.87		1.979		94.6	21.9	139		0		
Surr: Phenol-d6	4.19		3.959		106	10.3	128		0		

Work Order:	1612278
CLIENT:	Floyd | Snider
Project:	Ave 55 - Taylor Way

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID **1612293-003FMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33768**

Client ID: **BATCH** Batch ID: **15825** Analysis Date: **1/5/2017** SeqNo: **641346**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: p-Terphenyl	1.34		1.979		67.5	25.2	132		0		

NOTES:

N/A - N-nitrosodiphenylamine decomposes to Diphenylamine (mix component) in the injector. Please refer to Spike recoveries for Diphenylamine.

S - Spike recovery indicates a possible matrix effect. The method is in control as indicated by the Laboratory Control Sample (LCS).

Date: *1/9/2017*

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Sample ID **LCS-15802** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33734**
Client ID: **LCSW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640498**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	523	50.0	500.0	0	105	65	135				
Surr: Toluene-d8	25.4		25.00		101	65	135				
Surr: 4-Bromofluorobenzene	24.6		25.00		98.3	65	135				

Sample ID **LCSD-15802** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33734**
Client ID: **LCSW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640499**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	505	50.0	500.0	0	101	65	135				
Surr: Toluene-d8	25.5		25.00		102	65	135				
Surr: 4-Bromofluorobenzene	24.5		25.00		97.9	65	135				

Sample ID **MB-15802** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33734**
Client ID: **MBLKW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640500**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	50.0									
Surr: Toluene-d8	25.6		25.00		102	65	135				
Surr: 4-Bromofluorobenzene	23.9		25.00		95.5	65	135				

Sample ID **1612278-011ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33734**
Client ID: **TWP16-PMW5B** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640491**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	50.0						0		30	
Surr: Toluene-d8	25.1		25.00		100	65	135		0		
Surr: 4-Bromofluorobenzene	24.3		25.00		97.1	65	135		0		

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Sample ID **1612283-002BDUP**	SampType: **DUP**	Units: **µg/L**	Prep Date: **1/3/2017**	RunNo: **33734**	
Client ID: **BATCH**	Batch ID: **15802**		Analysis Date: **1/4/2017**	SeqNo: **640494**	

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	50.0						0		30	
Surr: Toluene-d8	25.3		25.00		101	65	135		0		
Surr: 4-Bromofluorobenzene	24.1		25.00		96.5	65	135		0		

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **LCS-15802** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **LCSW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640458**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	16.2	1.00	20.00	0	80.8	43	136				
Chloromethane	19.7	1.00	20.00	0	98.7	43.9	139				
Vinyl chloride	20.8	0.200	20.00	0	104	53.6	139				
Bromomethane	23.3	1.00	20.00	0	116	42.5	152				
Trichlorofluoromethane (CFC-11)	20.7	1.00	20.00	0	103	43.5	149				
Chloroethane	22.1	1.00	20.00	0	111	53	141				
1,1-Dichloroethene	21.6	1.00	20.00	0	108	65.6	136				
Methylene chloride	22.1	1.00	20.00	0	110	67.1	131				
trans-1,2-Dichloroethene	21.9	1.00	20.00	0	109	71.7	129				
Methyl tert-butyl ether (MTBE)	17.6	1.00	20.00	0	88.0	67.7	131				
1,1-Dichloroethane	22.2	1.00	20.00	0	111	67.9	134				
2,2-Dichloropropane	13.6	2.00	20.00	0	67.8	33.7	152				
cis-1,2-Dichloroethene	21.8	1.00	20.00	0	109	70.2	139				
Chloroform	21.5	1.00	20.00	0	108	66.3	131				
1,1,1-Trichloroethane (TCA)	20.5	1.00	20.00	0	103	71	131				
1,1-Dichloropropene	22.0	1.00	20.00	0	110	69.9	124				
Carbon tetrachloride	19.8	1.00	20.00	0	98.9	66.2	134				
1,2-Dichloroethane (EDC)	21.0	1.00	20.00	0	105	67	126				
Benzene	22.2	1.00	20.00	0	111	69.3	132				
Trichloroethene (TCE)	22.0	0.500	20.00	0	110	65.2	136				
1,2-Dichloropropane	22.3	1.00	20.00	0	112	70.5	130				
Bromodichloromethane	19.4	1.00	20.00	0	97.0	67.2	137				
Dibromomethane	19.6	1.00	20.00	0	98.0	75.5	126				
cis-1,3-Dichloropropene	18.1	1.00	20.00	0	90.5	62.6	137				
Toluene	22.3	1.00	20.00	0	111	61.3	145				
trans-1,3-Dichloropropylene	16.0	1.00	20.00	0	80.2	56.5	163				
1,1,2-Trichloroethane	21.4	1.00	20.00	0	107	71.7	131				
1,3-Dichloropropane	20.6	1.00	20.00	0	103	73.5	127				
Tetrachloroethene (PCE)	21.3	1.00	20.00	0	107	47.5	147				
Dibromochloromethane	17.4	1.00	20.00	0	87.2	67.2	134				
1,2-Dibromoethane (EDB)	19.4	0.0600	20.00	0	96.9	73.6	125				

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **LCS-15802** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **LCSW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640458**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	21.1	1.00	20.00	0	106	73.9	126				
1,1,1,2-Tetrachloroethane	19.6	1.00	20.00	0	97.9	76.8	124				
Ethylbenzene	21.9	1.00	20.00	0	109	72	130				
m,p-Xylene	42.8	1.00	40.00	0	107	70.3	134				
o-Xylene	21.3	1.00	20.00	0	107	72.1	131				
Styrene	21.0	1.00	20.00	0	105	64.3	140				
Isopropylbenzene	21.5	1.00	20.00	0	107	73.9	128				
Bromoform	17.0	1.00	20.00	0	85.2	55.3	141				
1,1,2,2-Tetrachloroethane	18.6	1.00	20.00	0	93.0	62.9	132				
n-Propylbenzene	21.6	1.00	20.00	0	108	74.5	127				
Bromobenzene	20.1	1.00	20.00	0	101	71	131				
1,3,5-Trimethylbenzene	21.1	1.00	20.00	0	106	73.1	128				
2-Chlorotoluene	21.4	1.00	20.00	0	107	70.8	130				
4-Chlorotoluene	21.1	1.00	20.00	0	106	70.1	131				
tert-Butylbenzene	21.1	1.00	20.00	0	105	68.2	131				
1,2,3-Trichloropropane	18.5	1.00	20.00	0	92.6	67.7	131				
1,2,4-Trichlorobenzene	19.5	2.00	20.00	0	97.4	51.8	152				
sec-Butylbenzene	21.2	1.00	20.00	0	106	72	129				
4-Isopropyltoluene	20.2	1.00	20.00	0	101	69.2	130				
1,3-Dichlorobenzene	21.5	1.00	20.00	0	107	71	115				
1,4-Dichlorobenzene	21.3	1.00	20.00	0	106	66.8	119				
n-Butylbenzene	21.0	1.00	20.00	0	105	73.8	127				
1,2-Dichlorobenzene	21.1	1.00	20.00	0	105	69.7	119				
1,2-Dibromo-3-chloropropane	14.3	1.00	20.00	0	71.6	63.1	136				
1,2,4-Trimethylbenzene	21.1	1.00	20.00	0	105	73.4	127				
Hexachloro-1,3-butadiene	20.2	4.00	20.00	0	101	58.6	138				
Naphthalene	19.0	1.00	20.00	0	95.2	41.8	165				
1,2,3-Trichlorobenzene	19.4	4.00	20.00	0	97.0	48.7	156				
Surr: Dibromofluoromethane	25.4		25.00		101	45.4	152				
Surr: Toluene-d8	25.5		25.00		102	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	25.3		25.00		101	64.2	128				

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **LCS-15802** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **LCSW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640458**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID **LCSD-15802** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **LCSW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640459**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	14.7	1.00	20.00	0	73.4	43	136				
Chloromethane	19.5	1.00	20.00	0	97.7	43.9	139				
Vinyl chloride	19.9	0.200	20.00	0	99.5	53.6	139				
Bromomethane	23.3	1.00	20.00	0	116	42.5	152				
Trichlorofluoromethane (CFC-11)	20.1	1.00	20.00	0	101	43.5	149				
Chloroethane	21.9	1.00	20.00	0	109	53	141				
1,1-Dichloroethene	21.3	1.00	20.00	0	107	65.6	136				
Methylene chloride	22.1	1.00	20.00	0	111	67.1	131				
trans-1,2-Dichloroethene	21.7	1.00	20.00	0	108	71.7	129				
Methyl tert-butyl ether (MTBE)	17.4	1.00	20.00	0	86.9	67.7	131				
1,1-Dichloroethane	22.1	1.00	20.00	0	110	67.9	134				
2,2-Dichloropropane	13.3	2.00	20.00	0	66.7	33.7	152				
cis-1,2-Dichloroethene	21.9	1.00	20.00	0	110	70.2	139				
Chloroform	21.6	1.00	20.00	0	108	66.3	131				
1,1,1-Trichloroethane (TCA)	20.5	1.00	20.00	0	102	71	131				
1,1-Dichloropropene	21.9	1.00	20.00	0	110	69.9	124				
Carbon tetrachloride	19.9	1.00	20.00	0	99.5	66.2	134				
1,2-Dichloroethane (EDC)	20.9	1.00	20.00	0	104	67	126				
Benzene	22.3	1.00	20.00	0	112	69.3	132				
Trichloroethene (TCE)	21.6	0.500	20.00	0	108	65.2	136				
1,2-Dichloropropane	22.4	1.00	20.00	0	112	70.5	130				
Bromodichloromethane	19.7	1.00	20.00	0	98.6	67.2	137				
Dibromomethane	19.5	1.00	20.00	0	97.3	75.5	126				
cis-1,3-Dichloropropene	18.1	1.00	20.00	0	90.6	62.6	137				
Toluene	22.1	1.00	20.00	0	110	61.3	145				

Work Order: 1612278

CLIENT: Floyd | Snider

Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **LCSD-15802** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**

Client ID: **LCSW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640459**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
trans-1,3-Dichloropropylene	16.0	1.00	20.00	0	80.2	56.5	163				
1,1,2-Trichloroethane	21.1	1.00	20.00	0	105	71.7	131				
1,3-Dichloropropane	20.4	1.00	20.00	0	102	73.5	127				
Tetrachloroethene (PCE)	21.1	1.00	20.00	0	106	47.5	147				
Dibromochloromethane	17.6	1.00	20.00	0	88.2	67.2	134				
1,2-Dibromoethane (EDB)	19.5	0.0600	20.00	0	97.3	73.6	125				
Chlorobenzene	21.0	1.00	20.00	0	105	73.9	126				
1,1,1,2-Tetrachloroethane	19.5	1.00	20.00	0	97.7	76.8	124				
Ethylbenzene	21.8	1.00	20.00	0	109	72	130				
m,p-Xylene	42.6	1.00	40.00	0	106	70.3	134				
o-Xylene	21.4	1.00	20.00	0	107	72.1	131				
Styrene	21.1	1.00	20.00	0	106	64.3	140				
Isopropylbenzene	21.3	1.00	20.00	0	107	73.9	128				
Bromoform	17.3	1.00	20.00	0	86.4	55.3	141				
1,1,2,2-Tetrachloroethane	18.7	1.00	20.00	0	93.3	62.9	132				
n-Propylbenzene	21.5	1.00	20.00	0	107	74.5	127				
Bromobenzene	20.1	1.00	20.00	0	101	71	131				
1,3,5-Trimethylbenzene	21.1	1.00	20.00	0	105	73.1	128				
2-Chlorotoluene	21.4	1.00	20.00	0	107	70.8	130				
4-Chlorotoluene	21.1	1.00	20.00	0	106	70.1	131				
tert-Butylbenzene	20.9	1.00	20.00	0	104	68.2	131				
1,2,3-Trichloropropane	17.7	1.00	20.00	0	88.6	67.7	131				
1,2,4-Trichlorobenzene	19.3	2.00	20.00	0	96.6	51.8	152				
sec-Butylbenzene	21.0	1.00	20.00	0	105	72	129				
4-Isopropyltoluene	20.0	1.00	20.00	0	100	69.2	130				
1,3-Dichlorobenzene	21.6	1.00	20.00	0	108	71	115				
1,4-Dichlorobenzene	21.1	1.00	20.00	0	106	66.8	119				
n-Butylbenzene	20.8	1.00	20.00	0	104	73.8	127				
1,2-Dichlorobenzene	21.0	1.00	20.00	0	105	69.7	119				
1,2-Dibromo-3-chloropropane	14.7	1.00	20.00	0	73.6	63.1	136				
1,2,4-Trimethylbenzene	21.0	1.00	20.00	0	105	73.4	127				

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **LCSD-15802** SampType: **LCS** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **LCSW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640459**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexachloro-1,3-butadiene	19.6	4.00	20.00	0	98.2	58.6	138				
Naphthalene	19.1	1.00	20.00	0	95.6	41.8	165				
1,2,3-Trichlorobenzene	19.4	4.00	20.00	0	97.2	48.7	156				
Surr: Dibromofluoromethane	25.6		25.00		103	45.4	152				
Surr: Toluene-d8	25.5		25.00		102	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	25.2		25.00		101	64.2	128				

Sample ID **MB-15802** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **MBLKW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640460**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	1.00									Q
Chloromethane	ND	1.00									
Vinyl chloride	ND	0.200									
Bromomethane	ND	1.00									
Trichlorofluoromethane (CFC-11)	ND	1.00									
Chloroethane	ND	1.00									
1,1-Dichloroethene	ND	1.00									
Methylene chloride	ND	1.00									
trans-1,2-Dichloroethene	ND	1.00									
Methyl tert-butyl ether (MTBE)	ND	1.00									
1,1-Dichloroethane	ND	1.00									
2,2-Dichloropropane	ND	2.00									Q
cis-1,2-Dichloroethene	ND	1.00									
Chloroform	ND	1.00									
1,1,1-Trichloroethane (TCA)	ND	1.00									
1,1-Dichloropropene	ND	1.00									
Carbon tetrachloride	ND	1.00									
1,2-Dichloroethane (EDC)	ND	1.00									
Benzene	ND	1.00									

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **MB-15802** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **MBLKW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640460**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichloroethene (TCE)	ND	0.500									
1,2-Dichloropropane	ND	1.00									
Bromodichloromethane	ND	1.00									
Dibromomethane	ND	1.00									
cis-1,3-Dichloropropene	ND	1.00									
Toluene	ND	1.00									
trans-1,3-Dichloropropylene	ND	1.00									Q
1,1,2-Trichloroethane	ND	1.00									
1,3-Dichloropropane	ND	1.00									
Tetrachloroethene (PCE)	ND	1.00									
Dibromochloromethane	ND	1.00									
1,2-Dibromoethane (EDB)	ND	0.0600									
Chlorobenzene	ND	1.00									
1,1,1,2-Tetrachloroethane	ND	1.00									
Ethylbenzene	ND	1.00									
m,p-Xylene	ND	1.00									
o-Xylene	ND	1.00									
Styrene	ND	1.00									
Isopropylbenzene	ND	1.00									
Bromoform	ND	1.00									
1,1,2,2-Tetrachloroethane	ND	1.00									
n-Propylbenzene	ND	1.00									
Bromobenzene	ND	1.00									
1,3,5-Trimethylbenzene	ND	1.00									
2-Chlorotoluene	ND	1.00									
4-Chlorotoluene	ND	1.00									
tert-Butylbenzene	ND	1.00									
1,2,3-Trichloropropane	ND	1.00									
1,2,4-Trichlorobenzene	ND	2.00									
sec-Butylbenzene	ND	1.00									
4-Isopropyltoluene	ND	1.00									

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **MB-15802** SampType: **MBLK** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **MBLKW** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640460**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dichlorobenzene	ND	1.00									
1,4-Dichlorobenzene	ND	1.00									
n-Butylbenzene	ND	1.00									
1,2-Dichlorobenzene	ND	1.00									
1,2-Dibromo-3-chloropropane	ND	1.00									Q
1,2,4-Trimethylbenzene	ND	1.00									
Hexachloro-1,3-butadiene	ND	4.00									
Naphthalene	ND	1.00									
1,2,3-Trichlorobenzene	ND	4.00									
Surr: Dibromofluoromethane	24.3		25.00		97.2	45.4	152				
Surr: Toluene-d8	25.3		25.00		101	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	23.7		25.00		94.9	64.2	128				

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID **1612278-011ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **TWP16-PMW5B** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640449**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	1.00						0		30	Q
Chloromethane	ND	1.00						0		30	
Vinyl chloride	ND	0.200						0		30	
Bromomethane	ND	1.00						0		30	
Trichlorofluoromethane (CFC-11)	ND	1.00						0		30	
Chloroethane	ND	1.00						0		30	
1,1-Dichloroethene	ND	1.00						0		30	
Methylene chloride	ND	1.00						0		30	
trans-1,2-Dichloroethene	ND	1.00						0		30	
Methyl tert-butyl ether (MTBE)	ND	1.00						0		30	
1,1-Dichloroethane	ND	1.00						0		30	
2,2-Dichloropropane	ND	2.00						0		30	Q

Work Order:	1612278		
CLIENT:	Floyd | Snider		
Project:	Ave 55 - Taylor Way		

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **1612278-011ADUP**	SampType: **DUP**	Units: **µg/L**	Prep Date: **1/3/2017**	RunNo: **33733**	
Client ID: **TWP16-PMW5B**	Batch ID: **15802**		Analysis Date: **1/4/2017**	SeqNo: **640449**	

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,2-Dichloroethene	ND	1.00						0		30	
Chloroform	ND	1.00						0		30	
1,1,1-Trichloroethane (TCA)	ND	1.00						0		30	
1,1-Dichloropropene	ND	1.00						0		30	
Carbon tetrachloride	ND	1.00						0		30	
1,2-Dichloroethane (EDC)	ND	1.00						0		30	
Benzene	ND	1.00						0		30	
Trichloroethene (TCE)	ND	0.500						0		30	
1,2-Dichloropropane	ND	1.00						0		30	
Bromodichloromethane	ND	1.00						0		30	
Dibromomethane	ND	1.00						0		30	
cis-1,3-Dichloropropene	ND	1.00						0		30	
Toluene	ND	1.00						0		30	
trans-1,3-Dichloropropylene	ND	1.00						0		30	
1,1,2-Trichloroethane	ND	1.00						0		30	
1,3-Dichloropropane	ND	1.00						0		30	
Tetrachloroethene (PCE)	ND	1.00						0		30	
Dibromochloromethane	ND	1.00						0		30	
1,2-Dibromoethane (EDB)	ND	0.0600						0		30	
Chlorobenzene	ND	1.00						0		30	
1,1,1,2-Tetrachloroethane	ND	1.00						0		30	
Ethylbenzene	ND	1.00						0		30	
m,p-Xylene	ND	1.00						0		30	
o-Xylene	ND	1.00						0		30	
Styrene	ND	1.00						0		30	
Isopropylbenzene	ND	1.00						0		30	
Bromoform	ND	1.00						0		30	
1,1,2,2-Tetrachloroethane	ND	1.00						0		30	
n-Propylbenzene	ND	1.00						0		30	
Bromobenzene	ND	1.00						0		30	
1,3,5-Trimethylbenzene	ND	1.00						0		30	

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **1612278-011ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **TWP16-PMW5B** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640449**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Chlorotoluene	ND	1.00						0		30	
4-Chlorotoluene	ND	1.00						0		30	
tert-Butylbenzene	ND	1.00						0		30	
1,2,3-Trichloropropane	ND	1.00						0		30	
1,2,4-Trichlorobenzene	ND	2.00						0		30	
sec-Butylbenzene	ND	1.00						0		30	
4-Isopropyltoluene	ND	1.00						0		30	
1,3-Dichlorobenzene	ND	1.00						0		30	
1,4-Dichlorobenzene	ND	1.00						0		30	
n-Butylbenzene	ND	1.00						0		30	
1,2-Dichlorobenzene	ND	1.00						0		30	
1,2-Dibromo-3-chloropropane	ND	1.00						0		30	
1,2,4-Trimethylbenzene	ND	1.00						0		30	
Hexachloro-1,3-butadiene	ND	4.00						0		30	
Naphthalene	ND	1.00						0		30	
1,2,3-Trichlorobenzene	ND	4.00						0		30	
Surr: Dibromofluoromethane	25.8		25.00		103	45.4	152		0		
Surr: Toluene-d8	25.7		25.00		103	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene	24.3		25.00		97.4	64.2	128		0		

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID **1612283-002BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **BATCH** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640453**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	1.00						0		30	Q
Chloromethane	ND	1.00						0		30	
Vinyl chloride	ND	0.200						0		30	
Bromomethane	ND	1.00						0		30	
Trichlorofluoromethane (CFC-11)	ND	1.00						0		30	

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **1612283-002BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **BATCH** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640453**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloroethane	ND	1.00						0		30	
1,1-Dichloroethene	ND	1.00						0		30	
Methylene chloride	ND	1.00						0		30	
trans-1,2-Dichloroethene	ND	1.00						0		30	
Methyl tert-butyl ether (MTBE)	ND	1.00						0		30	
1,1-Dichloroethane	ND	1.00						0		30	
2,2-Dichloropropane	ND	2.00						0		30	Q
cis-1,2-Dichloroethene	ND	1.00						0		30	
Chloroform	ND	1.00						0		30	
1,1,1-Trichloroethane (TCA)	ND	1.00						0		30	
1,1-Dichloropropene	ND	1.00						0		30	
Carbon tetrachloride	ND	1.00						0		30	
1,2-Dichloroethane (EDC)	ND	1.00						0		30	
Benzene	ND	1.00						0		30	
Trichloroethene (TCE)	ND	0.500						0		30	
1,2-Dichloropropane	ND	1.00						0		30	
Bromodichloromethane	ND	1.00						0		30	
Dibromomethane	ND	1.00						0		30	
cis-1,3-Dichloropropene	ND	1.00						0		30	
Toluene	ND	1.00						0		30	
trans-1,3-Dichloropropylene	ND	1.00						0		30	
1,1,2-Trichloroethane	ND	1.00						0		30	
1,3-Dichloropropane	ND	1.00						0		30	
Tetrachloroethene (PCE)	ND	1.00						0		30	
Dibromochloromethane	ND	1.00						0		30	
1,2-Dibromoethane (EDB)	ND	0.0600						0		30	
Chlorobenzene	ND	1.00						0		30	
1,1,1,2-Tetrachloroethane	ND	1.00						0		30	
Ethylbenzene	ND	1.00						0		30	
m,p-Xylene	ND	1.00						0		30	
o-Xylene	ND	1.00						0		30	

Work Order: 1612278
CLIENT: Floyd | Snider
Project: Ave 55 - Taylor Way

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID **1612283-002BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/3/2017** RunNo: **33733**
Client ID: **BATCH** Batch ID: **15802** Analysis Date: **1/4/2017** SeqNo: **640453**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Styrene	ND	1.00						0		30	
Isopropylbenzene	ND	1.00						0		30	
Bromoform	ND	1.00						0		30	
1,1,2,2-Tetrachloroethane	ND	1.00						0		30	
n-Propylbenzene	ND	1.00						0		30	
Bromobenzene	ND	1.00						0		30	
1,3,5-Trimethylbenzene	ND	1.00						0		30	
2-Chlorotoluene	ND	1.00						0		30	
4-Chlorotoluene	ND	1.00						0		30	
tert-Butylbenzene	ND	1.00						0		30	
1,2,3-Trichloropropane	ND	1.00						0		30	
1,2,4-Trichlorobenzene	ND	2.00						0		30	
sec-Butylbenzene	ND	1.00						0		30	
4-Isopropyltoluene	ND	1.00						0		30	
1,3-Dichlorobenzene	ND	1.00						0		30	
1,4-Dichlorobenzene	ND	1.00						0		30	
n-Butylbenzene	ND	1.00						0		30	
1,2-Dichlorobenzene	ND	1.00						0		30	
1,2-Dibromo-3-chloropropane	ND	1.00						0		30	
1,2,4-Trimethylbenzene	ND	1.00						0		30	
Hexachloro-1,3-butadiene	ND	4.00						0		30	
Naphthalene	ND	1.00						0		30	
1,2,3-Trichlorobenzene	ND	4.00						0		30	
Surr: Dibromofluoromethane	25.5		25.00		102	45.4	152		0		
Surr: Toluene-d8	25.6		25.00		102	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene	24.2		25.00		96.7	64.2	128		0		

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample Log-In Check List

Client Name:	**FS**	Work Order Number:	**1612278**
Logged by:	**Chelsea Ward**	Date Received:	**12/28/2016 5:24:00 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 ☐
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 Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°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: Erin Murray Date 12/28/2016

By Whom: Chelsea Ward Via: ☑ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: Missing bottles and Total/Dissolved Metals

Client Instructions: Only run VOCs/Gx on sample -009 and Dissolved Metals

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler 1	2.4
Cooler 2	1.7
Cooler 3	0.5
Sample 1	0.7
Sample 2	1.9

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

Sample Log-In Check List

Client Name:	**FS**	Work Order Number:	**1612278**
Logged by:	**Chelsea Ward**	Date Received:	**12/28/2016 5:24:00 PM**

Item #	Temp ºC
Sample 3	2.8
Temp Blank 1	0.2
Temp Blank 2	1.7
Temp Blank 3	1.6

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

Fremont Analytical

3600 Fremont Ave N.
Seattle, WA 98103

Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record and Laboratory Services Agreement

Date: 12/28/16

Laboratory Project No (internal): 1612278

Page: 1 **of:** 2

Client: Floyd Snider
Address: 601 Union Suite 600
City, State, Zip: Seattle, WA 98101
Telephone: 206.292.2078 **Fax:**

Project Name: Ave 55 - Taylor Way
Project No: **Collected by:** L. Wacter & E. Murray
Location: Tacoma, WA
Report To (PM): Tom Colligan
PM Email: tom.colligan@floydsnider.com

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM / 625)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Diss.	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	Hex Chromium				Comments
1	TWP16-PMW1A	12/28/16	1020	GW	X	X	~~HH~~		X	X	X			X	D			X				
2	TWP16-PMW1B		1030		X	X			X	X	X			X				X				
3	TWP16-PMW2B		1200		X	X		EM	X	X	X			X				X				
4	TWP16-PMW2X		1205		X	X			X	X	X			X				X				
5	TWP16-PMW2A		1200		X	X			X	X	X			X				X				
6	TWP16-PMW3A		1320		X	X			X	X	X			X				X				
7	TWP16-PMW3B		1315		X	X			X	X	X			X				X				
8	TWP16-PMW4A		1425		X	X			X	X	X			X				X				
9	TWP16-PMW4B		1445		X	X				~~X~~	~~X~~			~~X~~				~~X~~				Only VOC/Gx per E. Murray 12/29 EW
10	TWP16-PMW5A		1535		X	X				X	X			X				X				

****Metals Analysis (Circle):** MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al [✓ As] B [✓ Ba] Be Ca [✓ Cd] Co [✓ Cr] [✓ Cu] Fe [✓ Hg] K Mg Mn Mo Na [✓ Ni] [✓ Pb] Sb Se Sr Sn Ti Tl U V [✓ Zn]

*****Anions (Circle):** Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around times for samples received after 4:00pm will begin on the following business day.

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (Samples will be held for 30 days unless otherwise noted. A fee may be assessed if samples are retained after 30 days.)

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 x	Date/Time 12/28/16 1724	Received x	Date/Time 12/28/16 17:24
Relinquished x	Date/Time	Received x	Date/Time

TAT → SameDay^ NextDay^ 2 Day 3 Day [✓ STD]

^Please coordinate with the lab in advance

Fremont
Analytical

3600 Fremont Ave N.
Seattle, WA 98103

Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record and Laboratory Services Agreement

Date: 12/28/16

Laboratory Project No (internal): 1612278

Page: 2 of: 2

Client: Floyd | Snider
Address: Same As First
City, State, Zip:
Telephone:
Fax:

Project Name: Ave 55 - Taylor
Project No:
Collected by:
Location:
Report To (PM):
PM Email:

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM / 625)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) D()	Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	Hex Chromium				Comments
1	TWP16-PMW5B	12/28/16	1600	W	X	X			SM	X	X			X	D			X				
2	Trip Blank			W	X	X																
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al [✓ As] B [✓ Ba] Be Ca [✓ Cd] Co [✓ Cr] [✓ Cu] Fe [✓ Hg] K Mg Mn Mo Na [✓ Ni] [✓ Pb] Sb Se Sr Sn Ti Tl U V [✓ Zn]

***Anions (Circle):** Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around times for samples received after 4:00pm will begin on the following business day.

Special Remarks:

<u>Sample Disposal:</u> ☐ Return to Client ☐ Disposal by Lab (Samples will be held for 30 days unless otherwise noted. A fee may be assessed if samples are retained after 30 days.)

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	Date/Time	Received	Date/Time
x	12/28/16 1724	x	12/28/16 1724
x		x	

TAT → SameDay^ NextDay^ 2 Day 3 Day [✓ STD]

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

Fremont
Analytical

3600 Fremont Ave N.
Seattle, WA 98103

Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record and Laboratory Services Agreement

Date: 12/28/16
Laboratory Project No (internal): 1612278
Page: 1 of: 2

Client: Floyd Snider
Address: 601 Union Suite 600
City, State, Zip: Seattle, WA 98101
Telephone: 206.292.2078 Fax:

Project Name: Ave 55 - Taylor Way
Project No:
Collected by: L. Wacter & E. Murray
Location: Tacoma, WA
Report To (PM): Tom Colligan
PM Email: tom.colligan@floydsnider.com

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM / 625)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Diss...	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	Hex Chromium			Methane	Comments
1 TWP16-PMW1A	12/28/16	1020	GW	X	X	[illegible]		X	X	X			X	D			X			Ⓧ	Ⓧ Add Analysis 12/30/16 STANDARD TAT
2 TWP16-PMW1B	|	1030	|	X	X			X	X	X			X	|			X				
3 TWP16-PMW2B	|	1200	|	X	X		4M	X	X	X			X	|			X				
4 TWP16-PMW2X	|	1205	|	X	X			X	X	X			X	|			X				
5 TWP16-PMW2A	|	1200	|	X	X			X	X	X			X	|			X			Ⓧ	
6 TWP16-PMW3A	|	1320	|	X	X			X	X	X			X	|			X			Ⓧ	
7 TWP16-PMW3B	|	1315	|	X	X			X	X	X			X	|			X				
8 TWP16-PMW4A	|	1425	|	X	X			X	X	X			X	|			X			Ⓧ	
9 TWP16-PMW4B	|	1445	|	X	X				~~X~~	~~X~~			~~X~~	|			~~X~~				Only VOC/Gx per E. Murray 12/29 ew
10 TWP16-PMW5A	|	1535	|	X	X				X	X			X	↓			X			Ⓧ	

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al [✓ As] B [✓ Ba] Be Ca [✓ Cd] Co [✓ Cr] [✓ Cu] Fe [✓ Hg] K Mg Mn Mo Na [✓ Ni] [✓ Pb] Sb Se Sr Sn Ti Tl U V [✓ Zn]

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around times for samples received after 4:00pm will begin on the following business day.

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (Samples will be held for 30 days unless otherwise noted. A fee may be assessed if samples are retained after 30 days.)

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	Date/Time	Received	Date/Time
x	12/28/16 1724	x	12/28/16 17:24
x		x	

TAT → SameDay^ NextDay^ 2 Day 3 Day [✓ STD]

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

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DRAFT

Date of Report: 08/16/17
Date Received: 08/14/17
Project: Ave 55, F&BI 708260
Date Extracted: 08/15/17
Date Analyzed: 08/15/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
SP-1 708260-01	<50	<250	105
SP-2 708260-02	<50	<250	103
SP-3 708260-03	<50	<250	119
SP-4 708260-04	<50	<250	104
SP-1B 708260-05	<50	<250	104
SP-2B 708260-06	<50	<250	106
SP-3B 708260-07	<50	<250	104
SP-4B 708260-08	<50	<250	105
Method Blank 07-1760 MB	<50	<250	100

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-1	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-01
Date Analyzed:	08/15/17	Data File:	708260-01.101
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.29
Lead	5.02

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-2	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-02
Date Analyzed:	08/15/17	Data File:	708260-02.102
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.55
Lead	2.02

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-3	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-03
Date Analyzed:	08/15/17	Data File:	708260-03.103
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.40
Lead	2.09

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-4	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-04
Date Analyzed:	08/15/17	Data File:	708260-04.104
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	2.37

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-1B	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-05
Date Analyzed:	08/15/17	Data File:	708260-05.105
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.52
Lead	2.99

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-2B	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-06
Date Analyzed:	08/15/17	Data File:	708260-06.106
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.55
Lead	3.72

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-3B	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-07
Date Analyzed:	08/15/17	Data File:	708260-07.107
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.62
Lead	2.14

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-4B	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-08
Date Analyzed:	08/15/17	Data File:	708260-08.108
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.14
Lead	1.94

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	I7-432 mb2
Date Analyzed:	08/15/17	Data File:	I7-432 mb2.100
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-1	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-01 1/5
Date Analyzed:	08/16/17	Data File:	081524.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	108	31	163
Benzo(a)anthracene-d12	110	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-2	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-02 1/5
Date Analyzed:	08/16/17	Data File:	081525.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	105	31	163
Benzo(a)anthracene-d12	109	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-3	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-03 1/5
Date Analyzed:	08/16/17	Data File:	081526.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	102	31	163
Benzo(a)anthracene-d12	107	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-4	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-04 1/5
Date Analyzed:	08/16/17	Data File:	081527.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	108	31	163
Benzo(a)anthracene-d12	111	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-1B	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-05 1/5
Date Analyzed:	08/16/17	Data File:	081528.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	106	31	163
Benzo(a)anthracene-d12	111	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-2B	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-06 1/5
Date Analyzed:	08/16/17	Data File:	081529.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	104	31	163
Benzo(a)anthracene-d12	108	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-3B	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-07 1/5
Date Analyzed:	08/16/17	Data File:	081530.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	101	31	163
Benzo(a)anthracene-d12	110	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-4B	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-08 1/5
Date Analyzed:	08/16/17	Data File:	081531.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	98	31	163
Benzo(a)anthracene-d12	106	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	07-1759 mb 1/5
Date Analyzed:	08/16/17	Data File:	081523.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	106	31	163
Benzo(a)anthracene-d12	112	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-1	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-01
Date Analyzed:	08/15/17	Data File:	081527.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	89	113
Toluene-d8	99	64	137
4-Bromofluorobenzene	97	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-2	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-02
Date Analyzed:	08/16/17	Data File:	081607A.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	89	113
Toluene-d8	101	64	137
4-Bromofluorobenzene	97	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-3	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-03
Date Analyzed:	08/15/17	Data File:	081529.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	89	113
Toluene-d8	104	64	137
4-Bromofluorobenzene	97	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-4	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-04
Date Analyzed:	08/15/17	Data File:	081530.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	89	113
Toluene-d8	103	64	137
4-Bromofluorobenzene	98	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-1B	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-05
Date Analyzed:	08/15/17	Data File:	081531.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	89	113
Toluene-d8	102	64	137
4-Bromofluorobenzene	98	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-2B	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-06
Date Analyzed:	08/15/17	Data File:	081532.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	89	113
Toluene-d8	102	64	137
4-Bromofluorobenzene	97	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-3B	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-07
Date Analyzed:	08/15/17	Data File:	081533.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	89	113
Toluene-d8	101	64	137
4-Bromofluorobenzene	98	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-4B	Client:	Floyd-Snider
Date Received:	08/14/17	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	708260-08
Date Analyzed:	08/15/17	Data File:	081534.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	89	113
Toluene-d8	103	64	137
4-Bromofluorobenzene	97	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55, F&BI 708260
Date Extracted:	08/15/17	Lab ID:	07-1762 mb
Date Analyzed:	08/15/17	Data File:	081526.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	89	113
Toluene-d8	102	64	137
4-Bromofluorobenzene	99	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

708260

SAMPLE CHAIN OF CUSTODY

ME 08/14/17 A02/VS3

Report To Tom Colligan

Company Floyd|Snider

Address 607 Union St. Ste 600

City, State, ZIP Seattle, WA 98107

Phone 206-292-2078 Email Tom.colligan@floydsnider.com

SAMPLERS (*signature*)

PROJECT NAME AVC 55

PO #

REMARKS

INVOICE TO

Page # 1 of

TURNAROUND TIME

☐ Standard Turnaround
☒ RUSH 2 day
Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days
☐ Archive Samples
☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	cPAHs PAHs 8270D SIM	Metals - ~~RCRA~~	As+Pb ONLY	@ 8/14/17		Notes
SP-1	01 A-E	8/14/17	1020	SOIL	5		X			X		X	X				
SP-2	02 A-E		1030		5		X			X		X	X				
SP-3	03 A-E		1040		5		X			X		X	X				
SP-4	04 A-E	↓	1050	↓	5		X			X		X	X				
SP-1B	05 A-E		1304		5		X			X		X	X				
SP-2B	06 A-E		1308		5		X			X		X	X				
SP-3B	07 A-E		1310		5		X			X		X	X				
SP-4B	08 A-E	↓	1312	↓	5		X			X		X	X				

Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Erin Murray	Floyd|Snider	8/14/17	1145
Received by:	Eric Young	F&B	8/14/17	1145
Relinquished by:				
Received by:				

DRAFT

Date of Report: 09/19/17
Date Received: 09/12/17
Project: Avenue 55, F&BI 709186
Date Extracted: 09/13/17
Date Analyzed: 09/13/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
SP-21 (9/8-A-13.31) 709186-01	<2	89
SP-22 (9/8-C-13.31) 709186-02	<2	89
SP-23 (9/8-D-13.31) 709186-03	<2	89
SP-24 (9/8-E-13.31) 709186-04	<2	90
SP-25 (9/8-F-13.31) 709186-05	<2	92
SP-26 (9/8-G-13.31) 709186-06	<2	92
SP-27 (9/11-A-13.31) 709186-07	<2	89
Method Blank 07-1976 MB	<2	89

Date of Report: 09/19/17
Date Received: 09/12/17
Project: Avenue 55, F&BI 709186
Date Extracted: 09/13/17
Date Analyzed: 09/13/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
SP-21 (9/8-A-13.31) 709186-01	<50	<250	88
SP-22 (9/8-C-13.31) 709186-02	<50	<250	94
SP-23 (9/8-D-13.31) 709186-03	<50	<250	94
SP-24 (9/8-E-13.31) 709186-04	<50	<250	93
SP-25 (9/8-F-13.31) 709186-05	<50	<250	92
SP-26 (9/8-G-13.31) 709186-06	<50	<250	93
SP-27 (9/11-A-13.31) 709186-07	<50	<250	92
Method Blank 07-2011 MB	<50	<250	94

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-21 (9/8-A-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/14/17	Lab ID:	709186-01
Date Analyzed:	09/14/17	Data File:	709186-01.046
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.09
Cadmium	<1
Lead	1.56

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-22 (9/8-C-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/14/17	Lab ID:	709186-02
Date Analyzed:	09/14/17	Data File:	709186-02.062
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.05
Cadmium	<1
Lead	1.71

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-23 (9/8-D-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/14/17	Lab ID:	709186-03
Date Analyzed:	09/14/17	Data File:	709186-03.063
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.80
Cadmium	<1
Lead	8.31

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-24 (9/8-E-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/14/17	Lab ID:	709186-04
Date Analyzed:	09/14/17	Data File:	709186-04.067
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.05
Cadmium	<1
Lead	1.85

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-25 (9/8-F-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/14/17	Lab ID:	709186-05
Date Analyzed:	09/14/17	Data File:	709186-05.068
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.52
Cadmium	<1
Lead	2.06

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-26 (9/8-G-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/14/17	Lab ID:	709186-06
Date Analyzed:	09/14/17	Data File:	709186-06.069
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.45
Cadmium	<1
Lead	7.43

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-27 (9/11-A-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/14/17	Lab ID:	709186-07
Date Analyzed:	09/14/17	Data File:	709186-07.070
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Lead	1.63

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/14/17	Lab ID:	I7-498 mb
Date Analyzed:	09/14/17	Data File:	I7-498 mb.044
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Lead	<1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-21 (9/8-A-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/13/17	Lab ID:	709186-01 1/5
Date Analyzed:	09/14/17	Data File:	091337.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	75	31	163
Benzo(a)anthracene-d12	89	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-22 (9/8-C-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/13/17	Lab ID:	709186-02 1/5
Date Analyzed:	09/14/17	Data File:	091338.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	163
Benzo(a)anthracene-d12	88	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-23 (9/8-D-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/13/17	Lab ID:	709186-03 1/5
Date Analyzed:	09/14/17	Data File:	091339.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	75	31	163
Benzo(a)anthracene-d12	89	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-24 (9/8-E-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/13/17	Lab ID:	709186-04 1/5
Date Analyzed:	09/14/17	Data File:	091340.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	75	31	163
Benzo(a)anthracene-d12	88	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-25 (9/8-F-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/13/17	Lab ID:	709186-05 1/5
Date Analyzed:	09/14/17	Data File:	091341.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	75	31	163
Benzo(a)anthracene-d12	89	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-26 (9/8-G-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/13/17	Lab ID:	709186-06 1/50
Date Analyzed:	09/14/17	Data File:	091404A.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	104 d	31	163
Benzo(a)anthracene-d12	97 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.22
Chrysene	0.27
Benzo(a)pyrene	0.20
Benzo(b)fluoranthene	0.25
Benzo(k)fluoranthene	0.11
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-27 (9/11-A-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/13/17	Lab ID:	709186-07 1/5
Date Analyzed:	09/14/17	Data File:	091405.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	79	31	163
Benzo(a)anthracene-d12	98	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/12/17	Lab ID:	07-2003 mb2 1/5
Date Analyzed:	09/13/17	Data File:	091322.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	77	31	163
Benzo(a)anthracene-d12	90	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-21 (9/8-A-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/19/17	Lab ID:	709186-01
Date Analyzed:	09/19/17	Data File:	091907.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	89	113
Toluene-d8	101	64	137
4-Bromofluorobenzene	100	81	119

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-22 (9/8-C-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/19/17	Lab ID:	709186-02
Date Analyzed:	09/19/17	Data File:	091908.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	89	113
Toluene-d8	103	64	137
4-Bromofluorobenzene	100	81	119

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-23 (9/8-D-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/19/17	Lab ID:	709186-03
Date Analyzed:	09/19/17	Data File:	091909.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	89	113
Toluene-d8	99	64	137
4-Bromofluorobenzene	99	81	119

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-24 (9/8-E-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/19/17	Lab ID:	709186-04
Date Analyzed:	09/19/17	Data File:	091910.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	89	113
Toluene-d8	100	64	137
4-Bromofluorobenzene	100	81	119

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-25 (9/8-F-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/19/17	Lab ID:	709186-05
Date Analyzed:	09/19/17	Data File:	091911.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	89	113
Toluene-d8	102	64	137
4-Bromofluorobenzene	100	81	119

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-26 (9/8-G-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/19/17	Lab ID:	709186-06
Date Analyzed:	09/19/17	Data File:	091912.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	89	113
Toluene-d8	100	64	137
4-Bromofluorobenzene	100	81	119

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-27 (9/11-A-13.31)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/19/17	Lab ID:	709186-07
Date Analyzed:	09/19/17	Data File:	091913.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	89	113
Toluene-d8	99	64	137
4-Bromofluorobenzene	101	81	119

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Avenue 55, F&BI 709186
Date Extracted:	09/19/17	Lab ID:	07-2066 mb
Date Analyzed:	09/19/17	Data File:	091906.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	89	113
Toluene-d8	101	64	137
4-Bromofluorobenzene	100	81	119

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

709186 [redacted]

SAMPLE CHAIN OF CUSTODY

ME 09-12-17 [redacted] VS1/~~B04~~ BE2

Page # ____ of ____

Report To DREW Z. & TOM. COLLIGAN
Company AVENUE 55
Address 600 UNIVERSITY ST. #2305
City, State, ZIP SEATTLE, WA 98101
Phone 206-707-9696 Email DZABOROWSKI@AVENUE55.NET

SAMPLERS (*signature*)

PROJECT NAME AVENUE 55

PO #

REMARKS

INVOICE TO AVE. 55

TURNAROUND TIME
☒ Standard Turnaround
☐ RUSH ____
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other ____

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	SPAH# 8310 PAHs 8270D SIM	ARSENIC/LEAD	CADMIUM			Notes
SP-21 (9/8-A-B.31)	01 A-E	9/8	3:11	SOIL			X	X		X		X	X	X			
SP-22 (9/8-C-B.31)	02	9/8	3:18	SOIL			X	X		X		X	X	X			
SP-23 (9/8-D-B.31)	03	9/8	3:22	SOIL			X	X		X		X	X	X			
SP-24 (9/8-E-B.31)	04	9/8	3:26	SOIL			X	X		X		X	X	X			
SP-251 (9/8-F-B.31)	05	9/8	3:30	SOIL			X	X		X		X	X	X			
SP-26 (9/8-G B.31)	06	9/8	3:35	SOIL			X	X		X		X	X	X			
SP-27 (9/11-A-B.31)	07	9/~~8~~11	3:41	SOIL			X	X		X		X	X	X			

Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	DREW ZABOROWSKI	AVE55	9/12	3:48
Received by:	VINH	FBI	9/12	3:48 PM
Relinquished by:				
Received by:				

Samples received at ____ °C

DRAFT

Date of Report: 09/25/17
Date Received: 09/15/17
Project: Avenue 55, F&BI 709262
Date Extracted: 09/18/17
Date Analyzed: 09/18/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
SP-28-9/14 B.31 709262-01	<2	91
Method Blank 07-1981 MB	<2	85

Date of Report: 09/25/17
Date Received: 09/15/17
Project: Avenue 55, F&BI 709262
Date Extracted: 09/18/17
Date Analyzed: 09/18/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
SP-28-9/14 B.31 709262-01	<50	<250	123
Method Blank 07-2034 MB	<50	<250	116

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-28-9/14 B.31	Client:	Floyd-Snider
Date Received:	09/15/17	Project:	Avenue 55, F&BI 709262
Date Extracted:	09/19/17	Lab ID:	709262-01
Date Analyzed:	09/20/17	Data File:	709262-01.061
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Lead	1.62

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	Avenue 55, F&BI 709262
Date Extracted:	09/19/17	Lab ID:	I7-507 mb
Date Analyzed:	09/20/17	Data File:	I7-507 mb.046
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Lead	<1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-28-9/14 B.31	Client:	Floyd-Snider
Date Received:	09/15/17	Project:	Avenue 55, F&BI 709262
Date Extracted:	09/19/17	Lab ID:	709262-01 1/5
Date Analyzed:	09/19/17	Data File:	091915.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	31	163
Benzo(a)anthracene-d12	101	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Avenue 55, F&BI 709262
Date Extracted:	09/19/17	Lab ID:	07-2042 mb 1/5
Date Analyzed:	09/19/17	Data File:	091903.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	84	31	163
Benzo(a)anthracene-d12	99	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-28-9/14 B.31	Client:	Floyd-Snider
Date Received:	09/15/17	Project:	Avenue 55, F&BI 709262
Date Extracted:	09/18/17	Lab ID:	709262-01
Date Analyzed:	09/19/17	Data File:	091854.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Avenue 55, F&BI 709262
Date Extracted:	09/18/17	Lab ID:	07-2021 mb
Date Analyzed:	09/18/17	Data File:	091812.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

709262

SAMPLE CHAIN OF CUSTODY

ME 09/15/17

VS1/BI1

Report To DREW Z. & TOM COLLIGAN

Company AVENUE 55

Address 600 UNIVERSITY ST. # 2305

City, State, ZIP SEATTLE, WA 98101

Phone 206-707-9696 Email DZABOROWSKI@AVENUE55.NET

SAMPLERS (*signature*)

PROJECT NAME AVENUE 55

PO #

REMARKS

INVOICE TO AVE. 55

Page # ____ of ____

TURNAROUND TIME
☐ Standard Turnaround
☐ RUSH ____
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other ____

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars NO	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	~~SPAH 8310~~ SVOCs by 8270D	SPAH 8310 PAHs 8270D SIM	ARSENIC/LEA	CADMIUM			Notes
SP-28-9/14 B.31	01A-E	9/14	1:24	SOIL			X	X		X		X	X	X			

Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	DREW ZABOROWSKI	AVE. 55	9/14	1:24
Received by:	Nhan Phan	FeBT	9/15/17	15:30
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 27, 2017

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on September 18, 2017 from the Ave. 55, F&BI 709291 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Drew Zaborowski
FDS0927R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 18, 2017 by Friedman & Bruya, Inc. from the Floyd-Snider Ave. 55, F&BI 709291 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
709291 -01	SP-29 No.1 333D
709291 -02	SP-30 No.2 333D
709291 -03	SP-31 No.3 333D

Samples were sent to NVL Laboratories, Inc. for lead analysis. Review of the enclosed report indicates that all quality assurance was acceptable.

All quality control requirements were acceptable.

Date of Report: 09/27/17
Date Received: 09/18/17
Project: Ave. 55, F&BI 709291
Date Extracted: 09/19/17
Date Analyzed: 09/19/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 56-165)
SP-29 No.1 333D 709291-01	ND	ND	ND	118
SP-30 No.2 333D 709291-02	ND	ND	ND	103
SP-31 No.3 333D 709291-03	ND	ND	ND	104
Method Blank 07-2036 MB2	ND	ND	ND	107

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-29 No.1 333D	Client:	Floyd-Snider
Date Received:	09/18/17	Project:	Ave. 55, F&BI 709291
Date Extracted:	09/19/17	Lab ID:	709291-01 1/5
Date Analyzed:	09/20/17	Data File:	092009.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	90	31	163
Benzo(a)anthracene-d12	102	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-30 No.2 333D	Client:	Floyd-Snider
Date Received:	09/18/17	Project:	Ave. 55, F&BI 709291
Date Extracted:	09/19/17	Lab ID:	709291-02 1/5
Date Analyzed:	09/20/17	Data File:	092011.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	90	31	163
Benzo(a)anthracene-d12	103	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-31 No.3 333D	Client:	Floyd-Snider
Date Received:	09/18/17	Project:	Ave. 55, F&BI 709291
Date Extracted:	09/19/17	Lab ID:	709291-03 1/5
Date Analyzed:	09/20/17	Data File:	092012.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	31	163
Benzo(a)anthracene-d12	102	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave. 55, F&BI 709291
Date Extracted:	09/19/17	Lab ID:	07-2042 mb 1/5
Date Analyzed:	09/19/17	Data File:	091903.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	84	31	163
Benzo(a)anthracene-d12	99	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 09/27/17
Date Received: 09/18/17
Project: Ave. 55, F&BI 709291

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270D SIM

Laboratory Code: 709262-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	<0.01	90	44-129
Acenaphthylene	mg/kg (ppm)	0.17	<0.01	91	52-121
Acenaphthene	mg/kg (ppm)	0.17	<0.01	92	51-123
Fluorene	mg/kg (ppm)	0.17	<0.01	94	37-137
Phenanthrene	mg/kg (ppm)	0.17	<0.01	92	34-141
Anthracene	mg/kg (ppm)	0.17	<0.01	88	32-124
Fluoranthene	mg/kg (ppm)	0.17	<0.01	106	16-160
Pyrene	mg/kg (ppm)	0.17	<0.01	77	10-180
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	96	23-144
Chrysene	mg/kg (ppm)	0.17	<0.01	94	32-149
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	93	23-176
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	99	42-139
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	86	21-163
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	84	23-170
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	82	31-146
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	<0.01	81	37-133

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	92	91	58-121	1
Acenaphthylene	mg/kg (ppm)	0.17	90	90	54-121	0
Acenaphthene	mg/kg (ppm)	0.17	92	92	54-123	0
Fluorene	mg/kg (ppm)	0.17	93	93	56-127	0
Phenanthrene	mg/kg (ppm)	0.17	92	92	55-122	0
Anthracene	mg/kg (ppm)	0.17	86	88	50-120	2
Fluoranthene	mg/kg (ppm)	0.17	97	100	54-129	3
Pyrene	mg/kg (ppm)	0.17	81	80	53-127	1
Benz(a)anthracene	mg/kg (ppm)	0.17	93	93	51-115	0
Chrysene	mg/kg (ppm)	0.17	93	94	55-129	1
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	90	92	56-123	2
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	99	99	54-131	0
Benzo(a)pyrene	mg/kg (ppm)	0.17	82	83	51-118	1
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	86	80	49-148	7
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	90	86	50-141	5
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	88	81	52-131	8

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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September 26, 2017

Michael Erdahl
FRIEDMAN & BRUYA, INC.
3012 16th Ave. West
Seattle, WA 98119

RE: Metals Analysis; NVL Batch # 1717029.00

Dear Mr. Erdahl,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm) , Percent (%) or mg/cm^2 by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft^2. TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m^3. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. if you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

Shalini Patel, Laboratory Analyst

NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936 | www.nvllabs.com

Analysis Report

Total Lead (Pb)

Client: FRIEDMAN & BRUYA, INC.
Address: 3012 16th Ave. West
Seattle, WA 98119

Attention: Mr. Michael Erdahl
Project Location: N-A

Batch #: 1717029.00
Matrix: Soil
Method: EPA 3051/7000B
Client Project #: 709291
Date Received: 9/25/2017
Samples Received: 3
Samples Analyzed: 3

Lab ID	Client Sample #	Sample Wt (g)	RL mg/ kg	Results in mg/Kg	Results in ppm
17093122	SP29 #1 3330	0.3549	28.0	< 28.0	< 28.0
17093123	SP30 #2 3330	0.2800	36.0	< 36.0	< 36.0
17093124	SP31 #3 3330	0.2832	35.0	< 35.0	< 35.0

Sampled by: Client
Analyzed by: Yasuyuki Hida
Reviewed by: Shalini Patel
Date Analyzed: 09/25/2017
Date Issued: 09/26/2017

Shalini Patel, Laboratory Analyst

mg/ kg = Milligrams per kilogram
ppm = Parts per million
RL = Reporting Limit
'<' = Below the reporting Limit

Note : Method QC results are acceptable unless stated otherwise.
Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936 | www.nvllabs.com

LEAD LABORATORY SERVICES

NVL LABS

Company FRIEDMAN & BRUYA, INC.
Address 3012 16th Ave. West
Seattle, WA 98119
Project Manager Mr. Michael Erdahl
Phone (206) 285-8282

NVL Batch Number **1717029.00**
TAT 4 Hrs **AH** No
Rush TAT
Due Date 9/26/2017 **Time** 9:45 AM
Email merdahl@friedmanandbruya.com
Fax (206) 283-5044

Project Name/Number: 709291 **Project Location:** N-A

Subcategory Flame AA (FAA)
Item Code FAA-03 EPA 7000B Lead by FAA <soil>
Metals Lead (Pb)

Total Number of Samples 3 Rush Samples

	Lab ID	Sample ID	Description	A/R
1	17093122	SP29 #1 3330		A
2	17093123	SP30 #2 3330		A
3	17093124	SP31 #3 3330		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Federal Express				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Soumeya Benzina		NVL	9/25/17	1345
Analyzed by	Yasuyuki Hida		NVL	9/25/17	
Results Called by					
☐ **Faxed** ☐ **Emailed**					

Special Instructions:

Date: 9/25/2017
Time: 3:49 PM
Entered By: Soumeya Benzina

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

1717029

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 3012 16th Ave W
City, State, ZIP Seattle, WA 98119
Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER NVL	
PROJECT NAME/NO. 709291	PO # F-97
REMARKS Please Email Results	

Page # 1 of 1

TURNAROUND TIME
☐ Standard (2 Weeks)
☒ RUSH 4th 9/26 Noon.
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	VPH	Nitrate	Sulfate	Alkalinity	TOC-9060M	Lead			Notes
SP29 #1 3330		9/14/17	3:00	Soil	1								X			
SP30 #2 3330		↓	3:07	↓	1								X			
SP31 #3 3330		↓	3:14	↓	1								X			

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michael Erdahl	Friedman and Bruya	9/23/17	1345
Received by: Mohammed J.		NVL	9/25/17	13:45 Fdx
Relinquished by:				
Received by:				

Analyzed by Yasuyuki Hida 9/26/17 17:00

709291

SAMPLE CHAIN OF CUSTODY

ME 09-18-17 VS1/BT

Report To DREW Z. & TOM C.

Company AVE. 55

Address 600 UNIV. ST. #2305

City, State, ZIP SEATTLE, WA 98101

Phone 206-707-9696 Email DZABOROWSKI @AVENUE55.NET

SAMPLERS (signature)

PROJECT NAME	PO #
AVE. 55	
REMARKS	INVOICE TO
	AVE. 55

Page # ____ of 1

TURNAROUND TIME

☒ Standard Turnaround

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Archive Samples

☐ Other

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	LEAD				Notes
SP-29-#1 333D	01 A-E	9-14	3:00	SOIL	5	X						X	X				
SP-30-#2 3330	02	9-14	3:07	SOIL	5	X						X	X				
SP-31-#3 333D	03	9-14	3:14	SOIL	5	X						X	X				

Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	DREW ZABOROWSKI	AVE. 55	9-14	3:00
Received by:	Jon Shimizu	FBI	9/16/17	16:50
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 27, 2017

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on September 21, 2017 from the Ave. 55, F&BI 709367 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Drew Zaborowski
FDS0927R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 21, 2017 by Friedman & Bruya, Inc. from the Floyd-Snider Ave. 55, F&BI 709367 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
709367 -01	SP-32
709367 -02	SP-33
709367 -03	SP-34
709367 -04	SP-35
709367 -05	SP-36
709367 -06	SP-37
709367 -07	SP-38
709367 -08	SP-39
709367 -09	SP-40
709367 -10	SP-41
709367 -11	SP-42
709367 -12	SP-43
709367 -13	SP-44
709367 -14	SP-45
709367 -15	SP-46

Samples were sent to NVL Laboratories, Inc. for lead analysis. Review of the enclosed report indicates that all quality assurance was acceptable.

All quality control requirements were acceptable.

Date of Report: 09/27/17
Date Received: 09/21/17
Project: Ave. 55, F&BI 709367
Date Extracted: 09/22/17
Date Analyzed: 09/22/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 53-144)
SP-32 709367-01	ND	ND	ND	85
SP-33 709367-02	ND	ND	ND	73
SP-34 709367-03	ND	ND	ND	75
SP-35 709367-04	ND	ND	ND	77
SP-36 709367-05	ND	ND	ND	82
SP-37 709367-06	ND	ND	ND	88
SP-38 709367-07	ND	ND	ND	74
SP-39 709367-08	ND	ND	ND	85
SP-40 709367-09	ND	ND	ND	80

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 09/27/17
Date Received: 09/21/17
Project: Ave. 55, F&BI 709367
Date Extracted: 09/22/17
Date Analyzed: 09/22/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 53-144)
SP-41 709367-10	ND	ND	ND	71
SP-42 709367-11	ND	ND	ND	84
SP-43 709367-12	ND	ND	ND	81
SP-44 709367-13	ND	ND	ND	76
SP-45 709367-14	ND	ND	ND	75
SP-46 709367-15	ND	ND	ND	87
Method Blank 07-2103 MB	ND	ND	ND	88

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-32	Client:	Floyd-Snider
Date Received:	09/21/17	Project:	Ave. 55, F&BI 709367
Date Extracted:	09/22/17	Lab ID:	709367-01 1/5
Date Analyzed:	09/25/17	Data File:	092505.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	91	31	163
Benzo(a)anthracene-d12	103	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave. 55, F&BI 709367
Date Extracted:	09/22/17	Lab ID:	07-2085 mb2 1/5
Date Analyzed:	09/25/17	Data File:	092504.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	91	31	163
Benzo(a)anthracene-d12	101	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 09/27/17
Date Received: 09/21/17
Project: Ave. 55, F&BI 709367

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270D SIM

Laboratory Code: 709338-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	<0.01	81	44-129
Acenaphthylene	mg/kg (ppm)	0.17	<0.01	83	52-121
Acenaphthene	mg/kg (ppm)	0.17	<0.01	82	51-123
Fluorene	mg/kg (ppm)	0.17	<0.01	84	37-137
Phenanthrene	mg/kg (ppm)	0.17	<0.01	82	34-141
Anthracene	mg/kg (ppm)	0.17	<0.01	79	32-124
Fluoranthene	mg/kg (ppm)	0.17	<0.01	86	16-160
Pyrene	mg/kg (ppm)	0.17	<0.01	79	10-180
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	90	23-144
Chrysene	mg/kg (ppm)	0.17	<0.01	86	32-149
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	86	23-176
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	85	42-139
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	77	21-163
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	80	23-170
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	77	31-146
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	<0.01	76	37-133

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	88	91	58-121	3
Acenaphthylene	mg/kg (ppm)	0.17	91	92	54-121	1
Acenaphthene	mg/kg (ppm)	0.17	89	90	54-123	1
Fluorene	mg/kg (ppm)	0.17	92	92	56-127	0
Phenanthrene	mg/kg (ppm)	0.17	89	91	55-122	2
Anthracene	mg/kg (ppm)	0.17	84	87	50-120	4
Fluoranthene	mg/kg (ppm)	0.17	97	93	54-129	4
Pyrene	mg/kg (ppm)	0.17	87	93	53-127	7
Benz(a)anthracene	mg/kg (ppm)	0.17	96	95	51-115	1
Chrysene	mg/kg (ppm)	0.17	93	93	55-129	0
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	97	96	56-123	1
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	99	96	54-131	3
Benzo(a)pyrene	mg/kg (ppm)	0.17	87	87	51-118	0
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	73	90	49-148	21 vo
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	73	89	50-141	20
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	69	84	52-131	20

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

NVL LABS
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September 26, 2017

Michael Erdahl
FRIEDMAN & BRUYA, INC.
3012 16th Ave. West
Seattle, WA 98119

RE: Metals Analysis; NVL Batch # 1717028.00

Dear Mr. Erdahl,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm) , Percent (%) or mg/cm^2 by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft^2. TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m^3. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. if you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

Shalini Patel, Laboratory Analyst

Analysis Report

Total Lead (Pb)

Client: FRIEDMAN & BRUYA, INC.
Address: 3012 16th Ave. West
Seattle, WA 98119

Attention: **Mr. Michael Erdahl**
Project Location: N-A

Batch #: 1717028.00
Matrix: Soil
Method: EPA 3051/7000B
Client Project #: 709367
Date Received: 9/25/2017
Samples Received: 15
Samples Analyzed: 15

Lab ID	Client Sample #	Sample Wt (g)	RL mg/ kg	Results in mg/Kg	Results in ppm
17093107	SP-32	0.3048	33.0	< 33.0	< 33.0
17093108	SP-33	0.3164	32.0	< 32.0	< 32.0
17093109	SP-34	0.3235	31.0	< 31.0	< 31.0
17093110	SP-35	0.2956	34.0	< 34.0	< 34.0
17093111	SP-36	0.3135	32.0	< 32.0	< 32.0
17093112	SP-37	0.3556	28.0	< 28.0	< 28.0
17093113	SP-38	0.3425	29.0	< 29.0	< 29.0
17093114	SP-39	0.3208	31.0	< 31.0	< 31.0
17093115	SP-40	0.3209	31.0	< 31.0	< 31.0
17093116	SP-41	0.3192	31.0	< 31.0	< 31.0
17093117	SP-42	0.2989	33.0	< 33.0	< 33.0
17093118	SP-43	0.3036	33.0	< 33.0	< 33.0
17093119	SP-44	0.3168	32.0	< 32.0	< 32.0
17093120	SP-45	0.3580	28.0	< 28.0	< 28.0
17093121	SP-46	0.3716	27.0	< 27.0	< 27.0

Sampled by: Client
Analyzed by: Yasuyuki Hida
Reviewed by: Shalini Patel
Date Analyzed: 09/25/2017
Date Issued: 09/26/2017

Shalini Patel, Laboratory Analyst

mg/ kg = Milligrams per kilogram
ppm = Parts per million
RL = Reporting Limit
'<' = Below the reporting Limit

Note : Method QC results are acceptable unless stated otherwise.
Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

Bench Run No: 2017-0925-10

NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936 | www.nvllabs.com

LEAD LABORATORY SERVICES

NVL LABS

Company FRIEDMAN & BRUYA, INC.
Address 3012 16th Ave. West
Seattle, WA 98119
Project Manager Mr. Michael Erdahl
Phone (206) 285-8282

NVL Batch Number 1717028.00
TAT 4 Hrs **AH** No
Rush TAT
Due Date 9/26/2017 **Time** 9:45 AM
Email merdahl@friedmanandbruya.com
Fax (206) 283-5044

Project Name/Number: 709367 **Project Location:** N-A

Subcategory Flame AA (FAA)
Item Code FAA-03 EPA 7000B Lead by FAA <soil>

Total Number of Samples 15 Rush Samples

	Lab ID	Sample ID	Description	A/R
1	17093107	SP-32		A
2	17093108	SP-33		A
3	17093109	SP-34		A
4	17093110	SP-35		A
5	17093111	SP-36		A
6	17093112	SP-37		A
7	17093113	SP-38		A
8	17093114	SP-39		A
9	17093115	SP-40		A
10	17093116	SP-41		A
11	17093117	SP-42		A
12	17093118	SP-43		A
13	17093119	SP-44		A
14	17093120	SP-45		A
15	17093121	SP-46		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Federal Express				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Mohammed Jamal		NVL	9/25/17	1545
Analyzed by	Yasuyuki Hida		NVL	9/25/17	
Results Called by					
☐ **Faxed** ☐ **Emailed**					

Special Instructions:

Date: 9/25/2017
Time: 3:45 PM
Entered By: Mohammed Jamal

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

1717028

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER	NVL
PROJECT NAME/NO. 709367	PO # F-97
REMARKS Please Email Results	

Page # 1 of 4

TURNAROUND TIME
☐ Standard (2 Weeks) Due
☒ RUSH 4hr 9/26 @ Noon
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	VPH	Nitrate	Sulfate	Alkalinity	TOC-9060M	Lead			Notes
SP-32		9/18/17		Soil	1								X			
SP-33													X			
SP-34													X			
SP-35													X			
SP-36													X			
SP-37													X			
SP-38													X			
SP-39													X			
SP-40													X			
SP-41													X			
SP-42													X			
SP-43													X			
SP-44													X			

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michael Erdahl	Friedman and Bruya	9/27/17	1348
Received by:		NVL	9/25/17	15:45 F.d.
Relinquished by:				
Received by:				

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

1717028

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER NVL

PROJECT NAME/NO.	PO #
709367	F-97

REMARKS

Please Email Results

Page # 4 of 4

TURNAROUND TIME

☐ Standard (2 Weeks)
☒ RUSH 4hr. 9/26 @ Noon
Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	VPH	Nitrate	Sulfate	Alkalinity	TOC-9060M	Lead			Notes
SP-45		9/18/17		Soil	1								X			
SP-46		↓		↓	1								X			

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michael Erdahl	Friedman and Bruya	9/27/17	1346
Received by: Mohan		NVL	9/25/17	13:45
Relinquished by:				
Received by:				

209867 [redacted]

SAMPLE CHAIN OF CUSTODY ME 09/21/17

VS1/BT2

Page # ______ of ______

Report To DREW Z. & TOM. C
Company AVE.55
Address 600 UNIV. ST. #2305
City, State, ZIP SEA, WA 98101
Phone 206-707-9696 Email ______

SAMPLERS (*signature*) [redacted]	
PROJECT NAME AVE.55	PO #
REMARKS	INVOICE TO AVE.55

TURNAROUND TIME
☐ Standard Turnaround
☒ RUSH ~~48 HR~~ 3 days ok per TC
Rush charges authorized by: 9/25/17

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other ______

							ANALYSES REQUESTED											
Sample ID		Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	LEAD				Notes
SP-32	01 A-E	#4-333D	9/18	3:37	SOIL		X						X	X				
SP-33	02	#5-333D	9/18	3:41	SOIL		X							X				
SP-34	03	#6-333D	9/18	3:44	SOIL		X							X				
SP-35	04	#7-333D	9/18	3:48	SOIL		X							X				
SP-36	05	#8-333D	9/18	3:52	SOIL		X							X				
SP-37	06	#9-333D	9/18	3:56	SOIL		X							X				
SP-38	07	#10-333D	9/18	3:58	SOIL		X							X				
SP-39	08	#11-333D	9/18	3:59	SOIL		X							X				
SP-40	09	#12-333D	9/18	4:03	SOIL		X							X				

Samples received at 2 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	DREW ZABOROWSKI	AVE.55	9/21	3:37
Received by:	TOM LADD	FBI	09-21	[illegible]55
Relinquished by:				
Received by:				

709367 [redacted]

SAMPLE CHAIN OF CUSTODY

ME 09/21/17 [redacted] VS1/BI2

Report To DREW Z [redacted] TOM C
Company AVE. 55
Address 600 UNIV. ST. #2305
City, State, ZIP SEATTLE
Phone 206-707-4646 Email

SAMPLERS (*signature*)	
PROJECT NAME AVE 55	PO #
REMARKS	INVOICE TO AVE 55

Page # ______ of ______

TURNAROUND TIME
☐ Standard Turnaround
☒ RUSH 48 HR
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

Sample ID		Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	LEAD				Notes
SP-41	10	#1-333D	9/19	4:09	SOIL		X							X				
SP-42	11	#2-333D	9/19	4:11	SOIL		X							X				
SP-43	12	#3-333D	9/19	4:14	SOIL		X							X				
SP-44	13	#4-333D	9/19	4:15	SOIL		X							X				
SP-45	14	#5-333D	9/19	4:17	SOIL		X							X				
SP-46	15	#6-333D	9/19	4:19	SOIL		X							X				

Samples received at 2 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	DREW ZABOROWSKI	AVE.55	9/19 9/21	4:09
Received by:	TOM LAAD	FBI	09-21-17	4:58
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

November 1, 2017

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on October 26, 2017 from the Ave 55, F&BI 710426 project. There are 23 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Drew Zabrowski
FDS1101R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 26, 2017 by Friedman & Bruya, Inc. from the Floyd-Snider Ave 55, F&BI 710426 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
710426 -01	SP-47
710426 -02	SP-48
710426 -03	SP-49
710426 -04	SP-50
710426 -05	SP-51
710426 -06	SP-52

A 6020A internal standard failed the acceptance criteria for sample SP-50 due to matrix interferences. The data were flagged accordingly. The sample was diluted and reanalyzed.

All other quality control requirements were acceptable.

Date of Report: 11/01/17
Date Received: 10/26/17
Project: Ave 55, F&BI 710426
Date Extracted: 10/27/17
Date Analyzed: 10/27/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 48-168)
SP-47 710426-01	ND	ND	D	120
SP-48 710426-02	ND	ND	ND	104
SP-49 710426-03	ND	ND	ND	111
SP-50 710426-04	ND	ND	ND	119
SP-51 710426-05	ND	ND	ND	120
SP-52 710426-06	ND	ND	ND	115
Method Blank 07-2410 MB	ND	ND	ND	119

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 11/01/17
Date Received: 10/26/17
Project: Ave 55, F&BI 710426
Date Extracted: 10/30/17
Date Analyzed: 10/30/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
SP-47 710426-01	110 x	760	99
Method Blank 07-2417 MB	<50	<250	123

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-47	Client:	Floyd-Snider
Date Received:	10/26/17	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	710426-01
Date Analyzed:	10/27/17	Data File:	710426-01.047
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.76
Cadmium	<1
Chromium	20.0
Lead	29.0
Mercury	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-48	Client:	Floyd-Snider
Date Received:	10/26/17	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	710426-02
Date Analyzed:	10/27/17	Data File:	710426-02.052
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.13
Cadmium	<1
Chromium	18.0
Lead	2.12
Mercury	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-49	Client:	Floyd-Snider
Date Received:	10/26/17	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	710426-03
Date Analyzed:	10/27/17	Data File:	710426-03.048
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.23
Cadmium	<1
Chromium	29.6 J
Lead	3.00
Mercury	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-49	Client:	Floyd-Snider
Date Received:	10/26/17	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	710426-03 x5
Date Analyzed:	10/27/17	Data File:	710426-03 x5.061
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Chromium	33.8

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-50	Client:	Floyd-Snider
Date Received:	10/26/17	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	710426-04
Date Analyzed:	10/27/17	Data File:	710426-04.049
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.63
Cadmium	<1
Chromium	25.9 J
Lead	19.2
Mercury	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-50	Client:	Floyd-Snider
Date Received:	10/26/17	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	710426-04 x5
Date Analyzed:	10/27/17	Data File:	710426-04 x5.062
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Chromium	29.5

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-51	Client:	Floyd-Snider
Date Received:	10/26/17	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	710426-05
Date Analyzed:	10/27/17	Data File:	710426-05.050
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.67
Cadmium	<1
Chromium	24.8
Lead	7.81
Mercury	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-52	Client:	Floyd-Snider
Date Received:	10/26/17	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	710426-06
Date Analyzed:	10/27/17	Data File:	710426-06.051
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.78
Cadmium	<1
Chromium	36.7
Lead	5.26
Mercury	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	I7-602 mb
Date Analyzed:	10/27/17	Data File:	I7-602 mb.058
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-47	Client:	Floyd-Snider
Date Received:	10/26/17	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	710426-01 1/5
Date Analyzed:	10/27/17	Data File:	102709.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	92	31	163
Benzo(a)anthracene-d12	110	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.042
Chrysene	0.063
Benzo(a)pyrene	0.058
Benzo(b)fluoranthene	0.073
Benzo(k)fluoranthene	0.021
Indeno(1,2,3-cd)pyrene	0.035
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-48	Client:	Floyd-Snider
Date Received:	10/26/17	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	710426-02 1/5
Date Analyzed:	10/27/17	Data File:	102710.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	86	31	163
Benzo(a)anthracene-d12	103	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-49	Client:	Floyd-Snider
Date Received:	10/26/17	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	710426-03 1/5
Date Analyzed:	10/27/17	Data File:	102711.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	88	31	163
Benzo(a)anthracene-d12	101	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-50	Client:	Floyd-Snider
Date Received:	10/26/17	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	710426-04 1/5
Date Analyzed:	10/27/17	Data File:	102712.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	85	31	163
Benzo(a)anthracene-d12	106	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	0.013
Benzo(a)pyrene	0.011
Benzo(b)fluoranthene	0.014
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-51	Client:	Floyd-Snider
Date Received:	10/26/17	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	710426-05 1/5
Date Analyzed:	10/27/17	Data File:	102713.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	88	31	163
Benzo(a)anthracene-d12	106	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-52	Client:	Floyd-Snider
Date Received:	10/26/17	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	710426-06 1/5
Date Analyzed:	10/27/17	Data File:	102714.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	88	31	163
Benzo(a)anthracene-d12	102	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55, F&BI 710426
Date Extracted:	10/27/17	Lab ID:	07-2401 mb2 1/5
Date Analyzed:	10/27/17	Data File:	102708.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	92	31	163
Benzo(a)anthracene-d12	103	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Date of Report: 11/01/17
Date Received: 10/26/17
Project: Ave 55, F&BI 710426

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 710459-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	110	104	73-135	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	102	74-139

Date of Report: 11/01/17
Date Received: 10/26/17
Project: Ave 55, F&BI 710426

QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL METALS USING EPA METHOD 6020A

Laboratory Code: 710426-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	1.96	99	96	75-125	3
Cadmium	mg/kg (ppm)	10	<1	109	106	75-125	3
Chromium	mg/kg (ppm)	50	16.6	98	96	75-125	2
Lead	mg/kg (ppm)	50	1.95	101	98	75-125	3
Mercury	mg/kg (ppm	5	<1	102	103	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	98	80-120
Cadmium	mg/kg (ppm)	10	108	80-120
Chromium	mg/kg (ppm)	50	108	80-120
Lead	mg/kg (ppm)	50	107	80-120
Mercury	mg/kg (ppm)	5	103	80-120

Date of Report: 11/01/17
Date Received: 10/26/17
Project: Ave 55, F&BI 710426

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270D SIM

Laboratory Code: 710422-06 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	90	23-144
Chrysene	mg/kg (ppm)	0.17	<0.01	90	32-149
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	97	23-176
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	95	42-139
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	91	21-163
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	86	23-170
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	83	31-146

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.17	99	99	51-115	0
Chrysene	mg/kg (ppm)	0.17	100	102	55-129	2
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	97	102	56-123	5
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	98	100	54-131	2
Benzo(a)pyrene	mg/kg (ppm)	0.17	92	92	51-118	0
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	96	99	49-148	3
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	97	99	50-141	2

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

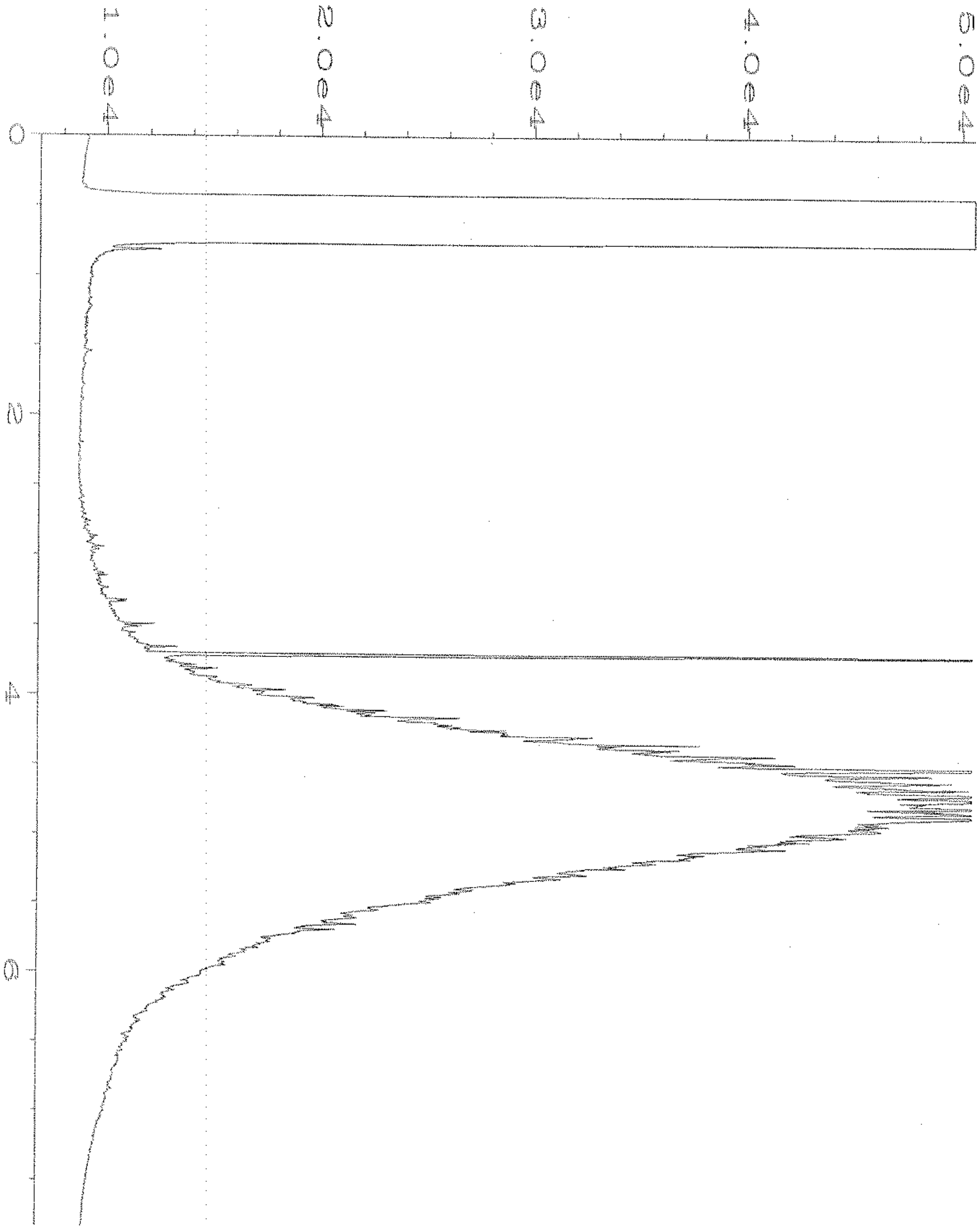
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

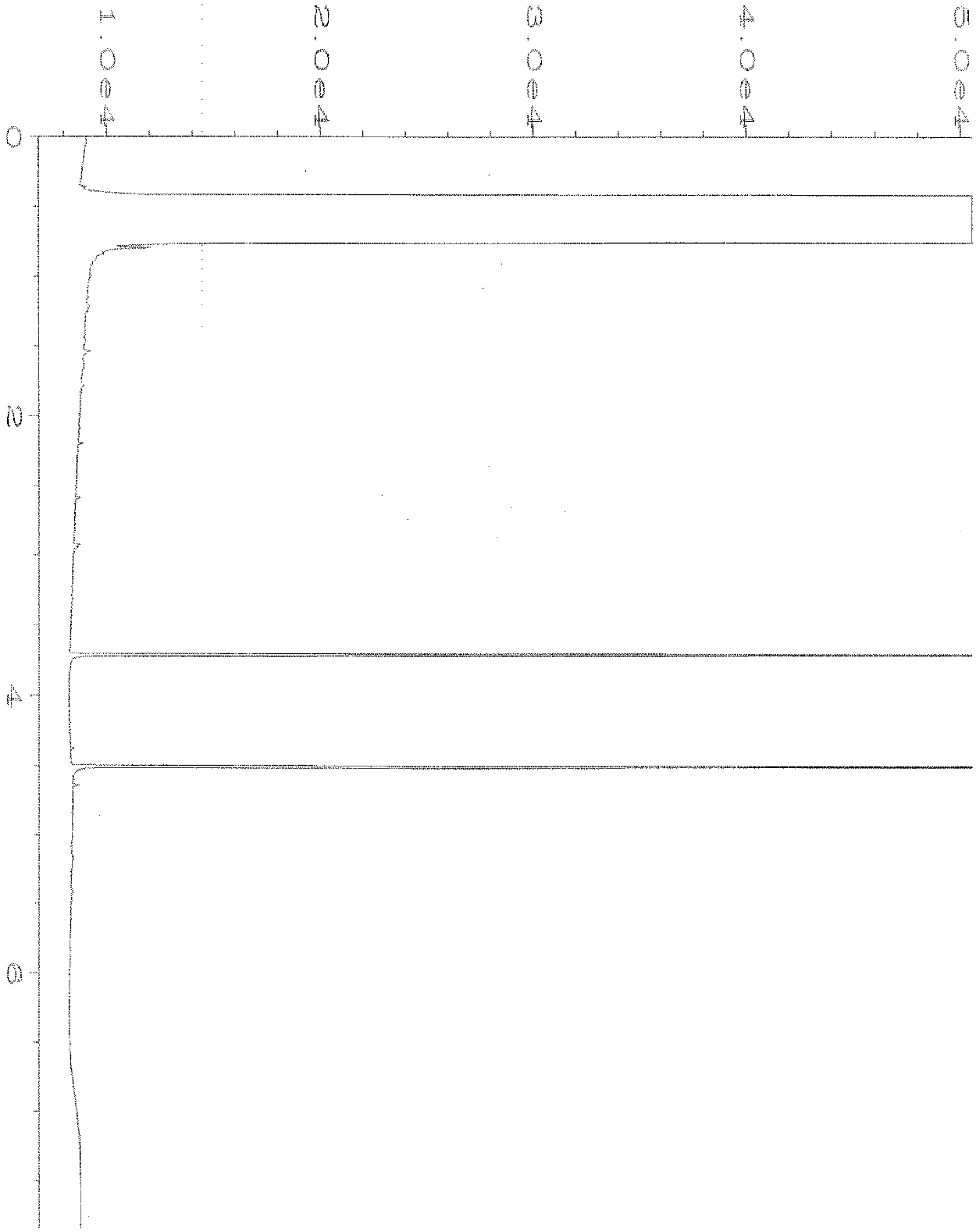
vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



Data File Name : C:\HPCHEM\4\DATA\10-27-17\008F0301.D
Operator : mwdl
Instrument : GC#4
Sample Name : 710426-01
Run Time Bar Code:
Acquired on : 27 Oct 17 09:36 AM
Report Created on: 27 Oct 17 12:08 PM

Page Number : 1
Vial Number : 8
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DX.MTH



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Operator          : mwdl                                Page Number      : 1
Instrument        : GC#4                                Vial Number      : 9
Sample Name       : 710426-02                           Injection Number : 1
Run Time Bar Code:                                      Sequence Line    : 3
Acquired on       : 27 Oct 17  09:48 AM                 Instrument Method: DX.MTH
Report Created on: 27 Oct 17  12:08 PM                  Analysis Method  : DX.MTH
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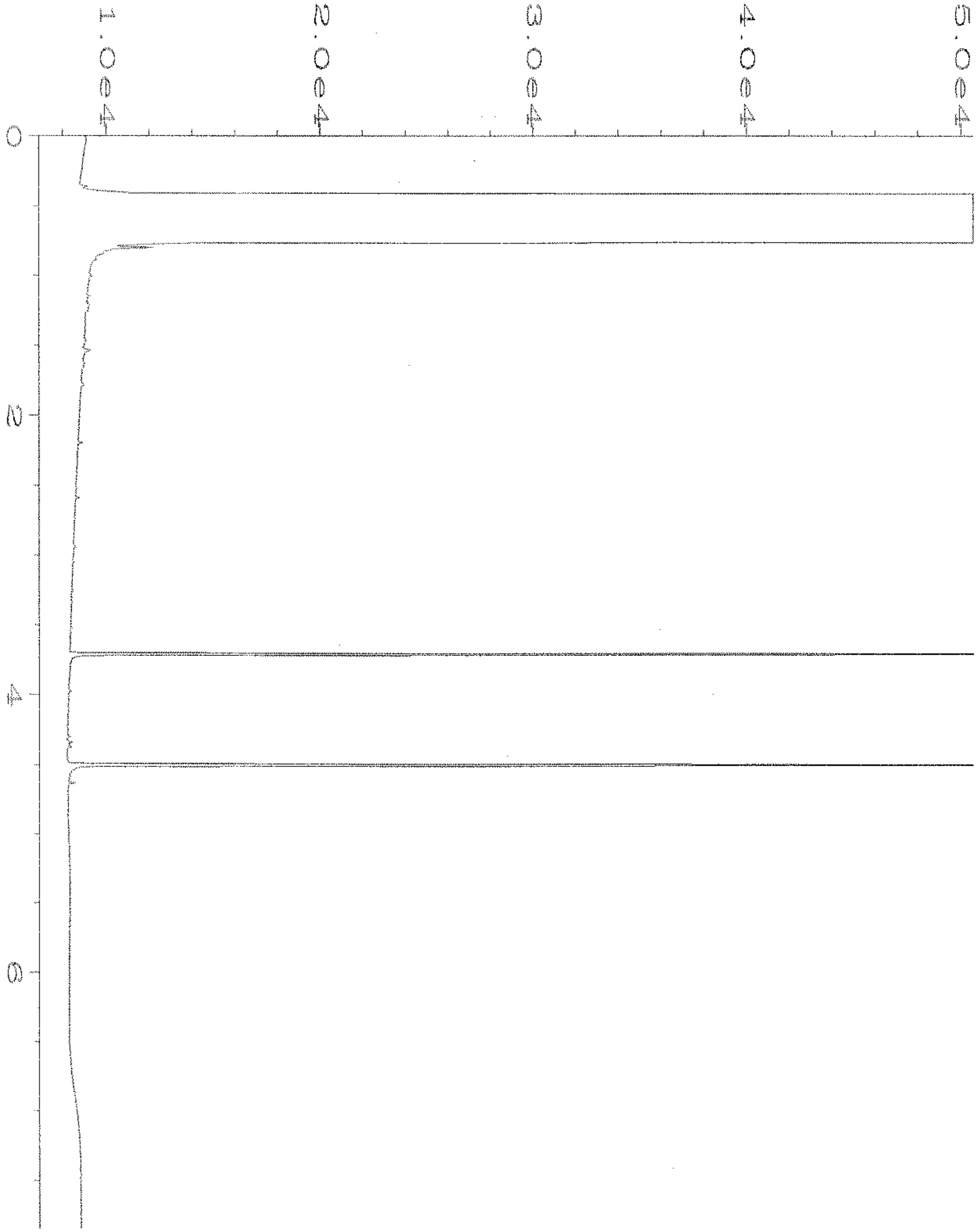

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Operator          : mwdl                                Page Number       : 1
Instrument        : GC#4                                Vial Number       : 10
Sample Name       : 710426-03                           Injection Number : 1
Run Time Bar Code:                                      Sequence Line     : 3
Acquired on       : 27 Oct 17  10:00 AM                 Instrument Method: DX.MTH
Report Created on: 27 Oct 17  12:10 PM                  Analysis Method   : DX.MTH
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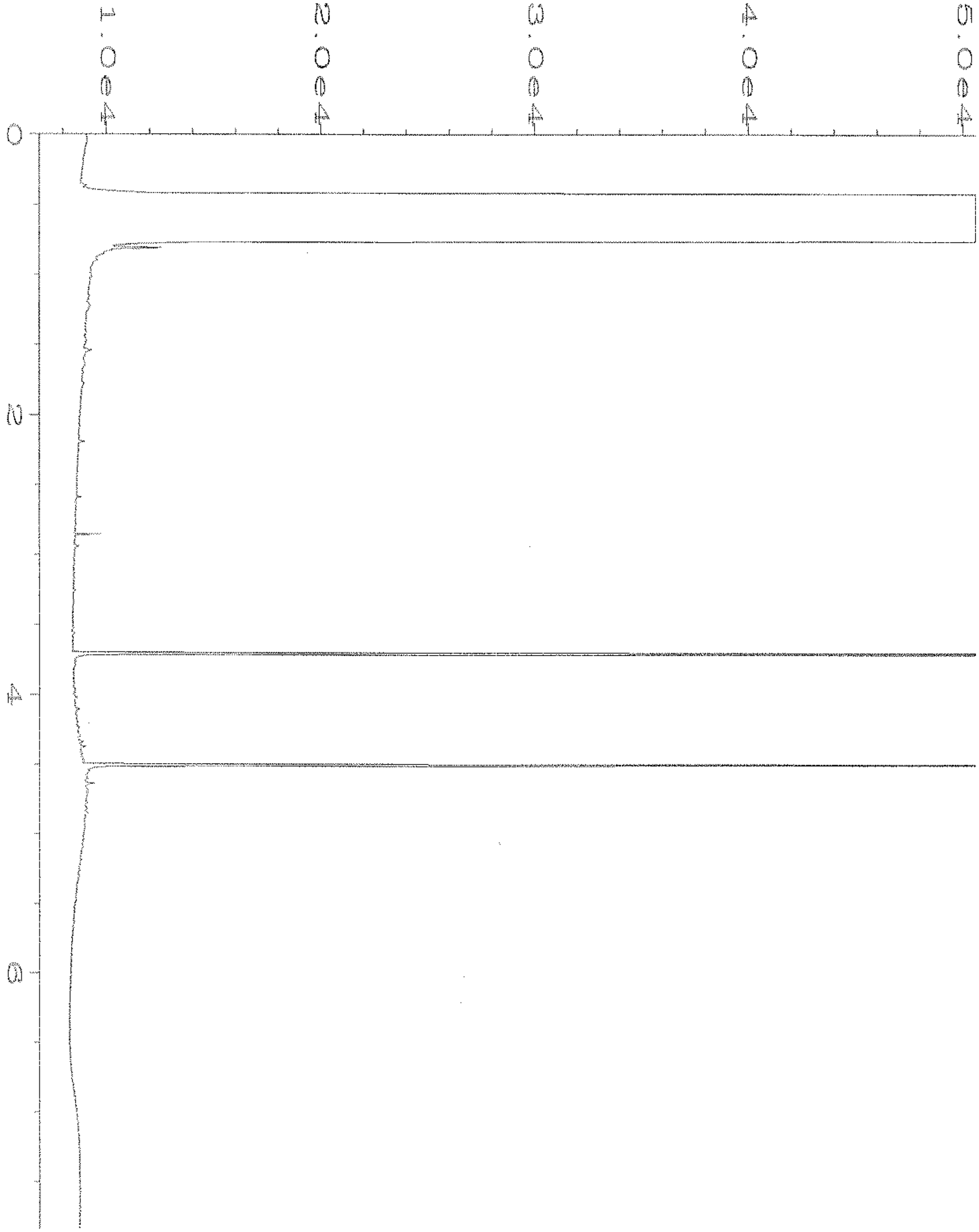

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Operator          : mwdl                            Page Number      : 1
Instrument        : GC#4                            Vial Number      : 11
Sample Name       : 710426-04                       Injection Number : 1
Run Time Bar Code:                                  Sequence Line    : 3
Acquired on       : 27 Oct 17  10:12 AM             Instrument Method: DX.MTH
Report Created on: 27 Oct 17  12:08 PM              Analysis Method  : DX.MTH
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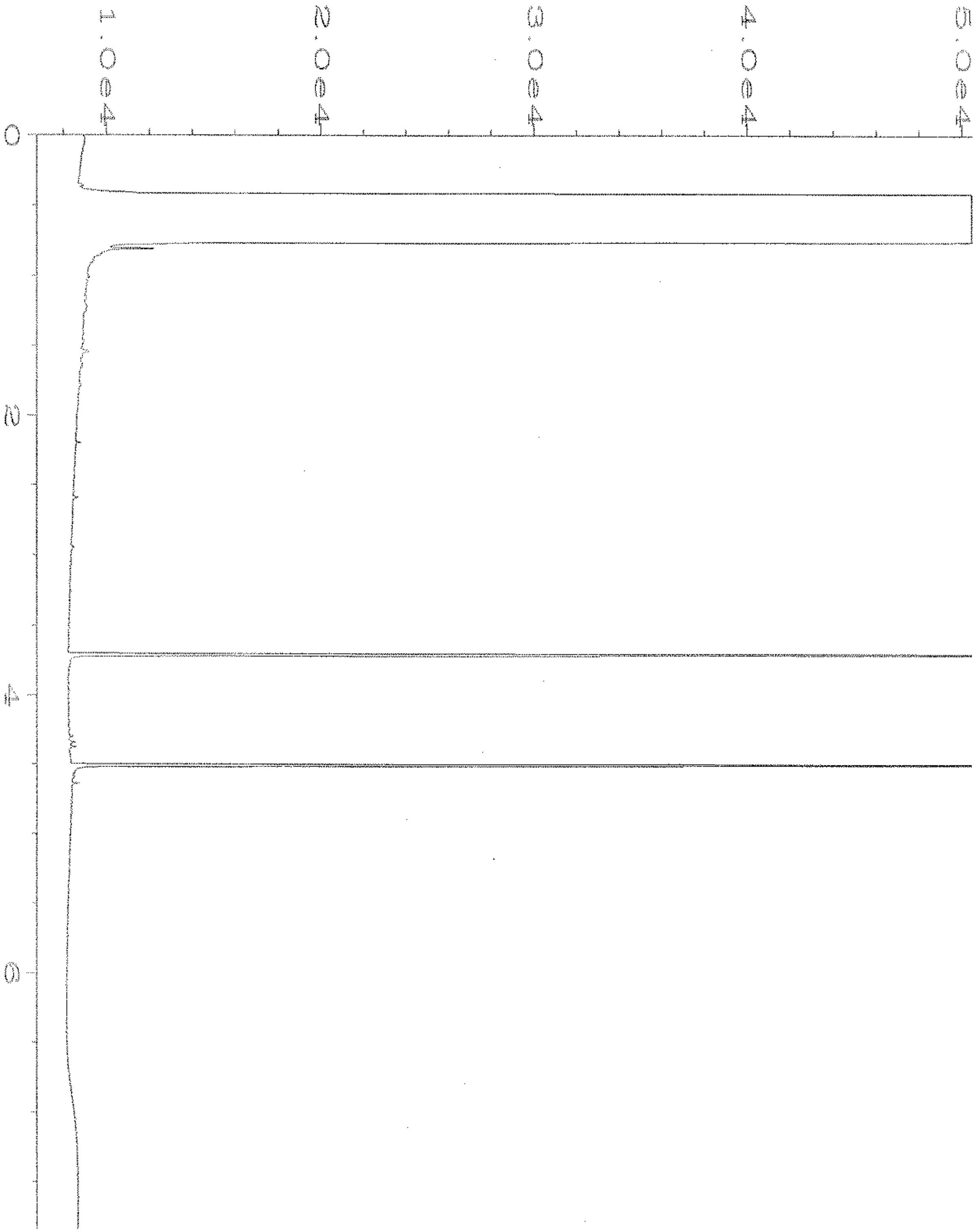

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Operator          : mwdl                          Page Number       : 1
Instrument        : GC#4                          Vial Number       : 12
Sample Name       : 710426-05                     Injection Number  : 1
Run Time Bar Code:                                Sequence Line     : 3
Acquired on       : 27 Oct 17  10:24 AM           Instrument Method: DX.MTH
Report Created on: 27 Oct 17  12:09 PM            Analysis Method   : DX.MTH
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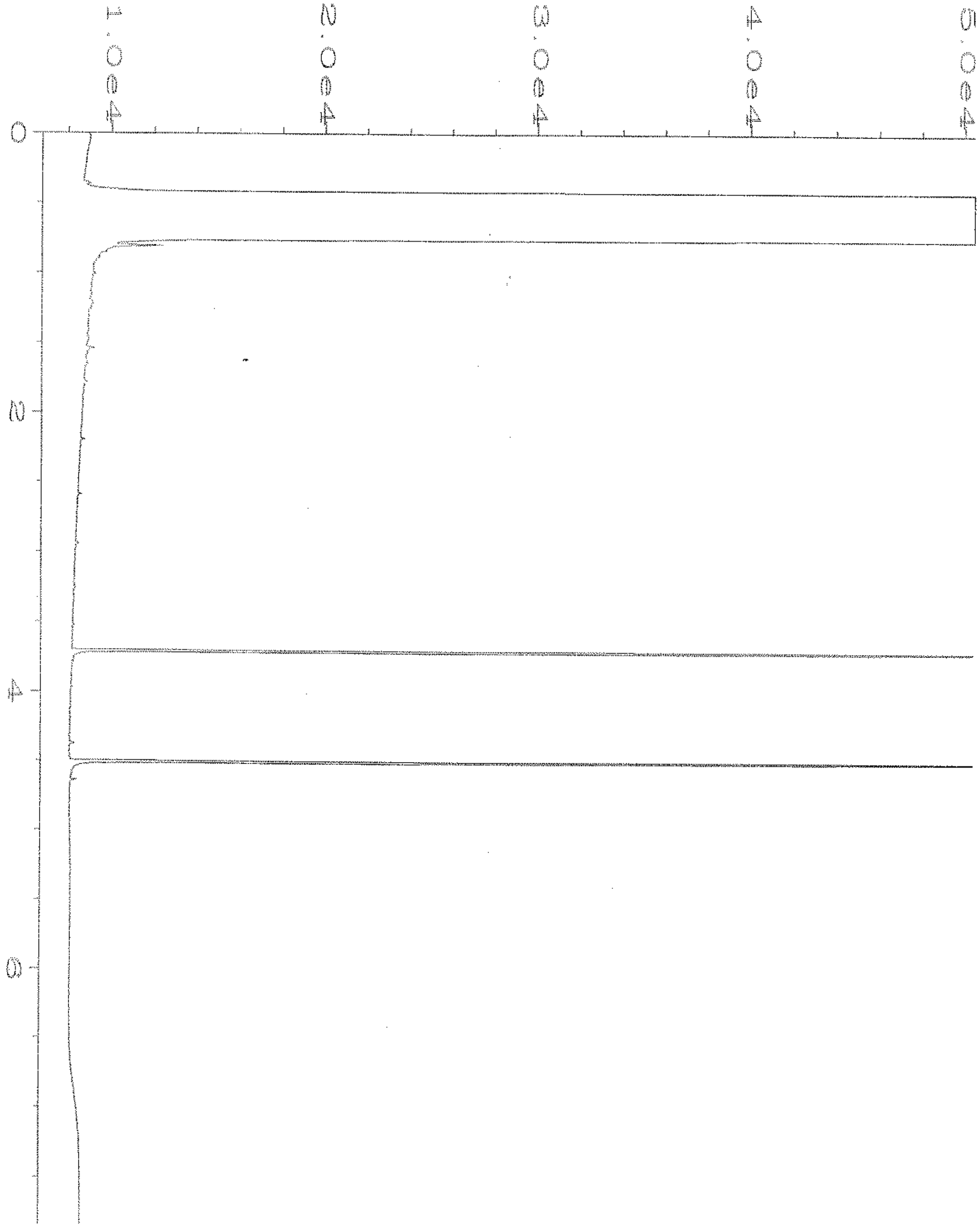

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Operator          : mwdl                          Page Number      : 1
Instrument        : GC#4                          Vial Number      : 13
Sample Name       : 710426-06                     Injection Number : 1
Run Time Bar Code:                                Sequence Line    : 3
Acquired on       : 27 Oct 17   10:36 AM          Instrument Method: DX.MTH
Report Created on: 27 Oct 17   12:09 PM           Analysis Method  : DX.MTH
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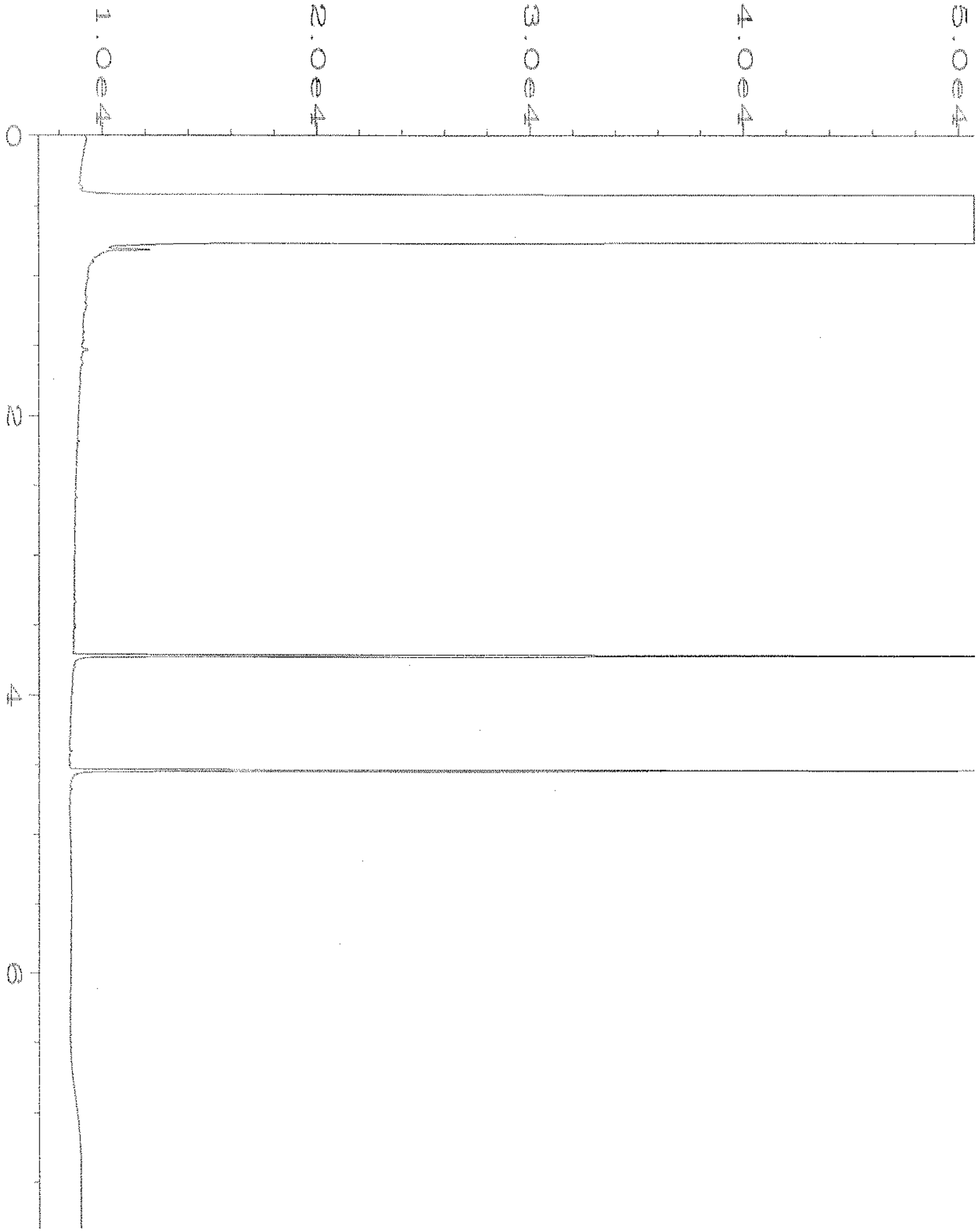

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Operator          : mwdl                               Page Number      : 1
Instrument        : GC#4                               Vial Number      : 6
Sample Name       : 07-2410 mb                         Injection Number : 1
Run Time Bar Code:                                     Sequence Line    : 3
Acquired on       : 27 Oct 17  09:14 AM                Instrument Method: DX.MTH
Report Created on: 27 Oct 17  12:08 PM                 Analysis Method  : DX.MTH
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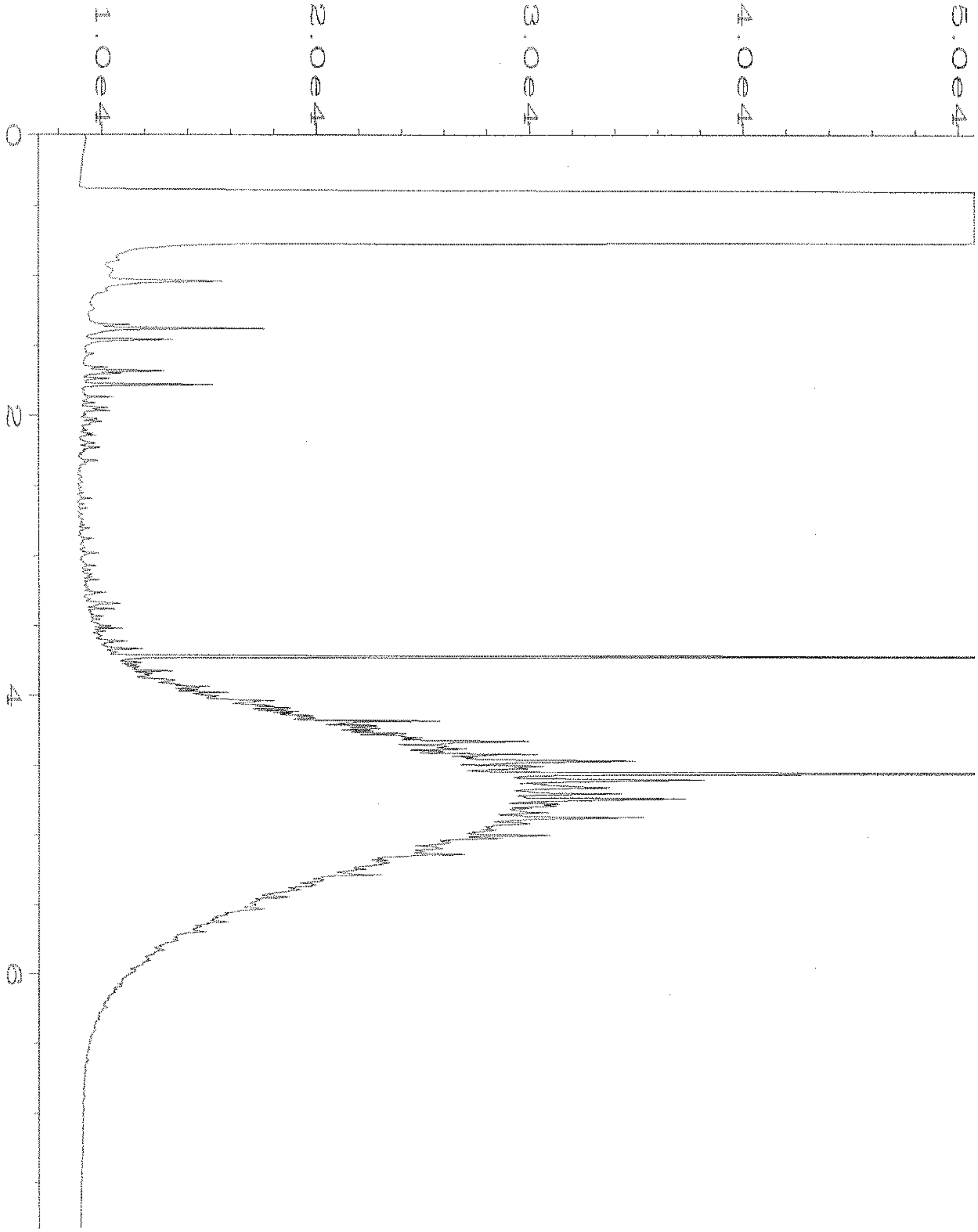

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Operator          : mwdl                          Page Number       : 1
Instrument        : GC#4                          Vial Number       : 96
Sample Name       : HCIDs G/M 50-146              Injection Number  : 1
Run Time Bar Code:                                Sequence Line     : 4
Acquired on       : 27 Oct 17  11:28 AM           Instrument Method: DX.MTH
Report Created on: 27 Oct 17  12:09 PM            Analysis Method   : DX.MTH
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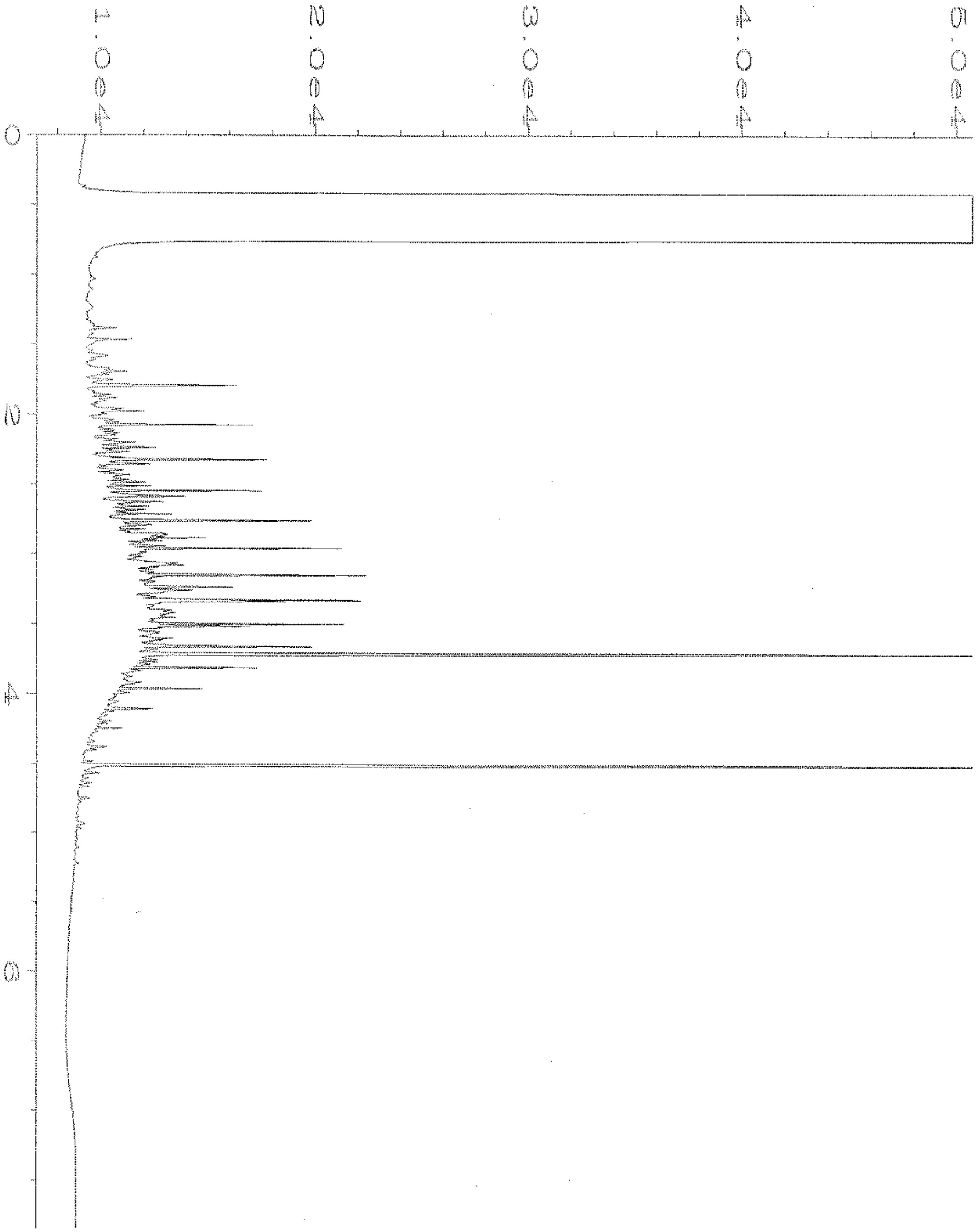

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Operator          : mwdl                                    Page Number       : 1
Instrument        : GC#4                                    Vial Number       : 97
Sample Name       : HCIDs Dx 50-101B                        Injection Number  : 1
Run Time Bar Code:                                          Sequence Line     : 4
Acquired on       : 27 Oct 17  11:41 AM                     Instrument Method: DX.MTH
Report Created on: 27 Oct 17  12:09 PM                      Analysis Method   : DX.MTH
```

7 10426 [redacted]

SAMPLE CHAIN OF CUSTODY

ME 10-26 17 [redacted]

·VS1 / B12

Report To DREW Z & TOM COLLIGAN
Company AVE. 55
Address 600 UNIVERSITY ST #2305
City, State, ZIP SEATTLE, WA 98107
Phone 206·707·9696 Email

SAMPLERS (*signature*)

PROJECT NAME AVE. 55	PO #
REMARKS	INVOICE TO AVE. 55

Page # ____ of ____

TURNAROUND TIME
☐ Standard Turnaround
☒ RUSH 24 HR
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSES REQUESTED

Sample ID	Lab ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel /MO	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	CPAH	MTCA METALS (Pb, Ar, Cd, Hg, Cr)			Notes
SP-47	01A-E	WS 1	10/26	2:44	SOIL		X	Ⓧ						X	X			Ⓧ per TC
SP-48	02	WS 2	10/26	2:50	SOIL		X							X	X			10/26/17
SP-49	03	WS 3	10/26	2:57	SOIL		X							X	X			MG
SP-50	04	WS 4	10/26	3:03	SOIL		X							X	X			
SP-51	05	WS 5	10/26	3:10	SOIL		X							X	X			
SP-52	06	WS6	10/26	3:16	SOIL		X							X	X			

Samples received at 12 **°C**

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	DREW ZABOROWSKI	AVE 55	10/26	3:17
Received by:	Jon [illegible]	FBI	10/26	17:45
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

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Seattle, WA 98119-2029
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fbi@isomedia.com
www.friedmanandbruya.com

September 7, 2017

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on August 28, 2017 from the Avenue 55, F&BI 708495 project. There are 25 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Drew Zaborowski
FDS0907R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 28, 2017 by Friedman & Bruya, Inc. from the Floyd-Snider Avenue 55, F&BI 708495 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
708495 -01	SP-14
708495 -02	SP-15
708495 -03	SP-16
708495 -04	SP-17
708495 -05	SP-18

All quality control requirements were acceptable.

Date of Report: 09/07/17
Date Received: 08/28/17
Project: Avenue 55, F&BI 708495
Date Extracted: 08/29/17
Date Analyzed: 08/29/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
SP-14 708495-01	<50	<250	99
SP-15 708495-02	<50	<250	98
SP-16 708495-03	<50	<250	98
SP-17 708495-04	<50	<250	105
SP-18 708495-05	<50	<250	99
Method Blank 07-1877 MB	<50	<250	100

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-14	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/31/17	Lab ID:	708495-01
Date Analyzed:	09/06/17	Data File:	708495-01.031
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.33
Lead	2.23

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-15	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/31/17	Lab ID:	708495-02
Date Analyzed:	09/06/17	Data File:	708495-02.032
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.04
Lead	1.52

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-16	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/31/17	Lab ID:	708495-03
Date Analyzed:	09/06/17	Data File:	708495-03.033
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.21
Lead	3.36

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-17	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/31/17	Lab ID:	708495-04
Date Analyzed:	09/06/17	Data File:	708495-04.034
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.78
Lead	2.72

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-18	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/31/17	Lab ID:	708495-05
Date Analyzed:	09/06/17	Data File:	708495-05.035
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	1.43

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/31/17	Lab ID:	I7-469 mb
Date Analyzed:	08/31/17	Data File:	I7-469 mb.076
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-14	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/29/17	Lab ID:	708495-01 1/5
Date Analyzed:	08/30/17	Data File:	083008.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	86	31	163
Benzo(a)anthracene-d12	97	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-15	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/29/17	Lab ID:	708495-02 1/5
Date Analyzed:	08/30/17	Data File:	083009.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	31	163
Benzo(a)anthracene-d12	100	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-16	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/29/17	Lab ID:	708495-03 1/5
Date Analyzed:	08/30/17	Data File:	083010.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	88	31	163
Benzo(a)anthracene-d12	102	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	0.012
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	0.013
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-17	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/29/17	Lab ID:	708495-04 1/5
Date Analyzed:	08/30/17	Data File:	083011.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	91	31	163
Benzo(a)anthracene-d12	107	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.043
Chrysene	0.046
Benzo(a)pyrene	0.037
Benzo(b)fluoranthene	0.042
Benzo(k)fluoranthene	0.019
Indeno(1,2,3-cd)pyrene	0.017
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-18	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/29/17	Lab ID:	708495-05 1/5
Date Analyzed:	08/30/17	Data File:	083012.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	85	31	163
Benzo(a)anthracene-d12	102	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/29/17	Lab ID:	07-1878 mb 1/5
Date Analyzed:	08/29/17	Data File:	082910.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	87	31	163
Benzo(a)anthracene-d12	105	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-14	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/29/17	Lab ID:	708495-01
Date Analyzed:	08/29/17	Data File:	082917.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	104	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-15	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/29/17	Lab ID:	708495-02
Date Analyzed:	08/29/17	Data File:	082918.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	105	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-16	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/29/17	Lab ID:	708495-03
Date Analyzed:	08/29/17	Data File:	082919.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	104	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-17	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/29/17	Lab ID:	708495-04
Date Analyzed:	08/29/17	Data File:	082920.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	104	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-18	Client:	Floyd-Snider
Date Received:	08/28/17	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/29/17	Lab ID:	708495-05
Date Analyzed:	08/30/17	Data File:	083017.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Avenue 55, F&BI 708495
Date Extracted:	08/29/17	Lab ID:	07-1851 mb
Date Analyzed:	08/29/17	Data File:	082906.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	105	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Date of Report: 09/07/17
Date Received: 08/28/17
Project: Avenue 55, F&BI 708495

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 708486-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	2,000	90 b	115 b	63-146	24 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	86	79-144

Date of Report: 09/07/17
Date Received: 08/28/17
Project: Avenue 55, F&BI 708495

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020A

Laboratory Code: 708491-21 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	7.20	81 b	73 b	75-125	10 b
Lead	mg/kg (ppm)	50	10.6	94	89	75-125	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	89	80-120
Lead	mg/kg (ppm)	50	99	80-120

Date of Report: 09/07/17
Date Received: 08/28/17
Project: Avenue 55, F&BI 708495

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270D SIM

Laboratory Code: 708497-09 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	91	91	23-144	0
Chrysene	mg/kg (ppm)	0.17	<0.01	89	88	32-149	1
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	83	87	23-176	5
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	89	93	42-139	4
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	82	84	21-163	2
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	83	84	23-170	1
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	83	83	31-146	0

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benz(a)anthracene	mg/kg (ppm)	0.17	103	51-115
Chrysene	mg/kg (ppm)	0.17	103	55-129
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	94	56-123
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	101	54-131
Benzo(a)pyrene	mg/kg (ppm)	0.17	88	51-118
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	103	49-148
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	105	50-141

Date of Report: 09/07/17
Date Received: 08/28/17
Project: Avenue 55, F&BI 708495

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 708362-20 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	42	41	10-138	2
Chloroethane	mg/kg (ppm)	2.5	<0.5	54	50	10-176	8
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	68	65	10-160	5
Methylene chloride	mg/kg (ppm)	2.5	<0.5	85	82	10-156	4
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	75	71	14-137	5
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	82	77	19-140	6
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	81	80	25-135	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	82	77	12-160	6
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	81	77	10-156	5
Trichloroethene	mg/kg (ppm)	2.5	<0.02	84	81	21-139	4
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	76	76	20-133	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2.5	66	22-139
Chloroethane	mg/kg (ppm)	2.5	77	10-163
1,1-Dichloroethene	mg/kg (ppm)	2.5	93	47-128
Methylene chloride	mg/kg (ppm)	2.5	106	42-132
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	99	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	104	68-115
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	103	72-113
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	102	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	102	62-131
Trichloroethene	mg/kg (ppm)	2.5	104	64-117
Tetrachloroethene	mg/kg (ppm)	2.5	95	72-114

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

708495 [redacted]

SAMPLE CHAIN OF CUSTODY

ME 08/28/17 [redacted] BI1/VS1

Page # ______ of ______

Report To DREW ZABOROWSKI & TOM COLLIGAN
Company AVENUE 55
Address 600 UNIVERSITY ST. #2305
City, State, ZIP SEATTLE, WA 98101
Phone 206-707-9696 Email DZABOROWSKI @AVENUE55.NET

SAMPLERS (*signature*) Dr Zabor

PROJECT NAME	PO #
AVENUE 55	
REMARKS	**INVOICE TO**
	AVE.55

TURNAROUND TIME
☒ Standard Turnaround
☐ RUSH ______
Rush charges authorized by: ______

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Archive Samples
☐ Other ______

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	SPAH 8310 ~~PAHs 8270D SIM~~	ARSENIC/LEAD				Notes
SP-14 01A-E	23-A	8/28	1:03	SOIL	5		X			X		X	X				
SP-15 02	23-B	8/28	1:12	SOIL			X			X		X	X				
SP-16 03	23-C	8/28	1:17	SOIL			X			X		X	X				
SP-17 04	25-A	8/28	1:24	SOIL			X			X		X	X				
SP-18 05	25-B	8/28	1:29	SOIL			X			X		X	X				

Samples received at 3 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE		PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Dr Zabor	DREW ZABOROWSKI	AVENUE 55	8/28/10	1:00
Received by:		Matt Langstan	FBInc	8/28/17	1645
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 22, 2017

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on September 12, 2017 from the Avenue 55, F&BI 709185 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Drew Zaborowski
FDS0922R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 12, 2017 by Friedman & Bruya, Inc. from the Floyd-Snider Avenue 55, F&BI 709185 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
709185 -01	SP-19 (9/8 B Roose)
709185 -02	SP-20 (9/8 H Roose)

All quality control requirements were acceptable.

Date of Report: 09/22/17
Date Received: 09/12/17
Project: Avenue 55, F&BI 709185
Date Extracted: 09/13/17
Date Analyzed: 09/13/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 53-144)
SP-19 (9/8 B Roose) 709185-01	ND	ND	ND	79
SP-20 (9/8 H Roose) 709185-02	ND	ND	ND	77
Method Blank 07-2007 MB	ND	ND	ND	77

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-19 (9/8 B Roose)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709185
Date Extracted:	09/13/17	Lab ID:	709185-01
Date Analyzed:	09/13/17	Data File:	091317.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-20 (9/8 H Roose)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709185
Date Extracted:	09/13/17	Lab ID:	709185-02
Date Analyzed:	09/13/17	Data File:	091318.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Avenue 55, F&BI 709185
Date Extracted:	09/13/17	Lab ID:	07-1919 mb
Date Analyzed:	09/13/17	Data File:	091308.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 09/22/17
Date Received: 09/12/17
Project: Avenue 55, F&BI 709185

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 709180-07 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	14	16	10-142	13
Chloromethane	mg/kg (ppm)	2.5	<0.5	43	45	10-126	5
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	41	42	10-138	2
Bromomethane	mg/kg (ppm)	2.5	<0.5	59	58	10-163	2
Chloroethane	mg/kg (ppm)	2.5	<0.5	56	58	10-176	4
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	44	45	10-176	2
Acetone	mg/kg (ppm)	12.5	<0.5	76	78	10-163	3
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	56	58	10-160	4
Hexane	mg/kg (ppm)	2.5	<0.25	40	40	10-137	0
Methylene chloride	mg/kg (ppm)	2.5	<0.5	74	75	10-156	1
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	71	73	21-145	3
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	63	64	14-137	2
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	68	70	19-140	3
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	73	73	10-158	0
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	72	72	25-135	0
Chloroform	mg/kg (ppm)	2.5	<0.05	72	74	21-145	3
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	82	83	19-147	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	72	73	12-160	1
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	68	69	10-156	1
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	65	67	17-140	3
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	66	67	9-164	2
Benzene	mg/kg (ppm)	2.5	<0.03	69	71	29-129	3
Trichloroethene	mg/kg (ppm)	2.5	<0.02	69	71	21-139	3
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	77	78	30-135	1
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	74	75	23-155	1
Dibromomethane	mg/kg (ppm)	2.5	<0.05	74	76	23-145	3
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	81	80	24-155	1
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	76	78	28-144	3
Toluene	mg/kg (ppm)	2.5	<0.05	70	74	35-130	6
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	76	78	26-149	3
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	78	79	10-205	1
2-Hexanone	mg/kg (ppm)	12.5	<0.5	86	88	15-166	2
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	78	79	31-137	1
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	70	71	20-133	1
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	74	76	28-150	3
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	75	78	28-142	4
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	76	77	32-129	1
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	74	76	32-137	3
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	74	76	31-143	3
m,p-Xylene	mg/kg (ppm)	5	<0.1	75	76	34-136	1
o-Xylene	mg/kg (ppm)	2.5	<0.05	74	74	33-134	0
Styrene	mg/kg (ppm)	2.5	<0.05	76	78	35-137	3
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	76	77	31-142	1
Bromoform	mg/kg (ppm)	2.5	<0.05	77	79	21-156	3
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	78	79	23-146	1
Bromobenzene	mg/kg (ppm)	2.5	<0.05	78	80	34-130	3
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	75	76	18-149	1
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	82	83	28-140	1
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	80	81	25-144	1
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	79	80	31-134	1
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	77	78	31-136	1
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	77	79	30-137	3
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	78	79	10-182	1
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	79	79	23-145	0
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	79	79	21-149	0
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	76	77	30-131	1
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	77	78	29-129	1
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	75	77	31-132	3
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	80	81	11-161	1
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	78	80	22-142	3
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	80	79	10-142	1
Naphthalene	mg/kg (ppm)	2.5	<0.05	79	79	14-157	0
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	79	80	20-144	1

Date of Report: 09/22/17
Date Received: 09/12/17
Project: Avenue 55, F&BI 709185

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	61	10-146
Chloromethane	mg/kg (ppm)	2.5	79	27-133
Vinyl chloride	mg/kg (ppm)	2.5	82	22-139
Bromomethane	mg/kg (ppm)	2.5	95	38-114
Chloroethane	mg/kg (ppm)	2.5	91	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	85	10-196
Acetone	mg/kg (ppm)	12.5	98	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	90	47-128
Hexane	mg/kg (ppm)	2.5	89	43-142
Methylene chloride	mg/kg (ppm)	2.5	99	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	94	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	91	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	94	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	100	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	95	72-113
Chloroform	mg/kg (ppm)	2.5	94	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	106	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	94	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	93	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	91	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	91	60-139
Benzene	mg/kg (ppm)	2.5	91	68-114
Trichloroethene	mg/kg (ppm)	2.5	93	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	100	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	96	72-130
Dibromomethane	mg/kg (ppm)	2.5	97	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	101	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	100	75-136
Toluene	mg/kg (ppm)	2.5	94	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	99	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	100	75-113
2-Hexanone	mg/kg (ppm)	12.5	109	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	100	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	94	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	97	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	98	74-132
Chlorobenzene	mg/kg (ppm)	2.5	97	76-111
Ethylbenzene	mg/kg (ppm)	2.5	97	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	96	69-135
m,p-Xylene	mg/kg (ppm)	5	97	78-122
o-Xylene	mg/kg (ppm)	2.5	96	77-124
Styrene	mg/kg (ppm)	2.5	99	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	98	76-127
Bromoform	mg/kg (ppm)	2.5	99	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	101	74-124
Bromobenzene	mg/kg (ppm)	2.5	101	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	97	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	106	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	100	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	101	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	100	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	100	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	101	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	102	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	102	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	98	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	100	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	97	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	103	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	102	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	100	50-153
Naphthalene	mg/kg (ppm)	2.5	103	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	103	63-138

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

709185 [redacted]

SAMPLE CHAIN OF CUSTODY

ME 09-12-17 [redacted] VS1 of B01

Report To DREW Z. & TOM COLLIGAN
Company AVENUE 55
Address 600 UNIVERSITY ST. # 2305
City, State, ZIP SEATTLE, WA 98101
Phone 206-707-9696 Email DZABOROWSKI@AVENUE55.NET

SAMPLERS (*signature*)

PROJECT NAME	PO #
AVENUE 55	
REMARKS	INVOICE TO
	AVE. 55

TURNAROUND TIME
☐ Standard Turnaround
☒ RUSH 24 HR
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	~~PAHs 8270D SIM~~					* HCID only. Follow up any detections — 9/21/17 Notes
SP-19 (9/8-B-ROOSE)	01 A-E	9/8	2:57	SOIL		X	~~*X~~	~~X~~	~~*~~	X							
SP-20 (9/8 H-ROOSE)	02 I	9/8	3:05	SOIL		X	~~*X~~	~~X~~	~~*~~	X							
												Samples received at 4 °C					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	DREW ZABOROWSKI	AVE. 55	9/12	3:08
Received by:	VINH	FBI	9/12	3:08 PM
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

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www.friedmanandbruya.com

September 25, 2017

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on September 15, 2017 from the Avenue 55, F&BI 709262 project. There are 16 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Drew Zaborowski
FDS0925R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 15, 2017 by Friedman & Bruya, Inc. from the Floyd-Snider Avenue 55, F&BI 709262 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
709262 -01	SP-28-9/14 B.31

All quality control requirements were acceptable.

Date of Report: 09/25/17
Date Received: 09/15/17
Project: Avenue 55, F&BI 709262
Date Extracted: 09/18/17
Date Analyzed: 09/18/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
SP-28-9/14 B.31 709262-01	<2	91
Method Blank 07-1981 MB	<2	85

Date of Report: 09/25/17
Date Received: 09/15/17
Project: Avenue 55, F&BI 709262
Date Extracted: 09/18/17
Date Analyzed: 09/18/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
SP-28-9/14 B.31 709262-01	<50	<250	123
Method Blank 07-2034 MB	<50	<250	116

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-28-9/14 B.31	Client:	Floyd-Snider
Date Received:	09/15/17	Project:	Avenue 55, F&BI 709262
Date Extracted:	09/19/17	Lab ID:	709262-01
Date Analyzed:	09/20/17	Data File:	709262-01.061
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Lead	1.62

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	Avenue 55, F&BI 709262
Date Extracted:	09/19/17	Lab ID:	I7-507 mb
Date Analyzed:	09/20/17	Data File:	I7-507 mb.046
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Lead	<1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-28-9/14 B.31	Client:	Floyd-Snider
Date Received:	09/15/17	Project:	Avenue 55, F&BI 709262
Date Extracted:	09/19/17	Lab ID:	709262-01 1/5
Date Analyzed:	09/19/17	Data File:	091915.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	31	163
Benzo(a)anthracene-d12	101	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Avenue 55, F&BI 709262
Date Extracted:	09/19/17	Lab ID:	07-2042 mb 1/5
Date Analyzed:	09/19/17	Data File:	091903.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	84	31	163
Benzo(a)anthracene-d12	99	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-28-9/14 B.31	Client:	Floyd-Snider
Date Received:	09/15/17	Project:	Avenue 55, F&BI 709262
Date Extracted:	09/18/17	Lab ID:	709262-01
Date Analyzed:	09/19/17	Data File:	091854.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Avenue 55, F&BI 709262
Date Extracted:	09/18/17	Lab ID:	07-2021 mb
Date Analyzed:	09/18/17	Data File:	091812.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 09/25/17
Date Received: 09/15/17
Project: Avenue 55, F&BI 709262

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 709235-17 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	100	61-153

Date of Report: 09/25/17
Date Received: 09/15/17
Project: Avenue 55, F&BI 709262

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 709267-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	3,500	83 b	102 b	73-135	21 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	94	74-139

Date of Report: 09/25/17
Date Received: 09/15/17
Project: Avenue 55, F&BI 709262

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020A

Laboratory Code: 709262-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<1	96	104	75-125	8
Cadmium	mg/kg (ppm)	10	<1	98	104	75-125	6
Lead	mg/kg (ppm)	50	1.52	96	101	75-125	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	96	80-120
Cadmium	mg/kg (ppm)	10	101	80-120
Lead	mg/kg (ppm)	50	110	80-120

Date of Report: 09/25/17
Date Received: 09/15/17
Project: Avenue 55, F&BI 709262

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270D SIM

Laboratory Code: 709262-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	96	23-144
Chrysene	mg/kg (ppm)	0.17	<0.01	94	32-149
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	93	23-176
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	99	42-139
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	86	21-163
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	84	23-170
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	82	31-146

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.17	93	93	51-115	0
Chrysene	mg/kg (ppm)	0.17	93	94	55-129	1
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	90	92	56-123	2
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	99	99	54-131	0
Benzo(a)pyrene	mg/kg (ppm)	0.17	82	83	51-118	1
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	86	80	49-148	7
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	90	86	50-141	5

Date of Report: 09/25/17
Date Received: 09/15/17
Project: Avenue 55, F&BI 709262

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 709272-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	12	11	10-142	9
Chloromethane	mg/kg (ppm)	2.5	<0.5	42	37	10-126	13
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	38	35	10-138	8
Bromomethane	mg/kg (ppm)	2.5	<0.5	56	51	10-163	9
Chloroethane	mg/kg (ppm)	2.5	<0.5	61	55	10-176	10
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	40	38	10-176	5
Acetone	mg/kg (ppm)	12.5	<0.5	79	72	10-163	9
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	56	53	10-160	6
Hexane	mg/kg (ppm)	2.5	<0.25	33	30	10-137	10
Methylene chloride	mg/kg (ppm)	2.5	<0.5	74	68	10-156	8
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	82	77	21-145	6
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	66	60	14-137	10
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	73	67	19-140	9
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	72	68	10-158	6
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	75	72	25-135	4
Chloroform	mg/kg (ppm)	2.5	<0.05	78	71	21-145	9
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	88	84	19-147	5
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	75	70	12-160	7
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	69	65	10-156	6
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	68	63	17-140	8
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	65	62	9-164	5
Benzene	mg/kg (ppm)	2.5	<0.03	74	68	29-129	8
Trichloroethene	mg/kg (ppm)	2.5	<0.02	73	69	21-139	6
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	82	77	30-135	6
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	77	72	23-155	7
Dibromomethane	mg/kg (ppm)	2.5	<0.05	78	73	23-145	7
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	86	80	24-155	7
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	80	75	28-144	6
Toluene	mg/kg (ppm)	2.5	<0.05	76	69	35-130	10
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	78	72	26-149	8
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	81	76	10-205	6
2-Hexanone	mg/kg (ppm)	12.5	<0.5	90	84	15-166	7
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	82	76	31-137	8
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	72	67	20-133	7
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	76	72	28-150	5
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	78	73	28-142	7
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	79	74	32-129	7
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	78	72	32-137	8
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	77	71	31-143	8
m,p-Xylene	mg/kg (ppm)	5	<0.1	78	73	34-136	7
o-Xylene	mg/kg (ppm)	2.5	<0.05	78	73	33-134	7
Styrene	mg/kg (ppm)	2.5	<0.05	80	75	35-137	6
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	79	74	31-142	7
Bromoform	mg/kg (ppm)	2.5	<0.05	78	73	21-156	7
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	81	76	23-146	6
Bromobenzene	mg/kg (ppm)	2.5	<0.05	80	75	34-130	6
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	77	73	18-149	5
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	85	80	28-140	6
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	83	78	25-144	6
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	80	76	31-134	5
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	79	75	31-136	5
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	80	75	30-137	6
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	80	75	10-182	6
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	82	77	23-145	6
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	81	76	21-149	6
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	77	72	30-131	7
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	79	74	29-129	7
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	76	72	31-132	5
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	81	76	11-161	6
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	79	74	22-142	7
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	82	78	10-142	5
Naphthalene	mg/kg (ppm)	2.5	<0.05	80	75	14-157	6
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	80	75	20-144	6

Date of Report: 09/25/17
Date Received: 09/15/17
Project: Avenue 55, F&BI 709262

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	47	10-146
Chloromethane	mg/kg (ppm)	2.5	68	27-133
Vinyl chloride	mg/kg (ppm)	2.5	74	22-139
Bromomethane	mg/kg (ppm)	2.5	88	38-114
Chloroethane	mg/kg (ppm)	2.5	91	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	80	10-196
Acetone	mg/kg (ppm)	12.5	95	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	90	47-128
Hexane	mg/kg (ppm)	2.5	84	43-142
Methylene chloride	mg/kg (ppm)	2.5	100	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	98	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	93	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	96	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	97	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	98	72-113
Chloroform	mg/kg (ppm)	2.5	97	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	112	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	96	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	94	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	94	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	90	60-139
Benzene	mg/kg (ppm)	2.5	95	68-114
Trichloroethene	mg/kg (ppm)	2.5	96	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	103	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	96	72-130
Dibromomethane	mg/kg (ppm)	2.5	97	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	104	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	100	75-136
Toluene	mg/kg (ppm)	2.5	95	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	96	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	101	75-113
2-Hexanone	mg/kg (ppm)	12.5	109	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	101	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	94	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	93	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	98	74-132
Chlorobenzene	mg/kg (ppm)	2.5	97	76-111
Ethylbenzene	mg/kg (ppm)	2.5	97	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	92	69-135
m,p-Xylene	mg/kg (ppm)	5	98	78-122
o-Xylene	mg/kg (ppm)	2.5	96	77-124
Styrene	mg/kg (ppm)	2.5	99	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	97	76-127
Bromoform	mg/kg (ppm)	2.5	95	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	98	74-124
Bromobenzene	mg/kg (ppm)	2.5	98	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	94	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	101	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	99	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	98	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	97	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	97	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	97	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	98	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	98	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	94	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	96	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	95	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	96	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	96	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	95	50-153
Naphthalene	mg/kg (ppm)	2.5	97	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	96	63-138

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

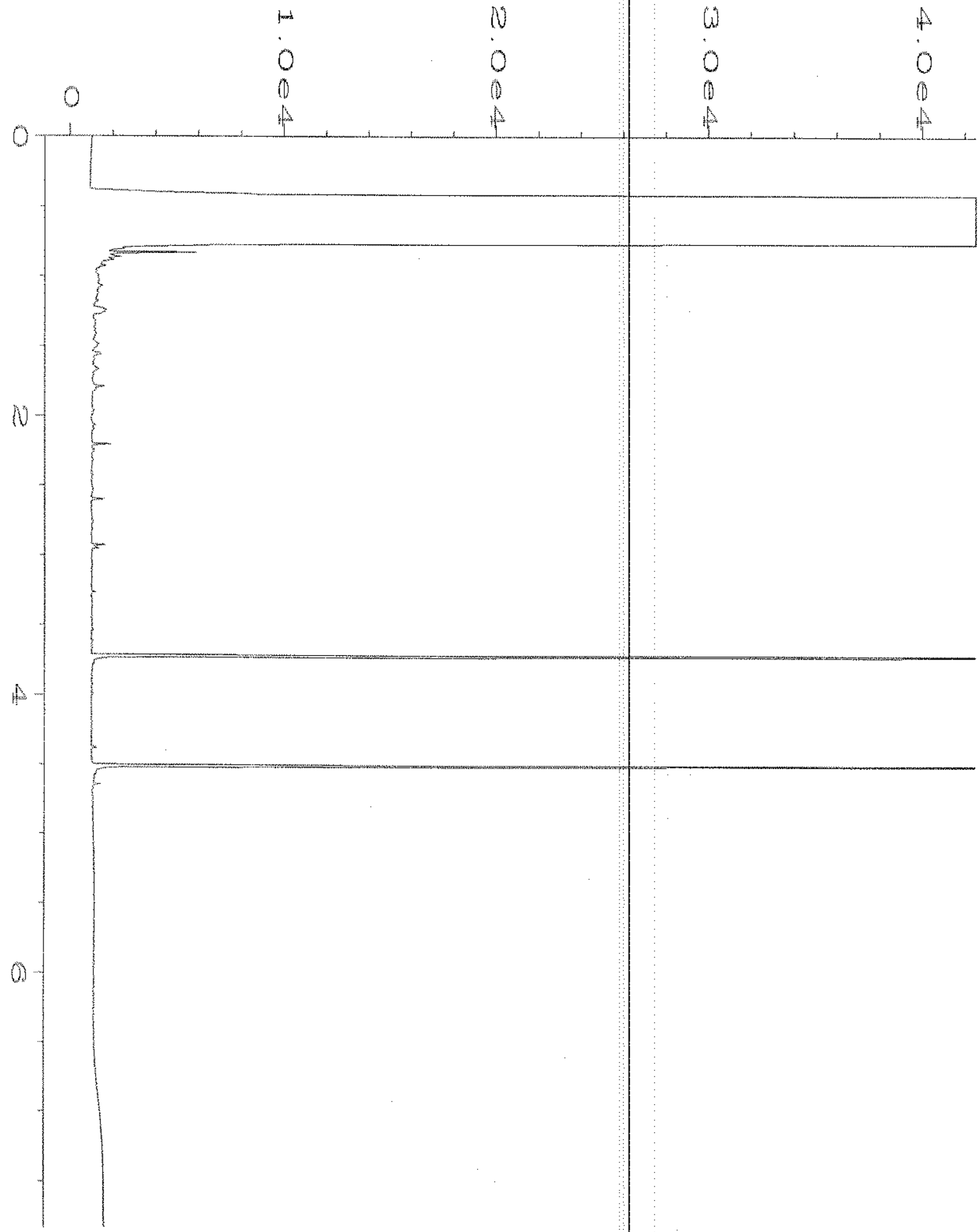
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



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Data File Name    : C:\HPCHEM\4\DATA\09-18-17\014F0301.D
Operator          : mwdl                            Page Number       : 1
Instrument        : GC#4                            Vial Number       : 14
Sample Name       : 709262-01                       Injection Number  : 1
Run Time Bar Code:                                  Sequence Line     : 3
Acquired on       : 18 Sep 17   10:26 AM            Instrument Method: DX.MTH
Report Created on: 22 Sep 17   03:25 PM             Analysis Method   : DX.MTH
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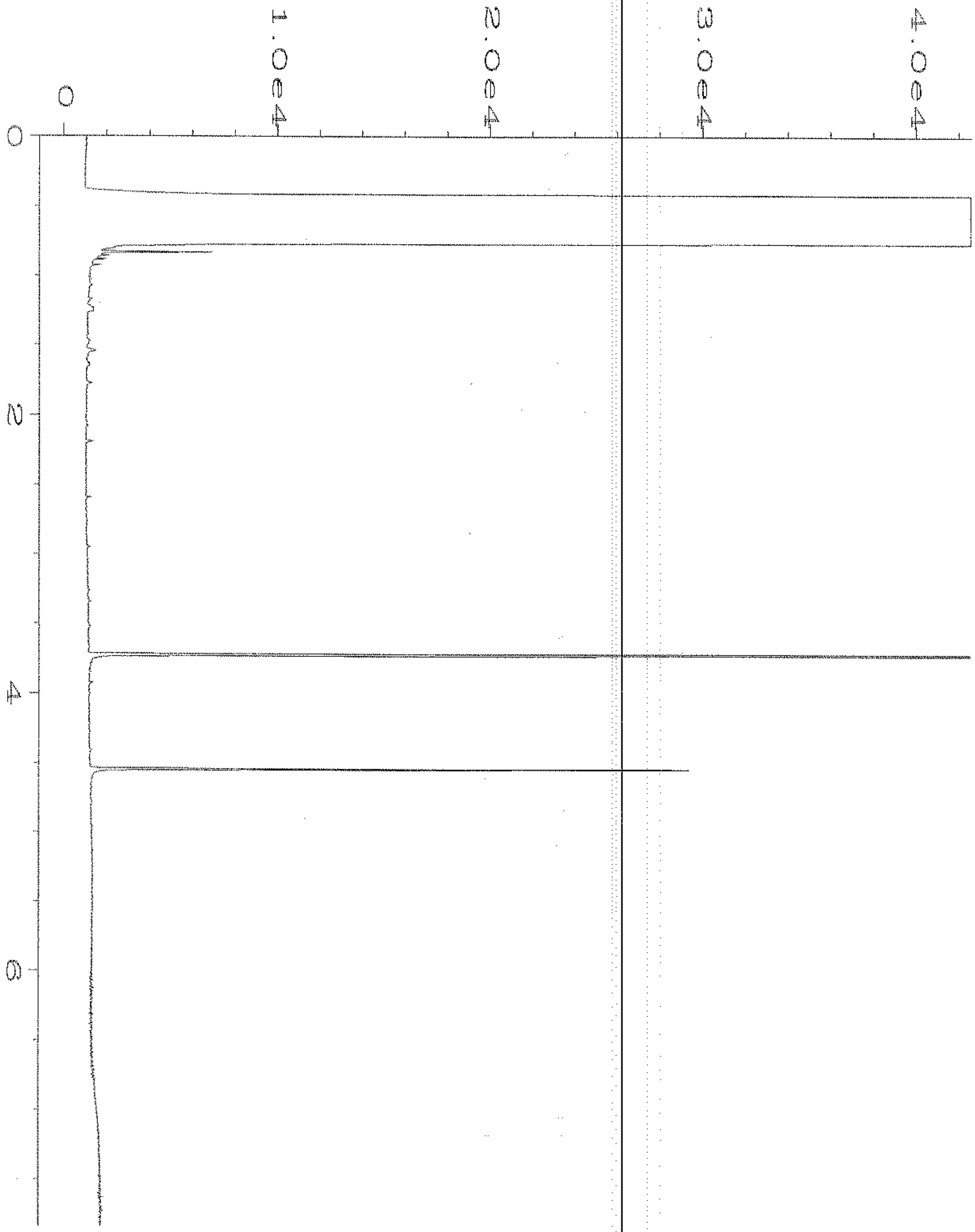

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Operator          : mwdl                        Page Number      : 1
Instrument        : GC#4                        Vial Number      : 6
Sample Name       : 07-2034 mb                  Injection Number : 1
Run Time Bar Code:                              Sequence Line    : 3
Acquired on       : 18 Sep 17  08:52 AM         Instrument Method: DX.MTH
Report Created on: 22 Sep 17  03:24 PM          Analysis Method  : DX.MTH
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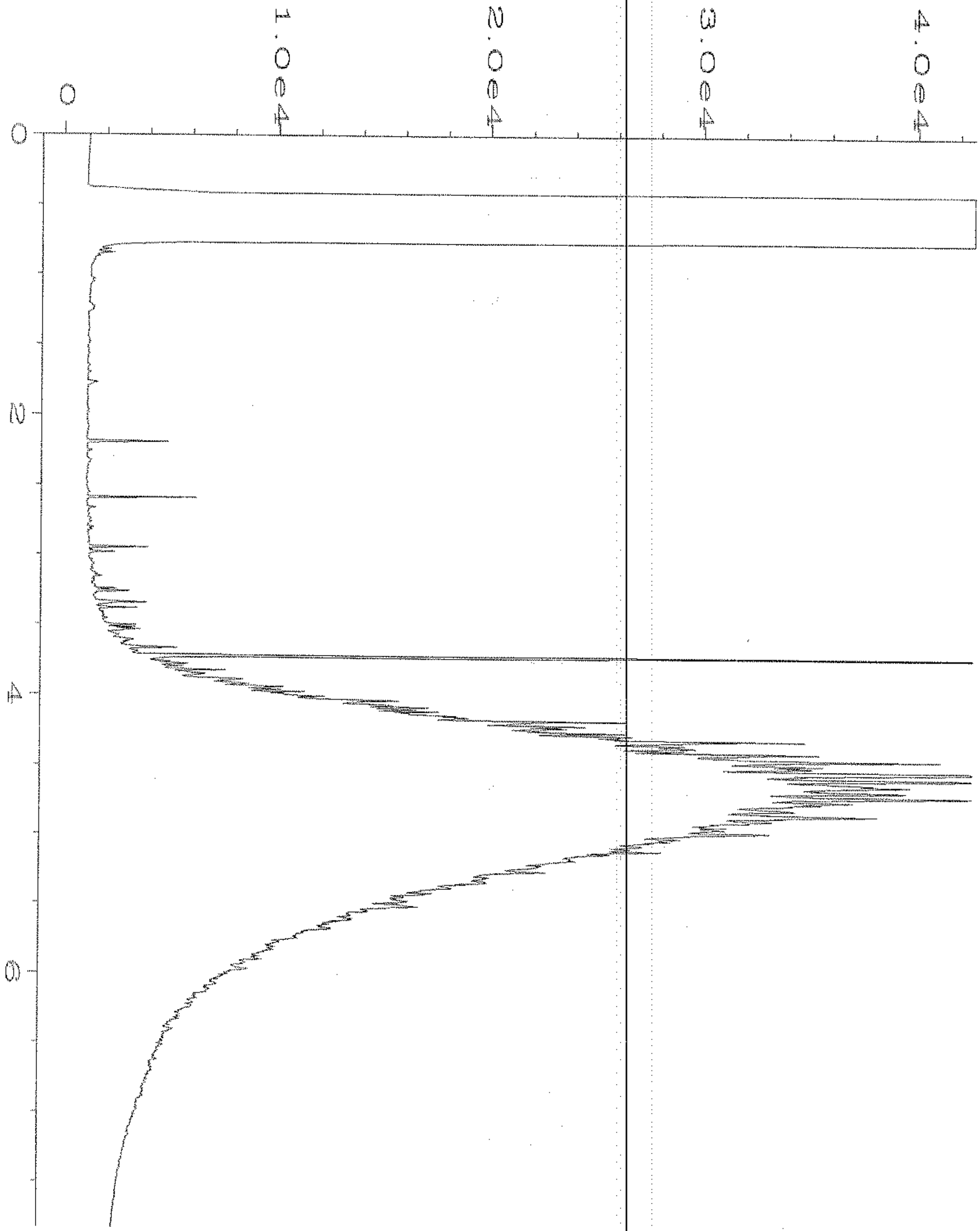
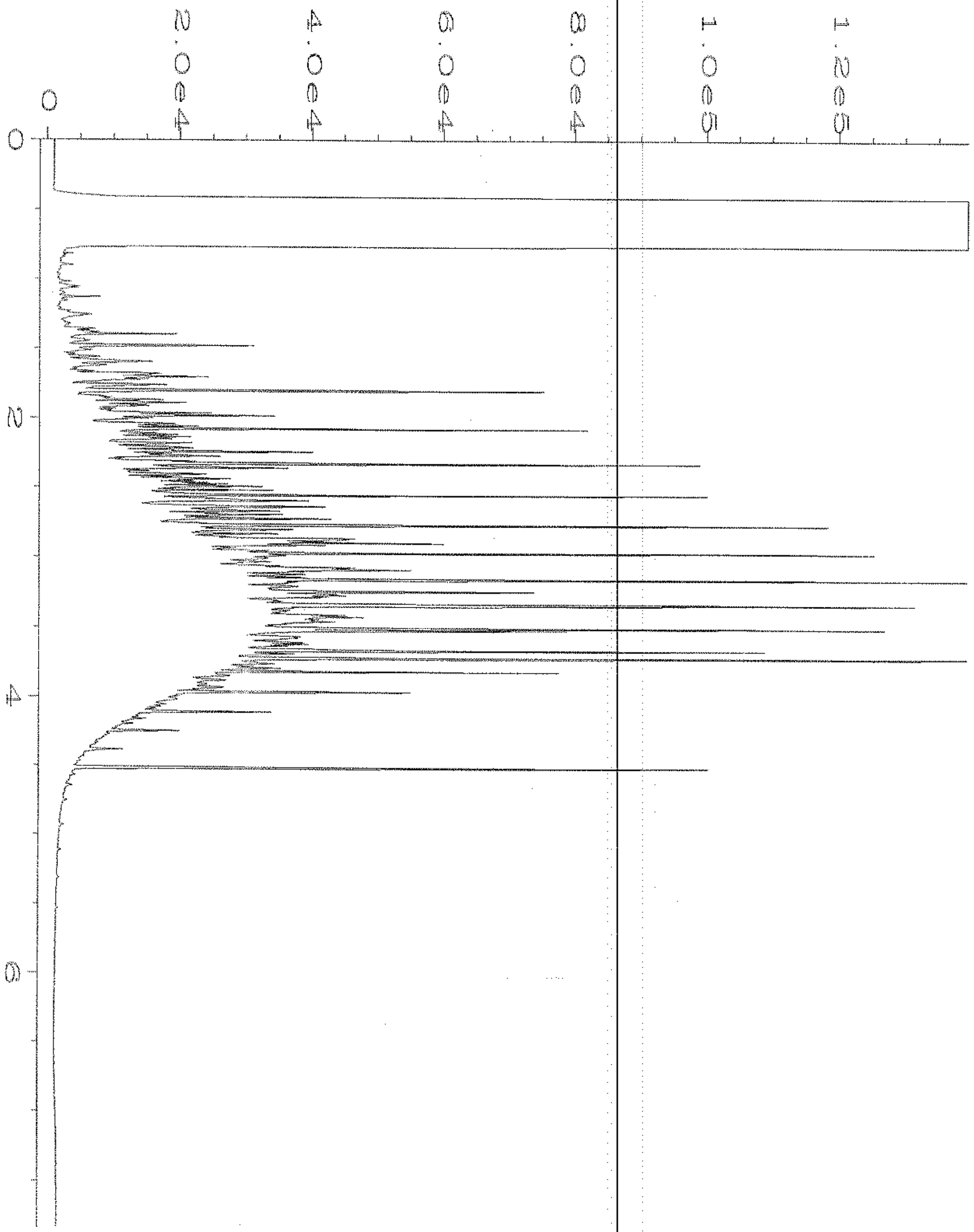


Data File Name   : C:\HPCHEM\4\DATA\09-18-17\002F0201.D
Operator   : mwdl
Instrument   : GC#4
Sample Name   : 500 MO 50-142B
Run Time Bar Code:
Acquired on   : 18 Sep 17   05:44 AM
Report Created on: 22 Sep 17   03:24 PM

Page Number   : 1
Vial Number   : 2
Injection Number : 1
Sequence Line   : 2
Instrument Method: DX.MTH
Analysis Method   : DX.MTH



Data File Name : C:\HPCHEM\4\DATA\09-18-17\003F0201.D
Operator : mwdl
Instrument : GC#4
Sample Name : 500 Dx 49-188E
Run Time Bar Code:
Acquired on : 18 Sep 17 06:05 AM
Report Created on: 22 Sep 17 03:24 PM

Page Number : 1
Vial Number : 3
Injection Number : 1
Sequence Line : 2
Instrument Method: DX.MTH
Analysis Method : DX.MTH

709262

SAMPLE CHAIN OF CUSTODY

ME 09/15/17

VS1/BI

Report To DREW Z. & TOM COLLIGAN
Company AVENUE 55
Address 600 UNIVERSITY ST. # 2305
City, State, ZIP SEATTLE, WA 98101
Phone 206-707-9696 Email DZABOROWSKI@AVENUE55.NET

SAMPLERS (*signature*)

PROJECT NAME	PO #
AVENUE 55	
REMARKS	INVOICE TO
	AVE. 55

Page # ____ of ____

TURNAROUND TIME
☐ Standard Turnaround
☐ RUSH ____
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other ____

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars NO	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	~~SPAH 8310~~ ~~SVOCs by 8270D~~	SPAH 8310 PAHs 8270D SIM	ARSENIC/LEA	CADMIUM			Notes
SP-28-9/14 B.31	01A-E	9/14	1:24	SOIL			X	X		X		X	X	X			

Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	DREW ZABOROWSKI	AVE. 55	9/14	1:24
Received by:	Nhan Phan	FeBI	9/15/17	15:30
Relinquished by:				
Received by:				

Date of Report: 09/13/17
Date Received: 09/12/17
Project: Avenue 55, F&BI 709185
Date Extracted: 09/13/17
Date Analyzed: 09/13/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 53-144)
SP-19 (9/8 B Roose) 709185-01	ND	ND	ND	79
SP-20 (9/8 H Roose) 709185-02	ND	ND	ND	77
Method Blank 07-2007 MB	ND	ND	ND	77

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-19 (9/8 B Roose)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709185
Date Extracted:	09/13/17	Lab ID:	709185-01
Date Analyzed:	09/13/17	Data File:	091317.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

DRAFT

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-20 (9/8 H Roose)	Client:	Floyd-Snider
Date Received:	09/12/17	Project:	Avenue 55, F&BI 709185
Date Extracted:	09/13/17	Lab ID:	709185-02
Date Analyzed:	09/13/17	Data File:	091318.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

DRAFT

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Avenue 55, F&BI 709185
Date Extracted:	09/13/17	Lab ID:	07-1919 mb
Date Analyzed:	09/13/17	Data File:	091308.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

709185

SAMPLE CHAIN OF CUSTODY

ME 09-12-17 VS1/ B01

Page # [redacted] of

Report To DREW Z. & TOM COLLIGAN
Company AVENUE 55
Address 600 UNIVERSITY ST. # 2305
City, State, ZIP SEATTLE, WA 98101
Phone 206-707-9696 Email DZABOROWSKI@AVENUE55.NET

SAMPLERS (*signature*)

PROJECT NAME	PO #
AVENUE 55	
REMARKS	INVOICE TO
	AVE. 55

TURNAROUND TIME
☐ Standard Turnaround
☒ RUSH 24 HR
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	S ~~PAHs 8270D SIM~~					Notes
SP-19 (9/8-B-ROOSE)	01 A-E	9/8	2:57	SOIL		X	X	X	X	X							
SP-20 (9/8 H-ROOSE)	02 I	9/8	3:05	SOIL		X	X	X	X	X							
																	Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	DREW ZABOROWSKI	AVE. 55	9/12	3:08
Received by:	VINH	FBI	9/12	3:08 PM
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 28, 2017

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on August 22, 2017 from the Taylor WA, F&BI 708403 project. There are 19 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Drew Zabrowski
FDS0828R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 22, 2017 by Friedman & Bruya, Inc. from the Floyd-Snider Taylor WA, F&BI 708403 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
708403 -01	SP-6
708403 -02	SP-7
708403 -03	SP-8

All quality control requirements were acceptable.

Date of Report: 08/28/17
Date Received: 08/22/17
Project: Taylor WA, F&BI 708403
Date Extracted: 08/23/17
Date Analyzed: 08/23/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
SP-6 708403-01	<50	<250	106
SP-7 708403-02	<50	<250	102
SP-8 708403-03	<50	<250	101
Method Blank 07-1826 MB	<50	<250	118

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-6	Client:	Floyd-Snider
Date Received:	08/22/17	Project:	Taylor WA, F&BI 708403
Date Extracted:	08/23/17	Lab ID:	708403-01
Date Analyzed:	08/23/17	Data File:	708403-01.038
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.89
Lead	1.80

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-7	Client:	Floyd-Snider
Date Received:	08/22/17	Project:	Taylor WA, F&BI 708403
Date Extracted:	08/23/17	Lab ID:	708403-02
Date Analyzed:	08/23/17	Data File:	708403-02.039
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.00
Lead	2.08

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-8	Client:	Floyd-Snider
Date Received:	08/22/17	Project:	Taylor WA, F&BI 708403
Date Extracted:	08/23/17	Lab ID:	708403-03
Date Analyzed:	08/23/17	Data File:	708403-03.040
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.85
Lead	2.19

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	Taylor WA, F&BI 708403
Date Extracted:	08/23/17	Lab ID:	I7-449 mb
Date Analyzed:	08/23/17	Data File:	I7-449 mb.036
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-6	Client:	Floyd-Snider
Date Received:	08/22/17	Project:	Taylor WA, F&BI 708403
Date Extracted:	08/23/17	Lab ID:	708403-01
Date Analyzed:	08/23/17	Data File:	082308.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-7	Client:	Floyd-Snider
Date Received:	08/22/17	Project:	Taylor WA, F&BI 708403
Date Extracted:	08/23/17	Lab ID:	708403-02
Date Analyzed:	08/23/17	Data File:	082309.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	102	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-8	Client:	Floyd-Snider
Date Received:	08/22/17	Project:	Taylor WA, F&BI 708403
Date Extracted:	08/23/17	Lab ID:	708403-03
Date Analyzed:	08/23/17	Data File:	082310.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	102	55	145
4-Bromofluorobenzene	103	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Taylor WA, F&BI 708403
Date Extracted:	08/23/17	Lab ID:	07-1803 mb
Date Analyzed:	08/23/17	Data File:	082306.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	102	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-6	Client:	Floyd-Snider
Date Received:	08/22/17	Project:	Taylor WA, F&BI 708403
Date Extracted:	08/23/17	Lab ID:	708403-01 1/5
Date Analyzed:	08/23/17	Data File:	082305.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	88	31	163
Benzo(a)anthracene-d12	97	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-7	Client:	Floyd-Snider
Date Received:	08/22/17	Project:	Taylor WA, F&BI 708403
Date Extracted:	08/23/17	Lab ID:	708403-02 1/5
Date Analyzed:	08/23/17	Data File:	082306.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	92	31	163
Benzo(a)anthracene-d12	97	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-8	Client:	Floyd-Snider
Date Received:	08/22/17	Project:	Taylor WA, F&BI 708403
Date Extracted:	08/23/17	Lab ID:	708403-03 1/5
Date Analyzed:	08/23/17	Data File:	082307.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	31	163
Benzo(a)anthracene-d12	101	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Taylor WA, F&BI 708403
Date Extracted:	08/23/17	Lab ID:	07-1825 mb 1/5
Date Analyzed:	08/23/17	Data File:	082304.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	76	31	163
Benzo(a)anthracene-d12	81	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Date of Report: 08/28/17
Date Received: 08/22/17
Project: Taylor WA, F&BI 708403

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 708403-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	90	90	73-135	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	92	74-139

Date of Report: 08/28/17
Date Received: 08/22/17
Project: Taylor WA, F&BI 708403

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020A

Laboratory Code: 708330-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	5.34	110	110	75-125	0
Lead	mg/kg (ppm)	50	1.68	104	103	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	105	80-120
Lead	mg/kg (ppm)	50	107	80-120

Date of Report: 08/28/17
Date Received: 08/22/17
Project: Taylor WA, F&BI 708403

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 708401-20 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	47	47	10-138	0
Chloroethane	mg/kg (ppm)	2.5	<0.5	59	58	10-176	2
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	69	70	10-160	1
Methylene chloride	mg/kg (ppm)	2.5	<0.5	85	83	10-156	2
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	75	75	14-137	0
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	83	82	19-140	1
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	84	84	25-135	0
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	85	83	12-160	2
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	84	82	10-156	2
Trichloroethene	mg/kg (ppm)	2.5	<0.02	84	83	21-139	1
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	79	80	20-133	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2.5	75	22-139
Chloroethane	mg/kg (ppm)	2.5	83	10-163
1,1-Dichloroethene	mg/kg (ppm)	2.5	96	47-128
Methylene chloride	mg/kg (ppm)	2.5	105	42-132
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	101	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	103	68-115
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	103	72-113
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	102	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	106	62-131
Trichloroethene	mg/kg (ppm)	2.5	103	64-117
Tetrachloroethene	mg/kg (ppm)	2.5	98	72-114

Date of Report: 08/28/17
Date Received: 08/22/17
Project: Taylor WA, F&BI 708403

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270D SIM

Laboratory Code: 708403-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	98	100	23-144	2
Chrysene	mg/kg (ppm)	0.17	<0.01	95	95	32-149	0
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	94	98	23-176	4
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	100	97	42-139	3
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	89	89	21-163	0
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	84	81	23-170	4
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	82	78	31-146	5

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benz(a)anthracene	mg/kg (ppm)	0.17	101	51-115
Chrysene	mg/kg (ppm)	0.17	100	55-129
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	102	56-123
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	100	54-131
Benzo(a)pyrene	mg/kg (ppm)	0.17	88	51-118
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	88	49-148
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	89	50-141

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

708403

SAMPLE CHAIN OF CUSTODY

ME 8-22-17

A·BI1/VS1

Report To Tom Colligan
Company FLOYD SNIDER
Address Seattle WA
City, State, ZIP
Phone Email

SAMPLERS (signature) Tom Colligan	
PROJECT NAME TAYLOR WA	PO #
REMARKS Sampled at FLOYDSNIDER LAB	INVOICE TO Drew Lab. AVE 55

Page # 1 of 1

TURNAROUND TIME
☐ Standard Turnaround
☒ RUSH 24-hr
Rush charges authorized by: TC

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Archive Samples
☐ Other

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	cPAH 8310 ~~PAHs 8270D SIM~~	Arsenic, Lead				Notes
SP-6	01A-E	8/22	1:15	Soil	5		+			x		x	+				
SP-7	02	"	1:16	"	5		x			x		x	+				
SP-8	03	"	1:17	"	5		x			x		x	+				

Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Spencer Holcomb	Avenue 55	08/22/2017	5:10pm
Received by:	Eric Young	F&B	8/22/17	1710
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 23, 2017

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on August 16, 2017 from the Taylor WA, PO Ave 55-Taylor Way, F&BI 708316 project. There are 13 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: dzaborowski@avenue55.net
FDS0823R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 16, 2017 by Friedman & Bruya, Inc. from the Floyd-Snider Taylor WA, PO Ave 55-Taylor Way, F&BI 708316 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
708316 -01	SP-5

All quality control requirements were acceptable.

Date of Report: 08/23/17
Date Received: 08/16/17
Project: Taylor WA, PO Ave 55-Taylor Way, F&BI 708316
Date Extracted: 08/17/17
Date Analyzed: 08/17/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 53-144)
SP-5 708316-01	<50	<250	102
Method Blank 07-1786 MB	<50	<250	90

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-5	Client:	Floyd-Snider
Date Received:	08/16/17	Project:	Taylor WA, PO Ave 55-Taylor Way
Date Extracted:	08/17/17	Lab ID:	708316-01
Date Analyzed:	08/17/17	Data File:	708316-01.049
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.47
Lead	1.98

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	Taylor WA, PO Ave 55-Taylor Way
Date Extracted:	08/17/17	Lab ID:	I7-437 mb2
Date Analyzed:	08/17/17	Data File:	I7-437 mb2.048
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-5	Client:	Floyd-Snider
Date Received:	08/16/17	Project:	Taylor WA, PO Ave 55-Taylor Way
Date Extracted:	08/17/17	Lab ID:	708316-01 1/5
Date Analyzed:	08/17/17	Data File:	081705.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	83	31	163
Benzo(a)anthracene-d12	84	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Taylor WA, PO Ave 55-Taylor Way
Date Extracted:	08/17/17	Lab ID:	07-1785 mb 1/5
Date Analyzed:	08/17/17	Data File:	081704.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	84	31	163
Benzo(a)anthracene-d12	85	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-5	Client:	Floyd-Snider
Date Received:	08/16/17	Project:	Taylor WA, PO Ave 55-Taylor Way
Date Extracted:	08/18/17	Lab ID:	708316-01
Date Analyzed:	08/18/17	Data File:	081812.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Taylor WA, PO Ave 55-Taylor Way
Date Extracted:	08/18/17	Lab ID:	07-1791 mb
Date Analyzed:	08/18/17	Data File:	081806.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Date of Report: 08/23/17
Date Received: 08/16/17
Project: Taylor WA, PO Ave 55-Taylor Way, F&BI 708316

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 708316-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	104	102	64-133	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	102	58-147

Date of Report: 08/23/17
Date Received: 08/16/17
Project: Taylor WA, PO Ave 55-Taylor Way, F&BI 708316

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020A

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	98	96	80-120	2
Lead	mg/kg (ppm)	50	97	95	80-120	2

Date of Report: 08/23/17
Date Received: 08/16/17
Project: Taylor WA, PO Ave 55-Taylor Way, F&BI 708316

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 708337-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	50	52	10-138	4
Chloroethane	mg/kg (ppm)	2.5	<0.5	62	65	10-176	5
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	71	77	10-160	8
Methylene chloride	mg/kg (ppm)	2.5	<0.5	89	96	10-156	8
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	77	82	14-137	6
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	84	90	19-140	7
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	85	89	25-135	5
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	85	90	12-160	6
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	85	90	10-156	6
Trichloroethene	mg/kg (ppm)	2.5	<0.02	83	89	21-139	7
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	82	86	20-133	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2.5	74	22-139
Chloroethane	mg/kg (ppm)	2.5	85	10-163
1,1-Dichloroethene	mg/kg (ppm)	2.5	99	47-128
Methylene chloride	mg/kg (ppm)	2.5	112	42-132
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	101	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	105	68-115
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	105	72-113
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	103	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	107	62-131
Trichloroethene	mg/kg (ppm)	2.5	103	64-117
Tetrachloroethene	mg/kg (ppm)	2.5	101	72-114

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270D SIM

Laboratory Code: 708316-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	95	98	23-144	3
Chrysene	mg/kg (ppm)	0.17	<0.01	97	98	32-149	1
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	105	102	23-176	3
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	109	103	42-139	6
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	84	85	21-163	1
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	72	85	23-170	17
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	77	91	31-146	17

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benz(a)anthracene	mg/kg (ppm)	0.17	96	51-115
Chrysene	mg/kg (ppm)	0.17	100	55-129
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	101	56-123
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	108	54-131
Benzo(a)pyrene	mg/kg (ppm)	0.17	83	51-118
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	77	49-148
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	83	50-141

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

708316

SAMPLE CHAIN OF CUSTODY

ME 08/16/17 ~~AED~~/ BT

Send Report To Tom Colliga

Company FLOYDSNIDER

Address

City, State, ZIP

Phone # Fax #

SAMPLERS (*signature*) Tom Colla

PROJECT NAME/NO.	PO#
TAYLOR WA	Ave 55 - Taylor Way

REMARKS

Page # of

TURNAROUND TIME
☐ Standard (2 Weeks)
☒ RUSH 48-hr
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

						ANALYSES REQUESTED												
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	CPAH	Arsenic, Lead					Notes
SP-5	9A-D	8-16	11:49	Soil	4	X			X			X	X					

Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Tom Colligan	FloydSnider	8-16-17	6:20 pm
Received by:	Joe Shimmer	FBI	↓	↓
Relinquished by:				
Received by:				

FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 29, 2017

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on August 23, 2017 from the Taylor Way, F&BI 708432 project. There are 25 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Drew Zabrowski
FDS0829R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 23, 2017 by Friedman & Bruya, Inc. from the Floyd-Snider Taylor Way, F&BI 708432 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
708432 -01	SP-9
708432 -02	SP-10
708432 -03	SP-11
708432 -04	SP-12
708432 -05	SP-13

All quality control requirements were acceptable.

Date of Report: 08/29/17
Date Received: 08/23/17
Project: Taylor Way, F&BI 708432
Date Extracted: 08/24/17
Date Analyzed: 08/24/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 53-144)
SP-9 708432-01	<50	<250	92
SP-10 708432-02	<50	<250	90
SP-11 708432-03	<50	<250	92
SP-12 708432-04	<50	<250	106
SP-13 708432-05	<50	<250	102
Method Blank 07-1829 MB2	<50	<250	93

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-9	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-01
Date Analyzed:	08/24/17	Data File:	708432-01.120
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.26
Lead	1.43

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-10	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-02
Date Analyzed:	08/24/17	Data File:	708432-02.043
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.27
Lead	1.27

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-11	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-03
Date Analyzed:	08/24/17	Data File:	708432-03.045
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.34
Lead	1.32

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-12	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-04
Date Analyzed:	08/24/17	Data File:	708432-04.046
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.31
Lead	1.38

Analysis For Total Metals By EPA Method 6020A

Client ID:	SP-13	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-05
Date Analyzed:	08/24/17	Data File:	708432-05.047
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.55
Lead	1.44

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	I7-451 mb
Date Analyzed:	08/24/17	Data File:	I7-451 mb.109
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-9	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-01 1/5
Date Analyzed:	08/24/17	Data File:	082405.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	31	163
Benzo(a)anthracene-d12	98	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-10	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-02 1/5
Date Analyzed:	08/24/17	Data File:	082406.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	31	163
Benzo(a)anthracene-d12	95	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-11	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-03 1/5
Date Analyzed:	08/24/17	Data File:	082407.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	88	31	163
Benzo(a)anthracene-d12	92	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-12	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-04 1/5
Date Analyzed:	08/24/17	Data File:	082408.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	90	31	163
Benzo(a)anthracene-d12	97	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SP-13	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-05 1/5
Date Analyzed:	08/24/17	Data File:	082409.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	85	31	163
Benzo(a)anthracene-d12	94	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	07-1825 mb2 1/5
Date Analyzed:	08/24/17	Data File:	082403.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	31	163
Benzo(a)anthracene-d12	91	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-9	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-01
Date Analyzed:	08/24/17	Data File:	082426.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-10	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-02
Date Analyzed:	08/24/17	Data File:	082427.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-11	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-03
Date Analyzed:	08/24/17	Data File:	082428.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-12	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-04
Date Analyzed:	08/24/17	Data File:	082429.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	102	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SP-13	Client:	Floyd-Snider
Date Received:	08/23/17	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	708432-05
Date Analyzed:	08/24/17	Data File:	082430.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Taylor Way, F&BI 708432
Date Extracted:	08/24/17	Lab ID:	07-1805 mb
Date Analyzed:	08/24/17	Data File:	082407.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	102	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Date of Report: 08/29/17
Date Received: 08/23/17
Project: Taylor Way, F&BI 708432

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 708419-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	3,600	57 b	93 b	73-135	48 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	88	74-139

Date of Report: 08/29/17
Date Received: 08/23/17
Project: Taylor Way, F&BI 708432

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020A

Laboratory Code: 708432-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	1.13	102	102	75-125	0
Lead	mg/kg (ppm)	50	1.28	100	99	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	103	80-120
Lead	mg/kg (ppm)	50	102	80-120

Date of Report: 08/29/17
Date Received: 08/23/17
Project: Taylor Way, F&BI 708432

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270D SIM

Laboratory Code: 708403-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	98	100	23-144	2
Chrysene	mg/kg (ppm)	0.17	<0.01	95	95	32-149	0
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	94	98	23-176	4
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	100	97	42-139	3
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	89	89	21-163	0
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	84	81	23-170	4
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	82	78	31-146	5

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benz(a)anthracene	mg/kg (ppm)	0.17	101	51-115
Chrysene	mg/kg (ppm)	0.17	100	55-129
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	102	56-123
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	100	54-131
Benzo(a)pyrene	mg/kg (ppm)	0.17	88	51-118
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	88	49-148
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	89	50-141

Date of Report: 08/29/17
Date Received: 08/23/17
Project: Taylor Way, F&BI 708432

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 708432-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	55	54	10-138	2
Chloroethane	mg/kg (ppm)	2.5	<0.5	63	61	10-176	3
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	76	76	10-160	0
Methylene chloride	mg/kg (ppm)	2.5	<0.5	94	92	10-156	2
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	83	83	14-137	0
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	90	89	19-140	1
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	90	90	25-135	0
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	89	89	12-160	0
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	90	88	10-156	2
Trichloroethene	mg/kg (ppm)	2.5	<0.02	88	87	21-139	1
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	86	83	20-133	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2.5	81	22-139
Chloroethane	mg/kg (ppm)	2.5	87	10-163
1,1-Dichloroethene	mg/kg (ppm)	2.5	103	47-128
Methylene chloride	mg/kg (ppm)	2.5	111	42-132
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	105	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	110	68-115
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	108	72-113
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	106	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	110	62-131
Trichloroethene	mg/kg (ppm)	2.5	106	64-117
Tetrachloroethene	mg/kg (ppm)	2.5	103	72-114

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

708432

SAMPLE CHAIN OF CUSTODY

ME 08-23-17

A~~03~~ AI1 / VS1

Report To Tom Colligan
Company Floyd / Snider
Address 601 Union St STE 600
City, State, ZIP Seattle, WA 98101
Phone 206-292-2078 Email Tom.colligan@FloydSnider.com

SAMPLERS (*signature*)

PROJECT NAME	PO #
Taylor Way	

REMARKS	INVOICE TO
	Drew Zaborowski Avenue 55

~~Page #~~ ________ of ________

TURNAROUND TIME
☐ Standard Turnaround
☒ RUSH 48
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	SPAH 8310 ~~PAHs 8270D SIM~~	Arsenic / lead				Notes
SP-9	01 A-E	8/23/17	1:26	Soil	5		X			X		X	X				
SP-10	02	"	1:22	"	5		X			X		X	X				
SP-11	03	"	1:24	"	5		X			X		X	X				
SP-12	04	"	1:25	"	5		X			X		X	X				
SP-13	05	"	1:27	"	5		X			X		X	X				

Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Spencer Holcomb	Avenue 55	8/23/2017	3:20pm
Received by:	DD VO	FOBI	8-23-17	3:20
Relinquished by:				
Received by:				

SPECTRA Laboratories ...Where experience matters

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

12/01/2017

P.O.#: 11714
Project: Portside 55 North
Client ID: 11-30 Tank 2
Sample Matrix: Wastewater
Date Sampled: 11/30/2017
Date Received: 11/30/2017
Spectra Project: 2017110867
Spectra Number: 1
Rush

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

Analyte	Result	Units	Method	Analyte	Result	Units	Method
HEM-SGT in Water	<5.0	mg/L	EPA 1664-B	1,2-Dichloroethane	<1	µg/L	EPA 624
Arsenic	< 0.05	mg/L	EPA 200.7	1,2-Dichloropropane	<1	µg/L	EPA 624
Cadmium	< 0.003	mg/L	EPA 200.7	1,3-Dichlorobenzene	<1	µg/L	EPA 624
Chromium	0.010	mg/L	EPA 200.7	1,4-Dichlorobenzene	<1	µg/L	EPA 624
Copper	0.015	mg/L	EPA 200.7	2-Chloroethylvinyl Ether	<10	µg/L	EPA 624
Lead	< 0.04	mg/L	EPA 200.7	Acrolein	<10	µg/L	EPA 624
Molybdenum	< 0.01	mg/L	EPA 200.7	Acrylonitrile	<10	µg/L	EPA 624
Nickel	0.031	mg/L	EPA 200.7	Benzene	<1	µg/L	EPA 624
Selenium	< 0.05	mg/L	EPA 200.7	Bromodichloromethane	<1	µg/L	EPA 624
Silver	< 0.007	mg/L	EPA 200.7	Bromoform	<1	µg/L	EPA 624
Zinc	0.090	mg/L	EPA 200.7	Carbon Tetrachloride	<1	µg/L	EPA 624
Mercury	<0.0005	mg/L	EPA 245.1	Chlorobenzene	<1	µg/L	EPA 624
1,1,1-Trichloroethane	<1	µg/L	EPA 624	Chlorodibromomethane	<1	µg/L	EPA 624
1,1,2,2-Tetrachloroethane	<1	µg/L	EPA 624	Chloroethane	<1	µg/L	EPA 624
1,1,2-Trichloroethane	<1	µg/L	EPA 624	Chloroform	<1	µg/L	EPA 624
1,1-Dichloroethane	<1	µg/L	EPA 624	Chloromethane	<1	µg/L	EPA 624
1,1-Dichloroethene	<1	µg/L	EPA 624	Ethylbenzene	<1	µg/L	EPA 624
1,2,4-Trichlorobenzene	<1	µg/L	EPA 624	Hexachlorobutadiene	<1	µg/L	EPA 624
1,2-Dichlorobenzene	<1	µg/L	EPA 624	Methyl bromide	<1	µg/L	EPA 624

*Surrogate was above limits due to a co-elution in the chromatogram. Since all results are below the reporting limit the results reported are not affected.

Surrogate	Recovery	Method	Surrogate	Recovery	Method
Dibromofluoromethane	120	EPA 624	2-Fluorobiphenyl	64	EPA 625
1,2-Dichloroethane-d4	130	EPA 624	2,4,6-Tribromophenol	79	EPA 625
Toluene-d8	95	EPA 624	p-Terphenyl-d14	73	EPA 625
4-Bromofluorobenzene	192*	EPA 624			
2-Fluorophenol	63	EPA 625			
Phenol-d6	66	EPA 625			
Nitrobenzene-d5	65	EPA 625			

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager
a14exsur/mkw

12/01/2017

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

P.O.#: 11714
Project: Portside 55 North
Client ID: 11-30 Tank 2
Sample Matrix: Wastewater
Date Sampled: 11/30/2017
Date Received: 11/30/2017
Spectra Project: 2017110867
Spectra Number: 1
Rush

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Methylene chloride	<5	µg/L	EPA 624	2,4-Dinitrotoluene	<2.5	µg/L	EPA 625
Naphthalene	<1	µg/L	EPA 624	2,6-Dinitrotoluene	<2.5	µg/L	EPA 625
Tetrachloroethene	<1	µg/L	EPA 624	2-Chloronaphthalene	<2.5	µg/L	EPA 625
Toluene	<1	µg/L	EPA 624	2-Chlorophenol	<2.5	µg/L	EPA 625
Total Xylenes	<2	µg/L	EPA 624	2-Nitrophenol	<2.5	µg/L	EPA 625
Trichloroethene	<1	µg/L	EPA 624	3,3-Dichlorobenzidine	<20	µg/L	EPA 625
Vinyl chloride	<1	µg/L	EPA 624	4,6-Dinitro-2-Methylphenol	<10	µg/L	EPA 625
cis-1,3-Dichloropropene	<1	µg/L	EPA 624	4-Bromophenyl-phenylether	<2.5	µg/L	EPA 625
trans-1,2-Dichloroethene	<1	µg/L	EPA 624	4-Chloro-3-Methylphenol	<2.5	µg/L	EPA 625
trans-1,3-Dichloropropene	<1	µg/L	EPA 624	4-Chlorophenyl-phenylether	<2.5	µg/L	EPA 625
1,2 diphenylhydrazine	<2.5	µg/L	EPA 625	4-Nitrophenol	<2.5	µg/L	EPA 625
1,2,4-Trichlorobenzene	<2.5	µg/L	EPA 625	Acenaphthene	<1.0	µg/L	EPA 625
1,2-Dichlorobenzene	<2.5	µg/L	EPA 625	Acenaphthylene	<1.0	µg/L	EPA 625
1,3-Dichlorobenzene	<2.5	µg/L	EPA 625	Anthracene	<1.0	µg/L	EPA 625
1,4-Dichlorobenzene	<2.5	µg/L	EPA 625	Benzidine	<20	µg/L	EPA 625
2,4,6-Trichlorophenol	<2.5	µg/L	EPA 625	Benzo(a)Anthracene	<1.0	µg/L	EPA 625
2,4-Dichlorophenol	<2.5	µg/L	EPA 625	Benzo(a)Pyrene	<1.0	µg/L	EPA 625
2,4-Dimethylphenol	<2.5	µg/L	EPA 625	Benzo(b)Fluoranthene	<1.0	µg/L	EPA 625
2,4-Dinitrophenol	<10	µg/L	EPA 625	Benzo(ghi)Perylene	<1.0	µg/L	EPA 625

*Surrogate was above limits due to a co-elution in the chromatogram. Since all results are below the reporting limit the results reported are not affected.

Surrogate	Recovery	Method
Dibromofluoromethane	120	EPA 624
1,2-Dichloroethane-d4	130	EPA 624
Toluene-d8	95	EPA 624
4-Bromofluorobenzene	192*	EPA 624
2-Fluorophenol	63	EPA 625
Phenol-d6	66	EPA 625
Nitrobenzene-d5	65	EPA 625

Surrogate	Recovery	Method
2-Fluorobiphenyl	64	EPA 625
2,4,6-Tribromophenol	79	EPA 625
p-Terphenyl-d14	73	EPA 625

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

a14exsur/mkw

12/01/2017

P.O.#: 11714
Project: Portside 55 North
Client ID: 11-30 Tank 2
Sample Matrix: Wastewater
Date Sampled: 11/30/2017
Date Received: 11/30/2017
Spectra Project: 2017110867
Spectra Number: 1
Rush

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

Analyte	Result	Units	Method
Benzo(k)Fluoranthene	<1.0	µg/L	EPA 625
Bis(2-Chloroethyl)Ether	<2.5	µg/L	EPA 625
Butylbenzylphthalate	<2.5	µg/L	EPA 625
Chrysene	<2.5	µg/L	EPA 625
Di-n-Butylphthalate	26.2	µg/L	EPA 625
Di-n-Octyl Phthalate	<2.5	µg/L	EPA 625
Dibenzo(a,h)Anthracene	<2.5	µg/L	EPA 625
Diethylphthalate	<2.5	µg/L	EPA 625
Dimethyl Phthalate	<2.5	µg/L	EPA 625
Fluoranthene	<1.0	µg/L	EPA 625
Fluorene	<1.0	µg/L	EPA 625
Hexachlorobenzene	<2.5	µg/L	EPA 625
Hexachlorobutadiene	<2.5	µg/L	EPA 625
Hexachlorocyclopentadiene	<2.5	µg/L	EPA 625
Hexachloroethane	<2.5	µg/L	EPA 625
Indeno(1,2,3-cd)Pyrene	<1.0	µg/L	EPA 625
Isophorone	<2.5	µg/L	EPA 625
N-Nitroso-Di-n-Propylamine	<2.5	µg/L	EPA 625
N-Nitrosodiphenylamine	<2.5	µg/L	EPA 625

Analyte	Result	Units	Method
N-nitrosodimethylamine	<2.5	µg/L	EPA 625
Naphthalene	<1.0	µg/L	EPA 625
Nitrobenzene	<2.5	µg/L	EPA 625
Pentachlorophenol	<2.5	µg/L	EPA 625
Phenanthrene	<1.0	µg/L	EPA 625
Phenol	<2.5	µg/L	EPA 625
Pyrene	<1.0	µg/L	EPA 625
bis(2-Chloroethoxy)Methane	<2.5	µg/L	EPA 625
bis(2-Ethylhexyl)Phthalate	3.7	µg/L	EPA 625
bis(2-chloroisopropyl)Ether	<2.5	µg/L	EPA 625
Total Suspended Solids	260	mg/L	SM 2540 D
Total Cyanide	<0.01	mg/L	SM 4500-CN^- E
pH	7.04	pH	SM 4500-H+ B
Hexavalent Chromium	<0.01	mg/L	SW846 7196A

*Surrogate was above limits due to a co-elution in the chromatogram. Since all results are below the reporting limit the results reported are not affected.

Surrogate	Recovery	Method
Dibromofluoromethane	120	EPA 624
1,2-Dichloroethane-d4	130	EPA 624
Toluene-d8	95	EPA 624
4-Bromofluorobenzene	192*	EPA 624
2-Fluorophenol	63	EPA 625
Phenol-d6	66	EPA 625
Nitrobenzene-d5	65	EPA 625

Surrogate	Recovery	Method
2-Fluorobiphenyl	64	EPA 625
2,4,6-Tribromophenol	79	EPA 625
p-Terphenyl-d14	73	EPA 625

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

4exsur/mkw

SPECTRA Laboratories
2221 Ross Way, Tacoma, WA 98421
(253) 272-4850 Fax (253) 572-9838
www.spectra-lab.com info@spectra-lab.com

SPECIAL INSTRUCTIONS/COMMENTS:
Metals - Arsenic✓, cadmium✓, chromium✓, copper✓, lead✓, mercury✓, molybdenum✓, nickel✓, selenium✓, silver✓, zinc✓

*** Free Cyanide if Total Cyanide is above 0.2**

Return Samples Y ___ N ___ Page ______ of ______

CHAIN of CUSTODY

SPECTRA PROJECT # 20171084-7

STANDARD ☐ **RUSH** ☒

ADDRESS CHANGE ☐

CLIENT: Sierra Construction
ADDRESS:
PROJECT: Portside 55 North
CONTACT: Jason Nix
SAMPLED BY: JASON NIX
PHONE: 206-406-7979 FAX:
e-MAIL: X2 SEE BELOW Prefer FAX ☐ or e-MAIL ☐
PURCHASE ORDER #: 11714

	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS
1	11-30 TANK 2	11/30		WW	9
2					
3					
4					
5					
6					
7					
8					
9					
0					

	HYDROCARBONS								ORGANICS						METALS					OTHER											
	NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-Dx	1664 SGT-HEM (TPH)	1664 HEM (FOG)		8260/624 VOA	8260 CHLOR SOLVENTS	8270/625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	TTO - Both 624 & 625	TOTAL METALS RCRA 8	TOTAL METALS (SPECIFY)	Hexavalent Chromium	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	PH 9040/9045	TX/TOX 9076	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY) TSS	Total Cyanide	Free Cyanide				
1						X								X		X	X			X					X	X	X*				
2																															
3																															
4																															
5																															
6																															
7																															
8																															
9																															
0																															

EMAIL TO BOTH -
BRYANP@SIERRAIND.COM &
JASONN@
SIERRAIND.COM

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
RELINQUISHED BY		JASON A. NIX	SIERRA	11 30	3:02P
RECEIVED BY		Kaitlyn Reilly	Spectra	11-30-17	15:02
RELINQUISHED BY					
RECEIVED BY					

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2 % per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Analytical, LLC*

SPECTRA Laboratories ...*Where experience matters*

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12/01/2017

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

P.O.#: 11714
Project: Portside 55 North
Client ID: 11-30 Tank 3
Sample Matrix: Wastewater
Date Sampled: 11/30/2017
Date Received: 11/30/2017
Spectra Project: 2017110868
Spectra Number: 1
Rush

Analyte	Result	Units	Method	Analyte	Result	Units	Method
HEM-SGT in Water	<5.0	mg/L	EPA 1664-B	1,2-Dichloroethane	<1	µg/L	EPA 624
Arsenic	< 0.05	mg/L	EPA 200.7	1,2-Dichloropropane	<1	µg/L	EPA 624
Cadmium	< 0.003	mg/L	EPA 200.7	1,3-Dichlorobenzene	<1	µg/L	EPA 624
Chromium	0.050	mg/L	EPA 200.7	1,4-Dichlorobenzene	<1	µg/L	EPA 624
Copper	0.088	mg/L	EPA 200.7	2-Chloroethylvinyl Ether	<10	µg/L	EPA 624
Lead	< 0.04	mg/L	EPA 200.7	Acrolein	<10	µg/L	EPA 624
Molybdenum	< 0.01	mg/L	EPA 200.7	Acrylonitrile	<10	µg/L	EPA 624
Nickel	< 0.015	mg/L	EPA 200.7	Benzene	<1	µg/L	EPA 624
Selenium	< 0.05	mg/L	EPA 200.7	Bromodichloromethane	<1	µg/L	EPA 624
Silver	< 0.007	mg/L	EPA 200.7	Bromoform	<1	µg/L	EPA 624
Zinc	0.058	mg/L	EPA 200.7	Carbon Tetrachloride	<1	µg/L	EPA 624
Mercury	<0.0005	mg/L	EPA 245.1	Chlorobenzene	<1	µg/L	EPA 624
1,1,1-Trichloroethane	<1	µg/L	EPA 624	Chlorodibromomethane	<1	µg/L	EPA 624
1,1,2,2-Tetrachloroethane	<1	µg/L	EPA 624	Chloroethane	<1	µg/L	EPA 624
1,1,2-Trichloroethane	<1	µg/L	EPA 624	Chloroform	<1	µg/L	EPA 624
1,1-Dichloroethane	<1	µg/L	EPA 624	Chloromethane	<1	µg/L	EPA 624
1,1-Dichloroethene	<1	µg/L	EPA 624	Ethylbenzene	<1	µg/L	EPA 624
1,2,4-Trichlorobenzene	<1	µg/L	EPA 624	Hexachlorobutadiene	<1	µg/L	EPA 624
1,2-Dichlorobenzene	<1	µg/L	EPA 624	Methyl bromide	<1	µg/L	EPA 624

Surrogate	Recovery	Method
Dibromofluoromethane	122	EPA 624
1,2-Dichloroethane-d4	133	EPA 624
Toluene-d8	94	EPA 624
4-Bromofluorobenzene	101	EPA 624
2-Fluorophenol	62	EPA 625
Phenol-d6	63	EPA 625
Nitrobenzene-d5	63	EPA 625

Surrogate	Recovery	Method
2-Fluorobiphenyl	62	EPA 625
2,4,6-Tribromophenol	71	EPA 625
p-Terphenyl-d14	68	EPA 625

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

a14exsur/jjb

12/01/2017

P.O.#: 11714
Project: Portside 55 North
Client ID: 11-30 Tank 3
Sample Matrix: Wastewater
Date Sampled: 11/30/2017
Date Received: 11/30/2017
Spectra Project: 2017110868
Spectra Number: 1
Rush

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Methylene chloride	<5	µg/L	EPA 624	2,4-Dinitrotoluene	<2.5	µg/L	EPA 625
Naphthalene	<1	µg/L	EPA 624	2,6-Dinitrotoluene	<2.5	µg/L	EPA 625
Tetrachloroethene	<1	µg/L	EPA 624	2-Chloronaphthalene	<2.5	µg/L	EPA 625
Toluene	<1	µg/L	EPA 624	2-Chlorophenol	<2.5	µg/L	EPA 625
Total Xylenes	<2	µg/L	EPA 624	2-Nitrophenol	<2.5	µg/L	EPA 625
Trichloroethene	<1	µg/L	EPA 624	3,3-Dichlorobenzidine	<20	µg/L	EPA 625
Vinyl chloride	<1	µg/L	EPA 624	4,6-Dinitro-2-Methylphenol	<10	µg/L	EPA 625
cis-1,3-Dichloropropene	<1	µg/L	EPA 624	4-Bromophenyl-phenylether	<2.5	µg/L	EPA 625
trans-1,2-Dichloroethene	<1	µg/L	EPA 624	4-Chloro-3-Methylphenol	<2.5	µg/L	EPA 625
trans-1,3-Dichloropropene	<1	µg/L	EPA 624	4-Chlorophenyl-phenylether	<2.5	µg/L	EPA 625
1,2 diphenylhydrazine	<2.5	µg/L	EPA 625	4-Nitrophenol	<2.5	µg/L	EPA 625
1,2,4-Trichlorobenzene	<2.5	µg/L	EPA 625	Acenaphthene	<1.0	µg/L	EPA 625
1,2-Dichlorobenzene	<2.5	µg/L	EPA 625	Acenaphthylene	<1.0	µg/L	EPA 625
1,3-Dichlorobenzene	<2.5	µg/L	EPA 625	Anthracene	<1.0	µg/L	EPA 625
1,4-Dichlorobenzene	<2.5	µg/L	EPA 625	Benzidine	<20	µg/L	EPA 625
2,4,6-Trichlorophenol	<2.5	µg/L	EPA 625	Benzo(a)Anthracene	<1.0	µg/L	EPA 625
2,4-Dichlorophenol	<2.5	µg/L	EPA 625	Benzo(a)Pyrene	<1.0	µg/L	EPA 625
2,4-Dimethylphenol	<2.5	µg/L	EPA 625	Benzo(b)Fluoranthene	<1.0	µg/L	EPA 625
2,4-Dinitrophenol	<10	µg/L	EPA 625	Benzo(ghi)Perylene	<1.0	µg/L	EPA 625

Surrogate	Recovery	Method	Surrogate	Recovery	Method
Dibromofluoromethane	122	EPA 624	2-Fluorobiphenyl	62	EPA 625
1,2-Dichloroethane-d4	133	EPA 624	2,4,6-Tribromophenol	71	EPA 625
Toluene-d8	94	EPA 624	p-Terphenyl-d14	68	EPA 625
4-Bromofluorobenzene	101	EPA 624			
2-Fluorophenol	62	EPA 625			
Phenol-d6	63	EPA 625			
Nitrobenzene-d5	63	EPA 625			

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

a14exsur/jjb

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12/01/2017

P.O.#: 11714
Project: Portside 55 North
Client ID: 11-30 Tank 3
Sample Matrix: Wastewater
Date Sampled: 11/30/2017
Date Received: 11/30/2017
Spectra Project: 2017110868
Spectra Number: 1
Rush

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

Analyte	Result	Units	Method
Benzo(k)Fluoranthene	<1.0	µg/L	EPA 625
Bis(2-Chloroethyl)Ether	<2.5	µg/L	EPA 625
Butylbenzylphthalate	<2.5	µg/L	EPA 625
Chrysene	<1.0	µg/L	EPA 625
Di-n-Butylphthalate	<2.5	µg/L	EPA 625
Di-n-Octyl Phthalate	<2.5	µg/L	EPA 625
Dibenzo(a,h)Anthracene	<1.0	µg/L	EPA 625
Diethylphthalate	<2.5	µg/L	EPA 625
Dimethyl Phthalate	<2.5	µg/L	EPA 625
Fluoranthene	<1.0	µg/L	EPA 625
Fluorene	<1.0	µg/L	EPA 625
Hexachlorobenzene	<2.5	µg/L	EPA 625
Hexachlorobutadiene	<2.5	µg/L	EPA 625
Hexachlorocyclopentadiene	<2.5	µg/L	EPA 625
Hexachloroethane	<2.5	µg/L	EPA 625
Indeno(1,2,3-cd)Pyrene	<1.0	µg/L	EPA 625
Isophorone	<2.5	µg/L	EPA 625
N-Nitroso-Di-n-Propylamine	<2.5	µg/L	EPA 625
N-Nitrosodiphenylamine	<2.5	µg/L	EPA 625

Analyte	Result	Units	Method
N-nitrosodimethylamine	<2.5	µg/L	EPA 625
Naphthalene	<1.0	µg/L	EPA 625
Nitrobenzene	<2.5	µg/L	EPA 625
Pentachlorophenol	<2.5	µg/L	EPA 625
Phenanthrene	<1.0	µg/L	EPA 625
Phenol	<2.5	µg/L	EPA 625
Pyrene	<2.5	µg/L	EPA 625
bis(2-Chloroethoxy)Methane	<2.5	µg/L	EPA 625
bis(2-Ethylhexyl)Phthalate	4.5	µg/L	EPA 625
bis(2-chloroisopropyl)Ether	<2.5	µg/L	EPA 625
Total Suspended Solids	130	mg/L	SM 2540 D
Total Cyanide	<0.01	mg/L	SM 4500-CN^- E
pH	7.11	pH	SM 4500-H+ B
Hexavalent Chromium	<0.01	mg/L	SW846 7196A

Surrogate	Recovery	Method
Dibromofluoromethane	122	EPA 624
1,2-Dichloroethane-d4	133	EPA 624
Toluene-d8	94	EPA 624
4-Bromofluorobenzene	101	EPA 624
2-Fluorophenol	62	EPA 625
Phenol-d6	63	EPA 625
Nitrobenzene-d5	63	EPA 625

Surrogate	Recovery	Method
2-Fluorobiphenyl	62	EPA 625
2,4,6-Tribromophenol	71	EPA 625
p-Terphenyl-d14	68	EPA 625

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager
s14exsur/jjb

SPECTRA Laboratories
2221 Ross Way, Tacoma, WA 98421
(253) 272-4850 Fax (253) 572-9838
www.spectra-lab.com info@spectra-lab.com

SPECIAL INSTRUCTIONS/COMMENTS:
Metals - Arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, zinc

*** Free Cyanide if Total Cyanide is above 0.2**

Return Samples Y ___ N ___ Page ___ of ___

CHAIN of CUSTODY

SPECTRA PROJECT #
2017110868

STANDARD ☐ **RUSH** ☒

CLIENT: Sierra Construction
ADDRESS:
ADDRESS CHANGE ☐
PROJECT: Portside 55 North
CONTACT: Jason Nix
SAMPLED BY: JASON NIX
PHONE: 206-406-7979 FAX:
e-MAIL: X2 SEE BELOW
Prefer FAX ☐ or e-MAIL ☐
PURCHASE ORDER #: 11714

						HYDROCARBONS								ORGANICS						METALS					OTHER											
	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS	NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-Dx	1664 SGT-HEM (TPH)	1664 HEM (FOG)		8260/624 VOA	8260 CHLOR SOLVENTS	8270/625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	TTO - Both 624 & 625	TOTAL METALS RCRA 8	TOTAL METALS (SPECIFY)	Hexavalent Chromium	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	PH 9040/9045	TX/TOX 9076	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY) TSS	Total Cyanide	Free Cyanide				
1	11-30 TANK 3	11/30		WW	9						X								X		X	X			X					X	X	X*				
2																																				
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
0																																				

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
RELINQUISHED BY		JASON A. NIX	SIERRA	11 30	3:02P
RECEIVED BY		Keitlyn Reilly	Spectra	11.30.17	15:02
RELINQUISHED BY					
RECEIVED BY					

EMAIL TO BOTH -
BRYANP@SIERRAIND.COM &
JASONN @
SIERRAIND.COM

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2 % per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Analytical, LLC*

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12/21/2017

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

P.O.#:	11714
Project:	Portside 55 North
Client ID:	12-20 Tank-1
Sample Matrix:	Wastewater
Date Sampled:	12/20/2017
Date Received:	12/20/2017
Spectra Project:	2017120518
Spectra Number:	1
	Rush

Analyte	Result	Units	Method
HEM-SGT in Water	<5.0	mg/L	EPA 1664-B
Arsenic	< 0.05	mg/L	EPA 200.7
Cadmium	< 0.003	mg/L	EPA 200.7
Chromium	< 0.007	mg/L	EPA 200.7
Copper	0.073	mg/L	EPA 200.7
Lead	< 0.04	mg/L	EPA 200.7
Molybdenum	< 0.01	mg/L	EPA 200.7
Nickel	< 0.015	mg/L	EPA 200.7
Selenium	< 0.05	mg/L	EPA 200.7

SPECTRA LABORATORIES

for

Jeffrey Cooper, Laboratory Manager

a6/krd

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12/21/2017

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

P.O.#: 11714
Project: Portside 55 North
Client ID: 12-20 Tank-1
Sample Matrix: Wastewater
Date Sampled: 12/20/2017
Date Received: 12/20/2017
Spectra Project: 2017120518
Spectra Number: 1
Rush

Silver	< 0.007	mg/L	EPA 200.7
Zinc	0.029	mg/L	EPA 200.7
Mercury	<0.0005	mg/L	EPA 245.1
Total Suspended Solids	38	mg/L	SM 2540 D
pH	7.37	pH Units	SM 4500-H+ B

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager
a6/krd

SPECTRA Laboratories
2221 Ross Way, Tacoma, WA 98421
(253) 272-4850 Fax (253) 572-9838
www.spectra-lab.com info@spectra-lab.com

SPECIAL INSTRUCTIONS/COMMENTS:

Metals - Arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, zinc

*** Free Cyanide if Total Cyanide is above 0.2**

Return Samples Y ___ N ___ **Page** ___ of ___

CHAIN of CUSTODY

SPECTRA PROJECT # 2017120578

STANDARD ☐ **RUSH** ☒

CLIENT: Sierra Construction

ADDRESS:

ADDRESS CHANGE ☐

PROJECT: Portside 55 North

CONTACT: Jason Nix

SAMPLED BY: Jason Nix

PHONE: 206-406-7979 FAX:

e-MAIL: X2 SEE BELOW Prefer FAX ☐ or e-MAIL ☐

PURCHASE ORDER #: 11714

	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS	HYDROCARBONS								ORGANICS						METALS					OTHER											
						NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-Dx	1664 SGT-HEM (TPH)	1664 HEM (FOG)		8260/624 VOA	8260 CHLOR SOLVENTS	8270/625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	~~[illegible] Both 624 & 625~~	TOTAL METALS RCRA 8	TOTAL METALS (SPECIFY)	~~Hexavalent Chromium~~	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	PH 9040/9045	TX/TOX 9076	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY) TSS	~~Total Cyanide~~	~~Free Cyanide~~				
1	12-20 TANK-1	12/20/17	7:30am	WW	9						X								~~X~~		X	~~X~~			X					X	~~X~~	~~X~~*				
2																																				
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
0																																				

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
RELINQUISHED BY		JASON A. NIX	SIERRA	12 20 17	9:12A
RECEIVED BY		Kaitlyn Riley	Spectra	12-20-17	9:12am
RELINQUISHED BY					
RECEIVED BY					

EMAIL TO BOTH -
BRYANP@SIERRAIND.COM &
JASONN@
SIERRAIND.COM

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2 % per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Analytical, LLC*

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12/21/2017

P.O.#: 11714
Project: Portside 55 North
Client ID: 12-20 Tank-2
Sample Matrix: Wastewater
Date Sampled: 12/20/2017
Date Received: 12/20/2017
Spectra Project: 2017120519
Spectra Number: 1
Rush

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

Analyte	Result	Units	Method
HEM-SGT in Water	<6.0*	mg/L	EPA 1664-B
Arsenic	< 0.05	mg/L	EPA 200.7
Cadmium	< 0.003	mg/L	EPA 200.7
Chromium	< 0.007	mg/L	EPA 200.7
Copper	< 0.006	mg/L	EPA 200.7
Lead	< 0.04	mg/L	EPA 200.7
Molybdenum	< 0.01	mg/L	EPA 200.7
Nickel	< 0.015	mg/L	EPA 200.7
Selenium	< 0.05	mg/L	EPA 200.7
Silver	< 0.007	mg/L	EPA 200.7
Zinc	0.022	mg/L	EPA 200.7
Mercury	<0.0005	mg/L	EPA 245.1
Total Suspended Solids	12	mg/L	SM 2540 D
pH	7.34	pH Units	SM 4500-H+ B

*Reporting limit elevated due to low sample volume.

SPECTRA LABORATORIES

for

Jeffrey Cooper, Laboratory Manager

a5/krd

SPECTRA Laboratories
2221 Ross Way, Tacoma, WA 98421
(253) 272-4850 Fax (253) 572-9838
www.spectra-lab.com info@spectra-lab.com

SPECIAL INSTRUCTIONS/COMMENTS:

Metals - Arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, zinc

*** Free Cyanide if Total Cyanide is above 0.2**

Return Samples Y ____ N ____ **Page** ____ of ____

CHAIN of CUSTODY

SPECTRA PROJECT # 201712051 9

STANDARD ☐ **RUSH** ☒

ADDRESS CHANGE ☐

CLIENT: Sierra Construction
ADDRESS:
PROJECT: Portside 55 North
CONTACT: Jason Nix
SAMPLED BY: Jason Nix
PHONE: 206-406-7979 FAX:
e-MAIL: X2 SEE BELOW Prefer FAX ☐ or e-MAIL ☐
PURCHASE ORDER #: 11714

						HYDROCARBONS								ORGANICS						METALS					OTHER											
	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS	NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-Dx	1664 SGT-HEM (TPH)	1664 HEM (FOG)		8260/624 VOA	8260 CHLOR SOLVENTS	8270/625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	~~TTO - Both 624 & 625~~	TOTAL METALS RCRA 8	TOTAL METALS (SPECIFY)	~~Hexavalent Chromium~~	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	PH 9040/9045	TX/TOX 9076	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY) TSS	~~Total Cyanide~~	~~Free Cyanide~~				
1	12-20 TANK-2	12/20/17	7:45am	WW	9						X								~~X~~		X	~~X~~			X					X	~~X~~	~~X~~*				
2																																				
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
0																																				

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
RELINQUISHED BY		JASON A. NIX	SIERRA	12 20 17	9:12A
RECEIVED BY		Kaitlyn Riley	Spectra	12-20-17	9:12Am
RELINQUISHED BY					
RECEIVED BY					

EMAIL TO BOTH -
BRYANP@SIERRAIND.COM &
JASON@
SIERRAIND.COM

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2 % per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Analytical, LLC*

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11/29/2017

P.O.#:	11714
Project:	Portside 55 North
Client ID:	11-22 Tank 1
Sample Matrix:	Wastewater
Date Sampled:	11/22/2017
Date Received:	11/22/2017
Spectra Project:	2017110695
Spectra Number:	1

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

Rush

Analyte	Result	Units	Method	Analyte	Result	Units	Method
HEM-SGT in Water	<5.0	mg/L	EPA 1664-B	1,4-Dichlorobenzene	<1	µg/L	EPA 624
Arsenic	< 0.05	mg/L	EPA 200.7	2-Chloroethylvinyl Ether	<10	µg/L	EPA 624
Cadmium	< 0.003	mg/L	EPA 200.7	Acrolein	<10	µg/L	EPA 624
Chromium	0.019	mg/L	EPA 200.7	Acrylonitrile	<10	µg/L	EPA 624
Copper	0.028	mg/L	EPA 200.7	Benzene	<1	µg/L	EPA 624
Lead	< 0.04	mg/L	EPA 200.7	Bromodichloromethane	<1	µg/L	EPA 624
Molybdenum	0.01	mg/L	EPA 200.7	Bromoform	<1	µg/L	EPA 624
Nickel	< 0.015	mg/L	EPA 200.7	Carbon Tetrachloride	<1	µg/L	EPA 624
Selenium	< 0.05	mg/L	EPA 200.7	Chlorobenzene	<1	µg/L	EPA 624
Silver	< 0.007	mg/L	EPA 200.7	Chlorodibromomethane	<1	µg/L	EPA 624
Zinc	0.068	mg/L	EPA 200.7	Chloroethane	<1	µg/L	EPA 624
1,1,1-Trichloroethane	<1	µg/L	EPA 624	Chloroform	<1	µg/L	EPA 624
1,1,2,2-Tetrachloroethane	<1	µg/L	EPA 624	Chloromethane	<1	µg/L	EPA 624
1,1,2-Trichloroethane	<1	µg/L	EPA 624	Ethylbenzene	<1	µg/L	EPA 624
1,1-Dichloroethane	<1	µg/L	EPA 624	Hexachlorobutadiene	<1	µg/L	EPA 624
1,1-Dichloroethene	<1	µg/L	EPA 624	Methyl bromide	<1	µg/L	EPA 624
1,2,4-Trichlorobenzene	<1	µg/L	EPA 624	Methylene chloride	<5	µg/L	EPA 624
1,2-Dichlorobenzene	<1	µg/L	EPA 624	Naphthalene	<1	µg/L	EPA 624
1,2-Dichloroethane	<1	µg/L	EPA 624	Tetrachloroethene	<1	µg/L	EPA 624
1,2-Dichloropropane	<1	µg/L	EPA 624	Toluene	<1	µg/L	EPA 624
1,3-Dichlorobenzene	<1	µg/L	EPA 624	Total Xylenes	<2	µg/L	EPA 624

Surrogate	Recovery	Method	Surrogate	Recovery	Method
Dibromofluoromethane	96	EPA 624	2-Fluorophenol	65	EPA 625
1,2-Dichloroethane-d4	111	EPA 624	Phenol-d6	65	EPA 625
Toluene-d8	109	EPA 624	Nitrobenzene-d5	70	EPA 625
4-Bromofluorobenzene	123	EPA 624	2-Fluorobiphenyl	67	EPA 625

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

314/jjb

11/29/2017

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

P.O.#: 11714
Project: Portside 55 North
Client ID: 11-22 Tank 1
Sample Matrix: Wastewater
Date Sampled: 11/22/2017
Date Received: 11/22/2017
Spectra Project: 2017110695
Spectra Number: 1
Rush

Analyte	Result	Units	Method
Trichloroethene	<1	µg/L	EPA 624
Vinyl chloride	<1	µg/L	EPA 624
cis-1,3-Dichloropropene	<1	µg/L	EPA 624
trans-1,2-Dichloroethene	<1	µg/L	EPA 624
trans-1,3-Dichloropropene	<1	µg/L	EPA 624
1,2 diphenylhydrazine	<2.5	µg/L	EPA 625
1,2,4-Trichlorobenzene	<2.5	µg/L	EPA 625
1,2-Dichlorobenzene	<2.5	µg/L	EPA 625
1,3-Dichlorobenzene	<2.5	µg/L	EPA 625
1,4-Dichlorobenzene	<2.5	µg/L	EPA 625
2,4,6-Trichlorophenol	<2.5	µg/L	EPA 625
2,4-Dichlorophenol	<2.5	µg/L	EPA 625
2,4-Dimethylphenol	<2.5	µg/L	EPA 625
2,4-Dinitrophenol	<10	µg/L	EPA 625
2,4-Dinitrotoluene	<2.5	µg/L	EPA 625
2,6-Dinitrotoluene	<2.5	µg/L	EPA 625
2-Chloronaphthalene	<2.5	µg/L	EPA 625
2-Chlorophenol	<2.5	µg/L	EPA 625
2-Nitrophenol	<2.5	µg/L	EPA 625
3,3-Dichlorobenzidine	<20	µg/L	EPA 625
4,6-Dinitro-2-Methylphenol	<10	µg/L	EPA 625

Analyte	Result	Units	Method
4-Bromophenyl-phenylether	<2.5	µg/L	EPA 625
4-Chloro-3-Methylphenol	<2.5	µg/L	EPA 625
4-Chlorophenyl-phenylether	<2.5	µg/L	EPA 625
4-Nitrophenol	<2.5	µg/L	EPA 625
Acenaphthene	<1.0	µg/L	EPA 625
Acenaphthylene	<1.0	µg/L	EPA 625
Anthracene	<1.0	µg/L	EPA 625
Benzidine	<20	µg/L	EPA 625
Benzo(a)Anthracene	<1.0	µg/L	EPA 625
Benzo(a)Pyrene	<1.0	µg/L	EPA 625
Benzo(b)Fluoranthene	<1.0	µg/L	EPA 625
Benzo(ghi)Perylene	<1.0	µg/L	EPA 625
Benzo(k)Fluoranthene	<1.0	µg/L	EPA 625
Bis(2-Chloroethyl)Ether	<2.5	µg/L	EPA 625
Butylbenzylphthalate	<2.5	µg/L	EPA 625
Chrysene	<1.0	µg/L	EPA 625
Di-n-Butylphthalate	<2.5	µg/L	EPA 625
Di-n-Octyl Phthalate	<2.5	µg/L	EPA 625
Dibenzo(a,h)Anthracene	<1.0	µg/L	EPA 625
Diethylphthalate	<2.5	µg/L	EPA 625
Dimethyl Phthalate	<2.5	µg/L	EPA 625

Surrogate	Recovery	Method
Dibromofluoromethane	96	EPA 624
1,2-Dichloroethane-d4	111	EPA 624
Toluene-d8	109	EPA 624
4-Bromofluorobenzene	123	EPA 624

Surrogate	Recovery	Method
2-Fluorophenol	65	EPA 625
Phenol-d6	65	EPA 625
Nitrobenzene-d5	70	EPA 625
2-Fluorobiphenyl	67	EPA 625

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

a14/jjb

11/29/2017

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

P.O.#: 11714
Project: Portside 55 North
Client ID: 11-22 Tank 1
Sample Matrix: Wastewater
Date Sampled: 11/22/2017
Date Received: 11/22/2017
Spectra Project: 2017110695
Spectra Number: 1
Rush

Analyte	Result	Units	Method
Fluoranthene	<1.0	µg/L	EPA 625
Fluorene	<1.0	µg/L	EPA 625
Hexachlorobenzene	<2.5	µg/L	EPA 625
Hexachlorobutadiene	<2.5	µg/L	EPA 625
Hexachlorocyclopentadiene	<2.5	µg/L	EPA 625
Hexachloroethane	<2.5	µg/L	EPA 625
Indeno(1,2,3-cd)Pyrene	<1.0	µg/L	EPA 625
Isophorone	<2.5	µg/L	EPA 625
N-Nitroso-Di-n-Propylamine	<2.5	µg/L	EPA 625
N-Nitrosodiphenylamine	<2.5	µg/L	EPA 625
N-nitrosodimethylamine	<2.5	µg/L	EPA 625
Naphthalene	<1.0	µg/L	EPA 625
Nitrobenzene	<2.5	µg/L	EPA 625
Pentachlorophenol	<2.5	µg/L	EPA 625
Phenanthrene	<1.0	µg/L	EPA 625
Phenol	<2.5	µg/L	EPA 625
Pyrene	<1.0	µg/L	EPA 625
bis(2-Chloroethoxy)Methane	<2.5	µg/L	EPA 625
bis(2-Ethylhexyl)Phthalate	<2.5	µg/L	EPA 625
bis(2-chloroisopropyl)Ether	<2.5	µg/L	EPA 625
Total Suspended Solids	100	mg/L	SM 2540 D

Analyte	Result	Units	Method
Total Cyanide	<0.01	mg/L	SM 4500-CN^- E
pH	7.08	pH	SM 4500-H+ B
Hexavalent Chromium	<0.01	mg/L	SW846 7196A
Mercury	<0.0005	mg/L	SW846 7470A

Surrogate	Recovery	Method
Dibromofluoromethane	96	EPA 624
1,2-Dichloroethane-d4	111	EPA 624
Toluene-d8	109	EPA 624
4-Bromofluorobenzene	123	EPA 624

Surrogate	Recovery	Method
2-Fluorophenol	65	EPA 625
Phenol-d6	65	EPA 625
Nitrobenzene-d5	70	EPA 625
2-Fluorobiphenyl	67	EPA 625

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager
#14/jjb

SPECTRA Laboratories
2221 Ross Way, Tacoma, WA 98421
(253) 272-4850 Fax (253) 572-9838
www.spectra-lab.com info@spectra-lab.com

SPECIAL INSTRUCTIONS/COMMENTS:
Metals - Arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, zinc

*** Free Cyanide if Total Cyanide is above 0.2**

Return Samples Y ___ N ___ **Page** ___ **of** ___

CHAIN of CUSTODY

SPECTRA PROJECT # 2017110695

STANDARD ☐ **RUSH** ☒

CLIENT: Sierra Construction
ADDRESS:
ADDRESS CHANGE ☐
PROJECT: Portside 55 North
CONTACT: Jason Nix
SAMPLED BY: Jason Nix
PHONE: 206-406-7979 FAX:
e-MAIL: JASONN@SIERRAIND.COM Prefer FAX ☐ or e-MAIL ☒
PURCHASE ORDER #: 11714

	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS
1	11-22 Tank 1	112217	1:15p	WW	9
2					
3					
4					
5					
6					
7					
8					
9					
0					

	HYDROCARBONS								ORGANICS					
	NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-Dx	1664 SGT-HEM (TPH)	1664 HEM (FOG)		8260/624 VOA	8260 CHLOR SOLVENTS	8270/625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	TTO - Both 624 & 625
1						X								X
2														
3														
4														
5														
6														
7														
8														
9														
0														

	METALS					OTHER											
	TOTAL METALS RCRA 8	TOTAL METALS (SPECIFY)	Hexavalent Chromium	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	PH 9040/9045	TX/TOX 9076	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY) TSS	Total Cyanide	Free Cyanide				
1		X	X			X					X	X	X*				
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
0																	

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
RELINQUISHED BY		Jason A. Nix	Sierra	11 22 17	1:40PM
RECEIVED BY	Marie Holt	MARIE HOLT	Spectra	11-22-17	1:40pm
RELINQUISHED BY					
RECEIVED BY					

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2 % per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Analytical, LLC*

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11/29/2017

P.O.#: 11714
Project: Portside 55 North
Client ID: 11-22 Tank 2
Sample Matrix: Wastewater
Date Sampled: 11/22/2017
Date Received: 11/22/2017
Spectra Project: 2017110696
Spectra Number: 1
Rush

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

Analyte	Result	Units	Method	Analyte	Result	Units	Method
HEM-SGT in Water	<5.0	mg/L	EPA 1664-B	1,4-Dichlorobenzene	<1	µg/L	EPA 624
Arsenic	< 0.05	mg/L	EPA 200.7	2-Chloroethylvinyl Ether	<10	µg/L	EPA 624
Cadmium	< 0.003	mg/L	EPA 200.7	Acrolein	<10	µg/L	EPA 624
Chromium	0.022	mg/L	EPA 200.7	Acrylonitrile	<10	µg/L	EPA 624
Copper	0.028	mg/L	EPA 200.7	Benzene	<1	µg/L	EPA 624
Lead	< 0.04	mg/L	EPA 200.7	Bromodichloromethane	<1	µg/L	EPA 624
Molybdenum	0.01	mg/L	EPA 200.7	Bromoform	<1	µg/L	EPA 624
Nickel	< 0.015	mg/L	EPA 200.7	Carbon Tetrachloride	<1	µg/L	EPA 624
Selenium	< 0.05	mg/L	EPA 200.7	Chlorobenzene	<1	µg/L	EPA 624
Silver	< 0.007	mg/L	EPA 200.7	Chlorodibromomethane	<1	µg/L	EPA 624
Zinc	0.073	mg/L	EPA 200.7	Chloroethane	<1	µg/L	EPA 624
1,1,1-Trichloroethane	<1	µg/L	EPA 624	Chloroform	<1	µg/L	EPA 624
1,1,2,2-Tetrachloroethane	<1	µg/L	EPA 624	Chloromethane	<1	µg/L	EPA 624
1,1,2-Trichloroethane	<1	µg/L	EPA 624	Ethylbenzene	<1	µg/L	EPA 624
1,1-Dichloroethane	<1	µg/L	EPA 624	Hexachlorobutadiene	<1	µg/L	EPA 624
1,1-Dichloroethene	<1	µg/L	EPA 624	Methyl bromide	<1	µg/L	EPA 624
1,2,4-Trichlorobenzene	<1	µg/L	EPA 624	Methylene chloride	<5	µg/L	EPA 624
1,2-Dichlorobenzene	<1	µg/L	EPA 624	Naphthalene	<1	µg/L	EPA 624
1,2-Dichloroethane	<1	µg/L	EPA 624	Tetrachloroethene	<1	µg/L	EPA 624
1,2-Dichloropropane	<1	µg/L	EPA 624	Toluene	<1	µg/L	EPA 624
1,3-Dichlorobenzene	<1	µg/L	EPA 624	Total Xylenes	<2	µg/L	EPA 624

Surrogate	Recovery	Method	Surrogate	Recovery	Method
Dibromofluoromethane	97	EPA 624	2-Fluorophenol	60	EPA 625
1,2-Dichloroethane-d4	110	EPA 624	Phenol-d6	60	EPA 625
Toluene-d8	107	EPA 624	Nitrobenzene-d5	61	EPA 625
4-Bromofluorobenzene	117	EPA 624	2-Fluorobiphenyl	63	EPA 625

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

a14/jjb

11/29/2017

P.O.#: 11714
Project: Portside 55 North
Client ID: 11-22 Tank 2
Sample Matrix: Wastewater
Date Sampled: 11/22/2017
Date Received: 11/22/2017
Spectra Project: 2017110696
Spectra Number: 1
Rush

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Trichloroethene	<1	µg/L	EPA 624	4-Bromophenyl-phenylether	<2.5	µg/L	EPA 625
Vinyl chloride	<1	µg/L	EPA 624	4-Chloro-3-Methylphenol	<2.5	µg/L	EPA 625
cis-1,3-Dichloropropene	<1	µg/L	EPA 624	4-Chlorophenyl-phenylether	<2.5	µg/L	EPA 625
trans-1,2-Dichloroethene	<1	µg/L	EPA 624	4-Nitrophenol	<2.5	µg/L	EPA 625
trans-1,3-Dichloropropene	<1	µg/L	EPA 624	Acenaphthene	<1.0	µg/L	EPA 625
1,2 diphenylhydrazine	<2.5	µg/L	EPA 625	Acenaphthylene	<1.0	µg/L	EPA 625
1,2,4-Trichlorobenzene	<2.5	µg/L	EPA 625	Anthracene	<1.0	µg/L	EPA 625
1,2-Dichlorobenzene	<2.5	µg/L	EPA 625	Benzidine	<20	µg/L	EPA 625
1,3-Dichlorobenzene	<2.5	µg/L	EPA 625	Benzo(a)Anthracene	<1.0	µg/L	EPA 625
1,4-Dichlorobenzene	<2.5	µg/L	EPA 625	Benzo(a)Pyrene	<1.0	µg/L	EPA 625
2,4,6-Trichlorophenol	<2.5	µg/L	EPA 625	Benzo(b)Fluoranthene	<1.0	µg/L	EPA 625
2,4-Dichlorophenol	<2.5	µg/L	EPA 625	Benzo(ghi)Perylene	<1.0	µg/L	EPA 625
2,4-Dimethylphenol	<2.5	µg/L	EPA 625	Benzo(k)Fluoranthene	<1.0	µg/L	EPA 625
2,4-Dinitrophenol	<10	µg/L	EPA 625	Bis(2-Chloroethyl)Ether	<2.5	µg/L	EPA 625
2,4-Dinitrotoluene	<2.5	µg/L	EPA 625	Butylbenzylphthalate	<2.5	µg/L	EPA 625
2,6-Dinitrotoluene	<2.5	µg/L	EPA 625	Chrysene	<1.0	µg/L	EPA 625
2-Chloronaphthalene	<2.5	µg/L	EPA 625	Di-n-Butylphthalate	<2.5	µg/L	EPA 625
2-Chlorophenol	<2.5	µg/L	EPA 625	Di-n-Octyl Phthalate	<2.5	µg/L	EPA 625
2-Nitrophenol	<2.5	µg/L	EPA 625	Dibenzo(a,h)Anthracene	<1.0	µg/L	EPA 625
3,3-Dichlorobenzidine	<20	µg/L	EPA 625	Diethylphthalate	<2.5	µg/L	EPA 625
4,6-Dinitro-2-Methylphenol	<10	µg/L	EPA 625	Dimethyl Phthalate	<2.5	µg/L	EPA 625

Surrogate	Recovery	Method	Surrogate	Recovery	Method
Dibromofluoromethane	97	EPA 624	2-Fluorophenol	60	EPA 625
1,2-Dichloroethane-d4	110	EPA 624	Phenol-d6	60	EPA 625
Toluene-d8	107	EPA 624	Nitrobenzene-d5	61	EPA 625
4-Bromofluorobenzene	117	EPA 624	2-Fluorobiphenyl	63	EPA 625

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager
a14/jjb

11/29/2017

P.O.#: 11714
Project: Portside 55 North
Client ID: 11-22 Tank 2
Sample Matrix: Wastewater
Date Sampled: 11/22/2017
Date Received: 11/22/2017
Spectra Project: 2017110696
Spectra Number: 1

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

Rush

Analyte	Result	Units	Method
Fluoranthene	<1.0	µg/L	EPA 625
Fluorene	<1.0	µg/L	EPA 625
Hexachlorobenzene	<2.5	µg/L	EPA 625
Hexachlorobutadiene	<2.5	µg/L	EPA 625
Hexachlorocyclopentadiene	<2.5	µg/L	EPA 625
Hexachloroethane	<2.5	µg/L	EPA 625
Indeno(1,2,3-cd)Pyrene	<1.0	µg/L	EPA 625
Isophorone	<2.5	µg/L	EPA 625
N-Nitroso-Di-n-Propylamine	<2.5	µg/L	EPA 625
N-Nitrosodiphenylamine	<2.5	µg/L	EPA 625
N-nitrosodimethylamine	<2.5	µg/L	EPA 625
Naphthalene	<1.0	µg/L	EPA 625
Nitrobenzene	<2.5	µg/L	EPA 625
Pentachlorophenol	<2.5	µg/L	EPA 625
Phenanthrene	<1.0	µg/L	EPA 625
Phenol	<2.5	µg/L	EPA 625
Pyrene	<1.0	µg/L	EPA 625
bis(2-Chloroethoxy)Methane	<2.5	µg/L	EPA 625
bis(2-Ethylhexyl)Phthalate	<2.5	µg/L	EPA 625
bis(2-chloroisopropyl)Ether	<2.5	µg/L	EPA 625
Total Suspended Solids	100	mg/L	SM 2540 D

Analyte	Result	Units	Method
Total Cyanide	<0.01	mg/L	SM 4500-CN$^-$ E
pH	7.10	pH	SM 4500-H+ B
Hexavalent Chromium	<0.01	mg/L	SW846 7196A
Mercury	<0.0005	mg/L	SW846 7470A

Surrogate	Recovery	Method
Dibromofluoromethane	97	EPA 624
1,2-Dichloroethane-d4	110	EPA 624
Toluene-d8	107	EPA 624
4-Bromofluorobenzene	117	EPA 624

Surrogate	Recovery	Method
2-Fluorophenol	60	EPA 625
Phenol-d6	60	EPA 625
Nitrobenzene-d5	61	EPA 625
2-Fluorobiphenyl	63	EPA 625

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager
a14/jjb

SPECTRA Laboratories
2221 Ross Way, Tacoma, WA 98421
(253) 272-4850 Fax (253) 572-9838
www.spectra-lab.com info@spectra-lab.com

SPECIAL INSTRUCTIONS/COMMENTS:
Metals - Arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, zinc

*** Free Cyanide if Total Cyanide is above 0.2**

Return Samples Y __ N __ Page __ of __

CHAIN of CUSTODY

SPECTRA PROJECT # 2017110694

STANDARD ☐ **RUSH** ☒

CLIENT: Sierra Construction
ADDRESS:
ADDRESS CHANGE ☐
PROJECT: Portside 55 North
CONTACT: Jason Nix
SAMPLED BY: Jason Nix
PHONE: 206-406-7979 FAX:
e-MAIL: JASONN@SIERRAIND.COM Prefer FAX ☐ or e-MAIL ☒
PURCHASE ORDER #: 11714

	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS
1	11-22 Tank 2	112217	1:00P	WW	9
2					
3					
4					
5					
6					
7					
8					
9					
0					

	HYDROCARBONS								ORGANICS					
	NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-Dx	1664 SGT-HEM (TPH)	1664 HEM (FOG)		8260/624 VOA	8260 CHLOR SOLVENTS	8270/625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	TTO - Both 624 & 625
1						X								X
2														
3														
4														
5														
6														
7														
8														
9														
0														

	METALS					OTHER											
	TOTAL METALS RCRA 8	TOTAL METALS (SPECIFY)	Hexavalent Chromium	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	PH 9040/9045	TX/TOX 9076	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY) TSS	Total Cyanide	Free Cyanide				
1		X	X			X					X	X	X*				
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
0																	

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
RELINQUISHED BY		Jason A. Nix	Sierra	11 22 17	1:40PM
RECEIVED BY	Marie Holt	MARIE HOLT	Spectra	11-22-17	1:39
RELINQUISHED BY					
RECEIVED BY					

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2 % per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Analytical, LLC*

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12/14/2017

Sierra Construction Company, Inc.
19900 144th Ave NE
Woodinville, WA 98072

P.O.#: 11714
Project: Portside 55 North
Client ID: 12-12 Tank 1
Sample Matrix: Wastewater
Date Sampled: 12/12/2017
Date Received: 12/12/2017
Spectra Project: 2017120264
Spectra Number: 1
Rush

Analyte	Result	Units	Method
HEM-SGT in Water	14	mg/L	EPA 1664-B
Arsenic	< 0.05	mg/L	EPA 200.7
Cadmium	0.008	mg/L	EPA 200.7
Chromium	0.254	mg/L	EPA 200.7
Copper	0.469	mg/L	EPA 200.7
Lead	0.43	mg/L	EPA 200.7
Molybdenum	< 0.01	mg/L	EPA 200.7
Nickel	0.237	mg/L	EPA 200.7
Selenium	< 0..05	mg/L	EPA 200.7
Silver	< 0.007	mg/L	EPA 200.7
Zinc	1.34	mg/L	EPA 200.7
Mercury	0.0016	mg/L	EPA 245.1
Total Suspended Solids	5000	mg/L	SM 2540 D
pH	7.36	pH Units	SM 4500-H+ B

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager
a5/krd

SPECTRA Laboratories
2221 Ross Way, Tacoma, WA 98421
(253) 272-4850 Fax (253) 572-9838
www.spectra-lab.com info@spectra-lab.com

SPECIAL INSTRUCTIONS/COMMENTS:
Metals - Arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, zinc

*** Free Cyanide if Total Cyanide is above 0.2**

Return Samples Y ___ N ___ Page ___ of ___

CHAIN of CUSTODY

SPECTRA PROJECT # 2017120264

STANDARD ☐ **RUSH** ☒

CLIENT: Sierra Construction
ADDRESS:
ADDRESS CHANGE ☐
PROJECT: Portside 55 North
CONTACT: Jason Nix
SAMPLED BY: JASON NIX
PHONE: 206-406-7979 FAX:
e-MAIL: X2 SEE BELOW
Prefer FAX ☐ or e-MAIL ☐
PURCHASE ORDER #: 11714

	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS
1	12-12 TANK 1	121217	8:15a	WW	9
2					
3					
4					
5					
6					
7					
8					
9					
0					

	HYDROCARBONS								ORGANICS						METALS				
	NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-Dx	1664 SGT-HEM (TPH)	1664 HEM (FOG)		8260/624 VOA	8260 CHLOR SOLVENTS	8270/625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	~~TTO - Both 624 & 625~~	TOTAL METALS RCRA 8	TOTAL METALS (SPECIFY)	~~Hexavalent Chromium~~	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)
1						X								~~X~~		X	~~X~~		
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
0																			

	OTHER											
	PH 9040/9045	TX/TOX 9076	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY) TSS	~~Total Cyanide~~	~~Free Cyanide~~				
1	X					X	~~X~~	~~X*~~				
2												
3												
4												
5												
6												
7												
8												
9												
0												

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
RELINQUISHED BY		JASON A. NIX	SIERRA	12 12 17	8:45a
RECEIVED BY	Marie Holt	MARIE HOLT	Spectra	12-12-17	8:43am
RELINQUISHED BY					
RECEIVED BY					

EMAIL TO BOTH -
BRYANP@SIERRAIND.COM &
JASONN@
SIERRAIND.COM

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2 % per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Analytical, LLC*

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 30, 2018

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on April 19, 2018 from the Ave 55 - Taylor Way, F&BI 804329 project. There are 13 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Kristin Anderson
FDS0430R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 19, 2018 by Friedman & Bruya, Inc. from the Floyd-Snider Ave 55 - Taylor Way, F&BI 804329 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
804329 -01	Loc 12
804329 -02	Loc 16
804329 -03	Loc 9

Water was present in sample Loc 16. The analysis was placed on hold.

The TO-15 propene concentration in sample Loc 12 exceeded the calibration range of the instrument. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 04/30/18
Date Received: 04/19/18
Project: Ave 55 - Taylor Way, F&BI 804329
Date Extracted: 04/27/18
Date Analyzed: 04/27/18

RESULTS FROM THE ANALYSIS OF AIR SAMPLES FOR HELIUM USING METHOD ASTM D1946

Results Reported as % Helium

Sample ID Laboratory ID	Helium
Loc 12 804329-01	<0.6
Loc 16 804329-03	1.1
Method Blank	<0.6

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Loc 12	Client:	Floyd-Snider
Date Received:	04/19/18	Project:	Ave 55 - Taylor Way, F&BI 804329
Date Collected:	04/18/18	Lab ID:	804329-01 1/10
Date Analyzed:	04/25/18	Data File:	042510.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,200
APH EC9-12 aliphatics	380
APH EC9-10 aromatics	<250

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Loc 9	Client:	Floyd-Snider
Date Received:	04/19/18	Project:	Ave 55 - Taylor Way, F&BI 804329
Date Collected:	04/18/18	Lab ID:	804329-03 1/10
Date Analyzed:	04/25/18	Data File:	042511.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,500
APH EC9-12 aliphatics	510
APH EC9-10 aromatics	<250

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55 - Taylor Way, F&BI 804329
Date Collected:	Not Applicable	Lab ID:	08-0846 mb
Date Analyzed:	04/25/18	Data File:	042509.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<46
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Loc 12	Client:	Floyd-Snider
Date Received:	04/19/18	Project:	Ave 55 - Taylor Way, F&BI 804329
Date Collected:	04/18/18	Lab ID:	804329-01 1/10
Date Analyzed:	04/25/18	Data File:	042510.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	<3.5	<1	1-Butanol	<61	<20
Propene	1,700 ve	1,000 ve	Carbon tetrachloride	<6.3	<1
Dichlorodifluoromethane	490	100	Benzene	5.9	1.8
Chloromethane	8.5	4.1	Cyclohexane	<69	<20
F-114	<7	<1	2-Pentanone	<35	<10
Isobutene	540	240	3-Pentanone	<35	<10
Acetaldehyde	<90	<50	Pentanal	<35	<10
Vinyl chloride	<2.6	<1	1,2-Dichloropropane	<2.3	<0.5
1,3-Butadiene	<0.22	<0.1	1,4-Dioxane	<3.6	<1
Bromomethane	<3.9	<1	Bromodichloromethane	<0.67	<0.1
Chloroethane	<2.6	<1	Trichloroethene	6.1	1.1
Ethanol	<75	<40	cis-1,3-Dichloropropene	<4.5	<1
Acetonitrile	<17	<10	4-Methyl-2-pentanone	<41	<10
Acrolein	<9.2	<4	trans-1,3-Dichloropropene	<4.5	<1
Acrylonitrile	<2.2	<1	Toluene	5.2	1.4
Pentane	270	92	1,1,2-Trichloroethane	<0.55	<0.1
Trichlorofluoromethane	180	32	3-Hexanone	<41	<10
Acetone	190	79	2-Hexanone	<41	<10
2-Propanol	<86	<35	Hexanal	<41	<10
Isoprene	7.0	2.5	Tetrachloroethene	<6.8	<1
Iodomethane	<5.8	<1	Dibromochloromethane	<0.85	<0.1
1,1-Dichloroethene	<4	<1	1,2-Dibromoethane (EDB)	<0.77	<0.1
Methacrolein	<29	<10	Chlorobenzene	<4.6	<1
trans-1,2-Dichloroethene	<4	<1	Ethylbenzene	<4.3	<1
Cyclopentane	61	21	1,1,2,2-Tetrachloroethane	<1.4	<0.2
Methyl vinyl ketone	<29	<10	m,p-Xylene	<8.7	<2
Butanal	<29	<10	o-Xylene	<4.3	<1
Methylene chloride	<870	<250	Styrene	<8.5	<2
CFC-113	<7.7	<1	Bromoform	<21	<2
Carbon disulfide	<62	<20	Benzyl chloride	<0.52	<0.1
Methyl t-butyl ether (MTBE)	<18	<5	1,3,5-Trimethylbenzene	<25	<5
Vinyl acetate	<70	<20	1,2,4-Trimethylbenzene	<25	<5
1,1-Dichloroethane	5.0	1.2	1,3-Dichlorobenzene	<6	<1
cis-1,2-Dichloroethene	<4	<1	1,4-Dichlorobenzene	<2.4	<0.4
Hexane	49	14	1,2,3-Trimethylbenzene	<25	<5
Chloroform	2.5	0.52	1,2-Dichlorobenzene	<6	<1
2-Butanone (MEK)	<29	<10	1,2,4-Trichlorobenzene	<7.4	<1
1,2-Dichloroethane (EDC)	0.97	0.24	Naphthalene	<1	<0.2
1,1,1-Trichloroethane	13	2.4	Hexachlorobutadiene	<2.1	<0.2

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Loc 9	Client:	Floyd-Snider
Date Received:	04/19/18	Project:	Ave 55 - Taylor Way, F&BI 804329
Date Collected:	04/18/18	Lab ID:	804329-03 1/10
Date Analyzed:	04/25/18	Data File:	042511.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<3.5	<1	1-Butanol	<61	<20
Propene	770	450	Carbon tetrachloride	<6.3	<1
Dichlorodifluoromethane	200	40	Benzene	15	4.8
Chloromethane	9.9	4.8	Cyclohexane	<69	<20
F-114	<7	<1	2-Pentanone	<35	<10
Isobutene	440	190	3-Pentanone	<35	<10
Acetaldehyde	<90	<50	Pentanal	<35	<10
Vinyl chloride	<2.6	<1	1,2-Dichloropropane	<2.3	<0.5
1,3-Butadiene	<0.22	<0.1	1,4-Dioxane	<3.6	<1
Bromomethane	<3.9	<1	Bromodichloromethane	<0.67	<0.1
Chloroethane	<2.6	<1	Trichloroethene	<2.7	<0.5
Ethanol	<75	<40	cis-1,3-Dichloropropene	<4.5	<1
Acetonitrile	<17	<10	4-Methyl-2-pentanone	<41	<10
Acrolein	<9.2	<4	trans-1,3-Dichloropropene	<4.5	<1
Acrylonitrile	<2.2	<1	Toluene	14	3.7
Pentane	150	50	1,1,2-Trichloroethane	<0.55	<0.1
Trichlorofluoromethane	470	83	3-Hexanone	<41	<10
Acetone	<48	<20	2-Hexanone	<41	<10
2-Propanol	<86	<35	Hexanal	<41	<10
Isoprene	<2.8	<1	Tetrachloroethene	<6.8	<1
Iodomethane	<5.8	<1	Dibromochloromethane	<0.85	<0.1
1,1-Dichloroethene	<4	<1	1,2-Dibromoethane (EDB)	<0.77	<0.1
Methacrolein	<29	<10	Chlorobenzene	<4.6	<1
trans-1,2-Dichloroethene	<4	<1	Ethylbenzene	<4.3	<1
Cyclopentane	15	5.4	1,1,2,2-Tetrachloroethane	<1.4	<0.2
Methyl vinyl ketone	<29	<10	m,p-Xylene	<8.7	<2
Butanal	<29	<10	o-Xylene	<4.3	<1
Methylene chloride	<870	<250	Styrene	<8.5	<2
CFC-113	<7.7	<1	Bromoform	<21	<2
Carbon disulfide	<62	<20	Benzyl chloride	<0.52	<0.1
Methyl t-butyl ether (MTBE)	<18	<5	1,3,5-Trimethylbenzene	<25	<5
Vinyl acetate	<70	<20	1,2,4-Trimethylbenzene	<25	<5
1,1-Dichloroethane	<4	<1	1,3-Dichlorobenzene	25	4.1
cis-1,2-Dichloroethene	<4	<1	1,4-Dichlorobenzene	<2.4	<0.4
Hexane	43	12	1,2,3-Trimethylbenzene	<25	<5
Chloroform	3.1	0.63	1,2-Dichlorobenzene	<6	<1
2-Butanone (MEK)	<29	<10	1,2,4-Trichlorobenzene	<7.4	<1
1,2-Dichloroethane (EDC)	0.73	0.18	Naphthalene	<1	<0.2
1,1,1-Trichloroethane	24	4.5	Hexachlorobutadiene	<2.1	<0.2

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55 - Taylor Way, F&BI 804329
Date Collected:	Not Applicable	Lab ID:	08-0846 mb
Date Analyzed:	04/25/18	Data File:	042509.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<0.35	<0.1	1-Butanol	<6.1	<2
Propene	<0.69	<0.4	Carbon tetrachloride	<0.63	<0.1
Dichlorodifluoromethane	<0.49	<0.1	Benzene	<0.32	<0.1
Chloromethane	<0.21	<0.1	Cyclohexane	<6.9	<2
F-114	<0.7	<0.1	2-Pentanone	<3.5	<1
Isobutene	<0.92	<0.4	3-Pentanone	<3.5	<1
Acetaldehyde	<9	<5	Pentanal	<3.5	<1
Vinyl chloride	<0.26	<0.1	1,2-Dichloropropane	<0.23	<0.05
1,3-Butadiene	<0.022	<0.01	1,4-Dioxane	<0.36	<0.1
Bromomethane	<0.39	<0.1	Bromodichloromethane	<0.067	<0.01
Chloroethane	<0.26	<0.1	Trichloroethene	<0.27	<0.05
Ethanol	<7.5	<4	cis-1,3-Dichloropropene	<0.45	<0.1
Acetonitrile	<1.7	<1	4-Methyl-2-pentanone	<4.1	<1
Acrolein	<0.92	<0.4	trans-1,3-Dichloropropene	<0.45	<0.1
Acrylonitrile	<0.22	<0.1	Toluene	<0.38	<0.1
Pentane	<3	<1	1,1,2-Trichloroethane	<0.055	<0.01
Trichlorofluoromethane	<0.56	<0.1	3-Hexanone	<4.1	<1
Acetone	<4.8	<2	2-Hexanone	<4.1	<1
2-Propanol	<8.6	<3.5	Hexanal	<4.1	<1
Isoprene	<0.28	<0.1	Tetrachloroethene	<0.68	<0.1
Iodomethane	<0.58	<0.1	Dibromochloromethane	<0.085	<0.01
1,1-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methacrolein	<2.9	<1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Cyclopentane	<0.29	<0.1	1,1,2,2-Tetrachloroethane	<0.14	<0.02
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	<0.87	<0.2
Butanal	<2.9	<1	o-Xylene	<0.43	<0.1
Methylene chloride	<87	<25	Styrene	<0.85	<0.2
CFC-113	<0.77	<0.1	Bromoform	<2.1	<0.2
Carbon disulfide	<6.2	<2	Benzyl chloride	<0.052	<0.01
Methyl t-butyl ether (MTBE)	<1.8	<0.5	1,3,5-Trimethylbenzene	<2.5	<0.5
Vinyl acetate	<7	<2	1,2,4-Trimethylbenzene	<2.5	<0.5
1,1-Dichloroethane	<0.4	<0.1	1,3-Dichlorobenzene	<0.6	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	1,4-Dichlorobenzene	<0.24	<0.04
Hexane	<3.5	<1	1,2,3-Trimethylbenzene	<2.5	<0.5
Chloroform	<0.049	<0.01	1,2-Dichlorobenzene	<0.6	<0.1
2-Butanone (MEK)	<2.9	<1	1,2,4-Trichlorobenzene	<0.74	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01	Naphthalene	<0.1	<0.02
1,1,1-Trichloroethane	<0.55	<0.1	Hexachlorobutadiene	<0.21	<0.02

Date of Report: 04/30/18
Date Received: 04/19/18
Project: Ave 55 - Taylor Way, F&BI 804329

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR HELIUM
USING METHOD ASTM D1946

Laboratory Code: 804329-03 (Duplicate)

Analyte	Sample Result (%)	Duplicate Result (%)	Relative Percent Difference	Acceptance Criteria
Helium	1.1	<0.6	nm	0-50

Date of Report: 04/30/18
Date Received: 04/19/18
Project: Ave 55 - Taylor Way, F&BI 804329

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD APH

Laboratory Code: 804329-03 1/10 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 25)
APH EC5-8 aliphatics	ug/m3	1,500	1,700	12
APH EC9-12 aliphatics	ug/m3	510	550	8
APH EC9-10 aromatics	ug/m3	<250	<250	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	230	74	70-130
APH EC9-12 aliphatics	ug/m3	350	97	70-130
APH EC9-10 aromatics	ug/m3	251	80	70-130

Date of Report: 04/30/18
Date Received: 04/19/18
Project: Ave 55 - Taylor Way, F&BI 804329

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chlorodifluoromethane	ppbv	10	98	70-130
Propene	ppbv	10	88	70-130
Dichlorodifluoromethane	ppbv	10	98	70-130
Chloromethane	ppbv	10	104	70-130
F-114	ppbv	10	103	70-130
Isobutene	ppbv	10	100	70-130
Acetaldehyde	ppbv	10	97	70-130
Vinyl chloride	ppbv	10	106	70-130
1,3-Butadiene	ppbv	10	104	70-130
Bromomethane	ppbv	10	129	70-130
Chloroethane	ppbv	10	105	70-130
Ethanol	ppbv	10	97	70-130
Acetonitrile	ppbv	10	106	70-130
Acrolein	ppbv	10	98	70-130
Acrylonitrile	ppbv	10	98	70-130
Pentane	ppbv	10	93	70-130
Trichlorofluoromethane	ppbv	10	90	70-130
Acetone	ppbv	10	93	70-130
2-Propanol	ppbv	10	82	70-130
Isoprene	ppbv	10	95	70-130
Iodomethane	ppbv	10	93	70-130
1,1-Dichloroethene	ppbv	10	100	70-130
Methacrolein	ppbv	10	95	70-130
trans-1,2-Dichloroethene	ppbv	10	100	70-130
Cyclopentane	ppbv	10	99	70-130
Methyl Vinyl Ketone	ppbv	10	99	70-130
Butanal	ppbv	10	96	70-130
Methylene chloride	ppbv	10	87	70-130
CFC-113	ppbv	10	96	70-130
Carbon disulfide	ppbv	10	93	70-130
Methyl t-butyl ether	ppbv	10	89	70-130
Vinyl acetate	ppbv	10	77	70-130
1,1-Dichloroethane	ppbv	10	101	70-130
cis-1,2-Dichloroethene	ppbv	10	101	70-130
Hexane	ppbv	10	93	70-130
Chloroform	ppbv	10	103	70-130
2-Butanone (MEK)	ppbv	10	96	70-130
1,2-Dichloroethane (EDC)	ppbv	10	100	70-130
1,1,1-Trichloroethane	ppbv	10	95	70-130
1-Butanol	ppbv	10	84	70-130
Carbon tetrachloride	ppbv	10	89	70-130

Date of Report: 04/30/18
Date Received: 04/19/18
Project: Ave 55 - Taylor Way, F&BI 804329

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample (Continued)

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ppbv	10	103	70-130
Cyclohexane	ppbv	10	95	70-130
2-Pentanone	ppbv	10	95	70-130
3-Pentanone	ppbv	10	106	70-130
Pentanal	ppbv	10	97	70-130
1,2-Dichloropropane	ppbv	10	105	70-130
1,4-Dioxane	ppbv	10	87	70-130
Bromodichloromethane	ppbv	10	104	70-130
Trichloroethene	ppbv	10	102	70-130
cis-1,3-Dichloropropene	ppbv	10	92	70-130
4-Methyl-2-pentanone	ppbv	10	86	70-130
trans-1,3-Dichloropropene	ppbv	10	88	70-130
Toluene	ppbv	10	99	70-130
1,1,2-Trichloroethane	ppbv	10	102	70-130
3-Hexanone	ppbv	10	90	70-130
2-Hexanone	ppbv	10	90	70-130
Hexanal	ppbv	10	93	70-130
Tetrachloroethene	ppbv	10	99	70-130
Dibromochloromethane	ppbv	10	105	70-130
1,2-Dibromoethane (EDB)	ppbv	10	103	70-130
Chlorobenzene	ppbv	10	98	70-130
Ethylbenzene	ppbv	10	100	70-130
1,1,2,2-Tetrachloroethane	ppbv	10	103	70-130
m,p-Xylene	ppbv	20	101	70-130
o-Xylene	ppbv	10	103	70-130
Styrene	ppbv	10	98	70-130
Bromoform	ppbv	10	104	70-130
Benzyl chloride	ppbv	10	81	70-130
1,3,5-Trimethylbenzene	ppbv	10	96	70-130
1,2,4-Trimethylbenzene	ppbv	10	94	70-130
1,3-Dichlorobenzene	ppbv	10	102	70-130
1,4-Dichlorobenzene	ppbv	10	103	70-130
1,2,3-Trimethylbenzene	ppbv	10	96	70-130
1,2-Dichlorobenzene	ppbv	10	102	70-130
1,2,4-Trichlorobenzene	ppbv	10	84	70-130
Naphthalene	ppbv	10	104	70-130
Hexachlorobutadiene	ppbv	10	97	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

804329

SAMPLE CHAIN OF CUSTODY

ME 04-19-18

Page # 1 of 1

Report To Tom Colligan
Company Floyd Snider
Address 601 Union St, Ste 600
City, State, ZIP Seattle, WA 98101
Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*)

PROJECT NAME	PO #
Arc 55 - Taylor Way	

REPORTING LEVEL
☐ Indoor Air ☒ Deep Soil Gas
☒ Sub Slab/Soil Gas ☐ SVE/Grab

INVOICE TO

TURNAROUND TIME
☐ Standard
☒ RUSH 5-day
Rush charges authorized by:

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	Helium ~~TO-15 BTEXN~~	Full List TO-15 ~~cVOCs~~	APH's	Notes He detection for leaks
LOC 12	01	2433	18	4/18/18	30	0924	2	0931		X	X	X	
LOC 16	02	3389	224	4/18/18	30	1621	15	1643		X	X	X	water in sample pt ~ likely bad sample
LOC 9	03	3672	01	4/18/18	30	1651	2	1659		X	X	X	
													Samples received at 20 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Kristin Andersen	FS	4/19/18	0830
Received by:	Eric Dow	F&B	4/19/18	0830
Relinquished by:				
Received by:				

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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
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May 23, 2018

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on May 10, 2018 from the Ave 55 - Taylor Way, F&BI 805181 project. There are 18 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Kristin Anderson
FDS0523R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 10, 2018 by Friedman & Bruya, Inc. from the Floyd-Snider Ave 55 - Taylor Way, F&BI 805181 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
805181 -01	Ambient
805181 -02	LOC 09
805181 -03	LOC 109
805181 -04	LOC 16

The TO-15 methylene chloride calibration verification was outside of control limits. The data were qualified accordingly.

The APH and several TO-15 compounds exceeded the calibration range. The TO-15 samples were analyzed at a dilution and the data were qualified accordingly.

Naphthalene was present in the TO-15 method blank. In addition, EDB was detected below the reporting limit in the method blank. The data and affected samples were qualified accordingly.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Ambient	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-01
Date Analyzed:	05/14/18	Data File:	051416.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	79	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	63
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	LOC 09	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-02 1/1.5
Date Analyzed:	05/14/18	Data File:	051417.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,100 ve
APH EC9-12 aliphatics	1,600
APH EC9-10 aromatics	<37

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	LOC 109	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-03 1/1.5
Date Analyzed:	05/15/18	Data File:	051418.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	107	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,500 ve
APH EC9-12 aliphatics	2,600
APH EC9-10 aromatics	<37

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	LOC 16	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-04 1/4
Date Analyzed:	05/15/18	Data File:	051419.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	102	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	24,000 ve
APH EC9-12 aliphatics	24,000 ve
APH EC9-10 aromatics	<100

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	Not Applicable	Lab ID:	08-1000 mb
Date Analyzed:	05/14/18	Data File:	051406.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	80	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<46
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Ambient	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-01
Date Analyzed:	05/14/18	Data File:	051416.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	1.0	0.29	1-Butanol	<6.1	<2
Propene	<1.7	<1	Carbon tetrachloride	<0.63	<0.1
Dichlorodifluoromethane	2.8	0.57	Benzene	0.39	0.12
Chloromethane	1.3	0.64	Cyclohexane	<6.9	<2
F-114	<0.7	<0.1	2-Pentanone	<3.5	<1
Isobutene	<0.92	<0.4	3-Pentanone	<3.5	<1
Acetaldehyde	<9	<5	Pentanal	<3.5	<1
Vinyl chloride	<0.26	<0.1	1,2-Dichloropropane	<0.23	<0.05
1,3-Butadiene	0.046	0.021	1,4-Dioxane	<0.36	<0.1
Bromomethane	0.98	0.25	Bromodichloromethane	<0.067	<0.01
Chloroethane	<0.26	<0.1	Trichloroethene	<0.27	<0.05
Ethanol	<7.5	<4	cis-1,3-Dichloropropene	<0.45	<0.1
Acetonitrile	<1.7	<1	4-Methyl-2-pentanone	<4.1	<1
Acrolein	<0.92	<0.4	trans-1,3-Dichloropropene	<0.45	<0.1
Acrylonitrile	<0.22	<0.1	Toluene	1.0	0.27
Pentane	<3	<1	1,1,2-Trichloroethane	<0.055	<0.01
Trichlorofluoromethane	1.4	0.25	3-Hexanone	<4.1	<1
Acetone	8.9	3.8	2-Hexanone	<4.1	<1
2-Propanol	<8.6	<3.5	Hexanal	<4.1	<1
Isoprene	<0.28	<0.1	Tetrachloroethene	<0.68	<0.1
Iodomethane	<0.58	<0.1	Dibromochloromethane	<0.085	<0.01
1,1-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methacrolein	<2.9	<1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Cyclopentane	<0.29	<0.1	1,1,2,2-Tetrachloroethane	<0.14	<0.02
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	<0.87	<0.2
Butanal	<2.9	<1	o-Xylene	<0.43	<0.1
Methylene chloride	<87 ca	<25 ca	Styrene	<0.85	<0.2
CFC-113	<0.77	<0.1	Bromoform	<2.1	<0.2
Carbon disulfide	<6.2	<2	Benzyl chloride	<0.052	<0.01
Methyl t-butyl ether (MTBE)	<1.8	<0.5	1,3,5-Trimethylbenzene	<2.5	<0.5
Vinyl acetate	<7	<2	1,2,4-Trimethylbenzene	<2.5	<0.5
1,1-Dichloroethane	<0.4	<0.1	1,3-Dichlorobenzene	<0.6	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	1,4-Dichlorobenzene	<0.24	<0.04
Hexane	<3.5	<1	1,2,3-Trimethylbenzene	<2.5	<0.5
Chloroform	0.17	0.034	1,2-Dichlorobenzene	<0.6	<0.1
2-Butanone (MEK)	<2.9	<1	1,2,4-Trichlorobenzene	<0.74	<0.1
1,2-Dichloroethane (EDC)	0.097	0.024	Naphthalene	0.16 fb	0.031 fb
1,1,1-Trichloroethane	<0.55	<0.1	Hexachlorobutadiene	<0.21	<0.02

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	LOC 09	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-02 1/1.5
Date Analyzed:	05/14/18	Data File:	051417.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	115	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	<0.53	<0.15	1-Butanol	<9.1	<3
Propene	670 ve	390 ve	Carbon tetrachloride	<0.94	<0.15
Dichlorodifluoromethane	76	15	Benzene	38	12
Chloromethane	12	5.8	Cyclohexane	24	6.9
F-114	<1	<0.15	2-Pentanone	<5.3	<1.5
Isobutene	480 ve	210 ve	3-Pentanone	<5.3	<1.5
Acetaldehyde	52	29	Pentanal	<5.3	<1.5
Vinyl chloride	<0.38	<0.15	1,2-Dichloropropane	2.9	0.62
1,3-Butadiene	<0.033	<0.015	1,4-Dioxane	<0.54	<0.15
Bromomethane	<1.2	<0.3	Bromodichloromethane	<0.1	<0.015
Chloroethane	1.4	0.53	Trichloroethene	0.61	0.11
Ethanol	<11	<6	cis-1,3-Dichloropropene	<0.68	<0.15
Acetonitrile	<2.5	<1.5	4-Methyl-2-pentanone	<6.1	<1.5
Acrolein	<1.4	<0.6	trans-1,3-Dichloropropene	<0.68	<0.15
Acrylonitrile	<0.33	<0.15	Toluene	43	11
Pentane	210	71	1,1,2-Trichloroethane	<0.082	<0.015
Trichlorofluoromethane	730 ve	130 ve	3-Hexanone	<6.1	<1.5
Acetone	110	48	2-Hexanone	<6.1	<1.5
2-Propanol	<13	<5.2	Hexanal	6.6	1.6
Isoprene	11	3.8	Tetrachloroethene	3.5	0.51
Iodomethane	<0.87	<0.15	Dibromochloromethane	<0.13	<0.015
1,1-Dichloroethene	0.76	0.19	1,2-Dibromoethane (EDB)	<0.12	<0.015
Methacrolein	<4.3	<1.5	Chlorobenzene	<0.69	<0.15
trans-1,2-Dichloroethene	<0.59	<0.15	Ethylbenzene	12	2.7
Cyclopentane	14	5.0	1,1,2,2-Tetrachloroethane	<0.21	<0.03
Methyl vinyl ketone	<4.3	<1.5	m,p-Xylene	28	6.5
Butanal	5.6	1.9	o-Xylene	11	2.5
Methylene chloride	<130 ca	<37 ca	Styrene	2.1	0.49
CFC-113	<1.1	<0.15	Bromoform	<3.1	<0.3
Carbon disulfide	24	7.7	Benzyl chloride	<0.078	<0.015
Methyl t-butyl ether (MTBE)	<2.7	<0.75	1,3,5-Trimethylbenzene	5.4	1.1
Vinyl acetate	<11	<3	1,2,4-Trimethylbenzene	6.4	1.3
1,1-Dichloroethane	2.1	0.52	1,3-Dichlorobenzene	2.6	0.43
cis-1,2-Dichloroethene	<0.59	<0.15	1,4-Dichlorobenzene	<0.36	<0.06
Hexane	93	26	1,2,3-Trimethylbenzene	<3.7	<0.75
Chloroform	340	69	1,2-Dichlorobenzene	<0.9	<0.15
2-Butanone (MEK)	6.5	2.2	1,2,4-Trichlorobenzene	<1.1	<0.15
1,2-Dichloroethane (EDC)	2.3	0.58	Naphthalene	0.79	0.15
1,1,1-Trichloroethane	44	8.1	Hexachlorobutadiene	<0.32	<0.03

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	LOC 09	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-02 1/15
Date Analyzed:	05/18/18	Data File:	051804.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3	ppbv
Propene	640	370
Isobutene	450	190
Trichlorofluoromethane	650	120

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	LOC 109	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-03 1/1.5
Date Analyzed:	05/15/18	Data File:	051418.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	127	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	<0.53	<0.15	1-Butanol	<9.1	<3
Propene	870 ve	500 ve	Carbon tetrachloride	<0.94	<0.15
Dichlorodifluoromethane	87	18	Benzene	38	12
Chloromethane	12	5.8	Cyclohexane	22	6.5
F-114	<1	<0.15	2-Pentanone	<5.3	<1.5
Isobutene	520 ve	230 ve	3-Pentanone	<5.3	<1.5
Acetaldehyde	62	34	Pentanal	<5.3	<1.5
Vinyl chloride	<0.38	<0.15	1,2-Dichloropropane	2.8	0.60
1,3-Butadiene	<0.033	<0.015	1,4-Dioxane	<0.54	<0.15
Bromomethane	<1.2	<0.3	Bromodichloromethane	<0.1	<0.015
Chloroethane	1.4	0.53	Trichloroethene	0.58	0.11
Ethanol	<11	<6	cis-1,3-Dichloropropene	<0.68	<0.15
Acetonitrile	<2.5	<1.5	4-Methyl-2-pentanone	<6.1	<1.5
Acrolein	<1.4	<0.6	trans-1,3-Dichloropropene	<0.68	<0.15
Acrylonitrile	<0.33	<0.15	Toluene	45	12
Pentane	210	72	1,1,2-Trichloroethane	<0.082	<0.015
Trichlorofluoromethane	710 ve	130 ve	3-Hexanone	<6.1	<1.5
Acetone	110	46	2-Hexanone	<6.1	<1.5
2-Propanol	<13	<5.2	Hexanal	6.2	1.5
Isoprene	11	3.9	Tetrachloroethene	4.0	0.58
Iodomethane	<0.87	<0.15	Dibromochloromethane	<0.13	<0.015
1,1-Dichloroethene	0.76	0.19	1,2-Dibromoethane (EDB)	<0.12	<0.015
Methacrolein	<4.3	<1.5	Chlorobenzene	<0.69	<0.15
trans-1,2-Dichloroethene	<0.59	<0.15	Ethylbenzene	15	3.4
Cyclopentane	15	5.3	1,1,2,2-Tetrachloroethane	<0.21	<0.03
Methyl vinyl ketone	<4.3	<1.5	m,p-Xylene	40	9.2
Butanal	<4.4	<1.5	o-Xylene	15	3.4
Methylene chloride	<130 ca	<37 ca	Styrene	3.6	0.83
CFC-113	<1.1	<0.15	Bromoform	<3.1	<0.3
Carbon disulfide	23	7.5	Benzyl chloride	<0.078	<0.015
Methyl t-butyl ether (MTBE)	<2.7	<0.75	1,3,5-Trimethylbenzene	9.2	1.9
Vinyl acetate	<11	<3	1,2,4-Trimethylbenzene	13	2.7
1,1-Dichloroethane	2.1	0.51	1,3-Dichlorobenzene	1.2	0.19
cis-1,2-Dichloroethene	<0.59	<0.15	1,4-Dichlorobenzene	<0.36	<0.06
Hexane	78	22	1,2,3-Trimethylbenzene	7.3	1.5
Chloroform	310	64	1,2-Dichlorobenzene	<0.9	<0.15
2-Butanone (MEK)	7.2	2.4	1,2,4-Trichlorobenzene	<1.1	<0.15
1,2-Dichloroethane (EDC)	2.3	0.57	Naphthalene	1.9	0.37
1,1,1-Trichloroethane	45	8.2	Hexachlorobutadiene	<0.32	<0.03

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	LOC 109	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-03 1/15
Date Analyzed:	05/18/18	Data File:	051805.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3	ppbv
Propene	870	500
Isobutene	510	220
Trichlorofluoromethane	660	120

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	LOC 16		Client:	Floyd-Snider
Date Received:	05/10/18		Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18		Lab ID:	805181-04 1/4
Date Analyzed:	05/15/18		Data File:	051419.D
Matrix:	Air		Instrument:	GCMS7
Units:	ug/m3		Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	121	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<1.4	<0.4	1-Butanol	<24	<8
Propene	3,100 ve	1,800 ve	Carbon tetrachloride	<2.5	<0.4
Dichlorodifluoromethane	2.8	0.56	Benzene	270	85
Chloromethane	12	5.6	Cyclohexane	380	110
F-114	<2.8	<0.4	2-Pentanone	<14	<4
Isobutene	2,100 ve	910 ve	3-Pentanone	<14	<4
Acetaldehyde	330	180	Pentanal	<14	<4
Vinyl chloride	8.9	3.5	1,2-Dichloropropane	<0.92	<0.2
1,3-Butadiene	<0.088	<0.04	1,4-Dioxane	<1.4	<0.4
Bromomethane	<3.2	<0.8	Bromodichloromethane	<0.27	<0.04
Chloroethane	1.2	0.44	Trichloroethene	2.5	0.47
Ethanol	100	53	cis-1,3-Dichloropropene	<1.8	<0.4
Acetonitrile	<6.7	<4	4-Methyl-2-pentanone	<16	<4
Acrolein	<3.7	<1.6	trans-1,3-Dichloropropene	<1.8	<0.4
Acrylonitrile	<0.87	<0.4	Toluene	510	140
Pentane	890 ve	300 ve	1,1,2-Trichloroethane	<0.22	<0.04
Trichlorofluoromethane	5.4	0.97	3-Hexanone	<16	<4
Acetone	290	120	2-Hexanone	<16	<4
2-Propanol	290	120	Hexanal	76	19
Isoprene	69	25	Tetrachloroethene	3.1	0.46
Iodomethane	<2.3	<0.4	Dibromochloromethane	0.99	0.12
1,1-Dichloroethene	<1.6	<0.4	1,2-Dibromoethane (EDB)	0.77 fb	0.10 fb
Methacrolein	<11	<4	Chlorobenzene	2.2	0.49
trans-1,2-Dichloroethene	2.0	0.49	Ethylbenzene	62	14
Cyclopentane	110	39	1,1,2,2-Tetrachloroethane	2.1	0.30
Methyl vinyl ketone	<11	<4	m,p-Xylene	200	46
Butanal	<12	<4	o-Xylene	84	19
Methylene chloride	<350 ca	<100 ca	Styrene	13	3.0
CFC-113	<3.1	<0.4	Bromoform	<8.3	<0.8
Carbon disulfide	970 ve	310 ve	Benzyl chloride	<0.21	<0.04
Methyl t-butyl ether (MTBE)	<7.2	<2	1,3,5-Trimethylbenzene	69	14
Vinyl acetate	<28	<8	1,2,4-Trimethylbenzene	120	25
1,1-Dichloroethane	<1.6	<0.4	1,3-Dichlorobenzene	11	1.8
cis-1,2-Dichloroethene	7.5	1.9	1,4-Dichlorobenzene	1.6 fb	0.26 fb
Hexane	680	190	1,2,3-Trimethylbenzene	66	13
Chloroform	2,700 ve	560 ve	1,2-Dichlorobenzene	<2.4	<0.4
2-Butanone (MEK)	65	22	1,2,4-Trichlorobenzene	<3	<0.4
1,2-Dichloroethane (EDC)	0.79	0.20	Naphthalene	65	12
1,1,1-Trichloroethane	<2.2	<0.4	Hexachlorobutadiene	2.9	0.28

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	LOC 16	Client:	Floyd-Snider
Date Received:	05/10/18	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	05/08/18	Lab ID:	805181-04 1/40
Date Analyzed:	05/18/18	Data File:	051806.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3	ppbv
Propene	3,300	1,900
Isobutene	2,200	960
Pentane	740	250
Carbon disulfide	850	270
Chloroform	3,100	620

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55 - Taylor Way, F&BI 805181
Date Collected:	Not Applicable	Lab ID:	08-1000 mb
Date Analyzed:	05/14/18	Data File:	051406.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	<0.35	<0.1	1-Butanol	<6.1	<2
Propene	<1.7	<1	Carbon tetrachloride	<0.63	<0.1
Dichlorodifluoromethane	<0.49	<0.1	Benzene	<0.32	<0.1
Chloromethane	<0.21	<0.1	Cyclohexane	<6.9	<2
F-114	<0.7	<0.1	2-Pentanone	<3.5	<1
Isobutene	<0.92	<0.4	3-Pentanone	<3.5	<1
Acetaldehyde	<9	<5	Pentanal	<3.5	<1
Vinyl chloride	<0.26	<0.1	1,2-Dichloropropane	<0.23	<0.05
1,3-Butadiene	<0.022	<0.01	1,4-Dioxane	<0.36	<0.1
Bromomethane	<0.78	<0.2	Bromodichloromethane	<0.067	<0.01
Chloroethane	<0.26	<0.1	Trichloroethene	<0.27	<0.05
Ethanol	<7.5	<4	cis-1,3-Dichloropropene	<0.45	<0.1
Acetonitrile	<1.7	<1	4-Methyl-2-pentanone	<4.1	<1
Acrolein	<0.92	<0.4	trans-1,3-Dichloropropene	<0.45	<0.1
Acrylonitrile	<0.22	<0.1	Toluene	<0.38	<0.1
Pentane	<3	<1	1,1,2-Trichloroethane	<0.055	<0.01
Trichlorofluoromethane	<0.56	<0.1	3-Hexanone	<4.1	<1
Acetone	<4.8	<2	2-Hexanone	<4.1	<1
2-Propanol	<8.6	<3.5	Hexanal	<4.1	<1
Isoprene	<0.28	<0.1	Tetrachloroethene	<0.68	<0.1
Iodomethane	<0.58	<0.1	Dibromochloromethane	<0.085	<0.01
1,1-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methacrolein	<2.9	<1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Cyclopentane	<0.29	<0.1	1,1,2,2-Tetrachloroethane	<0.14	<0.02
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	<0.87	<0.2
Butanal	<2.9	<1	o-Xylene	<0.43	<0.1
Methylene chloride	<87 ca	<25 ca	Styrene	<0.85	<0.2
CFC-113	<0.77	<0.1	Bromoform	<2.1	<0.2
Carbon disulfide	<6.2	<2	Benzyl chloride	<0.052	<0.01
Methyl t-butyl ether (MTBE)	<1.8	<0.5	1,3,5-Trimethylbenzene	<2.5	<0.5
Vinyl acetate	<7	<2	1,2,4-Trimethylbenzene	<2.5	<0.5
1,1-Dichloroethane	<0.4	<0.1	1,3-Dichlorobenzene	<0.6	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	1,4-Dichlorobenzene	<0.24	<0.04
Hexane	<3.5	<1	1,2,3-Trimethylbenzene	<2.5	<0.5
Chloroform	<0.049	<0.01	1,2-Dichlorobenzene	<0.6	<0.1
2-Butanone (MEK)	<2.9	<1	1,2,4-Trichlorobenzene	<0.74	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01	Naphthalene	0.13 lc	0.025 lc
1,1,1-Trichloroethane	<0.55	<0.1	Hexachlorobutadiene	<0.21	<0.02

Date of Report: 05/23/18
Date Received: 05/10/18
Project: Ave 55 - Taylor Way, F&BI 805181

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD APH

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	230	97	70-130
APH EC9-12 aliphatics	ug/m3	350	107	70-130
APH EC9-10 aromatics	ug/m3	251	112	70-130

Date of Report: 05/23/18
Date Received: 05/10/18
Project: Ave 55 - Taylor Way, F&BI 805181

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chlorodifluoromethane	ppbv	10	86	70-130
Propene	ppbv	10	95	70-130
Dichlorodifluoromethane	ppbv	10	87	70-130
Chloromethane	ppbv	10	91	70-130
F-114	ppbv	10	92	70-130
Isobutene	ppbv	10	106	70-130
Acetaldehyde	ppbv	10	124	70-130
Vinyl chloride	ppbv	10	95	70-130
1,3-Butadiene	ppbv	10	96	70-130
Bromomethane	ppbv	10	112	70-130
Chloroethane	ppbv	10	99	70-130
Ethanol	ppbv	10	104	70-130
Acetonitrile	ppbv	10	107	70-130
Acrolein	ppbv	10	95	70-130
Acrylonitrile	ppbv	10	95	70-130
Pentane	ppbv	10	96	70-130
Trichlorofluoromethane	ppbv	10	95	70-130
Acetone	ppbv	10	92	70-130
2-Propanol	ppbv	10	98	70-130
Isoprene	ppbv	10	92	70-130
Iodomethane	ppbv	10	100	70-130
1,1-Dichloroethene	ppbv	10	99	70-130
Methacrolein	ppbv	10	97	70-130
trans-1,2-Dichloroethene	ppbv	10	102	70-130
Cyclopentane	ppbv	10	108	70-130
Methyl Vinyl Ketone	ppbv	10	113	70-130
Butanal	ppbv	10	116	70-130
Methylene chloride	ppbv	10	84	70-130
CFC-113	ppbv	10	99	70-130
Carbon disulfide	ppbv	10	98	70-130
Methyl t-butyl ether	ppbv	10	102	70-130
Vinyl acetate	ppbv	10	95	70-130
1,1-Dichloroethane	ppbv	10	104	70-130
cis-1,2-Dichloroethene	ppbv	10	105	70-130
Hexane	ppbv	10	100	70-130
Chloroform	ppbv	10	99	70-130
2-Butanone (MEK)	ppbv	10	104	70-130
1,2-Dichloroethane (EDC)	ppbv	10	102	70-130
1,1,1-Trichloroethane	ppbv	10	105	70-130
1-Butanol	ppbv	10	113	70-130
Carbon tetrachloride	ppbv	10	108	70-130

Date of Report: 05/23/18
Date Received: 05/10/18
Project: Ave 55 - Taylor Way, F&BI 805181

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample (Continued)

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ppbv	10	102	70-130
Cyclohexane	ppbv	10	103	70-130
2-Pentanone	ppbv	10	95	70-130
3-Pentanone	ppbv	10	105	70-130
Pentanal	ppbv	10	100	70-130
1,2-Dichloropropane	ppbv	10	101	70-130
1,4-Dioxane	ppbv	10	95	70-130
Bromodichloromethane	ppbv	10	106	70-130
Trichloroethene	ppbv	10	102	70-130
cis-1,3-Dichloropropene	ppbv	10	102	70-130
4-Methyl-2-pentanone	ppbv	10	98	70-130
trans-1,3-Dichloropropene	ppbv	10	99	70-130
Toluene	ppbv	10	101	70-130
1,1,2-Trichloroethane	ppbv	10	101	70-130
3-Hexanone	ppbv	10	108	70-130
2-Hexanone	ppbv	10	104	70-130
Hexanal	ppbv	10	108	70-130
Tetrachloroethene	ppbv	10	105	70-130
Dibromochloromethane	ppbv	10	114	70-130
1,2-Dibromoethane (EDB)	ppbv	10	108	70-130
Chlorobenzene	ppbv	10	103	70-130
Ethylbenzene	ppbv	10	103	70-130
1,1,2,2-Tetrachloroethane	ppbv	10	107	70-130
m,p-Xylene	ppbv	20	105	70-130
o-Xylene	ppbv	10	107	70-130
Styrene	ppbv	10	106	70-130
Bromoform	ppbv	10	118	70-130
Benzyl chloride	ppbv	10	118	70-130
1,3,5-Trimethylbenzene	ppbv	10	99	70-130
1,2,4-Trimethylbenzene	ppbv	10	99	70-130
1,3-Dichlorobenzene	ppbv	10	105	70-130
1,4-Dichlorobenzene	ppbv	10	105	70-130
1,2,3-Trimethylbenzene	ppbv	10	113	70-130
1,2-Dichlorobenzene	ppbv	10	105	70-130
1,2,4-Trichlorobenzene	ppbv	10	93	70-130
Naphthalene	ppbv	10	96	70-130
Hexachlorobutadiene	ppbv	10	98	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

805181

SAMPLE CHAIN OF CUSTODY

ME 05/10/18

Page # 1 of 1

Report To Tom Colligan

Company Floyd Snider

Address 601 Union St, Ste 600

City, State, ZIP Seattle ; WA 98101

Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*)

PROJECT NAME Arc 55 – Taylor Way

PO #

REPORTING LEVEL
☐ Indoor Air ☐ Deep Soil Gas
☒ Sub Slab/Soil Gas ☐ SVE/Grab

INVOICE TO

TURNAROUND TIME
☒ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	TO-15 BTEXN	TO-15 cVOCs	(4L @ APP)	Notes
AMBIENT	01	29229	4hr	5/8/18	30	0934	8	1254			X		no He detection
LOC 09	02	~~2435~~ 2436	109	↓	30	1133	3	1142			X		
LOC 109	03	3674	231		30	~~[illegible]~~ 1202	3	1209			X		
LOC 16	04	~~2436~~ 2435	111	↓	30	1220	21	1235			X		
													Samples received at 17 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Kristin Anderson	FS	5/9/18	0930
Received by:	Elizabeth Webber-Bruya	F&BI	5/10/18	1045
Relinquished by:				
Received by:				

FORMS\COC\COCTO-15.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 8, 2018

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the additional results from the testing of material submitted on September 12, 2018 from the Ave 55-Taylor Way, F&BI 809188 project. There are 5 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS1008R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 12, 2018 by Friedman & Bruya, Inc. from the Floyd-Snider Ave 55-Taylor Way, F&BI 809188 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
809188 -01	VP-1-091218
809188 -02	VP-2-091218
809188 -03	VP-2-091218 Dup
809188 -04	VP-3-091218
809188 -05	VP-5-091218
809188 -06	VP-7-091218
809188 -07	VP-9-091218
809188 -08	VP-4-091218
809188 -09	VP-6-091218
809188 -10	VP-8-091218
809188 -11	VP-10-091218
809188 -12	VP-14-091218
809188 -13	VP-13-091218
809188 -14	VP-11-091218
809188 -15	VP-12-091218
809188 -16	VP-2B-091218

All quality control requirements were acceptable.

Date of Report: 10/08/18
Date Received: 09/12/18
Project: Ave 55-Taylor Way, F&BI 809188
Date Extracted: 10/02/18
Date Analyzed: 10/02/18

RESULTS FROM THE ANALYSIS OF AIR SAMPLES FOR HELIUM USING METHOD ASTM D1946

Results Reported as % Helium

Sample ID Laboratory ID	Helium
VP-1-091218 809188-01	<0.6
VP-2-091218 809188-02	<0.6
VP-2-091218 Dup 809188-03	<0.6
VP-3-091218 809188-04	<0.6
VP-5-091218 809188-05	<0.6
VP-7-091218 809188-06	<0.6
VP-9-091218 809188-07	<0.6
VP-4-091218 809188-08	<0.6
VP-6-091218 809188-09	<0.6
VP-8-091218 809188-10	<0.6
VP-10-091218 809188-11	<0.6
VP-14-091218 809188-12	<0.6

Date of Report: 10/08/18
Date Received: 09/12/18
Project: Ave 55-Taylor Way, F&BI 809188
Date Extracted: 10/02/18
Date Analyzed: 10/02/18

RESULTS FROM THE ANALYSIS OF AIR SAMPLES FOR HELIUM USING METHOD ASTM D1946

Results Reported as % Helium

Sample ID Laboratory ID	Helium
VP-13-091218 809188-13	<0.6
VP-11-091218 809188-14	<0.6
VP-12-091218 809188-15	<0.6
Method Blank	<0.6

Date of Report: 10/08/18
Date Received: 09/12/18
Project: Ave 55-Taylor Way, F&BI 809188

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR HELIUM
USING METHOD ASTM D1946

Laboratory Code: 809188-13 (Duplicate)

Analyte	Sample Result (%)	Duplicate Result (%)	Relative Percent Difference	Acceptance Criteria
Helium	<0.6	<0.6	nm	0-50

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

809188

SAMPLE CHAIN OF CUSTODY

ME 09-12-18

Page # 1 of 3

Report To Tom Colligan
Company Floyd Snider
Address 601 Union St, Suite 600
City, State, ZIP Seattle, WA 98101
Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*) Kora, Gabe

PROJECT NAME Ave 55 - Taylor Way

PO #

REPORTING LEVEL
☐ Indoor Air ☐ Deep Soil Gas
☑ Sub Slab/Soil Gas ☐ SVE/Grab

INVOICE TO Tom Colligan

TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☑ Dispose after 30 days
☐ Archive Samples
☐ Other

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	APH (MA-APH) ~~TO-15 BTEXN~~	Helium ~~TO-15 cVOCs~~		Notes
VP-1-091218	01	3252	31	9/12/18	30	0919	4.5	0926	X	X	X		*See table 3 for full
VP-2-091218	02	3378	02	↓	30	0957	4.5	~~1010~~ 1010	↓	↓	↓		list of VOCs
VP-2-091218 Dup	03	3258	102	↓	30	0957	4.5	~~1010~~ 1005	↓	↓	↓		
VP-3-091218	04	2301	106	↓	30	10:47	4.5	10:51	↓	↓	↓		↓
~~VP-4-091218~~		~~3672~~	~~256~~										
VP-5-091218	05	2435	07	↓	29.5	11:46	~~11:50~~ 4.5	11:50	↓	↓	↓		↓
VP-7-091218	06	3251	109	↓	28.5	12:28	4.5	12:32	↓	↓	↓		↓
VP-9-091218	07	2297	231	↓	30	13:36	~~13:4~~ 4.5	13:42	↓	↓	↓		↓ Samples received at 21 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd Snider	9/12/18	1720
Received by:	Eric Young	FB	9/12/18	1720
Relinquished by:				
Received by:				

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809188

SAMPLE CHAIN OF CUSTODY

ME 09-12-18

Page # 2 of 3

Report To Tom Colligan

Company Floyd Snider

Address 601 Union St, Suite 600

City, State, ZIP Seattle, WA 98101

Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*) Kora, Gabe

PROJECT NAME Ave 55-Taylor Way

PO #

REPORTING LEVEL
☐ Indoor Air
☑ Sub Slab/Soil Gas
☐ Deep Soil Gas
☐ SVE/Grab

INVOICE TO Tom Colligan

TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☑ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	~~TO-15 BTEXN~~ APH (MA-APH)	~~TO-15cVOCs~~ Helium		Notes
VP-4-091218	08	3672	256	9/12/18	28	1117	4.5	1121	X	X	X		*See table 3 for full
VP-6-091218	09	2300	108	9/12/18	30	1206	4.5	1210					list of VOCs
VP-8-091218	10	3669	105	9/12	29.5	1235	4.5	1239					
VP-10-091218	11	3386	01	9/12	30	1353	~~4.5~~ 2.0	1400					
VP-14-091218	12	2298	201	9/12	29.5	1442	4.5	1448					
VP-13-091218	13	3389	101	9/12	29.5	1522	~~1527~~ 4.5	1527					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabriel Cisneros	Floyd Snider	9/12/18	17:20
Received by:	Eric Young	FeB	9/12/18	1720
Relinquished by:				
Received by:				

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809188

SAMPLE CHAIN OF COUSTODY

ME 09-12-18

Page # 3 of 3

Report To Tom Colligan

Company Floyd Snider

Address 601 Union St, Suite 600

City, State, ZIP Seattle, WA 98101

Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*) Kora, Gabe

PROJECT NAME Ave 55 - Taylor Way

PO #

REPORTING LEVEL
☐ Indoor Air ☐ Deep Soil Gas
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☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	APH (MA-APH) ~~TO-15 BTEXN~~	Helium ~~TO-15 cVOCs~~	Archive	Notes
VP-11-091218	14	3677	257	9/12/18	28.7	14:28	4.5	14:37	X	X	X		* See table 3 for full list of VOCs
VP-12-091218	15	2437	03	↓	29.1 ~~28.7~~	15:09	4.5	15:15	↓	↓	↓		↓
VP-2B-091218	16	3674	111	↓	29.5	15:54 ~~15:56~~	4.5	16:03				X	HOLD ANALYSIS

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd Snider	9/12/18	1720
Received by:	Eric Young	FBI	9/12/18	1720
Relinquished by:				
Received by:				

FORMS\COC\COCTO-15.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
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September 28, 2018

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on September 12, 2018 from the Ave 55-Taylor Way, F&BI 809188 project. There are 38 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS0928R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 12, 2018 by Friedman & Bruya, Inc. from the Floyd-Snider Ave 55-Taylor Way project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
809188 -01	VP-1-091218
809188 -02	VP-2-091218
809188 -03	VP-2-091218 Dup
809188 -04	VP-3-091218
809188 -05	VP-5-091218
809188 -06	VP-7-091218
809188 -07	VP-9-091218
809188 -08	VP-4-091218
809188 -09	VP-6-091218
809188 -10	VP-8-091218
809188 -11	VP-10-091218
809188 -12	VP-14-091218
809188 -13	VP-13-091218
809188 -14	VP-11-091218
809188 -15	VP-12-091218
809188 -16	VP-2B-091218

The helium analysis will be sent in an additional report.

Several TO-15 and APH analytes exceeded the calibration range. The data were qualified accordingly.

Several TO15 compounds were present in the samples at a concentration less than 10 times the concentration in the method blank. The data were qualified accordingly.

Non-petroleum compounds with a Q value greater than 85 were subtracted from the APH ranges for all samples.

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-1-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-01 1/10
Date Analyzed:	09/20/18	Data File:	091930.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	105	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	11,000
APH EC9-12 aliphatics	21,000 ve
APH EC9-10 aromatics	2,700

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-2-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-02 1/3.3
Date Analyzed:	09/19/18	Data File:	091915.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,800
APH EC9-12 aliphatics	330
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-2-091218 Dup	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-03 1/3.3
Date Analyzed:	09/20/18	Data File:	091916.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,000
APH EC9-12 aliphatics	310
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-3-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-04 1/3.3
Date Analyzed:	09/20/18	Data File:	091917.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,100
APH EC9-12 aliphatics	180
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-5-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-05 1/3.3
Date Analyzed:	09/20/18	Data File:	091918.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,400
APH EC9-12 aliphatics	360
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-7-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-06 1/3.3
Date Analyzed:	09/20/18	Data File:	091919.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,900 ve
APH EC9-12 aliphatics	170
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-9-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-07 1/3.3
Date Analyzed:	09/20/18	Data File:	091920.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	86	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,400
APH EC9-12 aliphatics	220
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-4-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-08 1/3.3
Date Analyzed:	09/20/18	Data File:	091921.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	820
APH EC9-12 aliphatics	130
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-6-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-09 1/3.3
Date Analyzed:	09/20/18	Data File:	091922.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,900
APH EC9-12 aliphatics	530
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-8-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-10 1/3.3
Date Analyzed:	09/20/18	Data File:	091923.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	5,900 ve
APH EC9-12 aliphatics	1,100
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-10-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-11 1/3.3
Date Analyzed:	09/20/18	Data File:	091924.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,200
APH EC9-12 aliphatics	360
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-14-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-12 1/3.3
Date Analyzed:	09/20/18	Data File:	091925.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,600
APH EC9-12 aliphatics	520
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-13-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-13 1/3.3
Date Analyzed:	09/20/18	Data File:	091926.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	800
APH EC9-12 aliphatics	150
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-11-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-14 1/4.2
Date Analyzed:	09/20/18	Data File:	091929.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,900
APH EC9-12 aliphatics	6,000
APH EC9-10 aromatics	<100

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-12-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-15 1/3.3
Date Analyzed:	09/20/18	Data File:	091927.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	820
APH EC9-12 aliphatics	180
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-2B-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-16 1/3.3
Date Analyzed:	09/20/18	Data File:	091928.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,300
APH EC9-12 aliphatics	420
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/19/18	Lab ID:	08-2081 mb
Date Analyzed:	09/19/18	Data File:	091911.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<46
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-1-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-01 1/10
Date Analyzed:	09/20/18	Data File:	091930.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	113	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	8.3	2.3	1-Butanol	<61	<20
Propene	1,300 ve	740 ve	Carbon tetrachloride	<6.3	<1
Dichlorodifluoromethane	120	24	Benzene	28	8.6
Chloromethane	7.3	3.5	Cyclohexane	<69	<20
F-114	<7	<1	2-Pentanone	<35	<10
Isobutene	1,600 ve	700 ve	3-Pentanone	<35	<10
Acetaldehyde	<90	<50	Pentanal	<35	<10
Vinyl chloride	<2.6	<1	1,2-Dichloropropane	3.3	0.71
1,3-Butadiene	4.7	2.1	1,4-Dioxane	<3.6	<1
Bromomethane	<16	<4	Bromodichloromethane	5.8	0.86
Chloroethane	4.9	1.8	Trichloroethene	9.1	1.7
Ethanol	<75	<40	cis-1,3-Dichloropropene	<4.5	<1
Acetonitrile	27	16	4-Methyl-2-pentanone	<41	<10
Acrolein	<9.2	<4	trans-1,3-Dichloropropene	<4.5	<1
Acrylonitrile	<2.2	<1	Toluene	62	16
Pentane	360	120	1,1,2-Trichloroethane	1.0	0.19
Trichlorofluoromethane	880	160	3-Hexanone	<41	<10
Acetone	1,300 ve	560 ve	2-Hexanone	<41	<10
2-Propanol	<86	<35	Hexanal	<41	<10
Isoprene	17	5.9	Tetrachloroethene	17	2.5
Iodomethane	<5.8	<1	Dibromochloromethane	<0.85	<0.1
1,1-Dichloroethene	<4	<1	1,2-Dibromoethane (EDB)	<0.77	<0.1
Methacrolein	<29	<10	Chlorobenzene	<4.6	<1
trans-1,2-Dichloroethene	<4	<1	Ethylbenzene	75	17
Cyclopentane	<2.9	<1	1,1,2,2-Tetrachloroethane	<1.4	<0.2
Methyl vinyl ketone	<29	<10	m,p-Xylene	270	61
Butanal	<29	<10	o-Xylene	120	28
Methylene chloride	<870	<250	Styrene	<8.5	<2
CFC-113	<7.7	<1	Bromoform	<21	<2
Carbon disulfide	<62	<20	Benzyl chloride	2.3	0.45
Methyl t-butyl ether (MTBE)	<18	<5	1,3,5-Trimethylbenzene	130	27
Vinyl acetate	<70	<20	1,2,4-Trimethylbenzene	420	85
1,1-Dichloroethane	6.0	1.5	1,3-Dichlorobenzene	<6	<1
cis-1,2-Dichloroethene	<4	<1	1,4-Dichlorobenzene	<2.4	<0.4
Hexane	140	39	1,2,3-Trimethylbenzene	130	27
Chloroform	6.9	1.4	1,2-Dichlorobenzene	<6	<1
2-Butanone (MEK)	94	32	1,2,4-Trichlorobenzene	<7.4	<1
1,2-Dichloroethane (EDC)	5.8	1.4	Naphthalene	33	6.3
1,1,1-Trichloroethane	15	2.7	Hexachlorobutadiene	<2.1	<0.2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-2-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-02 1/3.3
Date Analyzed:	09/19/18	Data File:	091915.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

	Concentration	
Compounds:	ug/m3	ppbv
Chlorodifluoromethane	3.7	1.0
Propene	410 ve	240 ve
Dichlorodifluoromethane	49	9.9
Chloromethane	4.4	2.1
F-114	<2.3	<0.33
Isobutene	180	77
Acetaldehyde	80	44
Vinyl chloride	<0.84	<0.33
1,3-Butadiene	11	4.8
Bromomethane	<5.1	<1.3
Chloroethane	1.5	0.57
Ethanol	68	36
Acetonitrile	6.9	4.1
Acrolein	<3	<1.3
Acrylonitrile	5.8	2.7
Pentane	150	52
Trichlorofluoromethane	560	99
Acetone	91	38
2-Propanol	300	120
Isoprene	7.0	2.5
Iodomethane	<1.9	<0.33
1,1-Dichloroethene	1.3 fb	0.34 fb
Methacrolein	<9.5	<3.3
trans-1,2-Dichloroethene	<1.3	<0.33
Cyclopentane	<0.95	<0.33
Methyl vinyl ketone	<9.5	<3.3
Butanal	<9.7	<3.3
Methylene chloride	<290	<82
CFC-113	3.3 fb	0.43 fb
Carbon disulfide	<21	<6.6
Methyl t-butyl ether (MTBE)	<5.9	<1.6
Vinyl acetate	<23	<6.6
1,1-Dichloroethane	2.6	0.64
cis-1,2-Dichloroethene	<1.3	<0.33
Hexane	69	20
Chloroform	2.9	0.59
2-Butanone (MEK)	<9.7	<3.3
1,2-Dichloroethane (EDC)	0.59	0.15
1,1,1-Trichloroethane	16	2.9
1-Butanol	53	17
Carbon tetrachloride	<2.1	<0.33
Benzene	7.0	2.2
Cyclohexane	<23	<6.6
2-Pentanone	<12	<3.3
3-Pentanone	<12	<3.3
Pentanal	<12	<3.3
1,2-Dichloropropane	1.1	0.24
1,4-Dioxane	<1.2	<0.33
Bromodichloromethane	<0.22	<0.033
Trichloroethene	5.4	1.0
cis-1,3-Dichloropropene	<1.5	<0.33
4-Methyl-2-pentanone	26	6.2
trans-1,3-Dichloropropene	<1.5	<0.33
Toluene	11	2.9
1,1,2-Trichloroethane	0.65	0.12
3-Hexanone	<14	<3.3
2-Hexanone	<14	<3.3
Hexanal	<14	<3.3
Tetrachloroethene	2.6	0.38
Dibromochloromethane	<0.28	<0.033
1,2-Dibromoethane (EDB)	<0.25	<0.033
Chlorobenzene	<1.5	<0.33
Ethylbenzene	2.8	0.64
1,1,2,2-Tetrachloroethane	<0.45	<0.066
m,p-Xylene	8.4	1.9
o-Xylene	3.0	0.70
Styrene	<2.8	<0.66
Bromoform	<6.8	<0.66
Benzyl chloride	<0.17	<0.033
1,3,5-Trimethylbenzene	<8.1	<1.6
1,2,4-Trimethylbenzene	<8.1	<1.6
1,3-Dichlorobenzene	<2	<0.33
1,4-Dichlorobenzene	<0.79	<0.13
1,2,3-Trimethylbenzene	<8.1	<1.6
1,2-Dichlorobenzene	<2	<0.33
1,2,4-Trichlorobenzene	<2.4	<0.33
Naphthalene	1.2	0.23 fb
Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-2-091218 Dup	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-03 1/3.3
Date Analyzed:	09/20/18	Data File:	091916.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	4.1	1.2	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	37	7.4	Benzene	5.2	1.6
Chloromethane	3.3	1.6	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	130	56	3-Pentanone	<12	<3.3
Acetaldehyde	66	36	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	0.79	0.17
1,3-Butadiene	6.3	2.8	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	1.1	0.42	Trichloroethene	2.4 fb	0.45 fb
Ethanol	52	28	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	4.0	1.8	Toluene	7.9	2.1
Pentane	110	37	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	390	70	3-Hexanone	<14	<3.3
Acetone	160	67	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	4.6	1.6	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	1.8	0.43
Cyclopentane	20	6.9	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	5.3	1.2
Butanal	<9.7	<3.3	o-Xylene	1.8	0.42
Methylene chloride	410	120	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	1.9	0.47	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	71	20	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	1.9	0.39	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.39	0.096	Naphthalene	0.59 fb	0.11 fb
1,1,1-Trichloroethane	11	2.0	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-3-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-04 1/3.3
Date Analyzed:	09/20/18	Data File:	091917.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	2.3	0.65	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	35	7.1	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	36	16	3-Pentanone	<12	<3.3
Acetaldehyde	49	27	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	1.6	0.71	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	<0.89	<0.16
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	1.8	0.48
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	210	37	3-Hexanone	<14	<3.3
Acetone	28	12	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	8.5	1.3
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	16	4.6	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	0.69	0.14	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.57 fb	0.11 fb
1,1,1-Trichloroethane	5.0	0.91	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-5-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-05 1/3.3
Date Analyzed:	09/20/18	Data File:	091918.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	2.5	0.71	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	39	7.9	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	56	25	3-Pentanone	<12	<3.3
Acetaldehyde	45	25	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	1.5	0.32
1,3-Butadiene	2.4	1.1	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	5.8	1.1
Ethanol	33	18	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	4.9	1.3
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	390	69	3-Hexanone	<14	<3.3
Acetone	100	42	2-Hexanone	<14	<3.3
2-Propanol	130	52	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	1.7	0.40
Cyclopentane	1.2	0.43	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	7.4	1.7
Butanal	<9.7	<3.3	o-Xylene	2.4	0.54
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	23	6.5	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	0.97	0.20	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.16	0.040	Naphthalene	1.0 fb	0.20 fb
1,1,1-Trichloroethane	8.5	1.6	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-7-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-06 1/3.3
Date Analyzed:	09/20/18	Data File:	091919.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	3.0	0.85	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	91	18	Benzene	1.3	0.40
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	610 ve	270 ve	3-Pentanone	<12	<3.3
Acetaldehyde	100	58	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	5.0	1.1
1,3-Butadiene	25	11	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	0.93	0.35	Trichloroethene	2.8	0.51
Ethanol	38	20	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	15	8.8	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	9.2	4.2	Toluene	3.7	0.98
Pentane	55	19	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	2,200 ve	400 ve	3-Hexanone	<14	<3.3
Acetone	170	70	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	1.0	0.36	Tetrachloroethene	3.1	0.46
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	2.1	0.52	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	19	6.6	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	4.8	1.1
Butanal	<9.7	<3.3	o-Xylene	1.6	0.37
Methylene chloride	470	140	Styrene	<2.8	<0.66
CFC-113	4.6 fb	0.60 fb	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	4.9	1.2	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	33	9.4	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.6	0.54	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	1.2	0.29	Naphthalene	0.74 fb	0.14 fb
1,1,1-Trichloroethane	23	4.1	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-9-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-07 1/3.3
Date Analyzed:	09/20/18	Data File:	091920.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	2.3	0.65	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	3.8	0.77	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	2.2 fb	0.41 fb
Ethanol	28	15	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	5.4	1.4
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	6.1	1.1	3-Hexanone	<14	<3.3
Acetone	48	20	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	3.6	0.53
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	2.6	0.59
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	10	2.3
Butanal	<9.7	<3.3	o-Xylene	3.0	0.70
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	13	3.8	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	3.0	0.61	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	1.6 fb	0.31 fb
1,1,1-Trichloroethane	<1.8	<0.33	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-4-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-08 1/3.3
Date Analyzed:	09/20/18	Data File:	091921.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	1.5	0.42	1-Butanol	54	18
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	17	3.5	Benzene	1.1	0.34
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	34	19	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	6.8	1.3
Ethanol	46	24	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	1.7 fb	0.44 fb
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	150	27	3-Hexanone	<14	<3.3
Acetone	130	56	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	5.3	0.78
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	13	3.6	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.5	0.51	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.71 fb	0.14 fb
1,1,1-Trichloroethane	4.0	0.73	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-6-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-09 1/3.3
Date Analyzed:	09/20/18	Data File:	091922.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	101	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	1.8	0.52	1-Butanol	<20	<6.6
Propene	470 ve	280 ve	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	74	15	Benzene	20	6.2
Chloromethane	3.2	1.5	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	700 ve	310 ve	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	0.96	0.21
1,3-Butadiene	29	13	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	1.1	0.41	Trichloroethene	2.8	0.53
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	15	8.9	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	11	5.2	Toluene	17	4.4
Pentane	240	80	1,1,2-Trichloroethane	0.27 fb	0.049 fb
Trichlorofluoromethane	1,100 ve	190 ve	3-Hexanone	<14	<3.3
Acetone	210	89	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	7.3	2.6	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	1.6	0.40	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	7.7	1.8
Cyclopentane	20	7.0	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	14	3.1
Butanal	<9.7	<3.3	o-Xylene	4.9	1.1
Methylene chloride	<290	<82	Styrene	3.4	0.81
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	1.4	0.35	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	100	29	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.1	0.43	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	11	3.7	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	1.1	0.26	Naphthalene	0.88 fb	0.17 fb
1,1,1-Trichloroethane	11	2.0	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID: VP-8-091218
Date Received: 09/12/18
Date Collected: 09/12/18
Date Analyzed: 09/20/18
Matrix: Air
Units: ug/m3

Client: Floyd-Snider
Project: Ave 55-Taylor Way, F&BI 809188
Lab ID: 809188-10 1/3.3
Data File: 091923.D
Instrument: GCMS7
Operator: bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	11	3.1	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	57	12	Benzene	26	8.0
Chloromethane	4.0	1.9	Cyclohexane	36	10
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	1,200 ve	510 ve	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	0.92	0.36	1,2-Dichloropropane	2.9	0.62
1,3-Butadiene	47	21	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	3.9	1.5	Trichloroethene	4.4	0.81
Ethanol	32	17	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	39	23	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	25	12	Toluene	24	6.5
Pentane	470	160	1,1,2-Trichloroethane	0.83	0.15
Trichlorofluoromethane	960 ve	170 ve	3-Hexanone	<14	<3.3
Acetone	1,300 ve	540 ve	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	16	5.6	Tetrachloroethene	5.4	0.80
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	3.0	0.76	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	15	3.4
Cyclopentane	72	25	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	22	7.7	m,p-Xylene	13	3.1
Butanal	<9.7	<3.3	o-Xylene	8.3	1.9
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	9.4	1.2	Bromoform	<6.8	<0.66
Carbon disulfide	27	8.7	Benzyl chloride	0.29 fb	0.056 fb
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	9.2	2.3	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	79	22	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	4.7	0.96	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	21	7.1	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	2.2	0.54	Naphthalene	1.5 fb	0.29 fb
1,1,1-Trichloroethane	20	3.6	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-10-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-11 1/3.3
Date Analyzed:	09/20/18	Data File:	091924.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	5.0	1.4	1-Butanol	59	20
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	7.8	1.6	Benzene	<1.1	<0.33
Chloromethane	0.88	0.43	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	160	91	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	0.088 fb	0.040 fb	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	<0.89	<0.16
Ethanol	41	22	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	1.6 fb	0.43 fb
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	120	21	3-Hexanone	<14	<3.3
Acetone	30	13	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	14	3.9	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	3.7	0.77	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	1.1 fb	0.20 fb
1,1,1-Trichloroethane	<1.8	<0.33	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-14-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-12 1/3.3
Date Analyzed:	09/20/18	Data File:	091925.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	2.9	0.82	1-Butanol	21	7.0
Propene	<2.3	<1.3	Carbon tetrachloride	62	9.9
Dichlorodifluoromethane	59	12	Benzene	3.6	1.1
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	410 ve	180 ve	3-Pentanone	<12	<3.3
Acetaldehyde	110	59	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	16	7.2	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	94	18
Ethanol	71	38	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	14	8.2	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	16	7.6	Toluene	9.3	2.5
Pentane	260	87	1,1,2-Trichloroethane	4.9	0.89
Trichlorofluoromethane	13	2.3	3-Hexanone	<14	<3.3
Acetone	99	42	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	47	17	Tetrachloroethene	31	4.6
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	10	2.6	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	1.6	0.36
Cyclopentane	28	9.7	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	4.4	1.0
Butanal	<9.7	<3.3	o-Xylene	2.2	0.50
Methylene chloride	300	86	Styrene	<2.8	<0.66
CFC-113	18	2.3	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	2.4	0.59	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	120	34	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	4.3	0.87	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.13 fb	0.033 fb	Naphthalene	1.1 fb	0.20 fb
1,1,1-Trichloroethane	6.9	1.3	Hexachlorobutadiene	2.6	0.24

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-13-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-13 1/3.3
Date Analyzed:	09/20/18	Data File:	091926.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	7.0	2.0	1-Butanol	100	33
Propene	<2.3	<1.3	Carbon tetrachloride	6.2	0.99
Dichlorodifluoromethane	6.5	1.3	Benzene	<1.1	<0.33
Chloromethane	2.0	0.98	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	0.095 fb	0.043 fb	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	6.5	1.2
Ethanol	82	44	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	1.4 fb	0.38 fb
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	45	8.1	3-Hexanone	<14	<3.3
Acetone	44	18	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	7.6	1.1
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	2,200 ve	630 ve	Styrene	<2.8	<0.66
CFC-113	3.3	0.43	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	38	11	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	5.2	1.1	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.54 fb	0.10 fb
1,1,1-Trichloroethane	2.1 fb	0.39 fb	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-11-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-14 1/4.2
Date Analyzed:	09/20/18	Data File:	091929.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	102	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	4.0	1.1	1-Butanol	<25	<8.4
Propene	<2.9	<1.7	Carbon tetrachloride	<2.6	<0.42
Dichlorodifluoromethane	6.0	1.2	Benzene	11	3.4
Chloromethane	<0.87	<0.42	Cyclohexane	31 fb	9.1 fb
F-114	<2.9	<0.42	2-Pentanone	<15	<4.2
Isobutene	95	41	3-Pentanone	<15	<4.2
Acetaldehyde	320	180	Pentanal	<15	<4.2
Vinyl chloride	<1.1	<0.42	1,2-Dichloropropane	<0.97	<0.21
1,3-Butadiene	3.9	1.8	1,4-Dioxane	<1.5	<0.42
Bromomethane	<6.5	<1.7	Bromodichloromethane	3.2	0.48
Chloroethane	<1.1	<0.42	Trichloroethene	28	5.2
Ethanol	55	29	cis-1,3-Dichloropropene	<1.9	<0.42
Acetonitrile	<7.1	<4.2	4-Methyl-2-pentanone	<17	<4.2
Acrolein	<3.9	<1.7	trans-1,3-Dichloropropene	<1.9	<0.42
Acrylonitrile	<0.91	<0.42	Toluene	25	6.5
Pentane	77	26	1,1,2-Trichloroethane	3.8	0.69
Trichlorofluoromethane	5.9	1.0	3-Hexanone	<17	<4.2
Acetone	<20	<8.4	2-Hexanone	<17	<4.2
2-Propanol	<36	<15	Hexanal	<17	<4.2
Isoprene	1.2	0.44	Tetrachloroethene	14	2.1
Iodomethane	<2.4	<0.42	Dibromochloromethane	<0.36	<0.042
1,1-Dichloroethene	6.8	1.7	1,2-Dibromoethane (EDB)	<0.32	<0.042
Methacrolein	<12	<4.2	Chlorobenzene	<1.9	<0.42
trans-1,2-Dichloroethene	2.0	0.50	Ethylbenzene	3.3	0.77
Cyclopentane	<1.2	<0.42	1,1,2,2-Tetrachloroethane	<0.58	<0.084
Methyl vinyl ketone	<12	<4.2	m,p-Xylene	10	2.3
Butanal	<12	<4.2	o-Xylene	8.7	2.0
Methylene chloride	<360	<100	Styrene	<3.6	<0.84
CFC-113	12	1.6	Bromoform	<8.7	<0.84
Carbon disulfide	<26	<8.4	Benzyl chloride	0.63	0.12
Methyl t-butyl ether (MTBE)	<7.6	<2.1	1,3,5-Trimethylbenzene	<10	<2.1
Vinyl acetate	<30	<8.4	1,2,4-Trimethylbenzene	<10	<2.1
1,1-Dichloroethane	7.5	1.9	1,3-Dichlorobenzene	<2.5	<0.42
cis-1,2-Dichloroethene	4.5	1.1	1,4-Dichlorobenzene	<1	<0.17
Hexane	33	9.4	1,2,3-Trimethylbenzene	<10	<2.1
Chloroform	0.45	0.092	1,2-Dichlorobenzene	<2.5	<0.42
2-Butanone (MEK)	<12	<4.2	1,2,4-Trichlorobenzene	<3.1	<0.42
1,2-Dichloroethane (EDC)	0.27	0.067	Naphthalene	1.7 fb	0.33 fb
1,1,1-Trichloroethane	9.1	1.7	Hexachlorobutadiene	0.90 fb	0.084 fb

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-12-091218	Client:	Floyd-Snider
Date Received:	09/12/18	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/12/18	Lab ID:	809188-15 1/3.3
Date Analyzed:	09/20/18	Data File:	091927.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	2.3	0.65	1-Butanol	<20	<6.6
Propene	2.7	1.6	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	4.3	0.88	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	0.088	0.040	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	1.5 fb	0.28 fb
Ethanol	43	23	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	2.3	0.60
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	33	5.9	3-Hexanone	<14	<3.3
Acetone	25	11	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	3.0	0.44
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	2.9	0.67
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	3.7	0.75	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	1.1 fb	0.21 fb
1,1,1-Trichloroethane	2.1 fb	0.38 fb	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Ave 55-Taylor Way, F&BI 809188
Date Collected:	09/19/18	Lab ID:	08-2081 mb
Date Analyzed:	09/19/18	Data File:	091911.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<0.35	<0.1	1-Butanol	<6.1	<2
Propene	<0.69	<0.4	Carbon tetrachloride	<0.63	<0.1
Dichlorodifluoromethane	<0.49	<0.1	Benzene	<0.32	<0.1
Chloromethane	<0.21	<0.1	Cyclohexane	<6.9	<2
F-114	<0.7	<0.1	2-Pentanone	<3.5	<1
Isobutene	<0.92	<0.4	3-Pentanone	<3.5	<1
Acetaldehyde	<9	<5	Pentanal	<3.5	<1
Vinyl chloride	<0.26	<0.1	1,2-Dichloropropane	<0.23	<0.05
1,3-Butadiene	<0.022	<0.01	1,4-Dioxane	<0.36	<0.1
Bromomethane	<1.6	<0.4	Bromodichloromethane	<0.067	<0.01
Chloroethane	<0.26	<0.1	Trichloroethene	<0.27	<0.05
Ethanol	<7.5	<4	cis-1,3-Dichloropropene	<0.45	<0.1
Acetonitrile	<1.7	<1	4-Methyl-2-pentanone	<4.1	<1
Acrolein	<0.92	<0.4	trans-1,3-Dichloropropene	<0.45	<0.1
Acrylonitrile	<0.22	<0.1	Toluene	<0.38	<0.1
Pentane	<3	<1	1,1,2-Trichloroethane	<0.055	<0.01
Trichlorofluoromethane	<0.56	<0.1	3-Hexanone	<4.1	<1
Acetone	<4.8	<2	2-Hexanone	<4.1	<1
2-Propanol	<8.6	<3.5	Hexanal	<4.1	<1
Isoprene	<0.28	<0.1	Tetrachloroethene	<0.68	<0.1
Iodomethane	<0.58	<0.1	Dibromochloromethane	<0.085	<0.01
1,1-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methacrolein	<2.9	<1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Cyclopentane	<0.29	<0.1	1,1,2,2-Tetrachloroethane	<0.14	<0.02
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	<0.87	<0.2
Butanal	<2.9	<1	o-Xylene	<0.43	<0.1
Methylene chloride	<87	<25	Styrene	<0.85	<0.2
CFC-113	<0.77	<0.1	Bromoform	<2.1	<0.2
Carbon disulfide	<6.2	<2	Benzyl chloride	<0.052	<0.01
Methyl t-butyl ether (MTBE)	<1.8	<0.5	1,3,5-Trimethylbenzene	<2.5	<0.5
Vinyl acetate	<7	<2	1,2,4-Trimethylbenzene	<2.5	<0.5
1,1-Dichloroethane	<0.4	<0.1	1,3-Dichlorobenzene	<0.6	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	1,4-Dichlorobenzene	<0.24	<0.04
Hexane	<3.5	<1	1,2,3-Trimethylbenzene	<2.5	<0.5
Chloroform	<0.049	<0.01	1,2-Dichlorobenzene	<0.6	<0.1
2-Butanone (MEK)	<2.9	<1	1,2,4-Trichlorobenzene	<0.74	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01	Naphthalene	0.14 lc	0.026 lc
1,1,1-Trichloroethane	<0.55	<0.1	Hexachlorobutadiene	<0.21	<0.02

Date of Report: 09/28/18
Date Received: 09/12/18
Project: Ave 55-Taylor Way, F&BI 809188

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD APH

Laboratory Code: 809150-01 1/5 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	3,400	3,300	3
APH EC9-12 aliphatics	ug/m3	1,000	1,000	0
APH EC9-10 aromatics	ug/m3	300	320	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	45	80	70-130
APH EC9-12 aliphatics	ug/m3	45	116	70-130
APH EC9-10 aromatics	ug/m3	45	94	70-130

Date of Report: 09/28/18
Date Received: 09/12/18
Project: Ave 55-Taylor Way, F&BI 809188

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chlorodifluoromethane	ppbv	5	114	70-130
Propene	ppbv	5	101	70-130
Dichlorodifluoromethane	ppbv	5	108	70-130
Chloromethane	ppbv	5	102	70-130
F-114	ppbv	5	111	70-130
Isobutene	ppbv	5	105	70-130
Acetaldehyde	ppbv	5	124	70-130
Vinyl chloride	ppbv	5	107	70-130
1,3-Butadiene	ppbv	5	116	70-130
Bromomethane	ppbv	5	118	70-130
Chloroethane	ppbv	5	104	70-130
Ethanol	ppbv	5	91	70-130
Acetonitrile	ppbv	5	98	70-130
Acrolein	ppbv	5	103	70-130
Acrylonitrile	ppbv	5	123	70-130
Pentane	ppbv	5	107	70-130
Trichlorofluoromethane	ppbv	5	111	70-130
Acetone	ppbv	5	102	70-130
2-Propanol	ppbv	5	111	70-130
Isoprene	ppbv	5	110	70-130
Iodomethane	ppbv	5	107	70-130
1,1-Dichloroethene	ppbv	5	108	70-130
Methacrolein	ppbv	5	102	70-130
trans-1,2-Dichloroethene	ppbv	5	108	70-130
Cyclopentane	ppbv	5	112	70-130
Methyl vinyl ketone	ppbv	5	120	70-130
Butanal	ppbv	5	97	70-130
Methylene chloride	ppbv	5	82	70-130
CFC-113	ppbv	5	107	70-130
Carbon disulfide	ppbv	5	100	70-130
Methyl t-butyl ether (MTBE)	ppbv	5	111	70-130
Vinyl acetate	ppbv	5	106	70-130
1,1-Dichloroethane	ppbv	5	111	70-130
cis-1,2-Dichloroethene	ppbv	5	106	70-130
Hexane	ppbv	5	115	70-130
Chloroform	ppbv	5	113	70-130
2-Butanone (MEK)	ppbv	5	109	70-130
1,2-Dichloroethane (EDC)	ppbv	5	113	70-130
1,1,1-Trichloroethane	ppbv	5	115	70-130

Date of Report: 09/28/18
Date Received: 09/12/18
Project: Ave 55-Taylor Way, F&BI 809188

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
1-Butanol	ppbv	5	96	70-130
Carbon tetrachloride	ppbv	5	108	70-130
Benzene	ppbv	5	110	70-130
Cyclohexane	ppbv	5	103	70-130
2-Pentanone	ppbv	5	106	70-130
3-Pentanone	ppbv	5	113	70-130
Pentanal	ppbv	5	94	70-130
1,2-Dichloropropane	ppbv	5	103	70-130
1,4-Dioxane	ppbv	5	111	70-130
Bromodichloromethane	ppbv	5	110	70-130
Trichloroethene	ppbv	5	101	70-130
cis-1,3-Dichloropropene	ppbv	5	99	70-130
4-Methyl-2-pentanone	ppbv	5	96	70-130
trans-1,3-Dichloropropene	ppbv	5	105	70-130
Toluene	ppbv	5	98	70-130
1,1,2-Trichloroethane	ppbv	5	104	70-130
3-Hexanone	ppbv	5	101	70-130
2-Hexanone	ppbv	5	100	70-130
Hexanal	ppbv	5	98	70-130
Tetrachloroethene	ppbv	5	101	70-130
Dibromochloromethane	ppbv	5	119	70-130
1,2-Dibromoethane (EDB)	ppbv	5	111	70-130
Chlorobenzene	ppbv	5	106	70-130
Ethylbenzene	ppbv	5	109	70-130
1,1,2,2,-Tetrachloroethane	ppbv	5	118	70-130
m,p-Xylene	ppbv	10	116	70-130
o-Xylene	ppbv	5	123	70-130
Styrene	ppbv	5	109	70-130
Bromoform	ppbv	5	114	70-130
Benzyl chloride	ppbv	5	126	70-130
1,3,5-Trimethylbenzene	ppbv	5	110	70-130
1,2,4-Trimethylbenzene	ppbv	5	105	70-130
1,3-Dichlorobenzene	ppbv	5	114	70-130
1,4-Dichlorobenzene	ppbv	5	124	70-130
1,2,3-Trimethylbenzene	ppbv	5	107	70-130
1,2-Dichlorobenzene	ppbv	5	117	70-130
1,2,4-Trichlorobenzene	ppbv	5	101	70-130
Naphthalene	ppbv	5	100	70-130
Hexachloro-1,3-butadiene	ppbv	5	108	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

809188

SAMPLE CHAIN OF CUSTODY

ME 09-12-18

Page # 1 of 3

Report To Tom Colligan
Company Floyd Snider
Address 601 Union St, Suite 600
City, State, ZIP Seattle, WA 98101
Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*) Kora, Gabe

PROJECT NAME Ave 55-Taylor Way

PO #

REPORTING LEVEL
☐ Indoor Air ☐ Deep Soil Gas
☑ Sub Slab/Soil Gas ☐ SVE/Grab

INVOICE TO Tom Colligan

TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☑ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	APH (MA-APH)	Helium		Notes
VP-1-091218	01	3252	31	9/12/18	30	0919	4.5	0926	X	X	X		*See table 3 for full
VP-2-091218	02	3378	02	↓	30	0957	4.5	1010 ~~1000~~	↓	↓	↓		list of VOCs
VP-2-091218 Dup	03	3258	102	↓	30	0957	4.5	1005 ~~1010~~	↓	↓	↓		↓
VP-3-091218	04	2301	106	↓	30	10:47	4.5	10:51	↓	↓	↓		↓
~~VP-4-091218~~		~~3672~~	~~256~~	↓					↓	↓	↓		↓
VP-5-091218	05	2435	07	↓	29.5	11:46	4.5 ~~11:50~~	11:50	↓	↓	↓		↓
VP-7-091218	06	3251	109	↓	28.5	12:28	4.5	12:32	↓	↓	↓		↓
VP-9-091218	07	2297	231	↓	30	13:36	4.5 ~~13:4~~	13:42	↓	↓	↓		↓ Samples received at 21 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Gabe Cisneros	Floyd Snider	9/12/18	1720
Received by:		Eric Young	FEB	9/12/18	1720
Relinquished by:					
Received by:					

FORMS\COC\COCTO-15.DOC

809188

SAMPLE CHAIN OF CUSTODY

ME 09-12-18

Page # 2 of 3

Report To Tom Colligan

Company Floyd Snider

Address 601 Union St, Suite 600

City, State, ZIP Seattle, WA 98101

Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*) Kora, Gabe

PROJECT NAME Ave 55-Taylor Way

PO #

REPORTING LEVEL
☐ Indoor Air
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INVOICE TO Tom Colligan

TURNAROUND TIME
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☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	APH (MA-APH) ~~TO-15 BTEX~~	Helium TO-15 cVOCs		Notes
VP-4-091218	08	3672	256	9/12/18	28	1117	4.5	1121	X	X	X		*See table 3 for full
VP-6-091218	09	2300	108	9/12/18	30	1206	4.5	1210					list of VOCs
VP-8-091218	10	3669	105	9/12	29.5	1235	4.5	1239					
VP-10-091218	11	3386	01	9/12	30	1353	~~4.5~~ 2.0	1400					
VP-14-091218	12	2298	201	9/12	29.5	1442	4.5	1448					
VP-13-091218	13	3289	101	9/12	29.5	1522	~~1527~~ 4.5	1527					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabriel Cisneros	Floyd Snider	9/12/18	1720
Received by:	Eric Young	FeB	9/12/18	1720
Relinquished by:				
Received by:				

FORMS\COC\COCTO-15.DOC

809188

SAMPLE CHAIN OF CUSTODY

ME 09-12-18

Report To Tom Colligan

Company Floyd Snider

Address 601 Union St, Suite 600

City, State, ZIP Seattle, WA 98101

Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*) Kara, Gabe

PROJECT NAME Ave 55 - Taylor Way

PO #

REPORTING LEVEL
☐ Indoor Air
☑ Sub Slab/Soil Gas
☐ Deep Soil Gas
☐ SVE/Grab

INVOICE TO Tom Colligan

Page # 3 of 3

TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☑ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	APH (MA-APH) ~~TO-15 BTEXN~~	Helium ~~TO-15 VOCs~~	Archive	Notes
VP-11-091218	14	3677	257	9/12/18	28.7	14:28	4.5	14:37	X	X	X		* See table 3 for full list of VOCs
VP-12-091218	15	2437	03	↓	29.1 ~~28.7~~	15:09	4.5	15:15	↓	↓	↓		↓
VP-2B-091218	16	3674	111	↓	29.5	15:54 ~~15:56~~	4.5	16:03				X	HOLD ANALYSIS

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd Snider	9/12/18	1720
Received by:	Eric Young	F&B	9/12/18	1720
Relinquished by:				
Received by:				

FORMS\COC\COCTO-15.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

November 16, 2018

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the additional results from the testing of material submitted on October 24, 2018 from the Taylor Way-Ave 55, F&BI 810462 project. There are 20 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Gabe Cisneros
FDS1116R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 24, 2018 by Friedman & Bruya, Inc. from the Floyd-Snider Taylor Way-Ave 55, F&BI 810462 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
810462 -01	VP-2-102418
810462 -02	VP-1-102418
810462 -03	VP-1-102418 Dup
810462 -04	VP-3-102418
810462 -05	VP-5-102418
810462 -06	VP-8-102418
810462 -07	VP-11-102418
810462 -08	VP-9-102418
810462 -09	VP-4-102418
810462 -10	VP-6-102418
810462 -11	VP-7-102418
810462 -12	VP-12-102418
810462 -13	VP-13-102418
810462 -14	VP-14-102418
810462 -15	VP-10-102418
810462 -16	VP-LB-102418

An opening APH calibration standard was not analyzed on 10/26/18. The data were qualified accordingly. A full list TO15 calibration standard was analyzed and was within acceptance limits.

The APH EC5-8 aliphatics concentration for sample VP-6-102418 exceeded the calibration range. The data were flagged accordingly.

Non-petroleum compounds with Q values over 85 were subtracted from the APH EC5-8 and EC9-12 aliphatics ranges, if present.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-2-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-01 1/3.3
Date Analyzed:	10/26/18	Data File:	102608.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,200 ca
APH EC9-12 aliphatics	340 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-1-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-02 1/5
Date Analyzed:	11/09/18	Data File:	110911.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	BAT/MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,600
APH EC9-12 aliphatics	2,000
APH EC9-10 aromatics	170

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-1-102418 Dup	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-03 1/5
Date Analyzed:	11/09/18	Data File:	110912.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	BAT/MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,200
APH EC9-12 aliphatics	1,700
APH EC9-10 aromatics	160

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-3-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-04 1/3.3
Date Analyzed:	10/26/18	Data File:	102611.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	790
APH EC9-12 aliphatics	370
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-5-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-05 1/3.3
Date Analyzed:	10/26/18	Data File:	102612.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	750 ca
APH EC9-12 aliphatics	370 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-8-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-06 1/5
Date Analyzed:	11/09/18	Data File:	110913.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	BAT/MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	82	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,000
APH EC9-12 aliphatics	330
APH EC9-10 aromatics	<120

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-11-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-07 1/3.3
Date Analyzed:	11/09/18	Data File:	110914.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	BAT/MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,200
APH EC9-12 aliphatics	790
APH EC9-10 aromatics	<82

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-9-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-08 1/3.3
Date Analyzed:	10/26/18	Data File:	102615.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	690 ca
APH EC9-12 aliphatics	200 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-4-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-09 1/3.3
Date Analyzed:	10/26/18	Data File:	102616.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	480 ca
APH EC9-12 aliphatics	140 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-6-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-10 1/3.3
Date Analyzed:	10/26/18	Data File:	102617.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	4,700 ve ca
APH EC9-12 aliphatics	580 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-7-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-11 1/3.3
Date Analyzed:	10/26/18	Data File:	102618.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	2,800 ca
APH EC9-12 aliphatics	340 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-12-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-12 1/3.3
Date Analyzed:	10/26/18	Data File:	102619.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	740 ca
APH EC9-12 aliphatics	250 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-13-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-13 1/3.3
Date Analyzed:	10/26/18	Data File:	102620.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	770 ca
APH EC9-12 aliphatics	180 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-14-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-14 1/3.3
Date Analyzed:	10/26/18	Data File:	102621.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	710 ca
APH EC9-12 aliphatics	390 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-10-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-15 1/3.3
Date Analyzed:	10/26/18	Data File:	102622.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	470 ca
APH EC9-12 aliphatics	320 ca
APH EC9-10 aromatics	<82 ca

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-LB-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-16 1/10
Date Analyzed:	11/03/18	Data File:	110226.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	470
APH EC9-12 aliphatics	<350
APH EC9-10 aromatics	<250

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	Not Applicable	Lab ID:	08-2484 mb
Date Analyzed:	11/09/18	Data File:	110907.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	79	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<46
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Date of Report: 11/16/18
Date Received: 10/24/18
Project: Taylor Way-Ave 55, F&BI 810462

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD MA-APH

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	45	112	70-130
APH EC9-12 aliphatics	ug/m3	45	129	70-130
APH EC9-10 aromatics	ug/m3	45	107	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

810462

SAMPLE CHAIN OF CUSTODY ME 10-24-18

Report To Tom Colligan
Company Floyd Snider
Address 601 Union St., Suite 600
City, State, ZIP Seattle, WA 98101
Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*) Kara, Gabe	
PROJECT NAME Taylor Way-Ave 55	PO #
REPORTING LEVEL ☐ Indoor Air ☐ Deep Soil Gas ☑ Sub Slab/Soil Gas ☐ SVE/Grab	INVOICE TO Tom Colligan

Page # 1 of 2

TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☑ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	TO-15 BTEXN	TO-15 cVOCs	APH	Notes Ⓧ-per GC 11/8/18 ME
VP-2-102418	01	3311	242	10/24/18	29	7:59	4.5	8:05	X	X	X	Ⓧ	
VP-1-102418	02	3257	257	↓	28	0838	4.5	0843	X	X	X		
VP-1-102418 DUP	03	3390	256		27.5	0838	4.5	0843	X	X	X	↓	
VP-3-102418	04	3483	258		28.5	9:03	4.5	9:08	X	X	X		
VP-5-102418	05	3255	240		29.5	9:51	4.5	9:57	X	X	X		
VP-8-102418	06	3676	241		29.5	10:41	4.5	10:46	X	X	X		
VP-11-102418	07	2436	230		29.5	11:27	4.5	11:33	X	X	X		Samples received at 21 °C
VP-9-102418	08	3347	244		29	12:02	~~2~~4.5	12:07	X	X	X		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Kara Hitchko	Floyd Snider	10/24/18	13:16
Received by:	Eric Cla	FB	10/24/18	316
Relinquished by:				
Received by:				

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810462

SAMPLE CHAIN OF CUSTODY

ME 10-24-18

Page # 2 of 2

Report To Tom Colligan
Company Floyd|Snider
Address 601 Union St. Ste. 600
City, State, ZIP Seattle, WA 98101
Phone 206 292-2078 Email

SAMPLERS (signature)

PROJECT NAME
Ave 55 - Taylor Way

PO #

REPORTING LEVEL
☐ Indoor Air ☐ Deep Soil Gas
☒ Sub Slab/Soil Gas ☐ SVE/Grab

INVOICE TO

TURNAROUND TIME
☒ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

									ANALYSIS REQUESTED				
Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	TO-15 BTEXN	TO-15 cVOCs	APH	Notes
VP-4-102418	09	~~10~~ 3668	101	10/24/18	30	0909	4.5	0913	X	X	X	⊗	
VP-6-102418	10	2299	204		28.5	0937	4.5	0942	X	X	X		
VP-7-102418	11	3344	224		30	1002	4.5	1008	X	X	X		
VP-12-102418	12	3672	243		29.5	~~1035~~ 1030	4.5	1035	X	X	X		
VP-13-102418	13	3387	203		30	~~1448~~ 1048	4.5	1054	X	X	X		
VP-14-102418	14	3260	221		30	1121	4.5	1127	X	X	X		Samples received at 21 °C
VP-10-102418	15	2433	17		29	1155	4.0	1201	X	X	X		
VP-LB-102418	16	2434	111		30	1121	0.0	1122	X	X	X		Archive

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Koren Hitchko	Floyd Snider	10/24/18	13:16
Received by:	Eric Ka	FB	10/24/18	13:16
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
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www.friedmanandbruya.com

November 7, 2018

Tom Colligan, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Colligan:

Included are the results from the testing of material submitted on October 24, 2018 from the Taylor Way-Ave 55, F&BI 810462 project. There are 25 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS1107R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 24, 2018 by Friedman & Bruya, Inc. from the Floyd-Snider Taylor Way-Ave 55, F&BI 810462 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
810462 -01	VP-2-102418
810462 -02	VP-1-102418
810462 -03	VP-1-102418 Dup
810462 -04	VP-3-102418
810462 -05	VP-5-102418
810462 -06	VP-8-102418
810462 -07	VP-11-102418
810462 -08	VP-9-102418
810462 -09	VP-4-102418
810462 -10	VP-6-102418
810462 -11	VP-7-102418
810462 -12	VP-12-102418
810462 -13	VP-13-102418
810462 -14	VP-14-102418
810462 -15	VP-10-102418
810462 -16	VP-LB-102418

Naphthalene was detected in the TO-15 method blank at a level greater than one tenth the concentration detected in the samples. The data were flagged accordingly.

Several compounds exceeded the calibration range of the instrument. The data were flagged accoridngly.

An 8270D internal standard failed the acceptance criteria for sample VP-3-102418 due to matrix interferences. The data were flagged accordingly. The sample was diluted and reanalyzed.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-2-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-01 1/3.3
Date Analyzed:	10/26/18	Data File:	102608.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	47	9.6	Benzene	8.4	2.6
Chloromethane	2.6	1.3	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	140	60	3-Pentanone	<12	<3.3
Acetaldehyde	<270	<150	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	1.3	0.29
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	2.4	0.89	Trichloroethene	0.90	0.17
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	7.1	1.9
Pentane	120	40	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	180	32	3-Hexanone	<14	<3.3
Acetone	<16	<6.6	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	4.8	1.7	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	2.2	0.50
Cyclopentane	32	11	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	4.6	1.1
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	3.1	0.77	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	52	15	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.6	0.54	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.52	0.13	Naphthalene	0.35 fb	0.066 fb
1,1,1-Trichloroethane	9.2	1.7	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-1-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-02 1/3.3
Date Analyzed:	10/26/18	Data File:	102609.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	111	70	130

Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<1.2	<0.33
Propene	<2.3	<1.3
Dichlorodifluoromethane	75	15
Chloromethane	3.0	1.4
F-114	<2.3	<0.33
Isobutene	840 ve	370 ve
Acetaldehyde	110	62
Vinyl chloride	<0.84	<0.33
1,3-Butadiene	<0.073	<0.033
Bromomethane	<5.1	<1.3
Chloroethane	3.5	1.3
Ethanol	<25	<13
Acetonitrile	<5.5	<3.3
Acrolein	<3	<1.3
Acrylonitrile	<0.72	<0.33
Pentane	150	50
Trichlorofluoromethane	410	73
Acetone	500 ve	210 ve
2-Propanol	<28	<12
Isoprene	8.0	2.9
Iodomethane	<1.9	<0.33
1,1-Dichloroethene	1.8	0.47
Methacrolein	<9.5	<3.3
trans-1,2-Dichloroethene	<1.3	<0.33
Cyclopentane	22	7.7
Methyl vinyl ketone	<9.5	<3.3
Butanal	<9.7	<3.3
Methylene chloride	<290	<82
CFC-113	<2.5	<0.33
Carbon disulfide	<21	<6.6
Methyl t-butyl ether (MTBE)	<5.9	<1.6
Vinyl acetate	<23	<6.6
1,1-Dichloroethane	5.0	1.2
cis-1,2-Dichloroethene	<1.3	<0.33
Hexane	52	15
Chloroform	3.5	0.72
2-Butanone (MEK)	<9.7	<3.3
1,2-Dichloroethane (EDC)	3.2	0.78
1,1,1-Trichloroethane	9.2	1.7
1-Butanol	<20	<6.6
Carbon tetrachloride	<2.1	<0.33
Benzene	5.0	1.6
Cyclohexane	<23	<6.6
2-Pentanone	<12	<3.3
3-Pentanone	<12	<3.3
Pentanal	<12	<3.3
1,2-Dichloropropane	2.5	0.55
1,4-Dioxane	<1.2	<0.33
Bromodichloromethane	<0.22	<0.033
Trichloroethene	6.6	1.2
cis-1,3-Dichloropropene	<1.5	<0.33
4-Methyl-2-pentanone	<14	<3.3
trans-1,3-Dichloropropene	<1.5	<0.33
Toluene	11	2.8
1,1,2-Trichloroethane	<0.18	<0.033
3-Hexanone	<14	<3.3
2-Hexanone	<14	<3.3
Hexanal	<14	<3.3
Tetrachloroethene	11	1.6
Dibromochloromethane	<0.28	<0.033
1,2-Dibromoethane (EDB)	<0.25	<0.033
Chlorobenzene	<1.5	<0.33
Ethylbenzene	6.7	1.6
1,1,2,2-Tetrachloroethane	<0.45	<0.066
m,p-Xylene	19	4.3
o-Xylene	8.1	1.9
Styrene	<2.8	<0.66
Bromoform	<6.8	<0.66
Benzyl chloride	<0.17	<0.033
1,3,5-Trimethylbenzene	<8.1	<1.6
1,2,4-Trimethylbenzene	23	4.7
1,3-Dichlorobenzene	<2	<0.33
1,4-Dichlorobenzene	<0.79	<0.13
1,2,3-Trimethylbenzene	8.5	1.7
1,2-Dichlorobenzene	<2	<0.33
1,2,4-Trichlorobenzene	<2.4	<0.33
Naphthalene	5.5	1.0
Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-1-102418 Dup	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-03 1/3.3
Date Analyzed:	10/26/18	Data File:	102610.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	111	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	72	15	Benzene	4.9	1.5
Chloromethane	2.6	1.3	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	830 ve	360 ve	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	2.5	0.53
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	3.6	1.3	Trichloroethene	8.4	1.6
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	12	3.3
Pentane	150	50	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	390	69	3-Hexanone	<14	<3.3
Acetone	490 ve	210 ve	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	8.8	3.2	Tetrachloroethene	11	1.6
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	1.8	0.45	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	6.7	1.5
Cyclopentane	23	7.8	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	18	4.2
Butanal	<9.7	<3.3	o-Xylene	8.0	1.8
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	0.55	0.11
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	24	4.9
1,1-Dichloroethane	5.1	1.3	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	53	15	1,2,3-Trimethylbenzene	9.0	1.8
Chloroform	3.9	0.81	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	2.9	0.73	Naphthalene	3.6	0.69
1,1,1-Trichloroethane	8.8	1.6	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-3-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	11/24/18	Lab ID:	810462-04 1/3.3
Date Analyzed:	10/26/18	Data File:	102611.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	96	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2 J	<0.33 J	1-Butanol	<20 J	<6.6 J
Propene	<2.3 J	<1.3 J	Carbon tetrachloride	<2.1 J	<0.33 J
Dichlorodifluoromethane	18 J	3.7 J	Benzene	<1.1 J	<0.33 J
Chloromethane	<0.68 J	<0.33 J	Cyclohexane	<23 J	<6.6 J
F-114	<2.3 J	<0.33 J	2-Pentanone	<12	<3.3
Isobutene	16 J	6.9 J	3-Pentanone	<12	<3.3
Acetaldehyde	<30 J	<16 J	Pentanal	<12	<3.3
Vinyl chloride	<0.84 J	<0.33 J	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073 J	<0.033 J	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1 J	<1.3 J	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87 J	<0.33 J	Trichloroethene	1.1	0.20
Ethanol	<25 J	<13 J	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5 J	<3.3 J	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3 J	<1.3 J	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72 J	<0.33 J	Toluene	2.3	0.61
Pentane	<9.7 J	<3.3 J	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	96 J	17 J	3-Hexanone	<14	<3.3
Acetone	21 J	8.8 J	2-Hexanone	<14	<3.3
2-Propanol	<28 J	<12 J	Hexanal	<14	<3.3
Isoprene	<0.92 J	<0.33 J	Tetrachloroethene	4.7	0.69
Iodomethane	<1.9 J	<0.33 J	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3J	<0.33 J	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5 J	<3.3 J	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3 J	<0.33 J	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95 J	<0.33 J	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5 J	<3.3 J	m,p-Xylene	<2.9	<0.66
Butanal	<9.7 J	<3.3 J	o-Xylene	<1.4	<0.33
Methylene chloride	<290 J	<82 J	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21 J	<6.6 J	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9 J	<1.6 J	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23 J	<6.6 J	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3 J	<0.33 J	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3 J	<0.33 J	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12 J	<3.3 J	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	0.32 J	0.066 J	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7 J	<3.3 J	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13 J	<0.033 J	Naphthalene	0.59 fb	0.11 fb
1,1,1-Trichloroethane	2.9 J	0.54 J	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-3-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-04 1/6.25
Date Analyzed:	11/03/18	Data File:	110225.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<2.2	<0.62	1-Butanol	<38	<12
Propene	<4.3	<2.5	Carbon tetrachloride	<3.9	<0.62
Dichlorodifluoromethane	23	4.6	Benzene	<2	<0.62
Chloromethane	<1.3	<0.62	Cyclohexane	<43	<12
F-114	<4.4	<0.62	2-Pentanone	<22	<6.2
Isobutene	17	7.4	3-Pentanone	<22	<6.2
Acetaldehyde	<56	<31	Pentanal	<22	<6.2
Vinyl chloride	<1.6	<0.62	1,2-Dichloropropane	<1.4	<0.31
1,3-Butadiene	<0.14	<0.062	1,4-Dioxane	<2.3	<0.62
Bromomethane	<9.7	<2.5	Bromodichloromethane	<0.42	<0.062
Chloroethane	<1.6	<0.62	Trichloroethene	3.0	0.56
Ethanol	<47	<25	cis-1,3-Dichloropropene	<2.8	<0.62
Acetonitrile	<10	<6.2	4-Methyl-2-pentanone	<26	<6.2
Acrolein	<5.7	<2.5	trans-1,3-Dichloropropene	<2.8	<0.62
Acrylonitrile	<1.4	<0.62	Toluene	4.0	1.0
Pentane	<18	<6.2	1,1,2-Trichloroethane	<0.34	<0.062
Trichlorofluoromethane	110	20	3-Hexanone	<26	<6.2
Acetone	<30	<12	2-Hexanone	<26	<6.2
2-Propanol	<54	<22	Hexanal	<26	<6.2
Isoprene	<1.7	<0.62	Tetrachloroethene	5.7	0.84
Iodomethane	<3.6	<0.62	Dibromochloromethane	<0.53	<0.062
1,1-Dichloroethene	<2.5	<0.62	1,2-Dibromoethane (EDB)	<0.48	<0.062
Methacrolein	<18	<6.2	Chlorobenzene	<2.9	<0.62
trans-1,2-Dichloroethene	<2.5	<0.62	Ethylbenzene	<2.7	<0.62
Cyclopentane	<1.8	<0.62	1,1,2,2-Tetrachloroethane	<0.86	<0.12
Methyl vinyl ketone	<18	<6.2	m,p-Xylene	<5.4	<1.2
Butanal	<18	<6.2	o-Xylene	<2.7	<0.62
Methylene chloride	<540	<160	Styrene	<5.3	<1.2
CFC-113	<4.8	<0.62	Bromoform	<13	<1.2
Carbon disulfide	<39	<12	Benzyl chloride	<0.32	<0.062
Methyl t-butyl ether (MTBE)	<11	<3.1	1,3,5-Trimethylbenzene	<15	<3.1
Vinyl acetate	<44	<12	1,2,4-Trimethylbenzene	<15	<3.1
1,1-Dichloroethane	<2.5	<0.62	1,3-Dichlorobenzene	<3.8	<0.62
cis-1,2-Dichloroethene	<2.5	<0.62	1,4-Dichlorobenzene	<1.5	<0.25
Hexane	<22	<6.2	1,2,3-Trimethylbenzene	<15	<3.1
Chloroform	0.46	0.094	1,2-Dichlorobenzene	<3.8	<0.62
2-Butanone (MEK)	<18	<6.2	1,2,4-Trichlorobenzene	<4.6	<0.62
1,2-Dichloroethane (EDC)	<0.25	<0.062	Naphthalene	0.75 fb	0.14 fb
1,1,1-Trichloroethane	3.7	0.68	Hexachlorobutadiene	<1.3	<0.12

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-5-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-05 1/3.3
Date Analyzed:	10/26/18	Data File:	102612.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	96	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	29	5.9	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	32	14	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	1.2	0.26
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	0.89	0.16
Ethanol	51	27	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	4.0	1.1
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	250	45	3-Hexanone	<14	<3.3
Acetone	35	15	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	3.3	0.77
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	0.47	0.096	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.50 fb	0.096 fb
1,1,1-Trichloroethane	6.4	1.2	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-8-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-06 1/3.3
Date Analyzed:	10/26/18	Data File:	102613.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	29	5.9	Benzene	8.8	2.8
Chloromethane	<0.68	<0.33	Cyclohexane	27	7.8
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	760 ve	330 ve	3-Pentanone	<12	<3.3
Acetaldehyde	<270	<150	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	1.8	0.39
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	2.4	0.91	Trichloroethene	6.9	1.3
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	12	3.2
Pentane	290	98	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	410	73	3-Hexanone	<14	<3.3
Acetone	550 ve	230 ve	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	18	6.4	Tetrachloroethene	2.9	0.42
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	2.3	0.58	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	3.9	0.90
Cyclopentane	74	26	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	4.8	1.1
Butanal	<9.7	<3.3	o-Xylene	2.2	0.50
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	6.9	0.90	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	7.2	1.8	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	40	11	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.1	0.44	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.89	0.22	Naphthalene	0.42 fb	0.079 fb
1,1,1-Trichloroethane	13	2.4	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-11-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-07 1/3.3
Date Analyzed:	10/26/18	Data File:	102614.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	102	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	3.6	0.72	Benzene	3.5	1.1
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	12	5.1	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	11	2.0
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	13	3.5
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	2.7	0.49	3-Hexanone	<14	<3.3
Acetone	25	10	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	3.8	0.56
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	1.5	0.37	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	1.8	0.42
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	6.1	1.4
Butanal	<9.7	<3.3	o-Xylene	2.6	0.59
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	2.9	0.38	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	2.7	0.66	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	<0.16	<0.033	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.50 fb	0.096 fb
1,1,1-Trichloroethane	<1.8	<0.33	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-9-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-08 1/3.3
Date Analyzed:	10/26/18	Data File:	102615.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	2.6	1.5	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	2.9	0.59	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	1.2	0.21
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	2.3	0.62
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	3.6	0.64	3-Hexanone	<14	<3.3
Acetone	17	7.1	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.0	0.40	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.40 fb	0.076 fb
1,1,1-Trichloroethane	<1.8	<0.33	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-4-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-09 1/3.3
Date Analyzed:	10/26/18	Data File:	102616.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	10	2.1	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	0.96	0.18
Ethanol	26	14	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	2.1	0.57
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	69	12	3-Hexanone	<14	<3.3
Acetone	43	18	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	2.2	0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	1.5	0.31	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.43 fb	0.082 fb
1,1,1-Trichloroethane	2.0	0.36	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-6-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-10 1/3.3
Date Analyzed:	10/26/18	Data File:	102617.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	101	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	450 ve	260 ve	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	140	28	Benzene	21	6.6
Chloromethane	<0.68	<0.33	Cyclohexane	25	7.4
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	960 ve	420 ve	3-Pentanone	<12	<3.3
Acetaldehyde	<270	<150	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	1.6	0.34
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	0.88	0.33	Trichloroethene	28	5.2
Ethanol	31	17	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	21	5.6
Pentane	380	130	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	2,000 ve	360 ve	3-Hexanone	<14	<3.3
Acetone	120	51	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	12	4.2	Tetrachloroethene	9.5	1.4
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	7.9	2.0	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	5.8	1.3
Cyclopentane	39	14	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	11	4.0	m,p-Xylene	9.1	2.1
Butanal	<9.7	<3.3	o-Xylene	2.9	0.68
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	8.2	1.1	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	3.8	0.93	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	110	33	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	3.1	0.64	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	1.2	0.31	Naphthalene	0.54 fb	0.10 fb
1,1,1-Trichloroethane	23	4.1	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-7-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-11 1/3.3
Date Analyzed:	10/26/18	Data File:	102618.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	77	16	Benzene	1.1	0.34
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	430 ve	190 ve	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	4.5	0.97
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	1.6	0.30
Ethanol	40	21	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	3.7	0.98
Pentane	43	15	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	1,700 ve	290 ve	3-Hexanone	<14	<3.3
Acetone	26	11	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	2.3	0.34
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	15	5.1	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	4.0	0.98	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	1.9	0.38	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.80	0.20	Naphthalene	0.47 fb	0.089 fb
1,1,1-Trichloroethane	19	3.4	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-12-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-12 1/3.3
Date Analyzed:	10/26/18	Data File:	102619.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	<2.3	<1.3	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	4.0	0.80	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	1.3	0.24
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	2.7	0.73
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	15 c	2.7 c	3-Hexanone	<14	<3.3
Acetone	18	7.6	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	1.3	0.27	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.45 fb	0.086 fb
1,1,1-Trichloroethane	<1.8	<0.33	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-13-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-13 1/3.3
Date Analyzed:	10/26/18	Data File:	102620.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	3.2 fb	1.8 fb	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	6.3	1.3	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	35	6.6
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	42	11
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	29	5.1	3-Hexanone	<14	<3.3
Acetone	23	9.8	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	8.0	1.2
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	8.9	2.2	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	2.6	0.60
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	6.8	1.6
Butanal	<9.7	<3.3	o-Xylene	2.6	0.60
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	15	2.0	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	3.8	0.95	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	2.3	0.48	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.13	0.033	Naphthalene	0.36 fb	0.069 fb
1,1,1-Trichloroethane	15	2.7	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-14-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-14 1/3.3
Date Analyzed:	10/26/18	Data File:	102621.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	101	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	2.8 fb	1.6 fb	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	62	12	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	7.4	1.4
Ethanol	49	26	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	38	9.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	34	9.1
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	12	2.2	3-Hexanone	<14	<3.3
Acetone	58	24	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	3.1	0.45
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	5.7	1.3
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	27	6.1
Butanal	<9.7	<3.3	o-Xylene	8.3	1.9
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	4.1	0.53	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	1.3	0.27	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	13	4.4	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	0.31	0.076	Naphthalene	2.3 fb	0.43 fb
1,1,1-Trichloroethane	3.3	0.61	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-10-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-15 1/3.3
Date Analyzed:	10/26/18	Data File:	102622.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<1.2	<0.33	1-Butanol	<20	<6.6
Propene	2.4 fb	1.4 fb	Carbon tetrachloride	<2.1	<0.33
Dichlorodifluoromethane	6.6	1.3	Benzene	<1.1	<0.33
Chloromethane	<0.68	<0.33	Cyclohexane	<23	<6.6
F-114	<2.3	<0.33	2-Pentanone	<12	<3.3
Isobutene	<3	<1.3	3-Pentanone	<12	<3.3
Acetaldehyde	<30	<16	Pentanal	<12	<3.3
Vinyl chloride	<0.84	<0.33	1,2-Dichloropropane	<0.76	<0.16
1,3-Butadiene	<0.073	<0.033	1,4-Dioxane	<1.2	<0.33
Bromomethane	<5.1	<1.3	Bromodichloromethane	<0.22	<0.033
Chloroethane	<0.87	<0.33	Trichloroethene	1.8	0.33
Ethanol	<25	<13	cis-1,3-Dichloropropene	<1.5	<0.33
Acetonitrile	<5.5	<3.3	4-Methyl-2-pentanone	<14	<3.3
Acrolein	<3	<1.3	trans-1,3-Dichloropropene	<1.5	<0.33
Acrylonitrile	<0.72	<0.33	Toluene	3.5	0.92
Pentane	<9.7	<3.3	1,1,2-Trichloroethane	<0.18	<0.033
Trichlorofluoromethane	55	9.9	3-Hexanone	<14	<3.3
Acetone	19	8.1	2-Hexanone	<14	<3.3
2-Propanol	<28	<12	Hexanal	<14	<3.3
Isoprene	<0.92	<0.33	Tetrachloroethene	<2.2	<0.33
Iodomethane	<1.9	<0.33	Dibromochloromethane	<0.28	<0.033
1,1-Dichloroethene	<1.3	<0.33	1,2-Dibromoethane (EDB)	<0.25	<0.033
Methacrolein	<9.5	<3.3	Chlorobenzene	<1.5	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33	Ethylbenzene	<1.4	<0.33
Cyclopentane	<0.95	<0.33	1,1,2,2-Tetrachloroethane	<0.45	<0.066
Methyl vinyl ketone	<9.5	<3.3	m,p-Xylene	<2.9	<0.66
Butanal	<9.7	<3.3	o-Xylene	<1.4	<0.33
Methylene chloride	<290	<82	Styrene	<2.8	<0.66
CFC-113	<2.5	<0.33	Bromoform	<6.8	<0.66
Carbon disulfide	<21	<6.6	Benzyl chloride	<0.17	<0.033
Methyl t-butyl ether (MTBE)	<5.9	<1.6	1,3,5-Trimethylbenzene	<8.1	<1.6
Vinyl acetate	<23	<6.6	1,2,4-Trimethylbenzene	<8.1	<1.6
1,1-Dichloroethane	<1.3	<0.33	1,3-Dichlorobenzene	<2	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33	1,4-Dichlorobenzene	<0.79	<0.13
Hexane	<12	<3.3	1,2,3-Trimethylbenzene	<8.1	<1.6
Chloroform	1.6	0.34	1,2-Dichlorobenzene	<2	<0.33
2-Butanone (MEK)	<9.7	<3.3	1,2,4-Trichlorobenzene	<2.4	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033	Naphthalene	0.45 fb	0.086 fb
1,1,1-Trichloroethane	<1.8	<0.33	Hexachlorobutadiene	<0.7	<0.066

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-LB-102418	Client:	Floyd-Snider
Date Received:	10/24/18	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	10/24/18	Lab ID:	810462-16 1/10
Date Analyzed:	11/03/18	Data File:	110226.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	18	5.1	1-Butanol	<61	<20
Propene	7.4 fb	4.3 fb	Carbon tetrachloride	<6.3	<1
Dichlorodifluoromethane	<4.9	<1	Benzene	<3.2	<1
Chloromethane	<2.1	<1	Cyclohexane	<69	<20
F-114	<7	<1	2-Pentanone	<35	<10
Isobutene	<9.2	<4	3-Pentanone	<35	<10
Acetaldehyde	<90	<50	Pentanal	<35	<10
Vinyl chloride	<2.6	<1	1,2-Dichloropropane	<2.3	<0.5
1,3-Butadiene	0.35	0.16	1,4-Dioxane	<3.6	<1
Bromomethane	<16	<4	Bromodichloromethane	<0.67	<0.1
Chloroethane	<2.6	<1	Trichloroethene	<2.7	<0.5
Ethanol	86	46	cis-1,3-Dichloropropene	<4.5	<1
Acetonitrile	<17	<10	4-Methyl-2-pentanone	<41	<10
Acrolein	<9.2	<4	trans-1,3-Dichloropropene	<4.5	<1
Acrylonitrile	<2.2	<1	Toluene	4.4	1.2
Pentane	<30	<10	1,1,2-Trichloroethane	<0.55	<0.1
Trichlorofluoromethane	<5.6	<1	3-Hexanone	<41	<10
Acetone	64	27	2-Hexanone	<41	<10
2-Propanol	<86	<35	Hexanal	<41	<10
Isoprene	13	4.5	Tetrachloroethene	<6.8	<1
Iodomethane	<5.8	<1	Dibromochloromethane	<0.85	<0.1
1,1-Dichloroethene	<4	<1	1,2-Dibromoethane (EDB)	<0.77	<0.1
Methacrolein	<29	<10	Chlorobenzene	<4.6	<1
trans-1,2-Dichloroethene	<4	<1	Ethylbenzene	<4.3	<1
Cyclopentane	<2.9	<1	1,1,2,2-Tetrachloroethane	<1.4	<0.2
Methyl vinyl ketone	<29	<10	m,p-Xylene	<8.7	<2
Butanal	<29	<10	o-Xylene	<4.3	<1
Methylene chloride	2,500 ve	730 ve	Styrene	<8.5	<2
CFC-113	<7.7	<1	Bromoform	<21	<2
Carbon disulfide	<62	<20	Benzyl chloride	<0.52	<0.1
Methyl t-butyl ether (MTBE)	<18	<5	1,3,5-Trimethylbenzene	<25	<5
Vinyl acetate	<70	<20	1,2,4-Trimethylbenzene	<25	<5
1,1-Dichloroethane	<4	<1	1,3-Dichlorobenzene	<6	<1
cis-1,2-Dichloroethene	<4	<1	1,4-Dichlorobenzene	<2.4	<0.4
Hexane	57	16	1,2,3-Trimethylbenzene	<25	<5
Chloroform	<0.49	<0.1	1,2-Dichlorobenzene	<6	<1
2-Butanone (MEK)	<29	<10	1,2,4-Trichlorobenzene	<7.4	<1
1,2-Dichloroethane (EDC)	<0.4	<0.1	Naphthalene	<1	<0.2
1,1,1-Trichloroethane	<5.5	<1	Hexachlorobutadiene	<2.1	<0.2

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	Not Applicable	Lab ID:	08-2396 mb
Date Analyzed:	10/26/18	Data File:	102605.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<0.35	<0.1	1-Butanol	<6.1	<2
Propene	<0.69	<0.4	Carbon tetrachloride	<0.63	<0.1
Dichlorodifluoromethane	<0.49	<0.1	Benzene	<0.32	<0.1
Chloromethane	<0.21	<0.1	Cyclohexane	<6.9	<2
F-114	<0.7	<0.1	2-Pentanone	<3.5	<1
Isobutene	<0.92	<0.4	3-Pentanone	<3.5	<1
Acetaldehyde	<9	<5	Pentanal	<3.5	<1
Vinyl chloride	<0.26	<0.1	1,2-Dichloropropane	<0.23	<0.05
1,3-Butadiene	<0.022	<0.01	1,4-Dioxane	<0.36	<0.1
Bromomethane	<1.6	<0.4	Bromodichloromethane	<0.067	<0.01
Chloroethane	<0.26	<0.1	Trichloroethene	<0.27	<0.05
Ethanol	<7.5	<4	cis-1,3-Dichloropropene	<0.45	<0.1
Acetonitrile	<1.7	<1	4-Methyl-2-pentanone	<4.1	<1
Acrolein	<0.92	<0.4	trans-1,3-Dichloropropene	<0.45	<0.1
Acrylonitrile	<0.22	<0.1	Toluene	<0.38	<0.1
Pentane	<3	<1	1,1,2-Trichloroethane	<0.055	<0.01
Trichlorofluoromethane	<0.56	<0.1	3-Hexanone	<4.1	<1
Acetone	<4.8	<2	2-Hexanone	<4.1	<1
2-Propanol	<8.6	<3.5	Hexanal	<4.1	<1
Isoprene	<0.28	<0.1	Tetrachloroethene	<0.68	<0.1
Iodomethane	<0.58	<0.1	Dibromochloromethane	<0.085	<0.01
1,1-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methacrolein	<2.9	<1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Cyclopentane	<0.29	<0.1	1,1,2,2-Tetrachloroethane	<0.14	<0.02
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	<0.87	<0.2
Butanal	<2.9	<1	o-Xylene	<0.43	<0.1
Methylene chloride	<87	<25	Styrene	<0.85	<0.2
CFC-113	<0.77	<0.1	Bromoform	<2.1	<0.2
Carbon disulfide	<6.2	<2	Benzyl chloride	<0.052	<0.01
Methyl t-butyl ether (MTBE)	<1.8	<0.5	1,3,5-Trimethylbenzene	<2.5	<0.5
Vinyl acetate	<7	<2	1,2,4-Trimethylbenzene	<2.5	<0.5
1,1-Dichloroethane	<0.4	<0.1	1,3-Dichlorobenzene	<0.6	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	1,4-Dichlorobenzene	<0.24	<0.04
Hexane	<3.5	<1	1,2,3-Trimethylbenzene	<2.5	<0.5
Chloroform	<0.049	<0.01	1,2-Dichlorobenzene	<0.6	<0.1
2-Butanone (MEK)	<2.9	<1	1,2,4-Trichlorobenzene	<0.74	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01	Naphthalene	<0.1	<0.02
1,1,1-Trichloroethane	<0.55	<0.1	Hexachlorobutadiene	<0.21	<0.02

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Taylor Way-Ave 55, F&BI 810462
Date Collected:	Not Applicable	Lab ID:	08-2449 mb
Date Analyzed:	11/02/18	Data File:	110208.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

	Concentration			Concentration	
Compounds:	ug/m3	ppbv	Compounds:	ug/m3	ppbv
Chlorodifluoromethane	<0.35	<0.1	1-Butanol	<6.1	<2
Propene	<0.69	<0.4	Carbon tetrachloride	<0.63	<0.1
Dichlorodifluoromethane	<0.49	<0.1	Benzene	<0.32	<0.1
Chloromethane	<0.21	<0.1	Cyclohexane	<6.9	<2
F-114	<0.7	<0.1	2-Pentanone	<3.5	<1
Isobutene	<0.92	<0.4	3-Pentanone	<3.5	<1
Acetaldehyde	<9	<5	Pentanal	<3.5	<1
Vinyl chloride	<0.26	<0.1	1,2-Dichloropropane	<0.23	<0.05
1,3-Butadiene	<0.022	<0.01	1,4-Dioxane	<0.36	<0.1
Bromomethane	<1.6	<0.4	Bromodichloromethane	<0.067	<0.01
Chloroethane	<0.26	<0.1	Trichloroethene	<0.27	<0.05
Ethanol	<7.5	<4	cis-1,3-Dichloropropene	<0.45	<0.1
Acetonitrile	<1.7	<1	4-Methyl-2-pentanone	<4.1	<1
Acrolein	<0.92	<0.4	trans-1,3-Dichloropropene	<0.45	<0.1
Acrylonitrile	<0.22	<0.1	Toluene	<0.38	<0.1
Pentane	<3	<1	1,1,2-Trichloroethane	<0.055	<0.01
Trichlorofluoromethane	<0.56	<0.1	3-Hexanone	<4.1	<1
Acetone	<4.8	<2	2-Hexanone	<4.1	<1
2-Propanol	<8.6	<3.5	Hexanal	<4.1	<1
Isoprene	<0.28	<0.1	Tetrachloroethene	<0.68	<0.1
Iodomethane	<0.58	<0.1	Dibromochloromethane	<0.085	<0.01
1,1-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.077	<0.01
Methacrolein	<2.9	<1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Cyclopentane	<0.29	<0.1	1,1,2,2-Tetrachloroethane	<0.14	<0.02
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	<0.87	<0.2
Butanal	<2.9	<1	o-Xylene	<0.43	<0.1
Methylene chloride	<87	<25	Styrene	<0.85	<0.2
CFC-113	<0.77	<0.1	Bromoform	<2.1	<0.2
Carbon disulfide	<6.2	<2	Benzyl chloride	<0.052	<0.01
Methyl t-butyl ether (MTBE)	<1.8	<0.5	1,3,5-Trimethylbenzene	<2.5	<0.5
Vinyl acetate	<7	<2	1,2,4-Trimethylbenzene	<2.5	<0.5
1,1-Dichloroethane	<0.4	<0.1	1,3-Dichlorobenzene	<0.6	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	1,4-Dichlorobenzene	<0.24	<0.04
Hexane	<3.5	<1	1,2,3-Trimethylbenzene	<2.5	<0.5
Chloroform	<0.049	<0.01	1,2-Dichlorobenzene	<0.6	<0.1
2-Butanone (MEK)	<2.9	<1	1,2,4-Trichlorobenzene	<0.74	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01	Naphthalene	0.12 lc	0.023 lc
1,1,1-Trichloroethane	<0.55	<0.1	Hexachlorobutadiene	<0.21	<0.02

Date of Report: 11/07/18
Date Received: 10/24/18
Project: Taylor Way-Ave 55, F&BI 810462

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chlorodifluoromethane	ppbv	5	116	70-130
Propene	ppbv	5	104	70-130
Dichlorodifluoromethane	ppbv	5	103	70-130
Chloromethane	ppbv	5	119	70-130
F-114	ppbv	5	111	70-130
Isobutene	ppbv	5	120	70-130
Acetaldehyde	ppbv	5	126	70-130
Vinyl chloride	ppbv	5	115	70-130
1,3-Butadiene	ppbv	5	127	70-130
Bromomethane	ppbv	5	107	70-130
Chloroethane	ppbv	5	112	70-130
Ethanol	ppbv	5	115	70-130
Acetonitrile	ppbv	5	122	70-130
Acrolein	ppbv	5	110	70-130
Acrylonitrile	ppbv	5	112	70-130
Pentane	ppbv	5	119	70-130
Trichlorofluoromethane	ppbv	5	101	70-130
Acetone	ppbv	5	109	70-130
2-Propanol	ppbv	5	113	70-130
Isoprene	ppbv	5	105	70-130
Iodomethane	ppbv	5	95	70-130
1,1-Dichloroethene	ppbv	5	99	70-130
Methacrolein	ppbv	5	107	70-130
trans-1,2-Dichloroethene	ppbv	5	99	70-130
Cyclopentane	ppbv	5	120	70-130
Methyl vinyl ketone	ppbv	5	118	70-130
Butanal	ppbv	5	101	70-130
Methylene chloride	ppbv	5	90	70-130
CFC-113	ppbv	5	99	70-130
Carbon disulfide	ppbv	5	97	70-130
Methyl t-butyl ether (MTBE)	ppbv	5	105	70-130
Vinyl acetate	ppbv	5	109	70-130
1,1-Dichloroethane	ppbv	5	108	70-130
cis-1,2-Dichloroethene	ppbv	5	95	70-130
Hexane	ppbv	5	112	70-130
Chloroform	ppbv	5	107	70-130
2-Butanone (MEK)	ppbv	5	108	70-130
1,2-Dichloroethane (EDC)	ppbv	5	107	70-130
1,1,1-Trichloroethane	ppbv	5	105	70-130

Date of Report: 11/07/18
Date Received: 10/24/18
Project: Taylor Way-Ave 55, F&BI 810462

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample (continued)

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
1-Butanol	ppbv	5	104	70-130
Carbon tetrachloride	ppbv	5	96	70-130
Benzene	ppbv	5	106	70-130
Cyclohexane	ppbv	5	104	70-130
2-Pentanone	ppbv	5	110	70-130
3-Pentanone	ppbv	5	115	70-130
Pentanal	ppbv	5	96	70-130
1,2-Dichloropropane	ppbv	5	102	70-130
1,4-Dioxane	ppbv	5	98	70-130
Bromodichloromethane	ppbv	5	103	70-130
Trichloroethene	ppbv	5	93	70-130
cis-1,3-Dichloropropene	ppbv	5	86	70-130
4-Methyl-2-pentanone	ppbv	5	93	70-130
trans-1,3-Dichloropropene	ppbv	5	95	70-130
Toluene	ppbv	5	89	70-130
1,1,2-Trichloroethane	ppbv	5	97	70-130
3-Hexanone	ppbv	5	93	70-130
2-Hexanone	ppbv	5	109	70-130
Hexanal	ppbv	5	101	70-130
Tetrachloroethene	ppbv	5	89	70-130
Dibromochloromethane	ppbv	5	106	70-130
1,2-Dibromoethane (EDB)	ppbv	5	102	70-130
Chlorobenzene	ppbv	5	102	70-130
Ethylbenzene	ppbv	5	101	70-130
1,1,2,2,-Tetrachloroethane	ppbv	5	120	70-130
m,p-Xylene	ppbv	10	109	70-130
o-Xylene	ppbv	5	116	70-130
Styrene	ppbv	5	101	70-130
Bromoform	ppbv	5	104	70-130
Benzyl chloride	ppbv	5	126	70-130
1,3,5-Trimethylbenzene	ppbv	5	100	70-130
1,2,4-Trimethylbenzene	ppbv	5	98	70-130
1,3-Dichlorobenzene	ppbv	5	108	70-130
1,4-Dichlorobenzene	ppbv	5	117	70-130
1,2,3-Trimethylbenzene	ppbv	5	105	70-130
1,2-Dichlorobenzene	ppbv	5	112	70-130
1,2,4-Trichlorobenzene	ppbv	5	91	70-130
Naphthalene	ppbv	5	96	70-130
Hexachloro-1,3-butadiene	ppbv	5	100	70-130

Date of Report: 11/07/18
Date Received: 10/24/18
Project: Taylor Way-Ave 55, F&BI 810462

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chlorodifluoromethane	ppbv	5	112	70-130
Propene	ppbv	5	103	70-130
Dichlorodifluoromethane	ppbv	5	94	70-130
Chloromethane	ppbv	5	112	70-130
F-114	ppbv	5	107	70-130
Isobutene	ppbv	5	115	70-130
Acetaldehyde	ppbv	5	123	70-130
Vinyl chloride	ppbv	5	111	70-130
1,3-Butadiene	ppbv	5	122	70-130
Bromomethane	ppbv	5	105	70-130
Chloroethane	ppbv	5	108	70-130
Ethanol	ppbv	5	98	70-130
Acetonitrile	ppbv	5	114	70-130
Acrolein	ppbv	5	115	70-130
Acrylonitrile	ppbv	5	110	70-130
Pentane	ppbv	5	115	70-130
Trichlorofluoromethane	ppbv	5	93	70-130
Acetone	ppbv	5	99	70-130
2-Propanol	ppbv	5	107	70-130
Isoprene	ppbv	5	101	70-130
Iodomethane	ppbv	5	84	70-130
1,1-Dichloroethene	ppbv	5	92	70-130
Methacrolein	ppbv	5	102	70-130
trans-1,2-Dichloroethene	ppbv	5	93	70-130
Cyclopentane	ppbv	5	121	70-130
Methyl vinyl ketone	ppbv	5	113	70-130
Butanal	ppbv	5	94	70-130
Methylene chloride	ppbv	5	72	70-130
CFC-113	ppbv	5	92	70-130
Carbon disulfide	ppbv	5	91	70-130
Methyl t-butyl ether (MTBE)	ppbv	5	96	70-130
Vinyl acetate	ppbv	5	107	70-130
1,1-Dichloroethane	ppbv	5	103	70-130
cis-1,2-Dichloroethene	ppbv	5	89	70-130
Hexane	ppbv	5	105	70-130
Chloroform	ppbv	5	99	70-130
2-Butanone (MEK)	ppbv	5	98	70-130
1,2-Dichloroethane (EDC)	ppbv	5	99	70-130
1,1,1-Trichloroethane	ppbv	5	97	70-130
1-Butanol	ppbv	5	95	70-130
Carbon tetrachloride	ppbv	5	91	70-130

Date of Report: 11/07/18
Date Received: 10/24/18
Project: Taylor Way-Ave 55, F&BI 810462

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample (continued)

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ppbv	5	99	70-130
Cyclohexane	ppbv	5	101	70-130
2-Pentanone	ppbv	5	111	70-130
3-Pentanone	ppbv	5	111	70-130
Pentanal	ppbv	5	104	70-130
1,2-Dichloropropane	ppbv	5	102	70-130
1,4-Dioxane	ppbv	5	93	70-130
Bromodichloromethane	ppbv	5	101	70-130
Trichloroethene	ppbv	5	91	70-130
cis-1,3-Dichloropropene	ppbv	5	87	70-130
4-Methyl-2-pentanone	ppbv	5	88	70-130
trans-1,3-Dichloropropene	ppbv	5	92	70-130
Toluene	ppbv	5	86	70-130
1,1,2-Trichloroethane	ppbv	5	95	70-130
3-Hexanone	ppbv	5	94	70-130
2-Hexanone	ppbv	5	106	70-130
Hexanal	ppbv	5	98	70-130
Tetrachloroethene	ppbv	5	84	70-130
Dibromochloromethane	ppbv	5	101	70-130
1,2-Dibromoethane (EDB)	ppbv	5	98	70-130
Chlorobenzene	ppbv	5	93	70-130
Ethylbenzene	ppbv	5	94	70-130
1,1,2,2,-Tetrachloroethane	ppbv	5	114	70-130
m,p-Xylene	ppbv	10	101	70-130
o-Xylene	ppbv	5	108	70-130
Styrene	ppbv	5	95	70-130
Bromoform	ppbv	5	95	70-130
Benzyl chloride	ppbv	5	117	70-130
1,3,5-Trimethylbenzene	ppbv	5	92	70-130
1,2,4-Trimethylbenzene	ppbv	5	91	70-130
1,3-Dichlorobenzene	ppbv	5	99	70-130
1,4-Dichlorobenzene	ppbv	5	107	70-130
1,2,3-Trimethylbenzene	ppbv	5	98	70-130
1,2-Dichlorobenzene	ppbv	5	102	70-130
1,2,4-Trichlorobenzene	ppbv	5	81	70-130
Naphthalene	ppbv	5	89	70-130
Hexachloro-1,3-butadiene	ppbv	5	90	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

810462

SAMPLE CHAIN OF CUSTODY ME 10-24-18

Page # 1 of 2

Report To Tom Colligan

Company Floyd Snider

Address 601 Union St., Suite 600

City, State, ZIP Seattle, WA 98101

Phone 206-292-2078 Email tom.colligan@floydsnider.com

SAMPLERS (*signature*) Kara, Gabe

PROJECT NAME	PO #
Taylor Way-Ave 55	

REPORTING LEVEL

☐ Indoor Air ☐ Deep Soil Gas

☑ Sub Slab/Soil Gas ☐ SVE/Grab

INVOICE TO Tom Colligan

TURNAROUND TIME

☑ Standard

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☑ Dispose after 30 days

☐ Archive Samples

☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	TO-15 BTEXN	TO-15 cVOCs		Notes
VP-2-102418	01	3311	242	10/24/18	29	7:59	4.5	8:05	X	X	X		
VP-1-102418	02	3257	257		28	0838	4.5	0843	X	X	X		
VP-1-102418 DUP	03	3390	256		27.5	0838	4.5	0843	X	X	X		
VP-3-102418	04	3483	258		28.5	9:03	4.5	9:08	X	X	X		
VP-5-102418	05	3255	240		29.5	9:51	4.5	9:57	X	X	X		
VP-8-102418	06	3676	241		29.5	10:41	4.5	10:46	X	X	X		
VP-11-102418	07	2436	230		29.5	11:27	4.5	11:33	X	X	X		Samples received at 21 °C
VP-9-102418	08	3347	244		29	12:02	4.5	12:07	X	X	X		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Kara Hitchko	Floyd Snider	10/24/18	13:16
Received by:		Eric [illegible]	F&B	10/24/18	3:16
Relinquished by:					
Received by:					

FORMS\COC\COCTO-15.DOC

810462

SAMPLE CHAIN OF CUSTODY

ME 10-24-18

Page # 2 of 2

Report To Tom Colligan

Company Floyd|Snider

Address 601 Union St. Ste. 600

City, State, ZIP Seattle, WA 98101

Phone 206 292-2078 Email

SAMPLERS (signature)

PROJECT NAME	PO #
Ave 55 - Taylor Way	

REPORTING LEVEL
☐ Indoor Air ☐ Deep Soil Gas
☒ Sub Slab/Soil Gas ☐ SVE/Grab

INVOICE TO

TURNAROUND TIME
☒ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	TO-15 BTEXN	TO-15 cVOCs		Notes
VP-4-102418	09	~~10~~ 3668	101	10/24/18	30	0909	4.5	0913	X	X	X		
VP-6-102418	10	2299	204	↓	28.5	0937	4.5	0942	X	X	X		
VP-7-102418	11	3344	224		30	1002	4.5	1008	X	X	X		
VP-12-102418	12	3672	243		29.5	~~1035~~ 1030	4.5	1035	X	X	X		
VP-13-102418	13	3387	203		30	1048	4.5	1054	X	X	X		
VP-14-102418	14	3260	221		30	1121	4.5	1127	X	X	X		Samples received at 21 °C
VP-10-102418	15	2433	17		29	1155	4.0	1201	X	X	X		
VP-LB-102418	16	2434	111	1	30	1121	0.0	1122	X	X	X		Archive

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Karen Hitchko	Floyd Snider	10/24/18	13:16
Received by:	Eric [illegible]	F&B	10/24/18	13:16
Relinquished by:				
Received by:				

FORMS\COC\COCTO-15.DOC

1514 Taylor Way Development

Interim Action Completion Report

Appendix C
Permits

Tacoma

CITY OF TACOMA

Planning and Development Services
(253) 591-5030

747 Market St.
Tacoma, WA 98402
Inspections (253) 573-2587

SITE DEVELOPMENT PERMIT # SDEV17-0042

ISSUED: 06/29/2017
EXPIRES: 12/26/2017

PO Number: 18293

SITE INFORMATION	**PARCEL OWNER**	**ISSUED TO**
Parcel No.: 0321267005 1514 TAYLOR, TACOMA, WA 98421	PORT OF TACOMA PO BOX 1837 TACOMA WA, 984011837	AVENUE 55 LLC 600 University St, Suite 2305 Seattle, WA 98101

PROJECT DESCRIPTION

Avenue 55 Taylor Way
Grading and installation of temporary erosion control measures to prepare site for future building and site development improvements.

Total Value: $550,000.00
Permit Fee: $1,805.76
Payment Info: Check 2563

CONDITIONS OF APPROVAL

PERMIT MUST BE KEPT ON SITE DURING CONSTRUCTION

All plumbing, heating, and electrical work will be performed by either the home owner or by a contractor licensed to do the same. Separate permits are required for other work, including but not limited to, sanitary and storm sewer, sidewalk, curb and gutter, driveways, parking lot paving, street improvements, plumbing, mechanical, fire protection and signs.

X ______________________________

THIS PERMIT SHALL BECOME NULL AND VOID IF ANY OF THE ABOVE INFORMATION IS FOUND TO BE INCORRECT

GENERAL:

PERMISSION IS HEREBY GIVEN TO DO THE DESCRIBED WORK, AS NOTED ON THE REVERSE SIDE, ACCORDING TO THE CONDITIONS HEREON AND ACCORDING TO THE APPROVED PLANS AND SPECIFICATIONS PERTAINING THERETO, SUBJECT TO COMPLIANCE WITH THE ORDINANCES OF THE CITY OF TACOMA.,

YOUR ATTENTION IS CALLED TO THE FACT THAT IT SHALL BE THE DUTY OF THE PERMITEE (General Contractor) to assure that all necessary inspections are called for and approved by the City Inspectors.

YOUR ATTENTION IS CALLED to the fact that in addition to the called for inspections specified by the applicable codes, the Building Official may make or require any other inspections of any construction work necessary to ascertain compliance with the provisions of City Codes and other laws which are enforced by the City of Tacoma.

YOUR ATTENTION IS CALLED to the fact that in addition to regularly scheduled inspections during construction there shall be a final inspection and approval on all buildings or structures when completed and ready for occupancy. AU required off-site improvements (curbs, sidewalks, storm sewers, etc.) must be completed at time a final inspection and prior to occupancy of building. Construction of off-site improvements requires scheduled inspections during construction in addition to the final inspection.

SPECIAL PERMITS

The holder of Special Permits agrees to the following stipulations:

1. To complete the work encompassed by the Special Permit in accordance with the current edition of the WSDOTIAFWA Standard Specifications as amended by the City of Tacoma General Special Provisions and in accordance with any special provisions or conditions set forth before final acceptance as required by the provisions of the Street Obstruction Bond.
2. To indemnify and hold the City of Tacoma harmless from any and all damages done to any person or property which may arise from the construction encompassed by the Special Permit.
3. To submit for review and approval to the Traffic Engineer a traffic control plan developed in accordance with the "Manual on Uniform Traffic Control Devices" (MUTCD). The traffic control plan shall show pedestrian access through the work zone.
4. To protect the public by placing adequate barricades, signs, cones, lights or other traffic control devices in accordance with the approved traffic control plan. It is understood that traffic lane closures and or sidewalk closures are limited to that which is specifically permitted herein. No other closures will be allowed without prior written approval of the City Engineer.
5. To provide and maintain protected pedestrian and ADA compliant disability access on walkways at all times.
6. The City of Tacoma does not guarantee sewer location or depth information. It shall be the permittee's responsibility to verify sewer and sewer stub locations and depths.
7. To restore Rights-of-Way in accordance with the City's Rights-of-Way Restoration Policy and City of Tacoma Standard Plans
8. Trench backfill within all improved streets or streets proposed for improvement shall be full depth bank run gravel or approved equal by the Construction Division.
9. All cuts in arterial streets shall be patched and maintained with Hot Mix Asphalt until permanent repairs are completed. All cuts in residential streets or alleys shall be patched and maintained with cold mix asphalt until permanent repairs are made. Permanent repairs shall be per current City of Tacoma Standard Plans. Streets and alleys shall be permanently repaired within 30 days.
10. To be responsible for the preservation of any utilities within the construction area.

CALL TOLL FREE BEFORE YOU DIG -1-800-424-5555 (Utilities Underground Location Center)

11. 24 Hour notice is required prior to any inspection. Construction Division 253-591-5760, Traffic SignaVStreetlight 253-591 -5287.
12. The Special Permit Expiration date is 30 days from the issue date unless otherwise noted.

SPECIAL AUTHORIZATION
TO
DISCHARGE TO THE CITY OF TACOMA'S
SANITARY SEWER SYSTEM

In accordance with Tacoma Municipal Code section 12.08.365 and subject to the conditions contained in Chapter 12.08 and in this Authorization, the entity specified herein is authorized to discharge to the City of Tacoma's (City) *sanitary sewer system*:

17- 011
SAD No. Received by Date

Avenue 55 Bryan Ploetz 425-487-5200
Authorized Discharger, Company Representative, Phone No.

600 University Street #2305, Seattle, WA, 98101
Address of Company, Street, City, State, ZIP

Port Of Tacoma
Name of Property Owner (if different), Phone number

PO Box 1837, Tacoma, WA, 98401
Address of Property Owner, Street, City, State, ZIP

1514 Taylor Way, Tacoma
Address of Discharge Location, Street, City

A. PURPOSE OF DISCHARGE:

Avenue 55 is developing 1514 Taylor Way involving three (3) parcels (0321267005, 0321356008, and 0321355007). This project consists of two buildings that will be built on cap material since this is a former landfill site with contaminated soils. Contact stormwater and groundwater will be kept in a temporary holding pond on site or baker tanks if more storage is needed before being sampled. If water meets City of Tacoma's local limits for the sanitary sewer, tanked water will be discharged to sanitary sewer.

B. DISCHARGE CONDITIONS:

1. Flow Limitations and Monitoring Requirements:

The Authorized Discharger is required to meter all discharge flows. All flows will be recorded in a log book at the construction site for City inspector review. The Authorized Discharger shall control the flow of water into the downstream system to ensure that the capacity of the City's sanitary sewer system is not exceeded as a result of the additional flows caused by the discharge. If an exceedance occurs, the discharge must be immediately discontinued and the City notified at (253) 591-5595. Discharges to the City's municipal sanitary sewer system will be on a batch discharge basis between the hours of 7:30 am to 5:00 pm only after permission has been granted by the City. If the authorized discharger requests to discharge outside of these hours, the City must be contacted and permission granted. The discharge flow rate will be limited to **60 gpm**.

2. Quality Limitations and Monitoring Requirements:

   The following discharge limitations must be met in order to discharge to the municipal sanitary sewer system:

City of Tacoma Municipal Code – Chapter 12.08.020; Chapter 12.08.040; and 40 CFR Part 136.3

POLLUTANT	DISCHARGE LIMIT		APPROVED ANALYTICAL METHOD		
			EPA Method	*Standard Method*	*ASTM*
Total Arsenic	0.1	mg/L	200.5; 200.7; 200.8; 200.9		
Total Cadmium	0.25	mg/L	200.5; 200.7; 200.8		
Total Chromium	1.0	mg/L	200.5; 200.7; 200.8; 200.9		
Hexavalent Chromium	0.25	mg/L			
Total Copper	1.0	mg/L	200.5; 200.7; 200.8; 200.9		
Total Cyanide	0.64	mg/L		4500B; 4500C	
Free Cyanide	0.2	mg/L			D7237-10; D4282-02
Total Lead	0.4	mg/L	200.5; 200.7; 200.8; 200.9		
Total Mercury	0.05	mg/L	245.1; 245.2; 245.7; 1631E		
Total Molybdenum	1.0	mg/L	200.5; 200.7; 200.8		
Total Nickel	1.0	mg/L	200.5; 200.7; 200.8; 200.9		
Total Selenium	0.1	mg/L	200.5; 200.7; 200.8; 200.9		
Total Silver	0.2	mg/L	200.5; 200.7; 200.8; 200.9		
Total Zinc	2.0	mg/L	200.5; 200.7; 200.8; 282.2		
Total Petroleum Hydrocarbons	50	mg/L	1664A; 1664B *(measured as silica gel treated, hexane extractable materials (SGT-HEM)*		
pH	5.5 - 11.0		150.2	4500H$^+$B-2000	
Total Suspended Solids	225*	mg/L		2540 D – 1997	
Total Toxic Organics**	2.13	mg/L	624; 625		
BETX***	10	mg/L	624		

*The Total Suspended Solids value of 225 mg/L is a benchmark. Any amount over and above may be used for billing purposes. **The Sum of all Total toxic organics with 0.1 mg/L or greater cannot exceed 2.13 mg/L. ***Benzene may not exceed 0.5 mg/L

The Authorized Discharger must obtain samples and receive analytical data prior to requesting permission to discharge. After the sample analysis has been completed and the results indicate no violations of the parameters above, permission to discharge may be requested from Source Control. **Discharging without prior permission from Source Control is prohibited.**

The Authorized Discharger must observe the discharge for unusual color, odor and/or sheen. If any of these conditions are present, the discharge must be immediately discontinued and the City of Tacoma notified at (253) 591-5595.

C. DISCHARGE LOCATION:

The discharge will be into an existing private sanitary sewer located on parcels 0321267005, 0321356008, and 0321355007; once new private sanitary manholes are installed on parcel 0321355007, discharge will be to those.

D. OTHER CONDITIONS:

1. The Authorized Discharger must possess a valid NPDES permit from the Department of Ecology and/or the Environmental Protection Agency, if applicable, and operate in compliance with that permit as determined by the issuing agency
2. The City of Tacoma reserves all of the powers set forth in Chapter 12.08 TMC, as well as any other applicable powers granted by the Tacoma Municipal Code, state and/or federal law to enforce the terms of the Authorization, and to regulate the use of its municipal sewer system including, but not limited to, seeking supplemental charges under TMC 12.08.610.
3. The Authorized Discharger must pay the applicable fees and maintain payments as provided for in Tacoma Municipal Code Chapter 12.08.
4. The Authorized Discharger must cease discharge when:
   a) A violation is suspected or detected, of any of the discharge conditions specified in B. above; or
   b) When directed to by the City.
5. The Authorized Discharger may be required to reduce the flow rate of the discharge, or cease discharging during heavy rainfall events which may over burden the sanitary sewer system.
6. The Authorized Discharger must deliver a letter to the City at the office of Environmental Compliance Support, 2201 Portland Ave, Tacoma, 98421, (FAX

   (253) 502-2295) within 5 calendar days of any exceedance of the discharge conditions specified in B. above, explaining the limitations exceeded, the cause, the measures taken to mitigate it and to prevent reoccurrence.
7. The Authorized Discharger must submit a new application and pay an application fee for discharges that exceed twelve (12) months in duration.
8. This Special Approved Discharge (SAD) authorization is issued solely to the authorized discharger named in section one above. Authorization to discharge to the City's sanitary sewer system is not transferrable without the City's written consent.

E. BILLING:

The Authorized Discharger must keep records of each batch discharge, monitoring results, volume, date, and time in a log book kept on site for inspector review. The discharge records must also be submitted to the City of Tacoma for billing purposes on a monthly basis. Monthly reporting is due by the 15th of each following month. If no discharge occurred then a report stating that there was no discharge must be submitted. The Authorized Discharger must notify this office, in writing, upon project completion for final billing.

F. ENFORCEMENT:

Violations of this Authorization or of Tacoma Municipal Code Chapter 12.08 may be subject to Notices of Violation w/Civil penalties of up to $5000.00 per violation per day.

G. TERM OF AUTHORIZATION:

This Special Approved Discharge Authorization expires one year from the date of issuance. To extend this SAD, please submit an application at least one month prior to expiration.

ON BEHALF OF THE CITY OF TACOMA

Dan C. Thompson

Dan C. Thompson, Ph.D.
Business Operations Division Manager
Environmental Services

6-29-17
Dated

The 24-hour emergency telephone number for City of Tacoma Sewer Transmission Operation and Maintenance is (253) 591-5595. The regular business hours (Mon-Fri 8:00 A.M. to 4:30 P.M.) number is (253) 591-5588. FAX (253) 502-2295

Anthony L-T Chen, MD, MPH, Director of Health

Tacoma - Pierce County
Health Department
Healthy People in Healthy Communities
www.tpchd.org

No. 2155

WASTE DISPOSAL AUTHORIZATION

Tacoma Pierce County
Health Department

9/18/2017 10:02:49 AM
Clerk 62-T2
Waste Disposal Auth Initial
$165.00
Receipt #476952
v01243B Andrew Zaborowski #2155

(XX) Non-Asbestos **(XX) New**

( ) Asbestos (PSCAA Case # ___________) ( ) Amendment

A. Generator Name: Avenue 55, LLC

B. Generator Address: 1514 Taylor Way, Portside 55 North Development, Tacoma WA

C. Transporter Name: Sierra Construction Company

D. Technical Contact: Tom Colligan (Floyd|Snider Inc.) Phone: 206-292-2078

E. Waste Description: Petroleum contaminated soil

( ) Sludge **(XX)** Solid **(XX)** PCS ( ) Other

F. Approved Quantity: **4000 Tons**

G. **Actual Quantity (Filled in upon disposal):** ____________

H. Multiple Loads: **(XX)** Yes ( ) No

I. Dates of Disposal: **September 15, 2017 through December 31, 2017**

J. Testing: PCBs, TPH-G, TPH-DX, metals, SVOCs, VOCs

K. Reviewed by Department of Ecology: () Yes **(XX)** No

L. Disposal/Transportation Requirements: **A copy of this WDA must be transported with EACH load of waste and presented to the LRI Landfill Scalehouse Operator.** Soils demonstrating excessive odors are not suitable for use as daily cover and shall be directly buried (disposed of) in the landfill. If odors are not excessive and the soils physical characteristics are suitable for utilization as a daily cover then the soils may be used as alternative daily cover. Loads shall be covered during transport to the landfill to prevent fugitive emissions of contaminated soils. Load sizes shall comply with conditional-use and solid waste permit criteria. Wastes may have no free liquids. Generator shall add bulking agents to waste if needed, to absorb free liquids.

M. Facility: **(XX) LRI Landfill (304th Street LF), 30919 Meridian Street, Eatonville, WA**

CERTIFICATION

I hereby certify that I have personally examined and am familiar with the information submitted in this document and any supporting material. Based on my inquiry of those individuals immediately responsible for obtaining the information, the information submitted is true, accurate and complete to the best of my knowledge and ability and that all known and suspected hazards have been disclosed. I agree that the generator and/or transporter will abide by all conditions specified in line (L) or any attachments thereto.

9/18/17 DEV. MANAGER
Date Title Signature

AUTHORIZED BY:

Keith Johnston, TPCHD (253) 798-6561

Cc: LRI LF Scalehouse via Fax – 253 875 7205

APPROVED

SEP 15 2017

TACOMA-PIERCE COUNTY HEALTH DEPT.
ENVIRONMENTAL HEALTH DIV.

For Official Use Only

Tacoma-Pierce County Health Department Environmental Health Division Waste Management
3629 South D St, Tacoma, MS: 1045, WA 98418-6813 (253) 798-6047

Waste Disposal Authorization Application

Tacoma-Pierce County
Health Department
Healthy People in Healthy Communities

We require the information below to determine if this waste is acceptable for disposal at the City of Tacoma Landfill, the LRI Landfill, the Wm Dickson Waller Road Landfill, or other permitted solid waste facilities. It is unlikely that you will be able to respond in the space provided. Feel free to modify the format or address the information on additional pages. Include all the information requested below and email, fax or mail to:

Email ehsolidwaste@tpchd.org
Fax (253) 798-6498

Tacoma-Pierce County Health Department
3629 South D Street MS 1045
Waste Management
Tacoma, WA 98418-6813

Date
September 13, 2017

Site/Generator Name
1514 Taylor Way, Portside 55 North Development, Tacoma WA

Site Owner Name
Avenue 55 LLC

Describe Where Waste Originated (site address, physical location, company name, project name, etc.)

Waste lumber mixed with soil from construction site on the tideflats- 1514 Taylor Way.

Transporter Name
Sierra Construction Company

Technical Contact/Consultant Name
Tom Colligan, Floyd|Snider INc

Proposed Solid Waste Disposal/Treatment Facility
LRI

Describe the Site History (if applicable)

former Mutual Fir and Buffelen door manufacturing site, also used by Lindal Cedar Homes- lots of waste lumber. One section of the site was part of the adjacent Don Oline landfill.

Describe How Waste is Generated/Source of Waste

Near surface grading revealed lots of waste lumber (see photo) mixed with soil, this material is unsuitable for base course for pavement and so must be excavated to allow placement of quality fill soils.

Projected Quantity or Volume of Waste (tons or cubic yards generated per month, quarter, year, once, etc.)

2,500 cubic yards maximum

Describe the Sampling Method(s) and/or Submit Sampling Plan

Soils already extensively sampled as part of an Ecology RI.FS. Soil samples collected at over 30 locations, over 100 samples analyzed for VOCs, TPH, SVOCs, metals and PCBs. Only contaminant above MTCA was TPH and metals. See table 5.2 in Ecology-approved Interim Action Work Plan. Table 5.2 lists maximum contaminants levels in soil

Describe and Justify the Number of Samples per Volume of Waste

The area of the site where the waste lumber was found is along the west (see attached figure), this area was sampled by Test Pit locations 1, 2, 3, 4, 12, 17. Two samples per test pit, so 10 samples in total. That is one sample for every

Describe and Justify the Parameters Selected for Analysis
Samples analyzed for PCBs, TPH-G, TPH-DX, metals, SVOCs, VOCs. Results attached.

Please attach or enclose:

- analytical results
- chain of custody forms
- a sampling plan
- any other documents relevant to the review of the site, facility and/or waste being characterized

By my signature below, I certify that the information presented in this application is true and complete to the best of my knowledge.

Applicant Name Tom Colligan	Applicant Title Licensed Geologist, State of Washington
Applicant Signature Thomas Colligan	Date 9/13/2017
Company Name Floyd|Snider Inc.	Company Address 601 Union Street, Seattle WA Suite 600, 98191
Phone Number 206-292-2078	Fax Number
Email Address tom.colligan@floydsnider.com	

1514 Taylor Way Development

Interim Action Completion Report

Appendix D
Photographs

Photograph 1. Preconstruction Site Conditions. Looking south, existing surcharge pile in background.

Photograph 2. Dynamic Compaction Impact Craters. Looking South

Photograph 3. Wood debris found in soil at the North west edge of property. Looking South

Photograph 4. Covered stockpile of wood debris.

Photograph 5. Wet site conditions during initial methane and VOC vapor survey in April 2018.
Stormwater Pond in Background, Looking North

Photograph 6. Stormwater pump brought in to control excess water in the stormwater pond.
Looking South

Photograph 7. Site conditions during second VOC vapor sampling event in May 2018.

Photograph 8. Vapor sampling set up in May 2018.

Photograph 9. VOC vapor sampling equipment.

Photograph 10. Excavation of perimeter footing around recently poured floor.

Photograph 11. Looking East in finished floor slab of Building A.

Photograph 12. NE Office Node of Building A. Passive Vapor Mitigation system located under slab.

Photograph 13. Typical Vapor Pin installed in Building A and B.

Photograph 14. Vapor Points VP-12 and VP-13 after installation.

1514 Taylor Way Development

Interim Action Completion Report

Appendix E
Ecology Communications

Electronic Copy

1889

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • 360-407-6300
Call 711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

April 16, 2020

Scott Hooton
Port of Tacoma
PO Box 1837
Tacoma, WA 98401-1837
shooton@portoftacoma.com

Re: Comments on Post-Construction Vapor Intrusion Assessment

- **Site Name:** Taylor Way and Alexander Avenue Fill Area (TWAAFA)
- **Site Address:** 1514 Taylor Way E, Tacoma, Pierce County, WA
- **Facility/Site ID:** 1403183
- **Cleanup Site ID:** 4692
- **Agreed Order No.:** DE13921

Dear Scott Hooton:

Thank you for submitting the *Supplemental Post-Construction Vapor Intrusion Assessment* (report)[1] for our review. The Department of Ecology (Ecology) has the following comments on the report:

1. Ecology does not agree with the report's conclusion that no further assessment and/or mitigation is needed for vapor intrusion for the following reasons:

   a. **Methane:** Methane was measured at concentrations up to 27.2% beneath Building A (VP-8) and 4.2% beneath Building B (VP-11). These methane concentrations are much higher and are at a shallower depth than the initial measurements in 2016 and 2018 (1.4% maximum).[2] The report states that these concentrations are not of concern because they are below the ASTM (2016) methane action level of <30% and the cross-slab differential pressure criteria of <500 Pascals (Pa).[3]

---

[1] *Supplemental Post-Construction Vapor Intrusion Assessment, 1514 Taylor Way Development, Tacoma, Washington*. Prepared by Floyd|Snider, dated March 10, 2020.

[2] *Summary of Soil Vapor Survey Data and Vapor Mitigation Plan for the 1514 Taylor Way Site*. Prepared by Floyd|Snider, dated June 8, 2018.

[3] *Standard Guide for Evaluating Potential Hazard as a Result of Methane in the Vadose Zone*. E2993-16, ASTM International, 2016

However, this pressure criterion is based on a measurement depth of 1.5 meters (4.9 feet). As noted by ASTM (2016), for shallower measurements, the potential for temporal variability warrants further consideration. ASTM (2016) also states that any capping of the ground surface can impede the natural venting of soil gas. Therefore, it is possible that methane concentrations beneath the buildings are due to the lack of venting and will continue to increase due to the extensive capping from buildings and/or pavement. As a result, **one** of the following actions shall be taken:

i. **Passive Vapor Mitigation:** The passive vapor mitigation system shall be completed at both buildings so that it is operational. The system is not currently operable, mainly because aboveground riser vents are stubbed off and capped 2 to 3 feet above floor level.

   Quarterly methane monitoring from the sub-slab monitoring points shall be performed for the first year after operation begins. At the end of the first year of monitoring, Ecology shall evaluate the data and determine an appropriate monitoring frequency.

   If the passive system is not adequate to reduce methane concentrations, then conversion to an active venting system (with the installation of an inline blower in one or more vertical risers) shall be made.

ii. **Monthly Methane Monitoring:** Monthly measurements of methane concentrations shall be made from the sub-slab monitoring points beneath both buildings and reported to Ecology. Ecology will review the data to see if concentrations are continuing to increase and/or the spatial extent of soil gas with elevated methane is increasing and/or if these concentrations require additional indoor air measurements and/or operation of the passive or active vapor mitigation system.

Please inform Ecology **within 14 days** of the date of this letter which of the above two actions you propose to perform and the schedule for performing this work.

b. **Chloroform in Indoor Air:** Concentrations of chloroform at indoor air locations IA-A1 and IA-A3 (1.3 and 1.9 micrograms per cubic meter, $\mu g/m^3$, respectively) exceeded the MTCA Method C air cleanup level of 1.1 $\mu g/m^3$. The report attributes these exceedances to indoor sources. However, chloroform was measured in the sub-slab at concentrations up to 1.6 $\mu g/m^3$ and there are building features that could allow the direct transport of sub-slab soil gas into indoor air with little or no attenuation.

These features consist of the open penetration for the for the fire supply water lines in both buildings (Figure 1) and the wide expansion joint in Building A (Figure 2). To reduce the potential for chloroform vapor intrusion, the following actions shall be performed:

i. The open penetrations shall be sealed around each of the fire supply lines in Buildings A and B.

ii. Sealant shall be placed within the wide expansion joint in Building A.

Figure 1. *Note exposed gravel around fire supply water pipes that allow a direct connection to subsurface soil vapor.*

Figure 2*. Note wide expansion crack in center of photograph.*

Please inform Ecology **within 14 days** of the date of this letter of the methods that you propose to use to perform the above tasks and the schedule for performing this work.

2. **Cross-slab Differential Pressure:** Please revise the report to add an appendix that includes a tabular list of the cross-slab differential pressure data.

3. **Table 3:** This table shows two columns for location IA-A3 and no column for location IA-A4. This appears to be a typographic error. Please check this and correct the table accordingly.

4. **Attachment 5, Site-Specific MTCA Method B Cleanup Level Calculations:** The average total petroleum hydrocarbons (TPH) indoor air cleanup level should have been calculated separately for each building rather than combining all of the results. Then, the lowest value for the two buildings should be used for the Site cleanup level. Please revise the report accordingly.

5. Ecology recommends that if possible, photographs of the indoor air sampling locations should be included in the report.

Please provide the revised report **within 30 days** of the date of this letter. As indicated above, please also inform Ecology **within 14 days** of the date of this letter the requested information in above Comments 1a and 1b.

If you have any questions about this letter, please contact me at (360) 407-6247 or steve.teel@ecy.wa.gov.

Sincerely,

SSTeel

Steve Teel, LHG
Toxics Cleanup Program
Southwest Regional Office

SST/tam

cc by email: Drew Zaborowski, Avenue55, dzaborowski@avenue55.net
Tom Colligan, Floyd|Snider,Tom.Colligan@floydsnider.com
Gabrielle Gurian, Office of the Attorney General, Gabrielle.Gurian@atg.wa.gov
Nick Acklam, Ecology, nicholas.acklam@ecy.wa.gov
Rebecca S. Lawson, Ecology, rebecca.lawson@ecy.wa.gov
Ecology Site File

Port of Tacoma
People. Partnership. Performance.
P.O. Box 1837
Tacoma, WA 98401-1837
www.portoftacoma.com

April 29, 2020

Transmitted via email

Steve Teel, LHG
Cleanup Project Manager/Hydrogeologist
Toxics Cleanup Program – Southwest Regional Office
Washington State Department of Ecology
PO Box 47775
Olympia, Washington 98504-7775

RE: Agreed Order No. DE 13921
1514 Taylor Way E, Tacoma, Pierce County WA
April 16, 2020 Comments on Post-Construction Vapor Intrusion Assessment

Dear Mr. Teel:

This letter follows-up and confirms our April 28, 2020 telephone conversation regarding the above-captioned matter. Avenue 55's Drew Zaborowski and Floyd|Snider's Tom Colligan also participated in the call. While the Port is a PLP and signatory to the Agreed Order, it is also noteworthy that a separate agreement with the lessee (Avenue 55) provides for the implementation of most aspects of the Agreed Order by Avenue 55. Avenue 55 has contracted Floyd|Snider to perform many of those tasks. Consequently, the Port's response to Ecology comments below refers to Avenue 55 and/or Floyd|Snider.

Following the resolution of all comments, Floyd|Snider will provide a revised memo with these edits as an appendix to the revised Interim Action Completion Report unless directed otherwise by Ecology. That report will also be modified to address comments previously received from Andy Smith, the former site manager.

Set forth below are Ecology's April 16, 2020 comments (in reverse order) together with the Port's response.

Ecology Comment 5: Ecology recommends that if possible, photographs of the indoor air sampling locations should be included in the report.

Comment 5 Response: Floyd|Snider will update the report with a new attachment containing photographs of the indoor air and/or sub-slab sampling locations, where available.

Ecology Comment 4: Attachment 5, Site-Specific MTCA Method B Cleanup Level Calculations: The average total petroleum hydrocarbons (TPH) indoor air cleanup level should have been calculated separately for each building rather than combining all the results. Then, the lowest value for the two buildings should be used for the Site cleanup level. Please revise the report accordingly.

Comment 4 Response: Floyd|Snider will update the report to prepare building-specific total petroleum hydrocarbons (TPH) indoor air cleanup levels as requested. During our telephone conversation you explained that the rationale for requesting building-specific cleanup levels rather than site-specific cleanup levels is based on a conversation with Mark Gordon at Ecology, the author of Implementation Memo #18. To the extent further explanation for the required approach is desired Mr. Gordon will be consulted.

Ecology Comment 3: Table 3**:** This table shows two columns for location IA-A3 and no column for location IA-A4. This appears to be a typographic error. Please check this and correct the table accordingly.

Comment 3 Response: Floyd**I**Snider will make the noted correction to Table 3.

Ecology Comment 2: Cross-slab Differential Pressure: Please revise the report to add an appendix that includes a tabular list of the cross-slab differential pressure data.

Comment 2 Response: Floyd**I**Snider will revise the report to add the data to the differential pressure plots found in Attachment 3.

Ecology Comment 1B: Ecology does not agree with the report's conclusion that no further assessment and/or mitigation is needed for vapor intrusion for the following reason:

Chloroform in Indoor Air: Concentrations of chloroform at indoor air locations IA-A1 and IA-A3 (1.3 and 1.9 micrograms per cubic meter, μg/m3, respectively) exceeded the MTCA Method C air cleanup level of 1.1 μg/m3. The report attributes these exceedances to indoor sources. However, chloroform was measured in the sub-slab at concentrations up to 1.6 μg/m3 and there are building features that could allow the direct transport of sub-slab soil gas into indoor air with little or no attenuation. These features consist of the open penetration ~~for the~~ for the fire supply water lines in both buildings (Figure 1) and the wide expansion joint in Building A (Figure 2). To reduce the potential for chloroform vapor intrusion, the following actions shall be performed:

i. The open penetrations shall be sealed around each of the fire supply lines in Buildings A and B.

ii. Sealant shall be placed within the wide expansion joint in Building A.

Please inform Ecology within 14 days of the date of this letter of the methods that you propose to use to perform the above tasks and the schedule for performing this work.

Comment 1B Response: Avenue 55 has sealed the open penetrations around the fire supply lines in Buildings A and B and the expansion joint in Building A[1]. A 1" foam backer-rod was placed around the fire riser and entire floor penetration was sealed with a ½" layer of

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[1] Nevertheless, we stress our disagreement with any conclusion made from the data that the chloroform is due to vapor intrusion. Sub slab chloroform levels were found at generally lower concentrations that those measured in indoor air. If the chloroform in indoor air was due to vapor intrusion, we would expect the opposite- we would expect indoor air concentrations to be at least 10-100x lower that those measured sub slab. In addition, the indoor air sample collected at the location of the water supply lines had a concentration well less than the Method C concentration.

Sikaflex 1A Construction Sealant. The expansion joint was sealed by placing a foam backer inside the joint and sealing the top 2” with MM-80 Joint Filler from Metzger/Mcguire. Data sheets for both products are attached.

Ecology Comment 1A: Ecology does not agree with the report’s conclusion that no further assessment and/or mitigation is needed for vapor intrusion for the following reason:

Methane: Methane was measured at concentrations up to 27.2% beneath Building A (VP-8) and 4.2% beneath Building B (VP-11). These methane concentrations are much higher and are at a shallower depth than the initial measurements in 2016 and 2018 (1.4% maximum). The report states that these concentrations are not of concern because they are below the ASTM (2016) methane action level of <30% and the cross-slab differential pressure criteria of<500 Pascals (Pa).

However, this pressure criterion is based on a measurement depth of 1.5 meters (4.9 feet). As noted by ASTM (2016), for shallower measurements, the potential for temporal variability warrants further consideration. ASTM (2016) also states that any capping of the ground surface can impede the natural venting of soil gas. Therefore, it is possible that methane concentrations beneath the buildings are due to the lack of venting and will continue to increase due to the extensive capping from buildings and/or pavement. As a result, one of the following actions shall be taken:

> **i. Passive Vapor Mitigation:** The passive vapor mitigation system shall be completed at both buildings so that it is operational. The system is not currently operable, mainly because aboveground riser vents are stubbed off and capped 2 to 3 feet above floor level.
>
> Quarterly methane monitoring from the sub-slab monitoring points shall be performed for the first year after operation begins. At the end of the first year of monitoring, Ecology shall evaluate the data and determine an appropriate monitoring frequency.
>
> If the passive system is not adequate to reduce methane concentrations, then conversion to an active venting system (with the installation of an inline blower in one or more vertical risers) shall be made.
>
> **ii. Monthly Methane Monitoring:** Monthly measurements of methane concentrations shall be made from the sub-slab monitoring points beneath both buildings and reported to Ecology. Ecology will review the data to see if concentrations are continuing to increase and/or the spatial extent of soil gas with elevated methane is increasing and/or if these concentrations require additional indoor air measurements and/or operation of the passive or active vapor mitigation system.

Please inform Ecology **within 14 days** of the date of this letter which of the above two actions you propose to perform and the schedule for performing this work.

Comment 1A Response: Agreed Order AO DE 13921 required the Port to perform a methane hazard assessment in accordance with ASTM E2993-16, *Standard Guide for Evaluating Potential Hazard as a Result of Methane in the Vadose Zone* (the “ASTM Standard”).

Based on the explanation provided below, the Port believes that requirement has been satisfied and that no further monitoring or corrective action is warranted.

Consistent with the ASTM Standard, methane gas at this site originated from buried wood debris—organic matter, with a net increase in gas volume near the generating source. The resulting increased gas pressure causes gas flow away from the source zone. The screening values for methane are typically derived from the lower flammable limit since methane hazard is related to flammability and not toxicity. Methane in the soil gas is of concern if it migrates into enclosed spaces and mixes with air (including oxygen) to form a mixture within or above the flammable range.

The ASTM Standard provides a tiered approach for assessing and interpreting site methane, evaluating hazard and risk, determining the appropriate response, and identifying the urgency of the response. This approach uses a decision matrix based on methane concentrations in the vadose zone and other factors such as indoor air concentrations, differential pressure measurements, and estimates of the volume of methane within soil gas near a building to determine the potential hazard. Fires or explosions caused by intrusion of methane gas from the soil are relatively rare events, so the ASTM Standard reasonably assumes that most sites will be “screened out” by this process and result in no further action. In general, the greater the spatial extent of soil gas with elevated methane, the greater the potential for vapor intrusion of methane to be an issue. A single, isolated hot spot of 5 to 30% methane is unlikely to result in an indoor air concern.

The ASTM Standard Decision for a tiered Methane Hazard Evaluation Assessment is shown in Figure 1. There are four criteria: (1) differential pressure; (2) % methane; (3) presence of a large volume of gas; and, (4) methane in indoor air at concentrations >1.25%. At the 1514 Taylor Way property, all the differential pressure measurements are about three orders-of-magnitude lower than the 500 Pa differential pressure criteria, and so there is no pressure gradient to drive gas below the floor slab into the building. Only one in fourteen probes indicated concentrations above 5% so there is clearly a small volume of methane gas present. Moreover, no detectable methane was noted by the gas meter in the building air at the time the sub slab survey field measurements were conducted. Taken together and applying these results to tiered evaluation process shown in Figure 1, the ASTM Standard indicates that no further action is appropriate. The Port believes this alone meets the AO requirement to perform a methane hazard assessment in accordance with ASTM E2993-16, and no associated methane hazard exists.

Nevertheless, out of an abundance of caution, the vapor probes were resampled on April 22. The attached summary of results shows even lower methane concentrations and confirms our findings that methane gas below the floor slab present represents an isolated occurrence that is not increasing in volume. In consideration of these additional findings, the Port hereby requests that Ecology waive requirements for additional methane sampling or mitigation.

Given the Port’s disagreement with Ecology’s prior written decision dated April 16, 2010, directing the Port to take further action with respect to the Post-Construction Vapor Intrusion Assessment, the Port hereby officially notifies you that the Port invokes the Dispute Resolution provisions of Agreed Order No. DE13921. Specifically, this writing constitutes the Port’s requisite “Informal Dispute Notice” per AO Section VIII.H.1.a. The Notice commences a 14-day period in which to confer and resolve the dispute informally. See Section VIII.H.1.b.

Please call me at (253) 383-9428 if there are any questions, comments or other concerns.

Sincerely,

Scott Hooton
Environmental Project Manager

Attachments

cc by email: Drew Zaborowski, Avenue55, dzaborowski@avenue55.net
Tom Colligan, Floyd|Snider,Tom.Colligan@floydsnider.com
Gabrielle Gurian, Office of the Attorney General, Gabrielle.Gurian@atg.wa.gov
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Rebecca S. Lawson, Ecology, rebecca.lawson@ecy.wa.gov
Robert Healy, Port of Tacoma, rhealy@portoftacoma.com
Kim Seely, Coastline Law, kseely@coastlinelaw.com
Site File

Table 1
Field Parameter Measurements

Location		Methane (%) (1)	Carbon Dioxide (%)	Oxygen (%)	Nitrogen (%)	Cross-Slab Differential Pressure (Pascals)
VP-1	1/13/2020	0.0	0.0	5.4	94.6	-0.50
	4/22/2020	0.0	0.1	7.4	92.5	-0.25
VP-2	1/13/2020	0.0	0.0	2.1	97.9	0.99
	4/22/2020	-- (2)	-- (2)	-- (2)	-- (2)	-- (2)
VP-3	2/18/2020	0.0	0.0	16.1	83.8	-0.25
	4/22/2020	-- (2)	-- (2)	-- (2)	-- (2)	-- (2)
VP-4	1/14/2020	0.1	0.0	13.6	86.2	0.25
	4/22/2020	0.0	0.0	13.6	86.4	-0.25
VP-5	2/18/2020	0.0	0.0	1.42	85.7	0.00
	4/22/2020	0.0	0.0	15.5	84.5	0.00
VP-7	2/18/2020	8.2	0.0	2.6	89.2	-0.75
	4/22/2020	1.6	0.0	7	91.3	-0.50
VP-8	2/18/2020	27.2	0.0	0.2	72.5	0.00
	4/22/2020	19.4	0.0	0.1	80.4	0.25
VP-9	2/18/2020	0.1	1.0	20.4	78.5	0.50
	4/22/2020	0.1	1.6	18.6	79.7	0.00
VP-10	2/18/2020	0.1	1.1	18.2	80.7	0.99
	4/22/2020	0.1	0.9	16.8	82.2	0.00
VP-11	1/14/2020	4.2	5.0	0.0	90.8	0.50
	4/22/2020	3.5	6.3	0.0	90.1	0.25
VP-12	2/18/2020	0.1	1.0	20.1	78.8	1.49
	4/22/2020	0.1	2.8	13.4	83.8	0.00
VP-13	2/18/2020	0.1	5.3	11.9	82.7	-0.75
	4/22/2020	0.0	5.9	8.9	85.1	-0.25
VP-14	2/18/2020	0.1	3.7	5.8	90.4	1.24
	4/22/2020	1.5	4.2	0.0	94.3	0.00

Note

1 ASTM guidance requires further action to address methane concentrations between 5% and 30% if cross-slab differential pressures exceed 500 Pascals.

2 Location under reams of paper stacked ~15 ft high and inacessible.

MM-80

The Industry Standard

The Industry Standard Heavy-Duty, Semi-Rigid Epoxy Joint Filler for Class 6-9 Industrial Concrete Floors

TECHNICAL DATA M-1

USGBC LEED® EQ Credit 4.1 - Low Emitting Sealant

1. Product Name

MM-80

2. Manufacturer

METZGER/MCGUIRE
PO Box 2217 Concord, NH 03302 (USA) Phone: 603-224-6122
Fax: 603-224-6020 Web: www.metzgermcguire.com

3. Product Description

Composition:

MM-80 is a two-component, 100% solids content epoxy joint filler. When cured, ***MM-80*** is a gray, semi-rigid (hard but slightly resilient) filler with a Shore hardness of A90-95.

Related Products:

MM-80 is available in two versions: original ***MM-80*** in a 5:1 mix ratio for manual dispensing and ***MM-80P*** (P for pump), with a 1:1 mix ratio for dual-component pumps.

Both ***MM-80*** and ***MM-80P*** are available in silicone-free formulations for use in automotive/paint facilities.

Basic Use:

MM-80 was developed to fill and protect joints in industrial concrete floors that are subject to hard wheeled material handling traffic and heavy loads. Its primary function is to support such traffic and protect joint edges. ***MM-80*** is designed for use in areas where final temperatures are from 40°F (10°C) to +120°F (49°C). It is also ideal for joint and crack repair.

4. Limitations

MM-80 is not designed for use in:

- True expansion/isolation joints
- Exterior joints (paving, etc.)
- Joints exposed to extreme chemical exposure
- Joints under VCT/seamless floor coverings (in most settings)

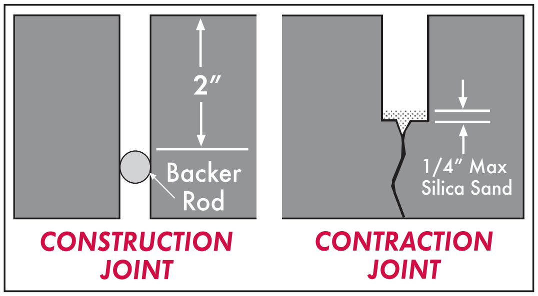
As with most semi-rigid joint fillers, ***MM-80*** may yellow or discolor if exposed to:

- UV rays from certain types of lighting
- Temporary and/or propane heating systems
- External environmental factors and/or chemical components

Discoloration is more likely when material installation occurs in colder temperatures.

5. Correct Joint Design/Installation

MM-80 should be installed full joint depth in saw-cut control joints (or 2" minimum in joints where depth exceeds 2") per PCA and ACI guidelines. In construction (formed) joints that are not saw-cut, ***MM-80*** should be installed 2" deep. If shrinkage crack is excessive and needs to be "choked off," it may be sealed with clean, dry silica sand as shown below (contractor's option).



Do not use compressible backer rod in saw cut contraction/control joints less than 2" deep. Compressible rod may be used as a base in construction joints if placed 2" below floor surface.

6. Color and Packaging

Standard color is medium gray. ***MM-80*** can be custom colored. Contact *Metzger/McGuire* for details. ***MM-80*** is available in a 1 gallon (US) kit.

7. Applicable Specifications

There are no government or ASTM standards for semi-rigid joint fillers. ***MM-80P*** meets or exceeds the criteria outline in the following industry standards:
American Concrete Institute (ACI) Guides/Specifications:
301-16, 302.1-R15, 310-R13, 360R-10
Portland Cement Association (PCA):
Concrete Floor on Ground, Third Edition 2008

8. Advantages

MM-80's superior formulation yields sufficient rigidity to support loads crossing joints, protecting edges from spalling, and sufficient resiliency to prevent brittleness throughout the floor's life.

MM-80 is also available in a silicone free version for use in paint and automobile facilities. Please contact us for more details.

MM-80's relative hardness has been gradually increased through the years to reflect increasing demands on floors created by heavier loads and smaller, harder vehicle wheels.

MM-80 is the joint filler upon which ACI and PCA standards are based. You can specify and use **MM-80** with the confidence that comes from a project-proven track record of more than forty-five years, and with the knowledge that you are relying on the best floor joint protection available in the industry.

9. USDA/FDA/CFIA/LEED® Acceptability

MM-80 is acceptable for use in floors subject to inspection/regulation by USDA/FDA and Environment Canada/CFIA. ***MM-80*** contains no VOC's and fully complies with all LEED® green building standards.

10. Technical Assistance

Complete technical support and literature are available from authorized distributors, through our web site (www.metzgermcguire.com) or by contacting our New Hampshire headquarters at (800) 223-MM80.

11. TECHNICAL PROPERTIES

	TEST METHOD	RESULTS
HARDNESS, SHORE "A" @ 70°F	D-2240	A90-95
TENSILE STRENGTH	D-638	1300 PSI
TENSILE ELONGATION*(@ 70°F)	D-638	45-55%
ADHESION TO CONCRETE	D-4541	300-350 PSI
POT LIFE @ 70°F	-	15-30 MINS.
INITIAL CURE @ 70°F	-	6-8 HOURS
LIGHT TRAFFIC READY @ 70° F	-	6-8 HOURS
FULL TRAFFIC READY @ 70° F	-	8-12 HOURS
MIX RATIO (by volume)	-	5:1
MIX RATIO (by weight)	-	100:15
SOLIDS CONTENT	-	100%
SHRINKAGE	-	Negligible

* This property provided only for comparison with other fillers.
Elongation does not directly correlate to lateral expansion capability.

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METZGER/McGUIRE

12. Quality Installation Program

When you specify "***MM-80***, No Substitutes" your project is eligible for our Quality Assurance Program. This project-tracking program helps ensure that ***MM-80*** is properly installed. There is no charge for this service.

13. Where to Specify and File

MM-80 is exclusively for use in concrete floors and thus should always be referenced in 03251 (expansion/contraction joints), 03300 (cast-in-place concrete) and/or 03930 (control joint sealers). It is not a sealant and should not be specified as part of 07900, other than for cross reference.

14. Availability

MM-80 is available through quality construction supply distributors (listing available at www.metzgermcguire.com) or through our NH headquarters.

15. Installation

The following instructions are ABBREVIATED. Complete instructions are provided with each shipment.

When to Install - The installation of ***MM-80*** should be deferred as long as possible after slab placement, and should not be installed prior to 30 days to ensure adequate adhesion. ACI recommends a slab cure of 60-90 days or longer, to permit for greater concrete shrinkage/joint opening, lessening the expected incidence of joint filler separation. Ambient areas should be stabilized at final operating temperature prior to installation, refrigerated areas stabilized and held for an additional 7-14 days or longer, if possible. Refer to Technical Bulletin T5 (Filler Installation Timing) for additional information.

Joint Preparation - *Joints should be completely free of saw laitance, dirt, debris, coatings/sealers and frost or visible moisture.* Joint cleaning procedures must accomplish the removal of all of the above. Failure to do so will compromise adhesion. Simply "raking" debris out of joint is not an acceptable cleaning method. The preferred method of joint cleaning is to use a dustless concrete saw with diamond blade (ensure blade is slightly wider than joint or clean both sides). No primer is needed. If unusual conditions are present, contact *Metzger/McGuire*.

If possible concrete staining from joint filler overfill is an issue, apply *Metzger/McGuire*'s **SPF** (stain preventing film) prior to material installation, being careful to prevent **SPF** from entering joints, as it may compromise adhesion. If **SPF** enters joints, clean joints as outlined previously.

The applicator may, at his option, choke-off the shrinkage crack at the base of the joint with a 1/4" maximum layer of clean, dry silica sand. *Do not use compressible backer rod (Ethafoam, etc) in saw cut joints less than 2" deep*. The applicator may use a compressible backer rod in through-slab construction (cold) joints or contraction/control joints exceeding 2" in depth ONLY. If used, the rod must be placed at least 2" below floor surface.

Prior to Dispensing

Caution: Thoroughly read SDS and complete installation instructions prior to opening containers or attempting to dispense.

Mixing - Use a variable speed drill at low RPM and a paint mixing paddle (Jiffy or similar) to mix ***MM-80***. Mix Part A thoroughly before combining. Gradually blend Part B into Part A and mix for approximately 1.5 minutes or until thoroughly blended. Do not dilute or alter material. Mix entire kit.

Dispensing - ***MM-80's*** viscosity is similar to a medium weight motor oil. It can be poured from can, but best results are obtained by dispensing through a bulk-type caulking gun or a dual-component dispensing pump ratioed at 5:1.

MM-80 should be installed using a two pass method. The first pass should fill the joint to within 1/2" of floor surface. Within 60-90 minutes (at 70°F) overfill joint with a second pass, leaving material "crowned" above floor.

15. Installation - Dispensing (Continued)

Check joints periodically to ensure low spots do not occur due to seepage. Do not fill flush and leave, as low filler profile is likely to occur. Allow material to cure into solid (approximately 6-8 hours minimum) and shave or grind material flush with floor surface. If shaving, heat material lightly with propane torch or other heating source prior to shaving to ease the shaving process and ensure a smoother filler profile. Use respirator mask if heating overfill.

Any overfill not removed during razoring may leave a slight stain on concrete. The degree of staining will depend on the surface density (porosity) of the slab. The stain will gradually fade as a result of subsequent traffic and floor cleaning procedures. Stains can be reduced or avoided by using *Metzger/McGuire*'s **SPF** (stain preventing film). See product data for more information.

Clean-Up

Spills of unmixed components can be cleaned up with solvent (Toluol, MEK, Denatured Alcohol, etc). Cured product can be shaved off floor and tools.

16. Maintenance

Once cured, ***MM-80*** is basically maintenance free. If joints should open after installation due to concrete shrinkage, fill any voids exceeding credit card width with additional ***MM-80*** or *Metzger/McGuire's* ***Spal-Pro RS 88.*** Refer to Technical Bulletin T11 (Joint Filler Separation; Causes & Corrections) for additional information.

17. Approximate Coverage Rates

Joint Size (US)	LF/Gal.	Joint Size (Metric)	M/Gal
1/8" x 1"	150	3 x 25	46
1/8" x 1 1/4"	125	3 x 31	38
1/8" x 1 1/2"	100	3 x 38	30
1/8" x 1 3/4"	85	3 x 44	26
1/8" x 2"	75	3 x 50	23
3/16" x 3/4"	135	5 x 19	41
3/16" x 1"	100	5 x 25	30
3/16" x 1 1/4"	85	5 x 31	26
3/16" x 1 1/2"	70	5 x 38	21
3/16" x 1 3/4"	60	5 x 44	18
3/16" x 2"	50	5 x 50	15
1/4" x 1"	80	6 x 25	24
1/4" x 1 1/4"	60	6 x 31	18
1/4" x 1 1/2"	50	6 x 44	14
1/4" x 1 3/4"	45	6 x 50	12
1/4" x 2"	40	9 x 25	15
1/2" x 1"	40	13 x 25	12

18. Shelf Life and Storage

MM-80 has a guaranteed shelf life of 12 months if containers remain unopened. Store in dry, cool areas away from excessive heat, freeze/thaw and sunlight. See complete installation instructions for information.

19. Safety

This product is for industrial use only. Use only in well ventilated areas. Practice all normal jobsite safety precautions (clear work area, etc). Thoroughly read and understand SDS and installation instructions for additional information prior to using material.

20. Food Related Facilities

USDA limits the use of chemicals in areas where existing food/food packaging is present. See "Food Warning" in installation instructions. ***MM-80***, when cured, is acceptable in USDA/FDA regulated facilities.

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WARRANTY: *Metzger/McGuire Co. solely and expressly warrants that its product shall be free from defects in material and workmanship for 12 months from the date of purchase. Unless authorized in writing by an officer of Metzger/McGuire, no other representations or statements made by Metzger/McGuire or its representatives, in writing or orally, shall alter this warranty. Metzger/McGuire makes no warranties, implied or otherwise, as to the merchantability or fitness for ordinary or particular purposes of its products and excludes the same. If any Metzger/McGuire product fails to conform with this warrant, Metzger/McGuire will replace the product at no cost to the purchaser. Purchaser's sole remedy in any case shall be limited to the purchase price or replacement cost of product and specifically excludes labor and the cost of labor, lost wages and opportunity costs, and all other possible incidental, consequential or special damages resulting from any claim of breach of warranty, breach of contract, negligence or any legal theory. Any warranty claim must be made within one (1) year from the date of material purchase. Metzger/McGuire does not authorize anyone on its behalf to make any written or oral statements which in any way alter the installation procedures or written installation instructions published in its product literature or on its packaging labels. Any installation of Metzger/McGuire products which fails to conform with such installation information or instructions shall void this warranty. Purchaser shall be solely responsible for determining the suitability of Metzger/McGuire's products for the purchaser's intended purpose.*

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • 360-407-6300
Call 711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

Electronic Copy

May 11, 2020

Scott Hooton
Port of Tacoma
PO Box 1837
Tacoma, WA 98401-1837
shooton@portoftacoma.com

Re: Response to Port of Tacoma, Informal Dispute Notice

- **Site Name:** Taylor Way and Alexander Avenue Fill Area (TWAAFA)
- **Site Address:** 1514 Taylor Way E, Tacoma, Pierce County, WA 98409
- **Facility/Site ID:** 1403183
- **Cleanup Site ID:** 4692
- **Agreed Order No.:** DE13921

Dear Scott Hooton:

The Washington State Department of Ecology (Ecology) has reviewed the April 29, 2020, response and Informal Dispute Notice (Notice)[1] by the Port of Tacoma (Port) to Ecology's April 16, 2020, comment letter[2]. The Informal Dispute Notice process is described in Section VIII.H of the Agreed Order.

As per Section VIII.H.b, the parties (Ecology and the Port) "shall informally confer for up to fourteen (14) calendar days from receipt of the receipt of the Informal Dispute Notice." The Notice was received by Ecology on April 29, 2020. **Ecology has the following comments on the Notice and it is Ecology's belief that the response below will resolve the dispute:**

1. **Notice Response to Ecology Comment 1A:** The Port disagreed with Ecology's comment that further assessment and/or mitigation of methane concentrations is needed beneath the buildings. Based on the explanation provided in the Notice, the Port believes that the requirement to assess methane hazard has been satisfied and no further actions are needed.

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[1] *Agreed Order No. DE 13921, 1514 Taylor Way E, Tacoma, Pierce County WA, April 16th, 2020 Comments on Post-Construction Vapor Intrusion Assessment*. Letter from Scott Hooton, Port of Tacoma, to Steve Teel, Ecology, dated April 29, 2020.

[2] *Comments on Post-Construction Vapor Intrusion Assessment*. Letter from Steve Teel, Ecology to Scott Hooton, Port of Tacoma, dated April 16, 2020.

The key points in the Ports explanation are:

a. There is only a relatively small volume of methane gas present because few measured probes showed methane concentrations above 5% and the maximum is less than 30%. A single, isolated hot spot of 5 to 30% methane is unlikely to result in an indoor air concern. Also, “no detectable methane was noted by the gas meter in the building air at the time the sub-slab survey field measurements were conducted.”

b. Differential pressure measurements are “about three orders-of-magnitude” lower than the 500 Pascals (Pa) differential pressure criteria (ASTM 2016),[3] so there is no pressure gradient to drive gas from below the floor slab into the building.

c. Additional data were presented from a resampling of the vapor probes on April 22, 2020, to further assess methane concentrations. Measurements were collected from 11 locations (three locations were not accessible).

Ecology has reviewed the April 2020 data and has the following conclusions:

- A total of 10 out of 11 locations showed either zero, equal, or lower concentrations compared to the previous sampling event (January 13, 2020).
- The location that previously showed the highest methane concentration in January 2020 (VP-8, 27.2%) decreased to a concentration of 19.4% on April 22, 2020.
- Only one location showed an increase in concentration (VP-14, increased from 0.1% to 1.5%).

Ecology agrees that, based on the explanation and additional data provided by the Port, no further assessment or mitigation of methane is required. Ecology’s primary concern regarding methane concentrations was the caution from ASTM (2016) that any capping of the ground surface can impede the natural venting of soil gas and result in an increase in methane concentrations.

Observed methane concentrations had increased from the pre-construction initial measurements in 2016 and 2018 (1.4% maximum)[4] to a maximum of 27.2% in January 2020. However, the additional methane measurements collected in April 2020 and the additional mitigation work performed by Avenue 55 (discussed below) is sufficient to alleviate this concern.

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[3] *Standard Guide for Evaluating Potential Hazard as a Result of Methane in the Vadose Zone*. E2993-16, ASTM International, 2016.

[4] *Summary of Soil Vapor Survey Data and Vapor Mitigation Plan for the 1514 Taylor Way Site*. Prepared by Floyd│Snider, dated June 8, 2018.

2. **Notice Response to Ecology Comment 1B:** To reduce the potential for chloroform vapor intrusion, Ecology required the following actions to be performed:

    - **a.** The open penetrations shall be sealed around each of the fire supply lines in Buildings A and B.

    - **b.** Sealant shall be placed within the wide expansion joint in Building A.

    The Notice stated that although the Port disagreed with Ecology's suggestion that there could be a potential for chloroform vapor intrusion, Avenue 55 has proceeded to seal the open penetrations around the fire supply lines in both buildings and the wide expansion joint in Building A. A description of the methods and materials used for this work was also provided by the Port in the Notice. **Ecology appreciates the Port's and Avenue 55's cooperation in performing this mitigation work.**

3. **Notice Responses to Comments 2, 3, 4, and 5:** The Port agreed to incorporate Ecology's comments. Thank you for your cooperation.

Please provide the revised Interim Action Completion report **within 30 days** of the date of this letter as required by Exhibit C of the Agreed Order.

If you have any questions about this letter, please contact me at (360) 407-6247 or steve.teel@ecy.wa.gov.

Sincerely,

SSTeel

Steve Teel, LHG
Toxics Cleanup Program
Southwest Regional Office

SST/tam

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Ecology Site File