PHASE II ENVIRONMENTAL SITE ASSESSMENT

Block 9 Site
740 North Knott Street
Portland, Oregon

For
Streimer Sheet Metal Works, Inc.
February 2, 2023

Project: Streimer-2-02

NV5

February 2, 2023

Streimer Sheet Metal Works, Inc.
740 North Knott Street
Portland, OR 97227

Attention: Steven Streimer

Phase II Environmental Site Assessment
Block 9 Site
740 North Knott Street
Portland, Oregon
Project: Streimer-2-02

NV5 is pleased to submit this report summarizing the results of a Phase II ESA of the Block 9 Site located at 740 North Knott Street in Portland, Oregon. Our services were performed in accordance with our proposal dated September 27, 2022.

We appreciate the opportunity to be of service to Streimer Sheet Metal Works, Inc. Please contact us if you have questions regarding this report.

Sincerely,

NV5

Colby R. Hunt, C.H.M.M.
Principal Engineer

CJE:CRH:kt
Attachments
One copy submitted
Document ID: Streimer-2-02-020223-envr.docx

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ACRONYMS AND ABBREVIATIONS

ASTM	American Society for Testing and Materials
BGS	below ground surface
BS	blank spike
BSD	blank spike duplicate
CFSL	Clean Fill Screening Level
DEQ	Oregon Department of Environmental Quality
ECSI	Environmental Cleanup Site Information
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
eV	electronvolt
GPR	ground penetrating radar
HVAC	heating, ventilation, and air conditioning
I.D.	identification
IDW	investigation-derived waste
inHg	inches of mercury
LOF	Locality of Facility
MDL	method detection limit
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MHz	megahertz
mL	milliliter
MS	matrix spike
MSD	matrix spike duplicate
NE	not established
not detected	compound not detected at a concentration equal to or greater than the laboratory method reporting limit or reporting detection limit
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PFA	perfluoroalkoxy
PID	photoionization detector
ppm	parts per million
PRT	Post Run Tubing
QA	quality assurance
QC	quality control
RBC	risk-based concentration
RBDM	*Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites*
RCRA	Resource Conservation and Recovery Act
RDL	reported detection limit
REC	recognized environmental condition
ROW	right-of-way
RPD	relative percent difference
TCE	trichloroethene

TMB	trimethylbenzene
µg/m^3	micrograms per cubic meter
UST	underground storage tank
VCP	Voluntary Cleanup Program
VOC	volatile organic compound

1.0 INTRODUCTION

This report summarizes the results of a Phase II ESA of the Block 9 Site located at 740 North Knott Street in Portland, Oregon (subject property). The 1.69-acre subject property includes Tax Lots 2500, 2600, 2700, 2800, and 2900 of Multnomah County Tax Map 1N1E27BD and is currently developed with four commercial buildings (the upper HVAC shop, a storage building, a cutting/welding shop, and a tool storage warehouse) and associated paved storage and parking areas. The subject property is shown relative to surrounding physical features on Figure 1. The subject property layout and surrounding properties are shown on Figure 2. Acronyms and abbreviations used herein are defined above, immediately following the Table of Contents.

2.0 BACKGROUND

NV5 conducted a Phase I ESA of the subject property in August 2022.[1] The results of the August 2022 Phase I ESA of the subject property indicated the following:

- A former 1,000-gallon gasoline UST was decommissioned by removal from Tax Lot 2900 in 1989. The UST was formerly located beneath the east portion of the upper HVAC shop. It does not appear that confirmation soil samples were collected from the UST cavity during decommissioning. Therefore, petroleum-impacted soil may be present in the area of the former gasoline UST, which was identified as a REC at the subject property.
- The southwest portions of Tax Lots 2700 and 2800 were historically occupied by auto repair facilities. Releases of auto repair-related chemicals or waste may have occurred, or undocumented USTs may be present in the areas of the former auto repair shops, which was identified as a REC at the subject property.
- First Class Cleaners operated on the southwest portion of Tax Lot 2700 from at least 1950 through 1975. There is the potential that undocumented releases of dry cleaning-related constituents occurred from the First Class Cleaners facility during its historical operations, which was identified as a REC at the subject property.
- The Tarr, Inc. site (ECSI No. 1139) adjoins the subject property to the south. Soil, soil vapor, and groundwater have been impacted by VOCs and petroleum hydrocarbons at the facility, and the Tarr, Inc. site entered into the DEQ VCP in 2005. Remediation and monitoring efforts are ongoing. The southwest portion of the subject property is located within the LOF for the Tarr Inc., site. In addition, VOCs have historically been detected in ambient indoor air, soil vapor, and groundwater on or in the immediate vicinity of the subject property at concentrations greater than one or more DEQ RBCs. Given that a portion of the subject property is within the LOF for ECSI No. 1139 and the ECSI file remains open, the release from the Tarr Inc. facility was identified as a REC at the subject property. The approximate LOF for the Tarr, Inc. is shown on Figure 3.

While not considered a REC, up to 11 feet of undocumented fill were encountered during a geotechnical investigation on the block adjoining the subject property to the west. It is possible that undocumented fill material may be present beneath the subject property. In our experience,

[1] NV5, 2022. *Phase I Environmental Site Assessment; Block 9 Site; 740 North Knott Street; Portland, Oregon,* dated August 25, 2022. Project: Streimer-2-01

historically placed fill material in the Portland area frequently contains low concentrations of contaminants, primarily PAHs and/or metals. While frequently present at concentrations greater than DEQ CFSLs, contaminants are rarely present at concentrations greater than applicable DEQ RBCs.

3.0 SCOPE OF SERVICES

The purpose of the Phase II ESA was to evaluate for potential impacts to the subject property from RECs identified during the August 2022 Phase I ESA and from potential on-site undocumented fill material. The specific scope of services for the Phase II ESA included the following:

- Coordinated and managed the field explorations, including utility checks, site access authorizations, access preparations, and scheduling subcontractors and NV5 field staff.
- Contacted Oregon's one-call Utility Notification Center to mark the location of public utilities beneath the ROWs surrounding the subject property.
- Subcontracted GeoPotential of Fairview, Oregon, to conduct a geophysical survey in the areas of the historical auto repair shops on Tax Lots 2700 and 2800 to evaluate for the presence of USTs, potential UST cavities, or other auto repair-related remnant subsurface features.
- Subcontracted Applied Professional Services, Inc. of Portland, Oregon, to clear an approximately 10-foot radius around each proposed exploration location.
- Subcontracted Western States Soil Conservation, Inc. of Hubbard, Oregon, to advance six direct-push borings (DP-1 through DP-6) at the subject property, as follows:
  - Advanced two borings (DP-1 and DP-2) to a depth of 20 feet BGS in the vicinity of the former auto repair shop on Tax Lot 2800 (i.e., auto shop borings)
  - Advanced two borings (DP-3 and DP-4) to a depth of 20 feet BGS in the vicinity of the former dry-cleaning facility on the southwest portion of Tax Lot 2700 (i.e., dry cleaner borings)
  - Advanced two borings (DP-5 and DP-6) to a depth of 20 feet BGS in the vicinity of the former auto repair shop on the south portion of Tax Lot 2700 (i.e., auto shop borings)
- Collected continuous soil samples from each boring, to the extent practical, for visual identification and field screening. Field screening consisted of visual observation for staining, water sheen testing, and headspace vapor measurements using a hand-held PID.
- Based on field screening results, submitted one soil sample from each boring to Pace Analytical of Mount Juliet, Tennessee, for analysis of the following:
  - Soil samples collected from the auto shop borings were analyzed gasoline-range hydrocarbons by Method NWTPH-Gx, diesel- and oil-range hydrocarbons by Method NWTPH-Dx, and priority pollutant metals by EPA Methods 6020B/7471B. Samples with reported elevated concentrations of diesel- or oil-range hydrocarbons were further analyzed for VOCs by EPA Method 8260D, PAHs by EPA Method 8270E-SIM, and PCBs by EPA Method 8082A.
  - The soil samples collected from the dry cleaner borings were analyzed for VOCs by EPA Method 8260D and priority pollutant metals by EPA Methods 6020B/7141B.

- Collected four soil gas samples (SG-1 through SG-4) from the vicinity of the former dry-cleaning facility on Tax Lot 2700. The soil gas samples were collected as follows:
  - Western States Soil Conservation, Inc. advanced a Geoprobe® PRT system equipped with an expendable point to depths of approximately 5.5 feet BGS for samples SG-2 and SG-3 and 10.5 feet BGS for samples SG-1 and SG-4. Extracted the PRT system to a depth of approximately 5 feet BGS and 10 feet BGS, respectively, to dislodge the expendable point.
  - Connected the PRT system to a laboratory-provided, 1-liter summa cannister using new, disposable PFA tubing.
  - Sealed the annular space between the soil gas probe and the boring sidewall with hydrated bentonite to minimize ambient air migration into the sampling zone. Allowed each soil gas sample to equilibrate for at least 30 minutes.
  - Installed a leak-check system consisting of cloths saturated with isopropyl alcohol (2-propanol) at each located in general accordance with DEQ's *Guidance for Assessing and Remediation Vapor Intrusion in Buildings*, dated March 25, 2010.
  - Purged approximately 2 to 3 air volumes prior to sampling. During purging, VOC concentrations were measured and recorded using a calibrated PID with a 10.6-eV lamp.
  - Collected soil gas samples SG-1 through SG-4 using laboratory-provided, 1-liter summa canisters equipped with in-line particulate filters (2 microns) and flow controllers (less than 200 mL per minute). The initial and final vacuum pressures of each summa canister were measured and recorded on the laboratory chain-of-custody form. Barometric pressure and ambient temperature were also recorded at each sample location.
  - Submitted the soil gas samples to Pace Analytical under general chain-of-custody protocols for analysis of gasoline-range hydrocarbons and VOCs by EPA Method TO-15.
- Collected soil gas sample VP-13(010623) from the existing on-site vapor probe VP-13 using a laboratory-provided, 1-liter summa cannister with a 200-mL per minute flow controller. Submitted the soil gas sample to Pace Analytical under general chain-of-custody protocols for analysis of gasoline-range hydrocarbons and VOCs by EPA Method TO-15.
- Collected one sub-slab vapor sample (SSV-1) from the vicinity of the former gasoline UST on Tax Lot 2900. The sub-slab vapor sample was collected as follows:
  - Installed a temporary Vapor Pin® at the sample location.
  - Allowed the Vapor Pin® to equilibrate for at least 30 minutes.
  - Installed a leak-check system consisting of cloths saturated with 2-propanol at the Vapor Pin® location in accordance with DEQ's *Guidance for Assessing and Remediating Vapor Intrusion into Buildings*, dated March 25, 2010.
  - Collected a sub-slab vapor sample from the temporary Vapor Pin® using a laboratory-provided, 1-liter summa canister with a 200-mL per minute flow controller.
  - Submitted the sub-slab vapor sample to Pace Analytical under general chain-of-custody protocols for analysis of gasoline-range hydrocarbons and VOCs by EPA Method TO-15.
- Decommissioned the direct-push borings, soil gas explorations, and sub-slab vapor sample location in accordance with state and local regulations immediately upon the conclusion of field work for this investigation and repaired the ground or floor surface as appropriate.
- Placed soil cuttings and decontamination water in a labeled, Department of Transportation-approved, 55-gallon drum for later disposal at an approved facility.
- Summarized the results of the Phase II ESA in this report.

4.0 FIELD ACTIVITIES

NV5 conducted field activities at the subject property on November 9, 2022, and January 5 and 6, 2023. Field activities included conducting a geophysical survey, collecting soil samples from direct-push borings DP-1 through DP-6, collecting soil gas samples SG-1 through SG-4 and VP-13(010623), and collecting sub-slab vapor sample SSV-1. Upon completing sampling activities, the borings were backfilled in accordance with Oregon Water Resources Department rules and regulations and the ground surface repaired to its approximate original condition. The locations of the direct-push borings, soil gas samples, and sub-slab vapor sample are shown on Figure 2. The geophysical report is presented in Appendix A. A description of our field procedures is summarized in Appendix B. The geophysical survey, soil sampling, soil gas sampling, and sub-slab vapor sampling activities are described in the following sections.

4.1 GEOPHYSICAL SURVEY

GeoPotential conducted a geophysical survey of the areas of the former auto repair shops on Tax Lots 2700 and 2800 on November 9, 2022, to evaluate for the presence of USTs, potential UST cavities, hydraulic hoists, and/or other remnant subsurface auto repair-related features. The geophysical survey included a GPR and magnetometer survey. One magnetic anomaly (M1) was identified during the geophysical survey. Anomaly M1 was interpreted to be associated with subsurface iron piping south of the tool storage warehouse loading dock on Tax Lot 2700.

GPR surveying performed west of the tool storage warehouse and north of a loading dock detected a possible UST, measuring 9 feet long by 7 feet wide; a possible UST vent pipe; and a possible UST fill port. Also, an approximately 11-foot-wide by 13-foot-long by 7-foot-deep backfilled excavation was detected north of the loading dock and potential UST. The locations of the possible UST and backfilled excavation are shown on Figure 2. In addition, an irregularly shaped pit containing ferric debris was identified on Tax Lot 2800.

In our experience, the practical effectiveness of geophysical surveys decreases significantly below 5 to 6 feet BGS. The GeoPotential report is presented in Appendix A.

4.2 DIRECT-PUSH BORINGS

On January 5 and 6, 2023, Western States Soil Conservation, Inc. advanced six direct-push borings (DP-1 through DP-6) at the subject property to a depth of 20 feet BGS. The direct-push borings were advanced at the following locations:

- Direct-push borings DP-1 and DP-2 were advanced in the vicinity of the former auto repair shop on Tax Lot 2800.
- Direct-push borings DP-3 and DP-4 were advanced in the vicinity of the former dry-cleaning facility on Tax Lot 2700.
- Direct-push borings DP-5 and DP-6 were advanced in the vicinity of the former auto repair facility on Tax Lot 2700.

The locations of the borings are shown on Figure 2. A detailed description of our field exploration program is presented in Appendix B and summarized below.

4.2.1 Subsurface Conditions

The ground surface of the subject property consists of concrete, asphalt concrete, or bare ground. The areas of concrete and asphalt concrete are underlain by up to 5 inches of aggregate base. In general, the subsurface conditions encountered in the direct-push borings consist of brown, sandy silt underlain by brown, silty sand to the maximum depths explored. Fill material, consisting of silty sand or sandy silt with varying amounts of debris (e.g., wood, porcelain, red brick) was observed in boring DP-3 from approximately 0 to 12 feet BGS and in boring DP-4 from 0 to 11 feet BGS. Groundwater was not encountered in the direct-push borings advanced during this investigation. The exploration logs are presented in Appendix B.

4.2.2 Soil Sampling

An NV5 representative observed the drilling activities and collected continuous soil samples from the borings for field screening purposes and potential chemical analysis. Field screening included visual and olfactory observation, water sheen testing, and headspace vapor screening using a hand-held PID. Field evidence of petroleum impacts (sheen, petroleum-like odors, and/or PID responses greater than 10 ppm) was observed in boring DP-6 in soil screened between 11 and 14 feet BGS.

Field evidence of petroleum impacts was not observed in borings DP-1 through DP-5. Field screening results for the soil samples collected from the borings are shown on the boring logs presented in Appendix B. A description of our field exploration program is also summarized in Appendix B.

Six discrete soil samples selected for analysis were collected in general accordance with EPA Method 5035A for laboratory analysis. The soil samples were placed immediately in an ice chest and kept cool until delivery to the laboratory. Standard chain-of-custody procedures were observed during transport of the samples to the laboratory.

4.3 SOIL GAS AND SUB-SLAB VAPOR SAMPLES

Soil gas samples SG-1 through SG-4 were collected on January 5, 2023, from the vicinity of the former dry-cleaning facility on the southwest portion of Tax Lot 2700. Soil gas sample VP-13(010623) was collected on January 6, 2023, from the existing vapor monitoring probe VP-13 on the south portion of Tax Lot 2600. Sub-slab vapor sample SSV-1 was collected on January 6, 2023, from the vicinity of the former gasoline UST in the east portion of the upper HVAC shop. The locations of the soil gas samples and sub-slab vapor sample are shown on Figure 2.

The samples were collected in general accordance with DEQ's *Guidance for Assessing and Remediating Vapor Intrusion in Buildings,* dated March 25, 2010. The samples were transported under standard chain-of-custody protocols to Pace Analytical for chemical analysis. Our field procedures are summarized in Appendix B.

NV5 installed a leak-check system consisting of cloths saturated with 2-propanol at each sampling location. Based on the ambient temperature and barometric pressure at the time of sampling and assuming 20 percent contribution of 2-propanol to the surrounding atmosphere, the maximum detected concentration of 2-propanol (242 µg/m^3) represents less than a

0.01 percent leakage contribution. The DEQ guidance states that less than 5 percent contribution from ambient air indicates the sampling trains were sufficiently airtight. Additional QA/QC information is presented in Appendix C.

The initial and final vacuum pressures of the summa cannisters, barometric pressure, and ambient temperature measured at the soil gas and sub-slab vapor sampling locations are presented in the table below.

Sample I.D.	Date	Start and End Times	Initial/Final Vacuum (inHg)	Barometric Pressure (inHg)	Ambient Temperature (degrees Fahrenheit)
SG-1	01/05/23	1410 – 1421	30/4	29.4	48
SG-2		1415 – 1421	22/4	29.4	48
SG-3		1430 – 1438	29/4	29.4	49
SG-4		1435 – 1438	28/4	29.4	49
VP-13(010623)	01/06/23	1320 – 1325	29/4	29.6	45
SSV-1		1245 – 1251	28/4	29.6	45

5.0 REGULATORY SCREENING LEVELS

Based on our understanding of the current and likely future use of the subject property, the following DEQ regulatory screening levels are considered applicable DEQ RBCs:

- *Soil Ingestion, Dermal Contact, and Inhalation* RBCs for occupational, construction worker, and excavation worker receptors
- *Volatilization to Outdoor Air* RBCs for occupational receptors (soil only)
- *Vapor Intrusion into Buildings* RBCs for occupational receptors

Potable water is supplied to the subject property and surrounding properties by the City of Portland. Therefore, the *Leaching to Groundwater* exposure pathways is considered an incomplete exposure pathway at the subject property.

To characterize soil for disposal purposes, soil sample chemical analytical results were also compared to DEQ CFSLs, updated February 21, 2019. Soil that does not appear stained, does not have a chemical- or petroleum-like odor, and does not contain contaminants at concentrations greater than DEQ CFSLs can be managed as clean fill. In general, soil containing contaminants at concentrations greater than DEQ CFSLs must be managed as solid waste and disposed of at a RCRA Subtitle D landfill or other DEQ-approved facility if exported from the subject property.

6.0 CHEMICAL ANALYTICAL RESULTS

Six soil samples, five soil gas samples, and one sub-slab vapor sample were submitted to Pace Analytical for chemical analysis. The following sections describe the chemical analytical program and the chemical analytical results relative to applicable regulatory criteria. A comparison of soil

sample chemical analytical results to applicable regulatory criteria is shown in Tables 1 through 4. A comparison of soil gas and sub-slab vapor chemical analytical results to applicable regulatory criteria is shown in Table 5. The chemical analytical program details, laboratory reports, and chain-of-custody documentation are presented in Appendix C.

6.1 SOIL SAMPLES

6.1.1 Auto Shop Borings

Soil samples DP-1(8-9) and DP-2(9-10) were collected in the vicinity of the former auto shop on Tax Lot 2800. Soil samples DP-5(8.5-9.5) and DP-6(11-12) were collected in the vicinity of the former auto shop on Tax Lot 2700. Soil samples collected from the auto shop borings were analyzed for gasoline-range hydrocarbons by Method NWTPH-Gx, diesel- and oil-range hydrocarbons by Method NWTPH-Dx, and priority pollutant metals by EPA Methods 6020B/ 7174B. Based on detections of diesel- and oil-range hydrocarbons and field screening evidence of potential contamination, sample DP-6(11-12) was further analyzed for VOCs by EPA Method 8260D, PAHs by EPA Method 8270E-SIM, and PCBs by EPA Method 8082A.

Gasoline-, diesel-, and oil-range hydrocarbons were either not detected or detected at concentrations less than applicable DEQ RBCs and DEQ CFSLs in the soil samples collected from the auto shop borings. VOCs, PAHs, and PCBs were either not detected or were detected at concentrations less than applicable DEQ RBCs and DEQ CFSLs in sample DP-6(11-12).

Except for arsenic, priority pollutant metals were not detected in the soil samples collected from the auto shop borings at concentrations greater than DEQ RBCs. Arsenic was detected in each of the soil samples collected from the auto shop borings at concentrations ranging from 2.78 to 5.64 mg/kg. While the detected concentrations of arsenic are greater than the DEQ *Soil Ingestion, Dermal Contact, and Inhalation* RBC for occupational receptors, they are within the range of naturally occurring arsenic concentrations in soil in the Portland Basin geophysical province; therefore, the detected concentrations of arsenic are not considered exceedances of the corresponding RBC.

Except for antimony, total metals were not detected at concentrations greater than DEQ CFSLs in the soil samples analyzed from the auto shop borings. The detected concentration of antimony in soil sample DP-6(11-12) of 1.36 mg/kg slightly exceeds the corresponding DEQ CFSL of 0.56 mg/kg. However, the reported concentration of antimony is greater than the laboratory MDL but less than the laboratory RDL and is therefore an estimated concentration. In addition, elevated concentrations of other metals were not detected in soil sample DP-6(11-12). While it is our opinion that soil represented by soil sample DP-6(11-12) chemically qualifies as clean fill, based on the presence of field screening evidence of petroleum contamination, soil represented by soil sample DP-6(11-12) cannot be managed as clean fill.

6.1.2 Dry Cleaner Borings

Soil samples DP-3(8-9) and DP-4(12-13) were collected from the vicinity of the former dry-cleaning facility on Tax lot 2700 and analyzed for VOCs by EPA Method 8260D and priority pollutant metals by EPA Methods 6020B/7471B.

PCE and TCE were detected in the samples collected in the dry cleaner borings at maximum concentrations of 0.0113 mg/kg and 0.0119 mg/kg, respectively. The detected concentrations of PCE and TCE are less than applicable DEQ RBCs and DEQ CFSLs. VOCs were otherwise not detected or were detected at concentrations less than applicable DEQ RBCs and DEQ CFSLs.

Arsenic was detected in both soil samples collected from the dry cleaner borings at concentrations of 3.12 mg/kg and 3.80 mg/kg. While the detected concentrations of arsenic are greater than the DEQ *Soil Ingestion, Dermal Contact, and Inhalation* RBC for occupational receptors, they are within the range of naturally occurring arsenic concentrations in soil in the Portland Basin geophysical province; therefore, the detected concentrations of arsenic are not considered exceedances of the corresponding RBC. Total metals were otherwise either not detected or were detected at concentrations less than DEQ RBCs in the soil samples collected from the dry cleaner borings.

Antimony and lead were detected soil sample DP-3(8-9), collected from apparent fill material, at concentrations of 2.11 mg/kg and 72.4 mg/kg. The detected concentrations of antimony and lead are greater than their respective DEQ CFSLs for the Portland Basin. Therefore, the fill material in the vicinity of DP-3(8-9) does not appear to qualify as clean fill.

6.2 SOIL GAS AND SUB-SLAB VAPOR SAMPLES

Soil gas samples SG-1 through SG-4 were collected from the vicinity of the former dry-cleaning facility on the southwest portion of Tax Lot 2700. Soil gas sample VP-13(010623) was collected from the permanent vapor monitoring well on the south portion of Tax Lot 2600. Sub-slab vapor sample SSV-1 was collected from the east portion of the upper HVAC shop and in the vicinity of the former gasoline UST. The soil gas and sub-slab vapor samples were analyzed for gasoline-range hydrocarbons and VOCs by EPA Method TO-15.

Gasoline-range hydrocarbons were detected in sub-slab vapor sample SSV-1 at a concentration of 921 µg/m^3. The detected concentration of gasoline-range hydrocarbons is significantly less than applicable DEQ RBC. Gasoline-range hydrocarbons were not detected in the soil gas samples.

Up to 27 VOCs were detected in each of the soil gas and sub-slab vapor samples analyzed. The detected concentrations of VOCs were two or more orders of magnitude less than applicable DEQ RBCs.

7.0 CONCLUSIONS AND RECOMMENDATIONS

NV5 conducted a Phase II ESA of the subject property located at 740 North Knott Street in Portland, Oregon, to evaluate potential risks from RECs identified during the August 2022 Phase I ESA and potential on-site undocumented fill material. The results of the Phase II ESA indicated the following:

- The geophysical survey identified a possible out-of-use UST, measuring 9 feet long by 7 feet wide, adjacent to the loading dock on the west side of the tool storage warehouse on Tax Lot 2700. In addition, an approximately 11-foot-wide by 13-foot-long by 7-foot-deep backfilled excavation, possibly from a former UST, was detected north of the loading dock on Tax Lot 2700.
- Fill material, including debris such as wood, porcelain, and red brick, was observed in boring DP-3 from approximately 0 to 12 feet BGS and in boring DP-4 from 0 to 11 feet BGS.
- Groundwater was not encountered in the direct-push borings.
- Except for a moderate petroleum-like odor and elevated PID readings in soil collected from DP-6 between 11 and 14 feet BGS, field screening evidence of petroleum contamination was not observed in borings DP-1 through DP-6.
- Gasoline-, diesel-, and oil-range hydrocarbons, VOCs, PAHs, and PCBs were not detected at concentrations greater than applicable DEQ RBCs or DEQ CFSLs in the soil samples collected during this investigation.
- Arsenic was detected in the soil samples collected from the subject property at concentrations greater than the DEQ *Soil Ingestion, Dermal Contact, and Inhalation* RBC for occupational receptors. However, the detected concentrations of arsenic were less than the naturally occurring background concentration of arsenic in the Portland Basin geophysical province. Therefore, the detected concentrations of arsenic are not considered exceedances of the corresponding RBC.
- Antimony and lead were detected soil sample DP-3(8-9), collected from apparent fill material, at concentrations greater than their respective DEQ CFSLs for the Portland Basin geophysical province. Therefore, the fill material in the vicinity of DP-3(8-9) does not qualify as clean fill.
- The detected concentration of antimony in soil sample DP-6(11-12) of 1.36 mg/kg slightly exceeds the corresponding DEQ CFSL of 0.56 mg/kg. However, the reported concentration of antimony is greater than the laboratory MDL but less than the laboratory RDL and is therefore an estimated concentration. In addition, elevated concentrations of other metals were not detected in soil sample DP-6(11-12). Therefore, it is our opinion that soil represented by soil sample DP-6(11-12) qualifies as clean fill.
- Gasoline-range hydrocarbons and VOCs were not detected at concentrations greater than applicable DEQ RBCs in the five soil gas and the sub-slab vapor sample collected from the subject property.
- It is our understanding that vapor monitoring associated with the Tarr, Inc. site (ECSI No. 1139) is ongoing. Given that the southwest portion of the subject property is located within the LOF for the Tarr, Inc. site, monitoring well VP-13 may continue to be sampled in the future. If vapor monitoring well VP-13 is not going to be used in the future, it should be decommissioned by a licensed well driller in accordance with state and local regulations.

The results of this investigation did not indicate the presence of a contamination that would pose a risk to human health or the environment in the areas explored at the subject property or the presence of a reportable release to DEQ. The possible presence of a UST west of the tool storage warehouse should be verified. If a UST is present, it should be decommissioned by an Oregon-licensed UST service provider in accordance with state and local regulations.

Soil in the vicinity of borings DP-3 and DP-6 does not qualify as clean fill because of the presence of lead and antimony or because of the presence of field screening evidence of petroleum contamination. If the subject property is redeveloped in the future, NV5 recommends preparing a Soil Management Plan prior to site redevelopment. The Soil Management Plan will guide the future earthwork contractor on the proper identification, handling, management, and disposal of potentially impacted soil and/or USTs that may be encountered beneath the subject property during construction.

8.0 LIMITATIONS

This report has been prepared for Streimer Sheet Metal Works, Inc. This report is not intended for use by others, and the information contained herein is not applicable to other sites. Reliance by other parties must be approved by NV5 in accordance with our standard contractual process for third-party reliance. Our interpretations of subsurface conditions are based on data from select soil, soil gas, and sub-slab vapor samples collected from limited areas. The results of the analyses only indicate the presence or absence of those chemical constituents analyzed in those discrete sample locations. It is always possible that contamination could exist between the widely spaced exploration locations. Analytical data from the laboratory samples should only be considered as indicators of subject property conditions and not a guarantee of the absence of subsurface impact in areas not sampled.

The conclusions presented in this report are based on our observations made during field investigations and chemical analytical data. The findings of this assessment should be considered as a professional opinion based on our evaluation of select and limited data.

Our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

♦ ♦ ♦

We appreciate the opportunity to be of service. Please call if you have questions regarding this report.

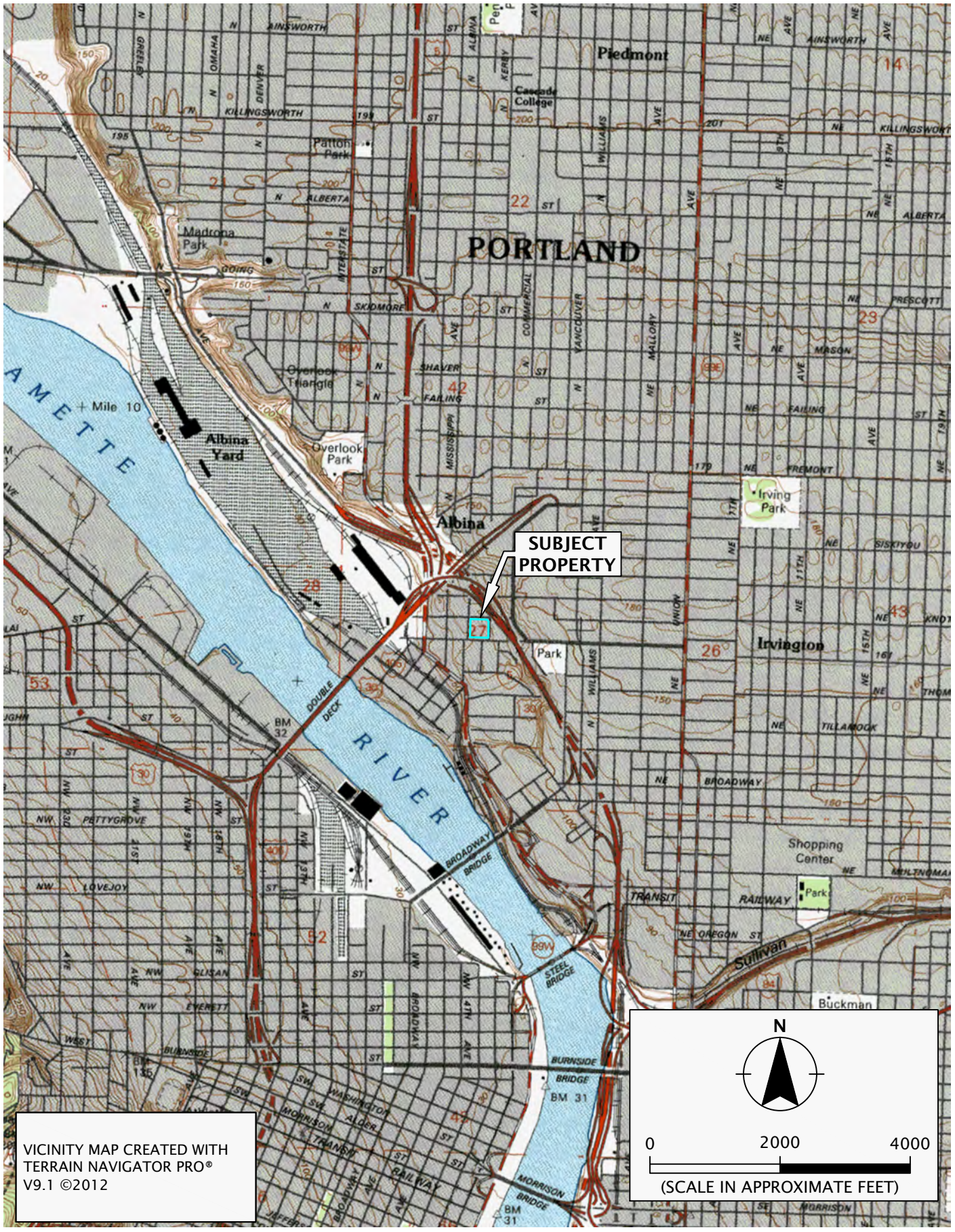
Sincerely,

NV5

Connor J. Ellis
Project Manager

Colby R. Hunt, C.H.M.M.
Principal

FIGURES



NV5	STREIMER-2-02	**VICINITY MAP**	
	FEBRUARY 2023	BLOCK 9 SITE PORTLAND, OR	**FIGURE 1**

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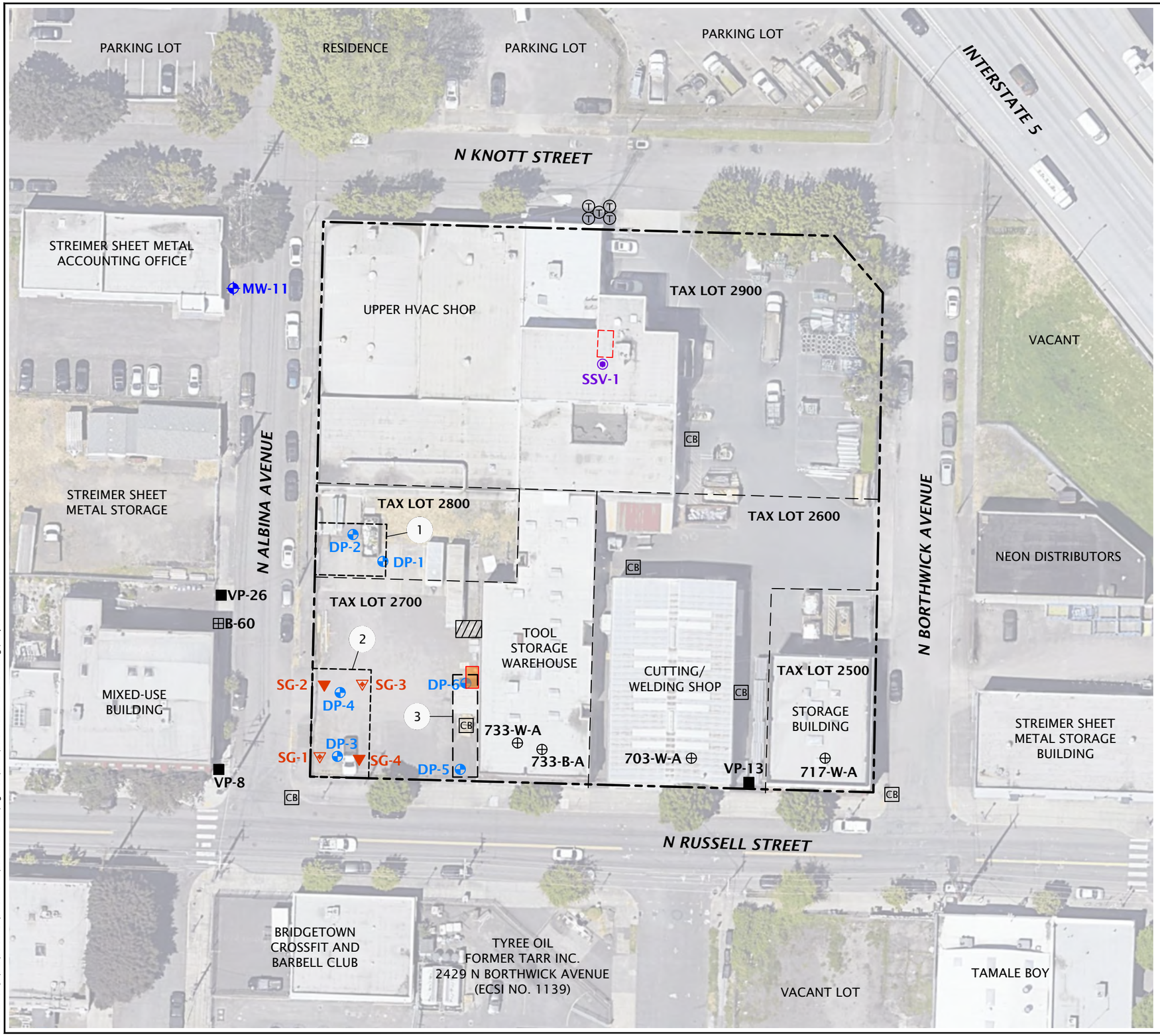

LEGEND:

- SUBJECT PROPERTY BOUNDARY
- TAX LOT BOUNDARY
- CB — CATCH BASIN
- T — POLE-MOUNTED TRANSFORMER
- MW-11 — MONITORING WELL (TARR INC. SITE)
- VP-8 — SHALLOW PERMANENT VAPOR POINT (TARR INC. SITE)
- B-60 — TEMPORARY VAPOR POINT (TARR INC. SITE)
- 703-W-A — AMBIENT AIR SAMPLE (TARR INC. SITE)
- DP-1 — DIRECT-PUSH BORING
- SG-1 — SOIL GAS SAMPLE (5 FEET BGS)
- SG-2 — SOIL GAS SAMPLE (10 FEET BGS)
- SSV-1 — SUB-SLAB VAPOR SAMPLE
- POSSIBLE UST IDENTIFIED BY GEOPOTENTIAL
- BACKFILLED PIT IDENTIFIED BY GEOPOTENTIAL
- 1 — APPROXIMATE LOCATION OF FORMER TURNER AUTO REPAIR SHOP
- 2 — APPROXIMATE LOCATION OF FORMER FIRST CLASS CLEANERS
- 3 — LOCATION OF FORMER CHAS H GADE REPAIR SHOP

N

0 50 100

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH DATED MAY 10, 2021, OBTAINED FROM GOOGLE EARTH PRO.

SITE PLAN

BLOCK 9 SITE
PORTLAND, OR

FIGURE 2

STREIMER-2-02

FEBRUARY 2023

NV5

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N

0 150 300

(SCALE IN FEET)

TARR, INC. SITE LOF BOUNDARY

SUBJECT PROPERTY BOUNDARY

LOCALITY OF FACILITY

PRIESTLEY/TARR FACILITY

#1009 (APPROXIMATELY 120 FEET NORTH)

#1010

819 NORTH RUSSELL FORMER DRY CLEANER

NORTH LARRABEE AVENUE

NORTH INTERSTATE AVENUE

NORTH RANDOLPH AVENUE

NORTH HARDING AVENUE

NORTH RAILROAD STREET

NORTH LORING STREET

NORTH RIVER STREET

WILLAMETTE RIVER

NORTH RUSSELL STREET

NORTH MISSISSIPPI AVENUE

NORTH ALBINA AVENUE

NORTH BORTHWICK AVENUE

NORTH CLARK AVENUE

NORTH LEWIS AVENUE

NORTH PAGE STREET

COLUMBIA RIVER HIGHWAY (I-5)

MW-1 11.23
MW-2 10.63
MW-3 10.73
MW-4 10.63
MW-5 10.62
MW-5B
MW-5C
MW-6 (16.18)
MW-7 10.28
MW-8 (1.26)
MW-9 10.05
MW-10 9.51
MW-11 9.72
MW-12 9.53
MW-13 9.72
MW-14 9.50
MW-15 9.46
MW-16 10.57
MW-16B
MW-17A
MW-17B
MW-17C
MW-18

VP-1/1A
VP-2/2A
VP-3/3A
VP-4/4A
VP-5/5A
VP-6/6A (AIW)
VP-7
VP-8
VP-9
VP-10
VP-11
VP-12
VP-13
VP-17
VP-18
VP-19
VP-20
VP-21
VP-22
VP-23
VP-24
VP-25
VP-26

A-1
A-2
A-3
651-0-A
807-W-A
807-B-A
816-O-A
2503-W-A
2503-O-A
2405-W-A
2405-O-A
2320-W-A
2624-O-A
733-W-A
733-B-A

CB

10.75
10.50
10.25
10.00
9.75
9.5
11.00

A
A'

LEGEND:

- MW-2 — GROUNDWATER MONITORING WELL
- #1010 — IDENTIFIED WATER WELL LOCATION AND DESIGNATION (APPROXIMATE)
- VP-12 — PERMANENT VAPOR POINT
- VP-17* — DEEP PERMANENT VAPOR POINT
- A-1 — AMBIENT AIR SAMPLE
- VP-1/1A — CO-LOCATED (SOIL VAPOR/AMBIENT AIR) SAMPLE LOCATION
- MW-17A — SHALLOW WELL (INSTALLED 2016)
- MW-5C — DEEP WELL (INSTALLED 2016)
- CONCRETE
- PARCEL/TAX LOT LINE
- CURBLINE
- 10.62 — DECEMBER 2010 GROUNDWATER ELEVATION IN FEET ABOVE MSL
- (1.26) — (NOT USED FOR CONTOURING)
- 12.50 — GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MSL
- A — A' — CROSS SECTION LOCATION (SEE FIGURES 3abc)

SOURCES: 1) BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006) AND A TAX LOT FILE FROM THE CITY OF PORTLAND (2010).

Site Vicinity Plan with December 2010 Groundwater Elevations

Staff Report
Tarr, Inc.
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number 1073-14
September 2016
Figure 2

TARR, INC. (ECSI NO. 1139) LOCALITY OF FACILITY

BLOCK 9 SITE
PORTLAND, OR

FIGURE 3

STREIMER-2-02

FEBRUARY 2023

NW 5

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TABLES

TABLE 1
Summary of Soil Sample Chemical Analytical Results
Petroleum Hydrocarbons
Block 9 Site
740 North Knott Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	Gasoline-Range Hydrocarbons Method NWTPH-Gx (mg/kg)		Diesel- and Oil-Range Hydrocarbons Method NWTPH-Dx (mg/kg)			
				Diesel-Range		Oil-Range	
DP-1(8-9)	01/05/23	5.99	U	4.99	U	12.5	U
DP-2(9-10)	01/05/23	7.45	U	5.36	U	13.4	U
DP-3(8-9)	01/06/23	--		--		--	
DP-4(12-13)	01/06/23	--		--		--	
DP-5(8.5-9.5)	01/06/23	5.87	U	4.53	U	11.3	U
DP-6(11-12)	01/06/23	3.38	U	**4.47**	**J**	**18.3**	
DEQ Generic RBCs[1]							
Soil Ingestion, Dermal Contact, and Inhalation							
Occupational		20,000		14,000		NE	
Construction Worker		9,700		4,600		NE	
Excavation Worker		>Max		>Max		NE	
Volatilization to Outdoor Air							
Occupational		69,000		>Max		NE	
Vapor Intrusion into Buildings							
Occupational		>Max		>Max		NE	
DEQ CFSLs[2]		31		1,100		NE	

Notes:
1. DEQ Generic RBCs dated May 2018
2. DEQ CFSLs dated February 21, 2019
J: The identification of the analyte is acceptable; the reported value is an estimate.
>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
--: not analyzed

TABLE 2
Summary of Soil Sample Chemical Analytical Results
VOCs and PAHs
Block 9 Site
740 North Knott Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	VOCs[1] EPA Method 8260D (mg/kg)			PAHs[1] EPA Method 8270E-SIM (mg/kg)
		Styrene	PCE	TCE	
DP-1(8-9)	01/05/23	--	--	--	--
DP-2(9-10)	01/05/23	--	--	--	--
DP-3(8-9)	01/06/23	0.0302 U	**0.0113**	**0.00823**	--
DP-4(12-13)	01/06/23	0.0314 U	**0.00786**	**0.0119**	--
DP-5(8.5-9.5)	01/06/23	--	--	--	--
DP-6(11-12)	01/06/23	**0.00169 J**	**0.00815**	**0.00434**	ND
DEQ Generic RBCs[2]					
Soil Ingestion, Dermal Contact, and Inhalation					
Occupational		130,000	1,000	51	Varies
Construction Worker		56,000	1,800	130	Varies
Excavation Worker		>Max	50,000	3,700	Varies
Volatilization to Outdoor Air					
Occupational		>Csat	>Csat	96	Varies
Vapor Intrusion into Buildings					
Occupational		>Csat	36	2.3	Varies
DEQ CFSLs[3]		1.2	0.18	0.013	Varies

Notes:

1. Only VOCs and PAHs detected during this investigation are listed. For a complete listing of VOCs and PAHs, refer to the laboratory reports in Appendix C.
2. DEQ Generic RBCs dated May 2018
3. DEQ CFSLs dated February 21, 2019

>Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present.

J: The identification of the analyte is acceptable; the reported value is an estimate.

>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.

ND: not detected at concentrations greater than the reporting or detection limit shown

U: Not detected. Reporting or detection limit shown.

Bolding indicates analyte detection.

--: not analyzed

TABLE 3
Summary Soil Sample Chemical Analytical Results
Total Metals
Block 9 Site
740 North Knott Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	Total Metals EPA Methods 6020B/7471B (mg/kg)												
		Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
DP-1(8-9)	01/05/23	3.74 U	4.75	0.680 J	0.121 J	13.7	18.8	8.84	0.499 U	15.9	0.390 J	0.624 U	0.193 J	59.8
DP-2(9-10)	01/05/23	4.02 U	5.64	0.712 J	0.131 J	15.4	17.2	9.20	0.536 U	15.4	0.338 J	0.670 U	0.175 J	64.6
DP-3(8-9)	01/06/23	2.11 J	3.80	0.502 J	0.364 J	9.98	17.4	72.4	0.0480 U	13.9	0.303 J	0.600 U	0.153 J	92.1
DP-4(12-13)	01/06/23	3.55 U	3.12	0.438 J	0.113 J	8.91	14.7	8.02	0.0473 U	12.3	0.372 J	0.592 U	0.121 J	46.6
DP-5(8.5-9.5)	01/06/23	3.39 U	2.78	0.416 J	0.128 J	7.73	13.1	5.98	0.0453 U	12.0	0.232 J	0.566 U	0.190 J	41.5
DP-6(11-12)	01/06/23	1.36 J	3.70	0.392 J	0.249 J	9.47	21.5	17.6	0.0470 U	12.7	0.265 J	0.587 U	0.124 J	77.8
DEQ Generic RBCs[1]														
Soil Ingestion, Dermal Contact, and Inhalation														
Occupational		NE	1.9[2]	2,300	1,100	>Max	47,000	800	350	22,000	NE	5,800	NE	NE
Construction Worker		NE	15	700	350	530,000	14,000	800	110	7,000	NE	1,800	NE	NE
Excavation Worker		NE	420	19,000	9,700	>Max	390,000	800	2,900	190,000	NE	49,000	NE	NE
Volatilization to Outdoor Air														
Occupational		NE	NV	NV	NV	NV	NV	NV	NV	NV	NE	NV	NE	NE
Vapor Intrusion into Buildings														
Occupational		NE	NV	NV	NV	NV	NV	NV	NV	NV	NE	NV	NE	NE
DEQ CFSLs[3]		0.56	8.8	2	0.63	76	34	28	0.23	47	0.71	0.82	5.2	180

Notes:
1. DEQ Generic RBCs dated May 2018
2. While the detected concentrations of arsenic are greater than this RBC, they are within the range of naturally occurring arsenic concentrations in soil in this area.
3. DEQ CFSLs dated February 21, 2019
J: The identification of the analyte is acceptable; the reported value is an estimate.
>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.
NV: chemical is considered non-volatile
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ RBCs and/or CFSLs.

TABLE 4
Summary of Soil Sample Chemical Analytical Results
PCBs
Block 9 Site
740 North Knott Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	PCBs EPA Method 8082A (mg/kg)						
		Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260
DP-1(8-9)	01/05/23	–	–	–	–	–	–	–
DP-2(9-10)	01/05/23	–	–	–	–	–	–	–
DP-3(8-9)	01/06/23	–	–	–	–	–	–	–
DP-4(12-13)	01/06/23	–	–	–	–	–	–	–
DP-5(8.5-9.5)	01/06/23	–	–	–	–	–	–	–
DP-6(11-12)	01/06/23	0.0399 U	0.0399 U	0.0399 U	0.0399 U	0.0200 U	0.0200 U	0.0200 U
DEQ Generic RBCs[1]								
Soil Ingestion, Dermal Contact, and Inhalation								
Occupational		0.59						
Construction Worker		4.9						
Excavation Worker		140						
Volatilization to Outdoor Air								
Occupational		>Csat						
Vapor Intrusion into Buildings								
Occupational		>Csat						
DEQ CFSLs[2]		1.1	0.0048	0.0048	0.041	0.0073	0.041	0.24

Notes:
1. DEQ Generic RBCs dated May 2018
2. DEQ CFSLs dated February 21, 2019

>Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present.

U: Not detected. Reporting or detection limit shown.

–: not analyzed

TABLE 5
Summary of Vapor Sample Chemical Analytical Results
Gasoline-Range Hydrocarbons and VOCs
Block 9 Site
740 North Knott Street
Portland, Oregon

Sample I.D.	Sample Date	Gasoline-Range Hydrocarbons EPA Method TO-15 (µg/m³)	VOCs[1] EPA Method TO-15 (µg/m³)												
			Acetone	Benzene	1,3-Butadiene	2-Butanone (MEK)	Carbon Disulfide	Chloromethane	Cyclohexane	Dichlorodifluoromethane	1,4-Dioxane	Ethanol	Ethylbenzene	4-Ethyltoluene	Heptane
SG-1	01/05/23	826 U	**84.1**	**78.6**	**23.9**	**19.5**	**2.06**	**1.51**	**7.20**	**1.60**	0.721 U	**96.3**	**2.54**	0.982 U	**7.53**
SG-2	01/05/23	826 U	**38.5**	**3.29**	4.43 U	**8.05**	**3.24**	**1.39**	**2.60**	**1.57**	0.721 U	**57.5**	**2.11**	**1.06**	**2.96**
SG-3	01/05/23	826 U	**20.9**	**1.56**	4.43 U	**8.20**	0.622 U	**1.04**	**1.38**	**1.55**	0.721 U	**33.4**	**1.02**	0.982 U	**1.29**
SG-4	01/05/23	826 U	**38.5**	**1.65**	4.43 U	**15.7**	0.622 U	**1.03**	**2.09**	**1.68**	0.721 U	**34.3**	**1.37**	0.982 U	**1.71**
SSV-1	01/06/23	**921**	**1,050**	**3.71**	4.43 U	**24.1**	**21.4**	**0.772**	**2.61**	**1.54**	**2.84**	**221**	**2.63**	**3.11**	**1.99**
VP-13(010623)	01/06/23	826 U	**4.56**	0.639 U	4.43 U	3.69 U	0.622 U	0.413 U	0.689 U	**1.42**	0.721 U	**127**	0.867 U	0.982 U	0.818 U
DEQ Generic RBCs[2]															
Vapor Intrusion into Buildings															
Occupational		1,700,000	NE	1,600	NE	NE	NE	390,000	NE	NE	2,500	NE	4,900	NE	NE

TABLE 5
Summary of Vapor Sample Chemical Analytical Results
Gasoline-Range Hydrocarbons and VOCs
Block 9 Site
740 North Knott Street
Portland, Oregon

Sample I.D.	Sample Date	VOCs[1] EPA Method TO-15 (µg/m³)													
		n-Hexane	Methylene Chloride (Dichloromethane)	2-Propanol	Propene	Styrene	PCE	Toluene	1,1,1-Trichloroethane	TCE	Trichlorofluoromethane	1,2,4-TMB	1,3,5-TMB	2,2,4-Trimethylpentane	Total Xylenes
SG-1	01/05/23	**16.4**	0.694 U	3.07 U	**241**	**0.898**	**11.5**	**12.1**	1.09 U	**2.20**	**1.28**	0.982 U	0.982 U	**1.93**	**8.45**
SG-2	01/05/23	**3.49**	**1.42**	**31.2**	**9.01**	**0.978**	1.36 U	**38.4**	1.09 U	1.07 U	**1.83**	**1.00**	0.982 U	**4.08**	**9.30**
SG-3	01/05/23	**2.53**	**1.11**	**19.4**	2.15 U	0.851 U	1.36 U	**6.40**	1.09 U	1.07 U	**1.24**	0.982 U	0.982 U	**0.934**	**4.41**
SG-4	01/05/23	**3.74**	0.694 U	**242**	**8.56**	0.851 U	1.36 U	**7.27**	1.09 U	1.07 U	**1.28**	0.982 U	0.982 U	**1.19**	**5.19**
SSV-1	01/06/23	**189**	**3.99**	**38.3**	2.15 U	**1.26**	**33.1**	**13.7**	1.09 U	**5.31**	**1.21**	**4.12**	**1.13**	0.934 U	**12.5**
VP-13(010623)	01/06/23	2.22 U	0.694 U	3.07 U	2.15 U	0.851 U	**828**	1.88 U	**1.21**	**11.1**	1.12 U	0.982 U	0.982 U	0.934 U	2.60 U
DEQ Generic RBCs[2]															
Vapor Intrusion into Buildings															
Occupational		NE	1,200,000	NE	NE	4,400,000	47,000	21,900,000	21,900,000	2,900	3,100,000	260,000	260,000	NE	440,000

Notes:
1. Only VOCs detected during this investigation are listed. For a complete listing of VOCs, refer to the laboratory report in Appendix C.
2. DEQ Generic RBCs dated May 2018
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.

APPENDIX A

GeoPotential

ENVIRONMENTAL & EXPLORATION GEOPHYSICS

330 Creekside Terrace, Fairview, OR 97024 Phone: (503) 912-6441 Fax: (503) 912-6448
WEB http://www.geopotential.biz/ E-MAIL GeoPotential@geopotential.biz

SUMMARY REPORT

SUBSURFACE MAPPING SURVEY TO DETECT UNDERGROUND STORAGE TANKS

Block 9 Site
N. Russell Street
Portland, Oregon

CLIENT

NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

DATE OF SURVEY

November 9, 2022

GeoPotential Project Number: 1462

CONTENTS

FIGURES

APPENDICES

SUMMARY

A Subsurface Mapping Survey (SMS) was conducted over two locations of the Block 9 Site located on N. Russell Street in Portland, Oregon to search for possible Underground Storage Tanks (USTS) and UST backfilled pits (see Figures 1, 2 & 3). A Subsurface Clearance Survey (SCS) was conducted over 12 proposed boring locations (see Figure 4).

Magnetic Surveys, Ground Penetrating Radar (GPR) Surveys and hand held magnetic and electromagnetic scanners were used for the project.

One possible UST was detected in the area covered by the SMS.

One possible UST Pit and a debris pit were detected in the area covered by the SMS.

A SCS was conducted over 12 proposed boring locations.

INTRODUCTION

Ralph Soule & Tarek Zaher of GeoPotential conducted the Subsurface Mapping Survey. Justin Ortgies was the onsite representative for NV5. Fieldwork was conducted on November 9, 2022. The report was completed and e-mailed to NV5 on November 13, 2022.

Subsurface mapping surveys are geophysical surveys utilizing geophysical methods and data to detect and locate natural and manmade subsurface features. Magnetic Surveys are used to detect and map the locations of buried **ferrous** (iron-bearing) objects (see Appendix A). Ground Penetrating Radar (GPR) Surveys are used to map both natural and manmade subsurface features such as USTs, utilities, backfilled pits, etc. (see Appendix B.). Pipe and cable locators are used to map the locations of buried utilities and piping.

Once subsurface ferrous objects are detected from a magnetic survey then hand held scanners and GPR surveys are used to map the locations, depths, sizes and shapes of the objects.

SURVEY OBJECTIVES

The objectives of this SMS survey were:

1. Search for USTS.
2. Search for backfilled UST Pits.
3. Conduct a Subsurface Clearance Survey (SCS) over twelve proposed boring locations.

SURVEY SITE

The SMS Sites (Figure 1 NV5 Site Plan) consisted of two locations; A NW Site asphalt and gravel covered storage yard adjacent to the Former Turner Auto Repair Shop and SE Site gravel driveway adjacent to a Tool Storage Warehouse. A GPR Only Survey was conducted over the NW Site due to surface obstructions. A Magnetic & GPR Survey was conducted over the SE Site. The only surface indications of USTS were a possible disconnected vent pipe located along the West Side of the Tool storage Warehouse.

SURVEY EQUIPMENT

The following geophysical instruments were used to conduct the survey:

- GEOMETRICS 858G Cesium Vapor Magnetometer (Magnetic Survey).
- Mala RAMAC Ground Penetrating Radar System with a 450 MHz antenna (GPR Survey).
- Schonstedt GA52 Magnetic Gradiometer.
- Aqua-Tronics A6 Pipe & Cable locator.
- Heath Sure Lock pipe & Cable locator.

This equipment and the procedures used to meet the survey objectives of this project have been proven effective in detecting metallic objects and mapping non-metallic features such as disturbed soil from backfilled pits.

Geophysical techniques are excellent at detecting changes in the subsurface caused by natural and manmade objects; however, they are poor at actually identifying subsurface features. Complementary methods may be used to assist in the interpretation; however, the only sure way of identifying a buried feature is by excavation.

Brief descriptions of the magnetic method and the radar method are included in the Appendices.

PROCEDURE

Magnetic Survey

The Magnetic Survey consisted of acquiring magnetic readings along traverses using a 5 foot spacing between traverses over the driveway where possible a loading dock and adjacent stairway were not included in the SMS due to ferric interference from these features. A rectangular grid was laid out over the area and magnetic data recorded along traverses. Magnetic data were downloaded to a computer, processed and contoured to produce the Magnetic Map shown in Figure 2. The Magnetic Map is plotted at a Contour Interval of 500 nT. This contour interval is sufficient to detect USTS.

In general buried ferriferous objects will produce stronger positive magnetic anomalies that are shown as red contours on the Magnetic Map. Surface ferric objects such as iron stairways will in general produce low magnetic anomalies which are shown as blue contours on the Magnetic Map. One Magnetic Anomaly which may be caused by a UST is designated as M1on Figures 2 & 3.

Ground Penetrating Radar Surveys

Over areas that contained suspect USTs GPR Profiles were acquired using a 450 MHz antenna. The data were processed and interpreted as discussed below. The GPR was also used to scan the entire area of both sites for backfilled UST Pits.

Pipe and Cable Survey

Hand held magnetic and electromagnetic scanners were used to help identify USTs and map utilities.

Subsurface Clearance Survey

The SCS consisted of scanning proposed boring locations with GPR and Pipe & cable instruments. When subsurface obstructions were encountered bore holes were relocated to nearby cleared areas.

RESULTS

Results are shown on Figures 2, 3 and 4. Results were marked on the surface with white marking paint.

Magnetic Anomaly M1 is interpreted to be caused by subsurface iron piping on the SE Site.

The GPR Survey next to the Stairway on the loading dock detected a probable UST that is approximately 7X9 feet in size. The possible vent pipe is located adjacent to this feature. A possible fill port was detected as shown. There is no Magnetic Anomaly from this feature due to interference from the iron stairway.

A 11X13 X 7 feet deep possible former UST backfilled excavation was detected as shown.

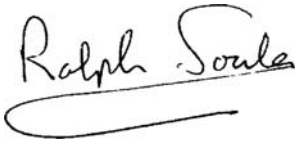
An irregular shaped debris pit containing some ferric debris was mapped on the NW Site as shown on Figure 3.

The SMS over boring locations were completed over 12 locations. When obstructions were detected the boring locations were moved to nearby cleared locations.

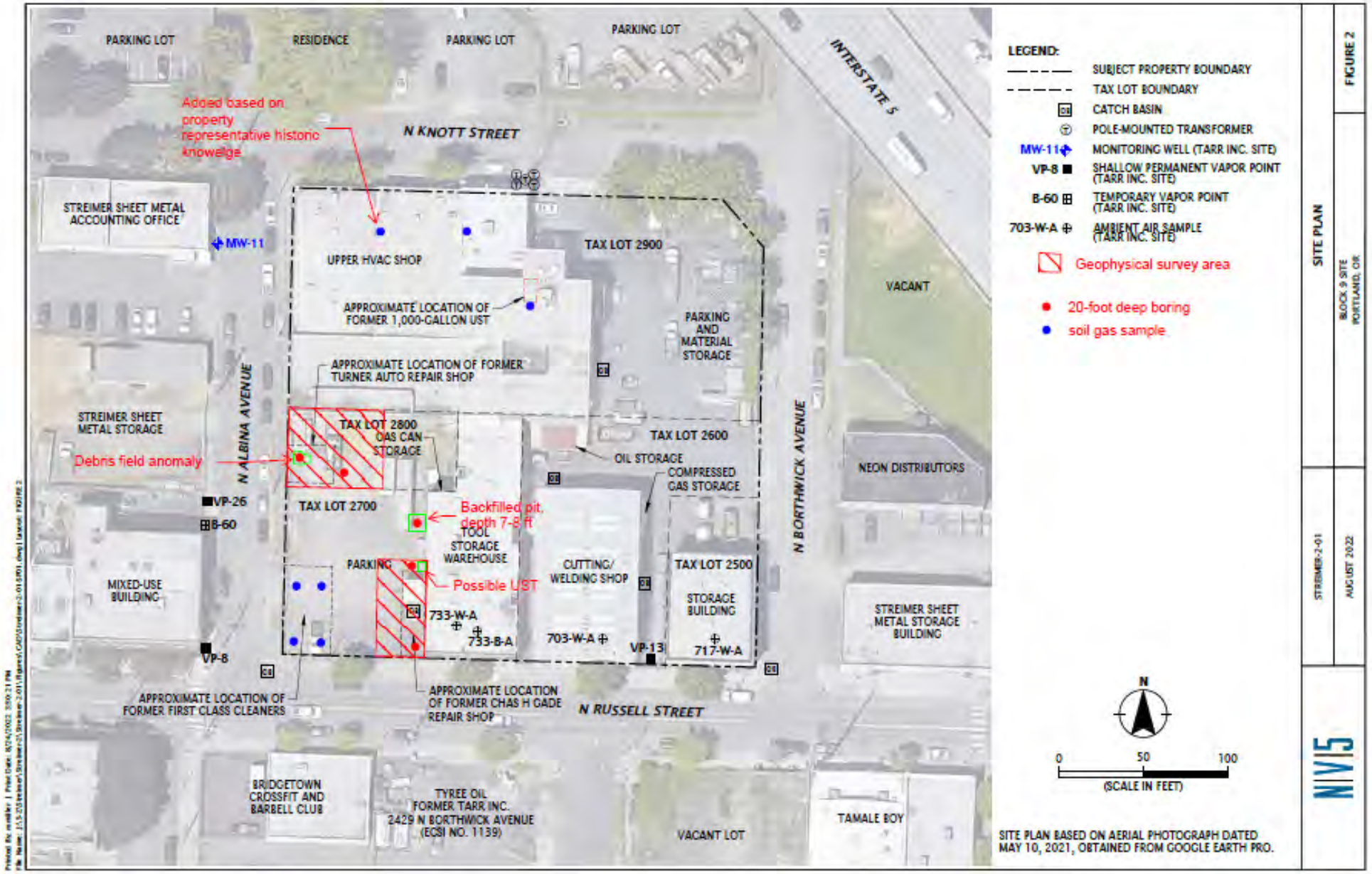
LIMITATIONS

Limitations of magnetometer and GPR surveys can be seen in the Appendices.

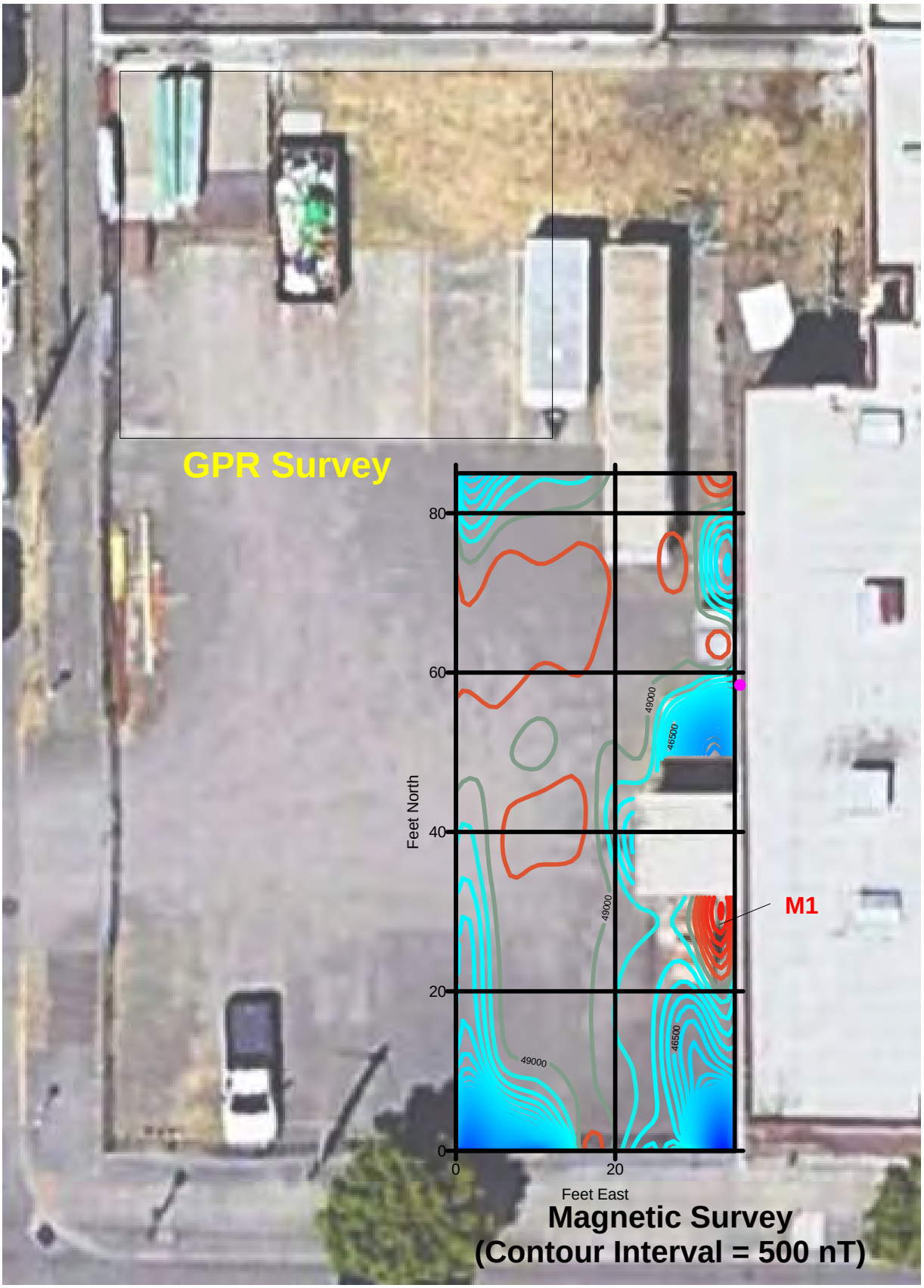
Geophysical surveys consist of interpreting geophysical responses from subsurface features. Since a variety of subsurface features can produce identical geophysical responses, it is necessary to confirm the geophysical interpretation with intrusive investigations such as excavating or drilling. In addition, many subsurface features may produce no geophysical response.



Ralph Soule **November 13, 2022**
GeoPotential



GeoPotential ENVIRONMENTAL & EXPLORATION GEOPHYSICS 330 Creekside Terrace, Fairview, OR 97024 Phone: (503) 912-6441 Fax: (503) 912-6449 WEB http://www.geopotential.biz/ E-MAIL GeoPotential@geopotential.biz	LOCATION: Block 9 Site N Russel Street Portland, OR	**Figure 1** **NV5 Site Map**
DATE: November 9, 2022 *SUBSURFACE MAPPING SURVEY* PROJECT No.: 1462	CLIENT: NV5	



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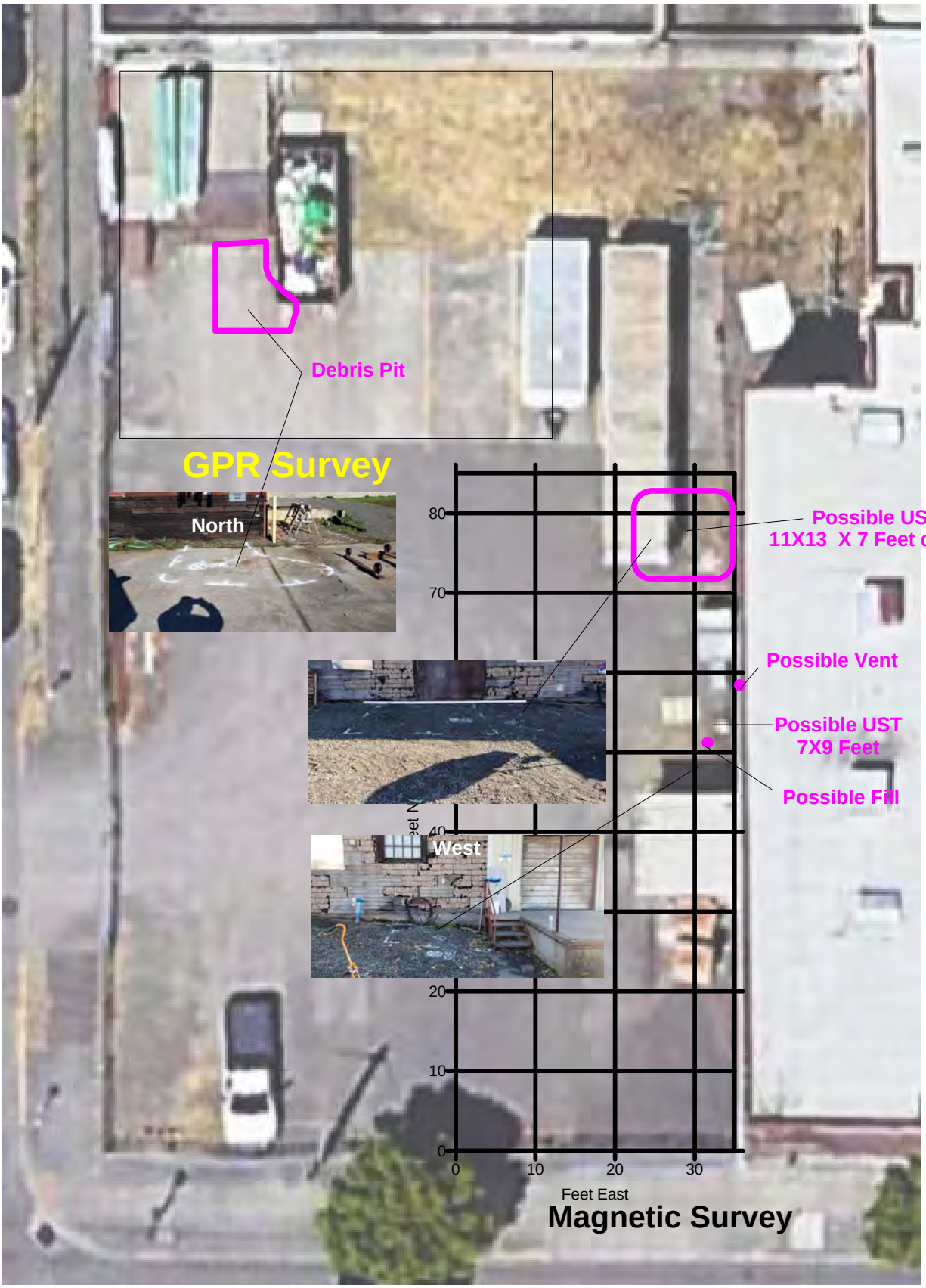
LOCATION:
Block 9 Site
N Russel Street
Portland, OR

Figure 2
Geophysical Surveys for
Underground Storage Tanks

DATE: November 9, 2022 *SUBSURFACE MAPPING SURVEY* PROJECT No. 1462

CLIENT: NV5



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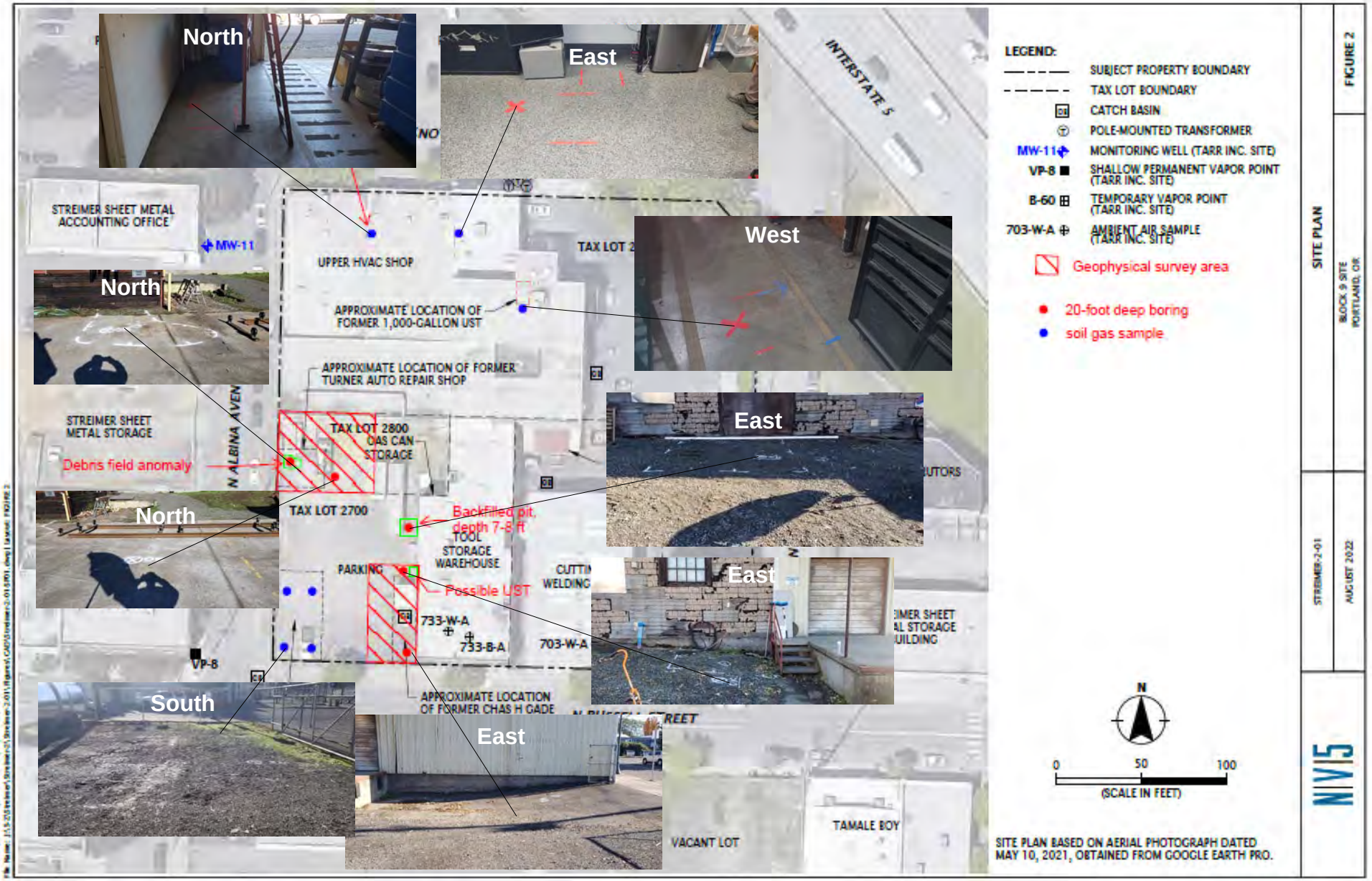
DATE: November 9, 2022 *SUBSURFACE MAPPING SURVEY* PROJECT No. 1462	CLIENT: NV5	



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DATE: November 9, 2022 *SUBSURFACE MAPPING SURVEY* PROJECT No.: 1462

LOCATION:
Block 9 Site
N Russel Street
Portland, OR

CLIENT: NV5

Figure 4
Photographs of Boring Locations

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APPENDIX A
MAGNETOMETER SURVEYS

The earth's magnetic field, measured in "nano Teslas" (nT), behaves like a bar magnet (a dipolar field), with the strongest magnetic field located at the poles, and the weakest field located near the equator. In the continental United States, the average field intensity varies widely, however, the average value is about 50,000 nT. Also, like the magnetic field around the bar magnet, the earth's magnetic field is inclined. This inclination in the continental United States varies between 60 and 75 degrees, generally depending upon the latitude of the measuring location. The earth's magnetic field varies constantly and, during sunspot activity, quite dramatically. A magnetometer is an electronic device that measures the intensity of the earth's magnetic field.

Naturally occurring geologic features and buried ferrous metal objects such as underground storage tanks, drums, ordnance, pipes and debris filled trenches produce both horizontal and vertical disturbances to the earth's local magnetic field. The objects causing these "anomalies" can be detected quickly and reliably using portable magnetometers.

The intensity of an anomaly is a function of the size, depth of burial and magnetic susceptibility of the object. As a rule of thumb, single drums buried several feet below the surface produce anomalies of about 200 nT relative to the normal undisturbed background and can be detected at a horizontal distance of about 15 feet, while large caches of drums can produce anomalies of many thousands of nT and may be detectable 50 feet away.

Magnetometers generally measure total intensity of the local magnetic field. A magnetic gradiometer is a variant of the magnetometer that measures both the horizontal and the vertical magnetic field at each survey point. It consists of two identical sensors located vertically on a staff and having a fixed separation. The intensity of the magnetic field caused by a buried metal object varies inversely with the distance between the object and the sensor. The relative intensities measured simultaneously at each sensor are used to determine the relative depth of burial of an object.

Relative depth estimates of buried metal objects can be made using a single sensor. In general, for a given object, the deeper the object is buried, the lower the amplitude and the wider the anomaly. Shallowly buried objects produce higher amplitude anomalies with closely spaced contour lines.

Magnetic surveys can only detect **ferrous metal** objects and cannot be used to identify the buried object. Estimates of the total mass of a buried object are difficult due to the physical properties of the object and other factors. Interference caused by observed surface metal objects limits the accuracy of the survey. The anomalies produced by fences, power lines, cars and buildings can easily mask the anomaly caused by an underground target.

Magnetic surveys are cost effective. Using the standard "step and wait" magnetometer, data from approximately 1000 points can be obtained in one field day corresponding to between 1 acre and about 5 acres depending on site conditions and survey goals. More modern cesium magnetometers collect up to 10 readings per second continuously, thus the operator can proceed without stopping. Many modern magnetometers use an audible signal to call attention to anomalous data as it is obtained. At some sites metallic objects can be detected and marked in the field at the time of the survey.

The use of a second, automatically recording "base station" magnetometer is highly recommended due to temporal variations in the earth's magnetic field. These changes must be removed from the field data before an accurate interpretation can be made, particularly when searching for small-buried objects.

Magnetic data are most commonly presented in two contour maps. The TOTAL MAGNETIC FIELD CONTOUR MAP shows the horizontal variation of the total intensity of the magnetic field and, therefore, the areal extent of anomalies. The GRADIOMETER CONTOUR MAPS show the horizontal variation of the vertical gradient of the magnetic field and indicate the relative depth of burial of the objects causing those anomalies. Color versions of these maps may be produced showing only the magnetic highs and lows.

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APPENDIX B
GROUND PENETRATING RADAR SURVEYS

Ground Penetrating Radar (GPR) can be a valuable tool to accurately locate both metallic and non-metallic UST's and utilities, buried drums and hazardous material at some sites. It may detect objects below reinforced concrete floors and slabs. GPR may delineate trenches and excavations and, under some conditions, it may be used to locate contaminant plumes. It has been used as an archaeological tool to look for buried artifacts. It may accurately profile fresh water lake bottoms either from a boat or from a frozen lake surface. GPR may be used to locate voids below roads and runways. GPR has numerous engineering applications. It can be used in non-destructive testing of engineering material, for example, locating rebar in concrete structures and determining the thickness of concrete and other structural material.

GPR uses short impulses of high frequency radio waves directed into the ground to acquire information about the subsurface. The energy radiated into the ground is reflected back to the antenna by features having different electrical properties to that of the surrounding material. The greater the contrast, the stronger the reflection. Typical reflectors include water table, bedrock, bedding, fractures, voids, contaminant plumes and man-made objects such as UST's and metal and plastic utilities. Materials having little electrical contrast like clay and concrete pipes may not produce strong reflections and may not be seen. Data are digitally recorded or downloaded to a laptop computer for filtering and processing.

The frequency of the radar signal used for a survey is a trade off. Low frequencies (250 MHz – 50 MHz) give better penetration but low resolution so that pipes and utilities may not be seen. Pipes and utilities may be seen using higher frequencies (500 MHz) but the depth of penetration may be limited to only a few feet especially in the wet, clayey soils found in many areas of the NW USA. The GPR frequency is dependent upon the antenna. Once an antenna is selected, nothing the operator can do can increase the depth of penetration.

Radar data is ambiguous. Many buried objects produce echoes that may be similar to the echo expected from the target object. Boulders and debris produce reflections that are similar to pipes and tanks. Subtle changes in the electrical properties along a traverse caused by changes in soil type, mineralogy, grain size, and moisture content all produce “noise” that can make interpretation difficult. Interpreting radargrams is an art as much as a science.

Under some conditions, although a UST itself may not be clearly visible in a GPR record, the excavation or trench in which the UST is buried is evident. Usually GPR data is used to compliment data from other “tools”. For example, a trench-like reflection but no clear UST reflection, combined with a “tank” shaped magnetic anomaly suggests the presence of a UST. Although the UST itself could not be seen using GPR, the radar showed a trench-like reflection. The magnetic data showed a large ferrous object. We would report a possible UST at that location.

GPR is often used in conjunction with magnetometer surveys. Magnetometer Surveys are very fast and large areas can be covered cost effectively. Magnetic anomalies are marked in the field, and then may be further investigated using radar.

GPR, like other geophysical tools, is excellent at detecting changes across a site, but it is poor at actually identifying the cause of the change. **The only definite way to identify buried objects is through excavation.**

ADVANTAGES - General

- When GPR data is properly interpreted subsurface objects can usually be confidently identified. This often requires the GPR data be combined with other geophysical data, surface features and historical information.
- GPR provides continuous records along traverses which, depending on the goal of the survey, may be interpreted in the field.
- At flat, open sites, for reconnaissance purposes, the antenna can be towed behind a vehicle at several mph.
- Many GPR antennas are shielded and are unaffected by surface and overhead objects and power lines.
- GPR can be used in conjunction with magnetic or EM surveys to accurately locate buried objects.

ADVANTAGES – Site specific

- With a low frequency antenna, in clean, dry, sandy soil, reflections from targets as deep as 100 feet are possible. Geologic features such as bedrock and cross bedding may be seen at some sites.
- The resolution of data is very high particularly for high frequency antennas.
- Shallow, man-made objects generally can be detected.
- Fiberglass UST's and plastic pipes can be detected using GPR.

LIMITATIONS - General

- To acquire the highest quality data, proper coupling between the antenna and the ground surface is necessary. Poor data may be obtained at sites covered with debris, an uneven surface, tall grass and brush. Objects located at curbs are difficult to see.
- Acquiring GPR data is slow. The antenna must be over the target. The signal from the antenna is cone-shaped. Reflections from objects to the side of the antenna may be seen, but their actual location relative to the antenna is not obvious.
- Penetration of the GPR signal is "site specific" and its depth of penetration at a particular site cannot be predicted ahead of time. Near surface conductive material, such as salty or contaminated ground water and wet, clay-rich soil, may attenuate the radar signal, limiting the effective depth of the survey to several feet. Reinforced concrete also can attenuate the signal. Rebar may produce reflections that look like pipes.

- GPR may not be cost-effective for some projects. For a detailed survey mapping underground storage tanks and utilities, it may be necessary to collect data in orthogonal directions at 5-foot line spacing.

LIMITATIONS – Interpretation

- Interpretation can be difficult. Radar data are ambiguous. Subsurface objects can be detected but, in general, they cannot be identified. USTs and utilities have a characteristic reflection, however, large rocks and boulders have a similar reflection.

- The reflection visible in a GPR record is very complex and may be caused by small changes in the electrical properties of the soil. The target in mind may not produce the reflection. Due to "noise", the target may be missed. USTs and deep utilities may be missed if they are under debris and/or other pipes.

- Other methods may be necessary to aid in the interpretation of the data (use a magnetometer to detect a large metallic mass, then GPR to determine if the object is tank-like, or a utility locator to determine if there are feed lines and fill pipes leading to the object).

- Adequate contrast between the ground and the target is required to obtain reflections. UST's may be missed if they are badly corroded. Utilities made of "earth" materials like clay and concrete may not be detected since their electrical properties are similar to the surrounding soil.

- To determine the depth to an object without "ground truth", assumptions must be made regarding soil properties. Even with ground truth at several locations on the same site, changes in material across a site (therefore changes in signal velocity) can cause errors in depth measurements at other locations.

APPENDIX B

APPENDIX B

FIELD PROCEDURES

GEOPHYSICAL SURVEY

On November 9, 2022, GeoPotential conducted a geophysical survey of the vicinities of the former auto repair shops on the southwest portion of the subject property to evaluate for potential USTs, UST pits, and other remnant features from historical operations on the subject property. GeoPotential used a GEOMETRICS 858G Cesium Vapor Magnetometer and a Schonstedt GA52 Magnetic Gradiometer to scan and map the subject property for buried ferrous objects. The subsurface anomalies identified by the magnetometers were then scanned using a Mala RAMAC GPR system with a 450-MHz antenna. In addition, GeoPotential used Aqua-Tronics A6 and Heath Sure Lock pipe and cable locators to further identify ferrous objects and utilities at the subject property.

EXPLORATIONS

Six direct-push borings (DP-1 through DP-6) were advanced to a depth of 20 feet BGS at the subject property using equipment owned and operated by Western States Soil Conservation, Inc. on January 5 and 6, 2023. The locations of the borings are shown on Figure 2. The exploration logs are presented in this appendix. An NV5 field representative observed the drilling activities and collected soil samples from the borings. The soil encountered in the borings was visually classified in general accordance with ASTM D2488.

Soil Sampling

Continuous soil samples were collected from the borings. Soil samples collected from the direct-push borings were collected from 2-inch-diameter, 60-inch-long samplers lined with acrylic sleeves. Soil samples were collected into laboratory-provided containers in general accordance with EPA Method 5035A and immediately placed in an ice chest and kept cool until delivery to the laboratory. Standard chain-of-custody procedures were observed during transport of the samples to the laboratory.

Soil Sampling Field Screening Methods

An NV5 representative performed field screening tests on select soil samples collected from the borings. Field screening results aided in the selection of soil samples for chemical analysis. Screening methods included visual examination, water sheen screening, and headspace vapor screening using a 10.6-eV MiniRAE 3000 PID.

Visual screening consisted of observing the soil for discoloration indicative of the presence of petroleum contamination in the sample. Water sheen screening involved placing soil in water and observing the water surface for signs of sheen. Sheen classifications are as follows:

No Sheen	No visible sheen on the water surface.
Slight Sheen	Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly. Natural organic matter in the soil may produce a slight sheen.

Moderate Sheen	Light to heavy sheen; may have some color/iridescence; spread is irregular to flowing, may be rapid; few remaining areas of no sheen on water surface.
Heavy Sheen	Heavy sheen with color/iridescence; spread is rapid; entire water surface may be covered with sheen.

Headspace vapor screening is performed by placing a soil sample in a plastic bag. Air is captured in the bag, and the bag is shaken to expose the soil to the air trapped in the bag. The probe of a MiniRAE 3000 PID is inserted into the bag, and the MiniRAE PID measures VOC vapor concentrations in units of ppm. The MiniRAE 3000 PID is calibrated to isobutylene. The MiniRAE PID is designed to quantify VOC vapor concentrations in the range between 10 and 2,000 ppm with an accuracy of 2 percent of the reading and between 2,000 and 10,000 ppm with an accuracy of 20 percent of the reading. Field screening results are site and exploration specific. The results may vary with temperature, soil moisture content, soil type, and type of contaminant.

SOIL GAS SAMPLING

The soil gas samples were collected as follows:

- For samples SG-1 through SG-4, Western States Soil Conservation, Inc. advanced a Geoprobe® PRT system to depths of 5 and 10 feet BGS.
- Connected each PRT system to a laboratory-provided summa canister using decontaminated Swagelok® fittings and new PFA tubing.
- Sealed the annular space between the boring sidewall and the PRT system with hydrated bentonite to minimize ambient air migration into the sampling zone.
- For soil gas sample VP-13(010623), a laboratory-provided summa canister was connected to permanent vapor monitoring well VP-13.
- Allowed each soil gas sample to equilibrate for at least 30 minutes prior to sampling.
- Installed a leach-check system in general accordance with DEQ's *Guidance for Assessing and Remediating Vapor Intrusion in Buildings*, dated March 25, 2010, at each soil gas sample location. Specifically, each leak-check system consisted of wrapping a cloth saturated with isopropyl alcohol (2-propanol) around the connection, fittings, and slab penetration.
- Purged approximately 2 to 3 volumes of air from the sampling train and tubing using a calibrated hand-held PID prior to collecting each sample.
- Measured and recorded the initial and final vacuum pressures of each summa canister, ambient temperature, and barometric pressure.
- Collected the soil gas samples using laboratory-provided summa canisters.
- Removed the PRT system and repaired the ground surface, as appropriate.

SUB-SLAB VAPOR SAMPLING

The sub-slab vapor sample was collected as follows:

- Drilled a 5/8-inch-diameter hole through the concrete slab using equipment owned and operated by NV5. The drill bit was advanced through the concrete slab and approximately 1 inch to 2 inches into the underlying soil or subgrade rock.
- Cleaned the slab penetration using a decontaminated brush and/or vacuum.
- Placed a new disposable silicon sleeve over the lower end of a decontaminated Vapor Pin® in accordance with the manufacturer's instructions.
- Installed the assembled Vapor Pin® into the slab penetration. During installation, the silicone sleeve forms a slight bulge between the slab and the Vapor Pin®, which creates an airtight seal.
- Placed hydrated bentonite around the Vapor Pin® and slab penetration to minimize potential ambient air migration into the sampling zone.
- Placed a protective cap over the top of the Vapor Pin® and allowed it to equilibrate for at least 30 minutes.
- After equilibration, new disposable silicon tubing and PFA tubing were used to connect the laboratory-provided, 1-liter summa canister to the Vapor Pin®. A maximum of 1 inch of silicon tubing was used to secure the PFA tubing to the Vapor Pin®. All sampling train fittings consisted of decontaminated Swagelok® fittings.
- Installed a leak-check system in general accordance with DEQ's *Guidance for Assessing and Remediating Vapor Intrusion in Buildings,* dated March 25, 2010, at the sub-slab vapor sample location. Specifically, the leak-check system consisted of wrapping a cloth saturated with isopropyl alcohol (2-propanol) around the connection, fittings, and slab penetration.
- Purged approximately 2 to 3 volumes of air from the sampling train and tubing using a calibrated hand-held PID prior to collecting each sample.
- Measured and recorded the initial and final vacuum pressures of the summa canister, ambient temperature, and barometric pressure.
- Collected the sub-slab vapor sample using a laboratory-provided, 1-liter summa canister.
- Removed the Vapor Pin® from the concrete slab and repaired the surface, as appropriate.

DECONTAMINATION

All sampling equipment used in the collection of samples was decontaminated prior to use. Decontamination was performed on all sample re-usable processing equipment that came into contact with sampling media, including tools, stainless steel implements, trowels, etc. Decontamination was performed prior to sampling each location using the following procedures:

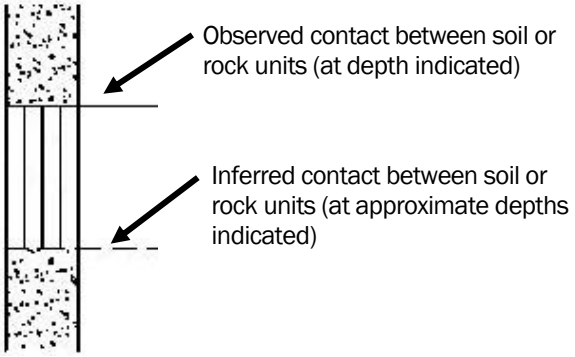
1. Rinsed with tap water and scrubbed with a scrub brush until free of large particles (e.g., sediment or soil).
2. Washed with phosphate-free (Alconox™) detergent solution.
3. Rinsed with tap water.
4. Rinsed with distilled water.

IDW MANAGEMENT

IDW from the borings (soil cuttings) was placed into a 55-gallon drum and stored at the subject property until disposal at a later date.

SYMBOL	SAMPLING DESCRIPTION
	Location of sample collected in general accordance with ASTM D1586 using Standard Penetration Test (SPT) with recovery
	Location of sample collected using thin-wall Shelby tube or Geoprobe® sampler in general accordance with ASTM D1587 with recovery
	Location of sample collected using Dames & Moore sampler and 300-pound hammer or pushed with recovery
	Location of sample collected using Dames & Moore sampler and 140-pound hammer or pushed with recovery
	Location of sample collected using 3-inch-outside diameter California split-spoon sampler and 140-pound hammer with recovery
	Location of grab sample
	Rock coring interval
	Water level during drilling
	Water level taken on date shown

Graphic Log of Soil and Rock Types



GEOTECHNICAL TESTING EXPLANATIONS

ATT	Atterberg Limits	P	Pushed Sample
CBR	California Bearing Ratio	PP	Pocket Penetrometer
CON	Consolidation	P200	Percent Passing U.S. Standard No. 200 Sieve
DD	Dry Density		
DS	Direct Shear	RES	Resilient Modulus
HYD	Hydrometer Gradation	SIEV	Sieve Gradation
MC	Moisture Content	TOR	Torvane
MD	Moisture-Density Relationship	UC	Unconfined Compressive Strength
NP	Non-Plastic	VS	Vane Shear
OC	Organic Content	kPa	Kilopascal

ENVIRONMENTAL TESTING EXPLANATIONS

CA	Sample Submitted for Chemical Analysis	ND	Not Detected
P	Pushed Sample	NS	No Visible Sheen
PID	Photoionization Detector Headspace Analysis	SS	Slight Sheen
		MS	Moderate Sheen
ppm	Parts per Million	HS	Heavy Sheen

RELATIVE DENSITY - COARSE-GRAINED SOIL

Relative Density	Standard Penetration Test (SPT) Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)
Very loose	0 – 4	0 – 11	0 – 4
Loose	4 – 10	11 – 26	4 – 10
Medium dense	10 – 30	26 – 74	10 – 30
Dense	30 – 50	74 – 120	30 – 47
Very dense	More than 50	More than 120	More than 47

CONSISTENCY - FINE-GRAINED SOIL

Consistency	Standard Penetration Test (SPT) Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)	Unconfined Compressive Strength (tsf)
Very soft	Less than 2	Less than 3	Less than 2	Less than 0.25
Soft	2 – 4	3 – 6	2 – 5	0.25 – 0.50
Medium stiff	4 – 8	6 – 12	5 – 9	0.50 – 1.0
Stiff	8 – 15	12 – 25	9 – 19	1.0 – 2.0
Very stiff	15 – 30	25 – 65	19 – 31	2.0 – 4.0
Hard	More than 30	More than 65	More than 31	More than 4.0

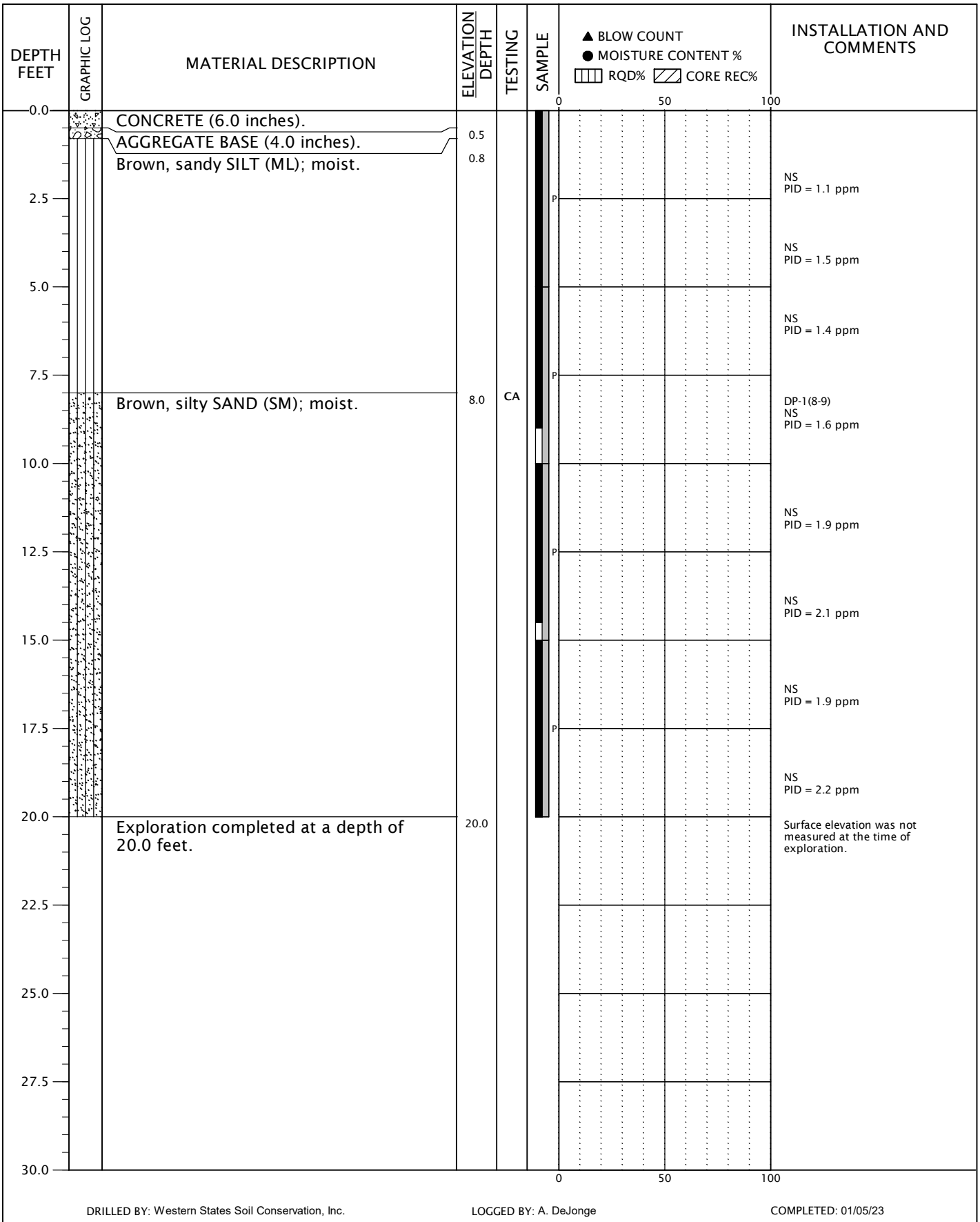
PRIMARY SOIL DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE-GRAINED SOIL (more than 50% retained on No. 200 sieve)	GRAVEL (more than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (< 5% fines)	GW or GP	GRAVEL
		GRAVEL WITH FINES (≥ 5% and ≤ 12% fines)	GW-GM or GP-GM	GRAVEL with silt
			GW-GC or GP-GC	GRAVEL with clay
		GRAVEL WITH FINES (> 12% fines)	GM	silty GRAVEL
			GC	clayey GRAVEL
			GC-GM	silty, clayey GRAVEL
	SAND (50% or more of coarse fraction passing No. 4 sieve)	CLEAN SAND (<5% fines)	SW or SP	SAND
		SAND WITH FINES (≥ 5% and ≤ 12% fines)	SW-SM or SP-SM	SAND with silt
			SW-SC or SP-SC	SAND with clay
		SAND WITH FINES (> 12% fines)	SM	silty SAND
			SC	clayey SAND
			SC-SM	silty, clayey SAND
FINE-GRAINED SOIL (50% or more passing No. 200 sieve)	SILT AND CLAY	Liquid limit less than 50	ML	SILT
			CL	CLAY
			CL-ML	silty CLAY
			OL	ORGANIC SILT or ORGANIC CLAY
		Liquid limit 50 or greater	MH	SILT
			CH	CLAY
			OH	ORGANIC SILT or ORGANIC CLAY
HIGHLY ORGANIC SOIL			PT	PEAT

MOISTURE CLASSIFICATION		ADDITIONAL CONSTITUENTS					
		Secondary granular components or other materials such as organics, man-made debris, etc.					
			Silt and Clay In:			Sand and Gravel In:	
Term	Field Test	Percent	Fine-Grained Soil	Coarse-Grained Soil	Percent	Fine-Grained Soil	Coarse-Grained Soil
dry	very low moisture, dry to touch						
moist	damp, without visible moisture	< 5	trace	trace	< 5	trace	trace
		5 – 12	minor	with	5 – 15	minor	minor
wet	visible free water, usually saturated	> 12	some	silty/clayey	15 – 30	with	with
					> 30	sandy/gravelly	Indicate %

NV5

SOIL CLASSIFICATION SYSTEM

TABLE B-2



DRILLED BY: Western States Soil Conservation, Inc.

LOGGED BY: A. DeJonge

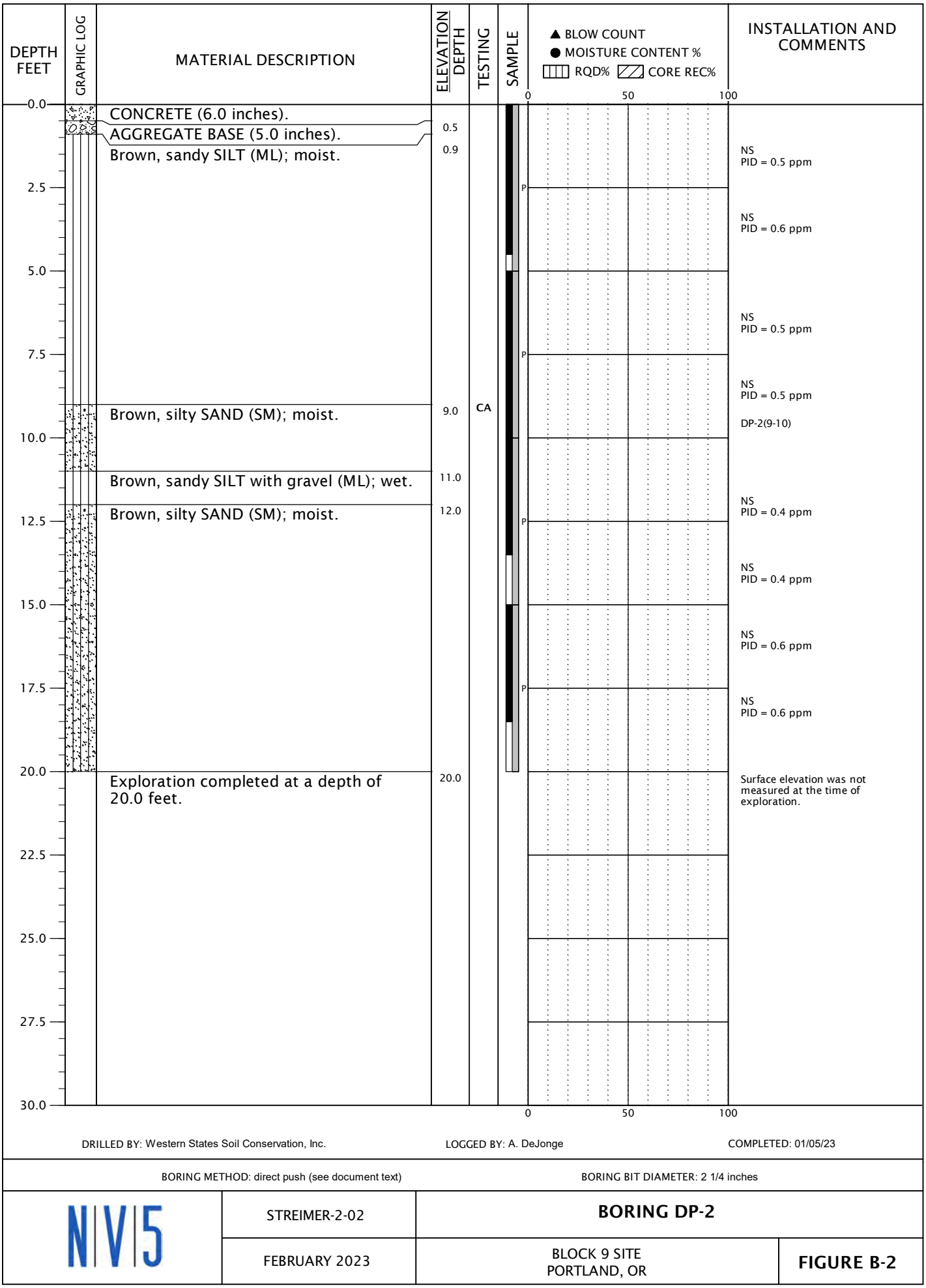
COMPLETED: 01/05/23

BORING METHOD: direct push (see document text)

BORING BIT DIAMETER: 2 1/4 inches

N|V|5	STREIMER-2-02	**BORING DP-1**
	FEBRUARY 2023	BLOCK 9 SITE PORTLAND, OR
		FIGURE B-1

BORING LOG - NV5 - 1 PER PAGE STREIMER-2-02-DP1_6.GPJ GDI_NV5.GDT PRINT DATE: 1/27/23:KT



DRILLED BY: Western States Soil Conservation, Inc.

LOGGED BY: A. DeJonge

COMPLETED: 01/05/23

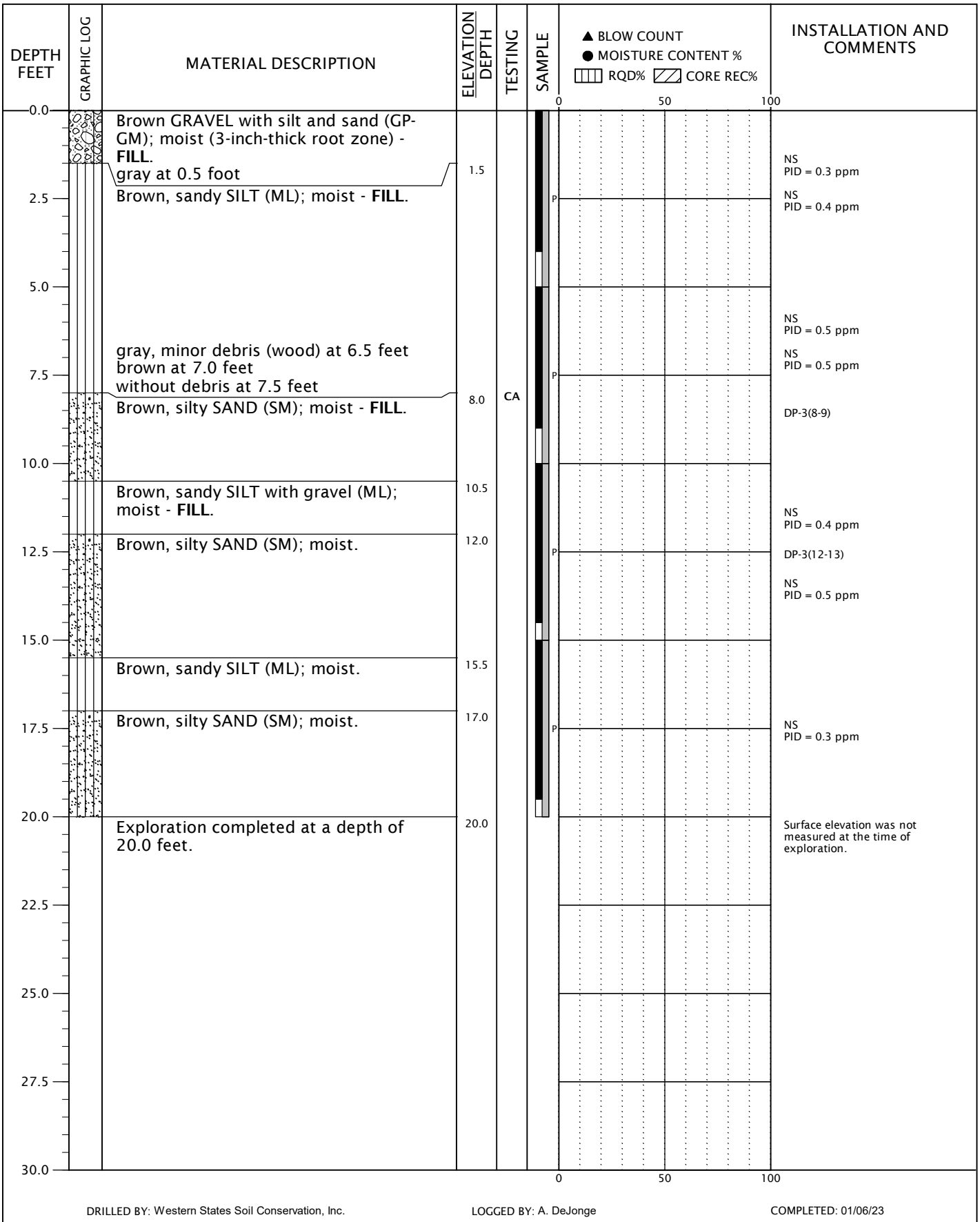
BORING METHOD: direct push (see document text)

BORING BIT DIAMETER: 2 1/4 inches

N|V|5	STREIMER-2-02	**BORING DP-2**
	FEBRUARY 2023	BLOCK 9 SITE PORTLAND, OR

FIGURE B-2

BORING LOG - NV5 - 1 PER PAGE STREIMER-2-02-DP1_6.GPJ GDI_NV5.GDT PRINT DATE: 1/27/23:KT



DRILLED BY: Western States Soil Conservation, Inc.

LOGGED BY: A. DeJonge

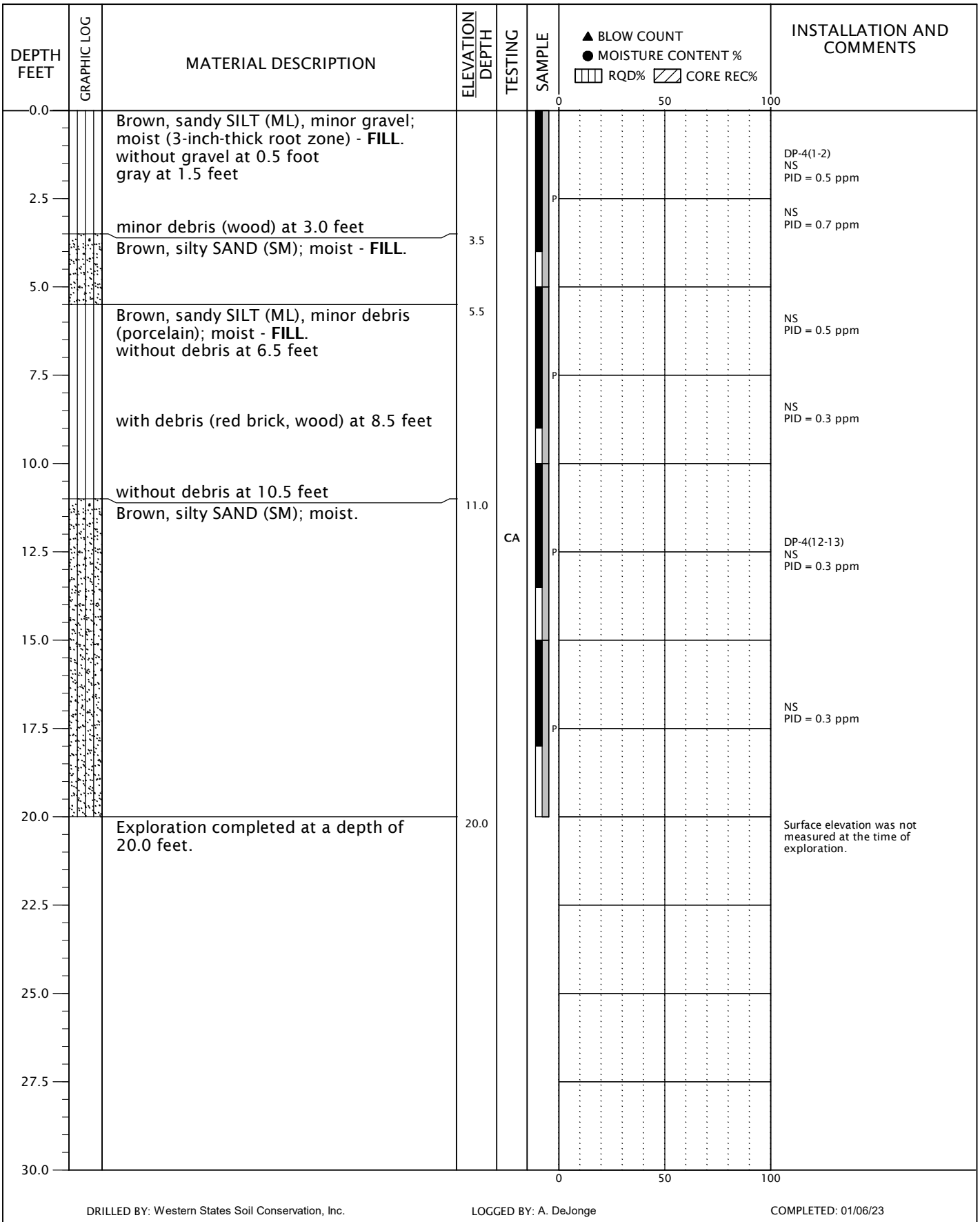
COMPLETED: 01/06/23

BORING METHOD: direct push (see document text)

BORING BIT DIAMETER: 2 1/4 inches

N|V|5	STREIMER-2-02	**BORING DP-3**
	FEBRUARY 2023	BLOCK 9 SITE PORTLAND, OR
		FIGURE B-3

BORING LOG - NV5 - 1 PER PAGE STREIMER-2-02-DP1_6.GPJ GDI_NV5.GDT PRINT DATE: 1/27/23:KT



DRILLED BY: Western States Soil Conservation, Inc.

LOGGED BY: A. DeJonge

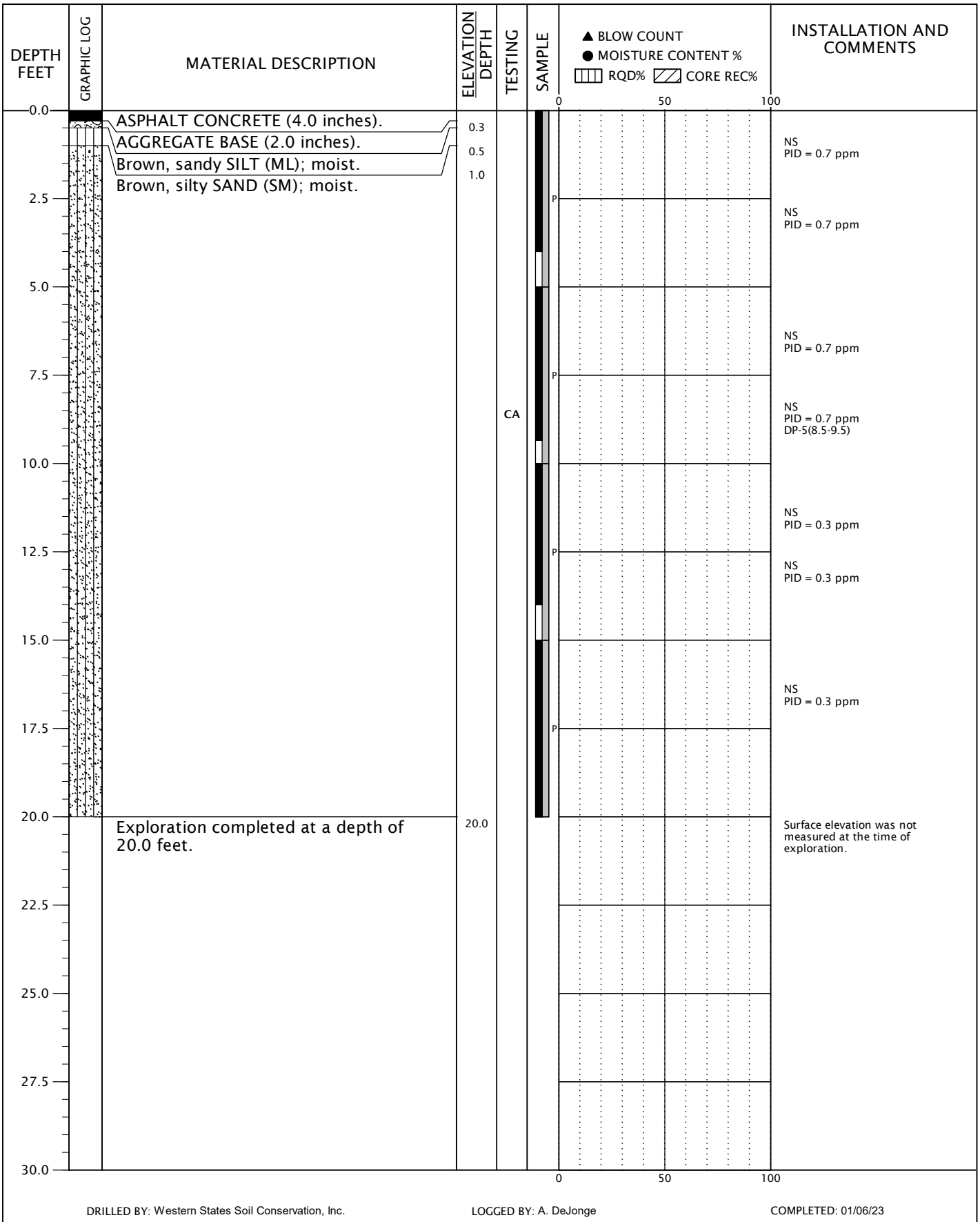
COMPLETED: 01/06/23

BORING METHOD: direct push (see document text)

BORING BIT DIAMETER: 2 1/4 inches

N|V|5	STREIMER-2-02	**BORING DP-4**
	FEBRUARY 2023	BLOCK 9 SITE PORTLAND, OR
		FIGURE B-4

BORING LOG - NV5 - 1 PER PAGE STREIMER-2-02-DP1_6.GPJ GDI_NV5.GDT PRINT DATE: 1/27/23:KT


DEPTH FEET
GRAPHIC LOG
MATERIAL DESCRIPTION
ELEVATION DEPTH
TESTING
SAMPLE
▲ BLOW COUNT
● MOISTURE CONTENT %
RQD% CORE REC%
0 50 100
INSTALLATION AND COMMENTS
ASPHALT CONCRETE (4.0 inches).
AGGREGATE BASE (2.0 inches).
Brown, sandy SILT (ML); moist.
Brown, silty SAND (SM); moist.
0.3
0.5
1.0
CA
NS
PID = 0.7 ppm
NS
PID = 0.7 ppm
NS
PID = 0.7 ppm
NS
PID = 0.7 ppm
DP-5(8.5-9.5)
NS
PID = 0.3 ppm
NS
PID = 0.3 ppm
NS
PID = 0.3 ppm
Exploration completed at a depth of 20.0 feet.
20.0
Surface elevation was not measured at the time of exploration.
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
22.5
25.0
27.5
30.0
DRILLED BY: Western States Soil Conservation, Inc.
LOGGED BY: A. DeJonge
COMPLETED: 01/06/23
BORING METHOD: direct push (see document text)
BORING BIT DIAMETER: 2 1/4 inches
STREIMER-2-02
BORING DP-5
FEBRUARY 2023
BLOCK 9 SITE
PORTLAND, OR
FIGURE B-5
BORING LOG - NV5 - 1 PER PAGE STREIMER-2-02-DP1_6.GPJ GDI_NV5.GDT PRINT DATE: 1/27/23:KT

DEPTH FEET	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	INSTALLATION AND COMMENTS
0.0	Brown GRAVEL with silt and sand (GP-GM); moist (4-inch-thick root zone).	0.5			
	Brown, silty SAND (SM); moist. wet at 1.5 feet				
2.5	moist at 3.5 feet			P	NS PID = 0.2 ppm NS PID = 0.4 ppm
5.0					
7.5				P	NS PID = 0.3 ppm NS PID = 0.3 ppm
10.0	Brown GRAVEL with silt and sand (GP-GM); moist.	10.5			
	Brown, silty SAND (SM); moist.	11.0	CA		DP-6(11-12) PID = 90.3 ppm
12.5				P	NS PID = 87.4 ppm
15.0					NS PID = 5.8 ppm NS PID = 5.9 ppm
17.5				P	NS PID = 8.9 ppm
20.0	Exploration completed at a depth of 20.0 feet.	20.0			Surface elevation was not measured at the time of exploration.
22.5					
25.0					
27.5					
30.0					

GRAPHIC LOG

▲ BLOW COUNT
● MOISTURE CONTENT %
RQD% CORE REC%

0 50 100

DRILLED BY: Western States Soil Conservation, Inc.

LOGGED BY: A. DeJonge

COMPLETED: 01/06/23

BORING METHOD: direct push (see document text)

BORING BIT DIAMETER: 2 1/4 inches

N|V|5

STREIMER-2-02

BORING DP-6

FEBRUARY 2023

BLOCK 9 SITE
PORTLAND, OR

FIGURE B-6

BORING LOG - NV5 - 1 PER PAGE STREIMER-2-02-DP1_6.GPJ GDI_NV5.GDT PRINT DATE: 1/27/23:KT

APPENDIX C

APPENDIX C

CHEMICAL ANALYTICAL PROGRAM

GENERAL

Chain-of-custody procedures were followed during handling and transport of the soil, soil gas, and sub-slab vapor samples to the analytical laboratory. The laboratory holds the samples in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference, and laboratory QC records are presented in this appendix. The analytical results also are summarized in the tables of this report.

SOIL GAS AND SUB-SLAB VAPOR SAMPLING QA/QC

Cloths saturated with isopropyl alcohol (2-propanol) were placed around the floor penetration and sampling train fittings as a leak-check system. 2-propanol was detected in the sub-slab vapor sample and three of the soil gas samples at concentrations between 19.4 and 242 µg/m^3. Based on the ambient temperature and barometric pressure at the time of sampling and assuming 20 percent contribution of 2-propanol to the surrounding atmosphere, the maximum detected concentration (242 µg/m^3) represents less 0.01 percent leakage contribution. DEQ's *Guidance for Assessing and Remediating Vapor Intrusion in Buildings,* dated March 25, 2010, states that less than a 5 percent contribution from ambient air indicates the sampling trains were sufficiently airtight.

REVIEW OF ANALYTICAL DATA

The analytical laboratory used for this project maintains an internal QA program consisting of a combination of the following:

Blanks: Blanks are laboratory-prepared water samples that are free of contaminants. The blanks are carried through the analysis procedure along with the field samples to document that contaminants were not introduced to the samples during sample handling and analysis.

Surrogate Recoveries: Surrogates are organic compounds that are similar in nature to the analytes of concern but are not normally found in nature. The surrogates are added to QC and field samples prior to analysis. The percent recovery of the surrogate is calculated to demonstrate acceptable method performance.

Duplicates: Duplicates are obtained by splitting a sample into two parts. The two separate parts are carried through the analyses. The analytical results are then compared by calculating the RPD between the samples.

MS/MSD Recoveries: An MS sample is a sample that has been split into a second portion. The MSD is obtained by further splitting the MS sample. A known concentration of the analyte of interest is added to the MS and MSD samples. The analytical results for both samples are then compared for RPD and percent recovery to demonstrate acceptable method performance.

BS/BSD Recoveries: BS and BSD samples are obtained and analyzed in the same procedure as the MS/MSD samples; however, the laboratory blank sample is used to obtain the BS/BSD samples. The percent recovery and RPD of the known concentration of analyte of interest added to the BS/BSD sample is calculated after chemical analyses to demonstrate acceptable method performance.

SUMMARY OF ANALYTICAL DATA REVIEW

NV5 reviewed the attached analytical data reports for data quality exceptions and deviations from acceptable method performance criteria. Our review indicated the following:

- Styrene was detected in the blank associated with soil sample DP-6(11-12). The reported results are likely biased high.
- Multiple metals and VOCs in soil samples were qualified by the laboratory as being estimated values, but as acceptable for their intended use.

Based on the relatively low reported concentrations of the flagged analytes, the analytical data appears to be acceptable for its intended use.

ANALYTICAL REPORT

January 17, 2023

Revised Report

NV5 - Wilsonville, OR

Sample Delivery Group:	L1573805
Samples Received:	01/07/2023
Project Number:	Streimer -2-02
Description:	Block 9 Site

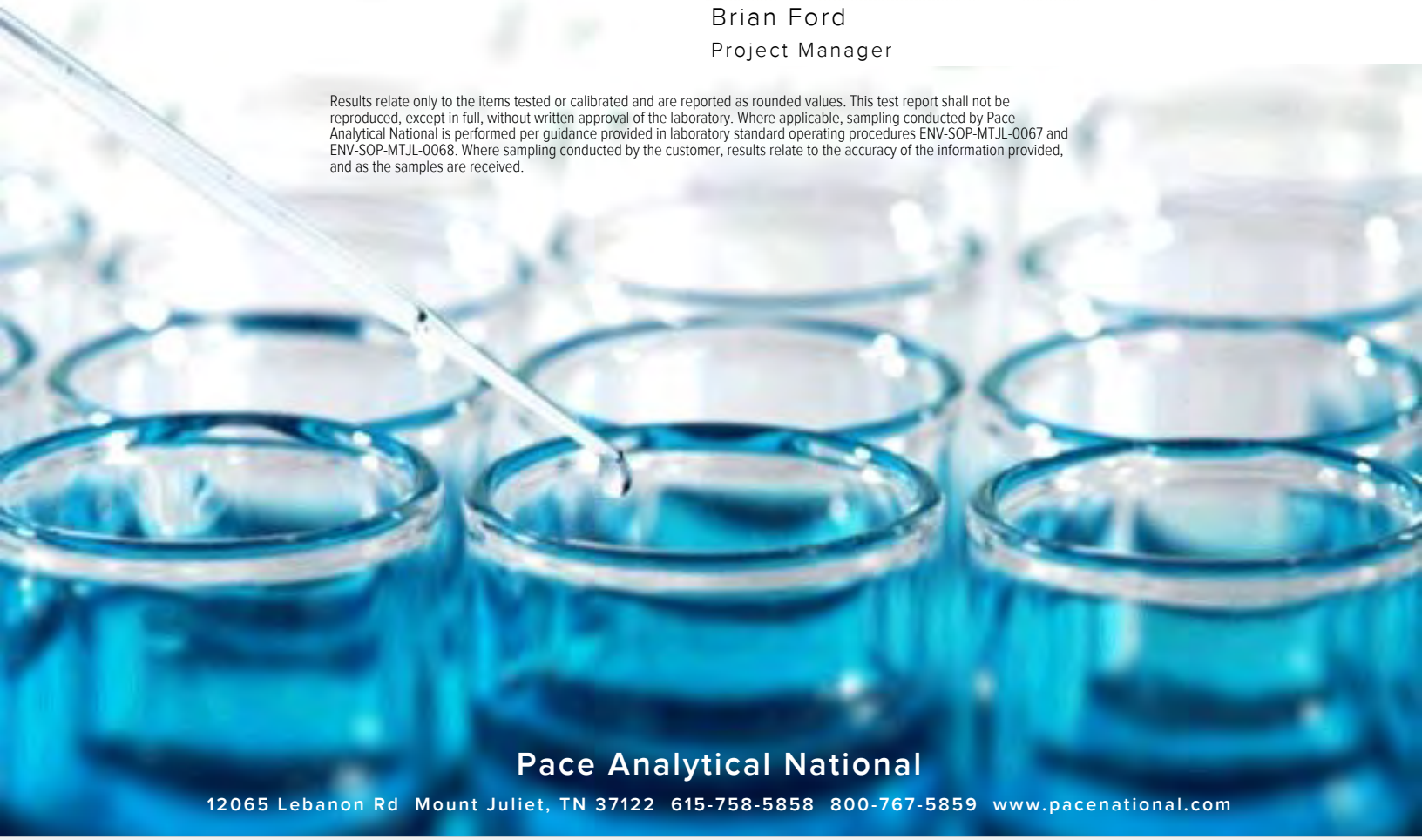
Report To:

Andre DeJonge
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Entire Report Reviewed By:

Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

DP-1(8-9) L1573805-01 Solid

Collected by: ADD | Collected date/time: 01/05/23 15:25 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1985219	1	01/10/23 12:08	01/10/23 12:25	CMK	Mt. Juliet, TN
Mercury by Method 7471B	WG1985133	1	01/08/23 20:49	01/09/23 13:21	SRT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1985544	5	01/09/23 16:20	01/09/23 20:12	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1989374	43	01/05/23 15:25	01/16/23 20:39	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1985175	1	01/10/23 05:21	01/10/23 11:14	JDG	Mt. Juliet, TN

DP-2(9-10) L1573805-02 Solid

Collected by: ADD | Collected date/time: 01/05/23 16:00 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1985219	1	01/10/23 12:08	01/10/23 12:25	CMK	Mt. Juliet, TN
Mercury by Method 7471B	WG1985133	1	01/08/23 20:49	01/09/23 13:24	SRT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1985544	5	01/09/23 16:20	01/09/23 20:15	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1989374	49.3	01/05/23 16:00	01/16/23 21:03	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1985175	1	01/10/23 05:21	01/10/23 11:27	JDG	Mt. Juliet, TN

DP-3(8-9) L1573805-03 Solid

Collected by: ADD | Collected date/time: 01/06/23 09:00 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1985219	1	01/10/23 12:08	01/10/23 12:25	CMK	Mt. Juliet, TN
Mercury by Method 7471B	WG1985133	1	01/08/23 20:49	01/09/23 13:26	SRT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1985544	5	01/09/23 16:20	01/09/23 20:19	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1985389	1.85	01/06/23 09:00	01/09/23 17:36	ADM	Mt. Juliet, TN

DP-4(12-13) L1573805-05 Solid

Collected by: ADD | Collected date/time: 01/06/23 09:45 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1985220	1	01/10/23 11:45	01/10/23 12:04	CMK	Mt. Juliet, TN
Mercury by Method 7471B	WG1985133	1	01/08/23 20:49	01/09/23 13:29	SRT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1985544	5	01/09/23 16:20	01/09/23 20:22	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1985389	1.97	01/06/23 09:45	01/09/23 17:54	ADM	Mt. Juliet, TN

DP-5(8.5-9.5) L1573805-07 Solid

Collected by: ADD | Collected date/time: 01/06/23 10:50 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1985220	1	01/10/23 11:45	01/10/23 12:04	CMK	Mt. Juliet, TN
Mercury by Method 7471B	WG1985133	1	01/08/23 20:49	01/09/23 13:32	SRT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1985544	5	01/09/23 16:20	01/09/23 20:25	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1989374	49	01/06/23 10:50	01/16/23 21:28	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1985175	1	01/10/23 05:21	01/10/23 11:40	JDG	Mt. Juliet, TN

DP-6(11-12) L1573805-08 Solid

Collected by: ADD | Collected date/time: 01/06/23 11:20 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1985220	1	01/10/23 11:45	01/10/23 12:04	CMK	Mt. Juliet, TN
Mercury by Method 7471B	WG1985133	1	01/08/23 20:49	01/09/23 13:34	SRT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1985544	5	01/09/23 16:20	01/09/23 20:28	LD	Mt. Juliet, TN

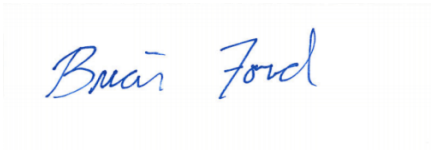
DP-6(11-12) L1573805-08 Solid

Collected by	Collected date/time	Received date/time
ADD	01/06/23 11:20	01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1989374	25	01/06/23 11:20	01/16/23 22:43	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1985389	1	01/06/23 11:20	01/09/23 18:13	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1985175	1	01/10/23 05:21	01/10/23 15:09	JDG	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Report Revision History

Level II Report - Version 1: 01/17/23 13:38

Project Narrative

Sample IDs updated per Client Request

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	80.1		1	01/10/2023 12:25	WG1985219

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	U		0.0225	0.0499	1	01/09/2023 13:21	WG1985133

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.207	3.74	5	01/09/2023 20:12	WG1985544
Arsenic	4.75		0.125	1.25	5	01/09/2023 20:12	WG1985544
Beryllium	0.680	J	0.172	3.12	5	01/09/2023 20:12	WG1985544
Cadmium	0.121	J	0.107	1.25	5	01/09/2023 20:12	WG1985544
Chromium	13.7		0.369	6.24	5	01/09/2023 20:12	WG1985544
Copper	18.8		0.165	6.24	5	01/09/2023 20:12	WG1985544
Lead	8.84		0.124	2.50	5	01/09/2023 20:12	WG1985544
Nickel	15.9		0.246	3.12	5	01/09/2023 20:12	WG1985544
Selenium	0.390	J	0.225	3.12	5	01/09/2023 20:12	WG1985544
Silver	U		0.108	0.624	5	01/09/2023 20:12	WG1985544
Thallium	0.193	J	0.0811	2.50	5	01/09/2023 20:12	WG1985544
Zinc	59.8		0.923	31.2	5	01/09/2023 20:12	WG1985544

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		2.03	5.99	43	01/16/2023 20:39	WG1989374
(S) a,a,a-Trifluorotoluene(FID)	*89.6*			*77.0-120*		*01/16/2023 20:39*	WG1989374

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.66	4.99	1	01/10/2023 11:14	WG1985175
Residual Range Organics (RRO)	U		4.16	12.5	1	01/10/2023 11:14	WG1985175
(S) o-Terphenyl	*59.1*			*18.0-148*		*01/10/2023 11:14*	WG1985175

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	74.7		1	01/10/2023 12:25	WG1985219

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	U		0.0241	0.0536	1	01/09/2023 13:24	WG1985133

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.222	4.02	5	01/09/2023 20:15	WG1985544
Arsenic	5.64		0.134	1.34	5	01/09/2023 20:15	WG1985544
Beryllium	0.712	J	0.185	3.35	5	01/09/2023 20:15	WG1985544
Cadmium	0.131	J	0.115	1.34	5	01/09/2023 20:15	WG1985544
Chromium	15.4		0.396	6.70	5	01/09/2023 20:15	WG1985544
Copper	17.2		0.177	6.70	5	01/09/2023 20:15	WG1985544
Lead	9.20		0.133	2.68	5	01/09/2023 20:15	WG1985544
Nickel	15.4		0.264	3.35	5	01/09/2023 20:15	WG1985544
Selenium	0.338	J	0.241	3.35	5	01/09/2023 20:15	WG1985544
Silver	U		0.116	0.670	5	01/09/2023 20:15	WG1985544
Thallium	0.175	J	0.0871	2.68	5	01/09/2023 20:15	WG1985544
Zinc	64.6		0.991	33.5	5	01/09/2023 20:15	WG1985544

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		2.52	7.45	49.3	01/16/2023 21:03	WG1989374
(S) a,a,a-Trifluorotoluene(FID)	*89.2*			*77.0-120*		*01/16/2023 21:03*	WG1989374

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.78	5.36	1	01/10/2023 11:27	WG1985175
Residual Range Organics (RRO)	U		4.46	13.4	1	01/10/2023 11:27	WG1985175
(S) o-Terphenyl	*68.4*			*18.0-148*		*01/10/2023 11:27*	WG1985175

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	83.3		1	01/10/2023 12:25	WG1985219

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	U		0.0216	0.0480	1	01/09/2023 13:26	WG1985133

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	2.11	J	0.199	3.60	5	01/09/2023 20:19	WG1985544
Arsenic	3.80		0.120	1.20	5	01/09/2023 20:19	WG1985544
Beryllium	0.502	J	0.166	3.00	5	01/09/2023 20:19	WG1985544
Cadmium	0.364	J	0.103	1.20	5	01/09/2023 20:19	WG1985544
Chromium	9.98		0.355	6.00	5	01/09/2023 20:19	WG1985544
Copper	17.4		0.158	6.00	5	01/09/2023 20:19	WG1985544
Lead	72.4		0.119	2.40	5	01/09/2023 20:19	WG1985544
Nickel	13.9		0.236	3.00	5	01/09/2023 20:19	WG1985544
Selenium	0.303	J	0.216	3.00	5	01/09/2023 20:19	WG1985544
Silver	U		0.104	0.600	5	01/09/2023 20:19	WG1985544
Thallium	0.153	J	0.0780	2.40	5	01/09/2023 20:19	WG1985544
Zinc	92.1		0.888	30.0	5	01/09/2023 20:19	WG1985544

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0883	0.121	1.85	01/09/2023 17:36	WG1985389
Acrylonitrile	U		0.00874	0.0302	1.85	01/09/2023 17:36	WG1985389
Benzene	U		0.00113	0.00242	1.85	01/09/2023 17:36	WG1985389
Bromobenzene	U		0.00218	0.0302	1.85	01/09/2023 17:36	WG1985389
Bromodichloromethane	U		0.00175	0.00606	1.85	01/09/2023 17:36	WG1985389
Bromoform	U		0.00283	0.0606	1.85	01/09/2023 17:36	WG1985389
Bromomethane	U	C3	0.00476	0.0302	1.85	01/09/2023 17:36	WG1985389
n-Butylbenzene	U		0.0127	0.0302	1.85	01/09/2023 17:36	WG1985389
sec-Butylbenzene	U		0.00697	0.0302	1.85	01/09/2023 17:36	WG1985389
tert-Butylbenzene	U		0.00472	0.0121	1.85	01/09/2023 17:36	WG1985389
Carbon tetrachloride	U		0.00217	0.0121	1.85	01/09/2023 17:36	WG1985389
Chlorobenzene	U		0.000509	0.00606	1.85	01/09/2023 17:36	WG1985389
Chlorodibromomethane	U		0.00148	0.00606	1.85	01/09/2023 17:36	WG1985389
Chloroethane	U	C3	0.00412	0.0121	1.85	01/09/2023 17:36	WG1985389
Chloroform	U		0.00250	0.00606	1.85	01/09/2023 17:36	WG1985389
Chloromethane	U	C3	0.0105	0.0302	1.85	01/09/2023 17:36	WG1985389
2-Chlorotoluene	U		0.00209	0.00606	1.85	01/09/2023 17:36	WG1985389
4-Chlorotoluene	U		0.00109	0.0121	1.85	01/09/2023 17:36	WG1985389
1,2-Dibromo-3-Chloropropane	U		0.00945	0.0606	1.85	01/09/2023 17:36	WG1985389
1,2-Dibromoethane	U		0.00157	0.00606	1.85	01/09/2023 17:36	WG1985389
Dibromomethane	U		0.00182	0.0121	1.85	01/09/2023 17:36	WG1985389
1,2-Dichlorobenzene	U		0.00103	0.0121	1.85	01/09/2023 17:36	WG1985389
1,3-Dichlorobenzene	U		0.00145	0.0121	1.85	01/09/2023 17:36	WG1985389
1,4-Dichlorobenzene	U		0.00170	0.0121	1.85	01/09/2023 17:36	WG1985389
Dichlorodifluoromethane	U	C3	0.00390	0.00606	1.85	01/09/2023 17:36	WG1985389
1,1-Dichloroethane	U		0.00119	0.00606	1.85	01/09/2023 17:36	WG1985389
1,2-Dichloroethane	U		0.00157	0.00606	1.85	01/09/2023 17:36	WG1985389
1,1-Dichloroethene	U		0.00147	0.00606	1.85	01/09/2023 17:36	WG1985389

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
cis-1,2-Dichloroethene	U		0.00178	0.00606	1.85	01/09/2023 17:36	WG1985389
trans-1,2-Dichloroethene	U		0.00251	0.0121	1.85	01/09/2023 17:36	WG1985389
1,2-Dichloropropane	U		0.00344	0.0121	1.85	01/09/2023 17:36	WG1985389
1,1-Dichloropropene	U		0.00196	0.00606	1.85	01/09/2023 17:36	WG1985389
1,3-Dichloropropane	U		0.00121	0.0121	1.85	01/09/2023 17:36	WG1985389
cis-1,3-Dichloropropene	U		0.00183	0.00606	1.85	01/09/2023 17:36	WG1985389
trans-1,3-Dichloropropene	U		0.00276	0.0121	1.85	01/09/2023 17:36	WG1985389
2,2-Dichloropropane	U		0.00334	0.00606	1.85	01/09/2023 17:36	WG1985389
Di-isopropyl ether	U		0.000992	0.00242	1.85	01/09/2023 17:36	WG1985389
Ethylbenzene	U		0.00178	0.00606	1.85	01/09/2023 17:36	WG1985389
Hexachloro-1,3-butadiene	U		0.0145	0.0606	1.85	01/09/2023 17:36	WG1985389
Isopropylbenzene	U		0.00103	0.00606	1.85	01/09/2023 17:36	WG1985389
p-Isopropyltoluene	U		0.00618	0.0121	1.85	01/09/2023 17:36	WG1985389
2-Butanone (MEK)	U		0.153	0.242	1.85	01/09/2023 17:36	WG1985389
Methylene Chloride	U		0.0161	0.0606	1.85	01/09/2023 17:36	WG1985389
4-Methyl-2-pentanone (MIBK)	U		0.00552	0.0606	1.85	01/09/2023 17:36	WG1985389
Methyl tert-butyl ether	U		0.000848	0.00242	1.85	01/09/2023 17:36	WG1985389
Naphthalene	U		0.0118	0.0302	1.85	01/09/2023 17:36	WG1985389
n-Propylbenzene	U		0.00230	0.0121	1.85	01/09/2023 17:36	WG1985389
Styrene	U		0.000555	0.0302	1.85	01/09/2023 17:36	WG1985389
1,1,1,2-Tetrachloroethane	U		0.00229	0.00606	1.85	01/09/2023 17:36	WG1985389
1,1,2,2-Tetrachloroethane	U		0.00169	0.00606	1.85	01/09/2023 17:36	WG1985389
1,1,2-Trichlorotrifluoroethane	U		0.00182	0.00606	1.85	01/09/2023 17:36	WG1985389
Tetrachloroethene	0.0113		0.00217	0.00606	1.85	01/09/2023 17:36	WG1985389
Toluene	U		0.00315	0.0121	1.85	01/09/2023 17:36	WG1985389
1,2,3-Trichlorobenzene	U		0.0178	0.0302	1.85	01/09/2023 17:36	WG1985389
1,2,4-Trichlorobenzene	U		0.0106	0.0302	1.85	01/09/2023 17:36	WG1985389
1,1,1-Trichloroethane	U		0.00224	0.00606	1.85	01/09/2023 17:36	WG1985389
1,1,2-Trichloroethane	U		0.00144	0.00606	1.85	01/09/2023 17:36	WG1985389
Trichloroethene	0.00823		0.00141	0.00242	1.85	01/09/2023 17:36	WG1985389
Trichlorofluoromethane	U		0.00200	0.00606	1.85	01/09/2023 17:36	WG1985389
1,2,3-Trichloropropane	U		0.00392	0.0302	1.85	01/09/2023 17:36	WG1985389
1,2,4-Trimethylbenzene	U		0.00382	0.0121	1.85	01/09/2023 17:36	WG1985389
1,2,3-Trimethylbenzene	U		0.00382	0.0121	1.85	01/09/2023 17:36	WG1985389
1,3,5-Trimethylbenzene	U		0.00484	0.0121	1.85	01/09/2023 17:36	WG1985389
Vinyl chloride	U		0.00281	0.00606	1.85	01/09/2023 17:36	WG1985389
Xylenes, Total	U		0.00213	0.0157	1.85	01/09/2023 17:36	WG1985389
(S) Toluene-d8	*99.2*			*75.0-131*		*01/09/2023 17:36*	WG1985389
(S) 4-Bromofluorobenzene	*99.4*			*67.0-138*		*01/09/2023 17:36*	WG1985389
(S) 1,2-Dichloroethane-d4	*78.8*			*70.0-130*		*01/09/2023 17:36*	WG1985389

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	84.5		1	01/10/2023 12:04	WG1985220

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	U		0.0213	0.0473	1	01/09/2023 13:29	WG1985133

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.196	3.55	5	01/09/2023 20:22	WG1985544
Arsenic	3.12		0.118	1.18	5	01/09/2023 20:22	WG1985544
Beryllium	0.438	J	0.163	2.96	5	01/09/2023 20:22	WG1985544
Cadmium	0.113	J	0.101	1.18	5	01/09/2023 20:22	WG1985544
Chromium	8.91		0.350	5.92	5	01/09/2023 20:22	WG1985544
Copper	14.7		0.156	5.92	5	01/09/2023 20:22	WG1985544
Lead	8.02		0.117	2.37	5	01/09/2023 20:22	WG1985544
Nickel	12.3		0.233	2.96	5	01/09/2023 20:22	WG1985544
Selenium	0.372	J	0.213	2.96	5	01/09/2023 20:22	WG1985544
Silver	U		0.102	0.592	5	01/09/2023 20:22	WG1985544
Thallium	0.121	J	0.0769	2.37	5	01/09/2023 20:22	WG1985544
Zinc	46.6		0.876	29.6	5	01/09/2023 20:22	WG1985544

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0918	0.126	1.97	01/09/2023 17:54	WG1985389
Acrylonitrile	U		0.00907	0.0314	1.97	01/09/2023 17:54	WG1985389
Benzene	U		0.00117	0.00251	1.97	01/09/2023 17:54	WG1985389
Bromobenzene	U		0.00226	0.0314	1.97	01/09/2023 17:54	WG1985389
Bromodichloromethane	U		0.00183	0.00628	1.97	01/09/2023 17:54	WG1985389
Bromoform	U		0.00294	0.0629	1.97	01/09/2023 17:54	WG1985389
Bromomethane	U	C3	0.00495	0.0314	1.97	01/09/2023 17:54	WG1985389
n-Butylbenzene	U		0.0131	0.0314	1.97	01/09/2023 17:54	WG1985389
sec-Butylbenzene	U		0.00724	0.0314	1.97	01/09/2023 17:54	WG1985389
tert-Butylbenzene	U		0.00490	0.0126	1.97	01/09/2023 17:54	WG1985389
Carbon tetrachloride	U		0.00226	0.0126	1.97	01/09/2023 17:54	WG1985389
Chlorobenzene	U		0.000528	0.00628	1.97	01/09/2023 17:54	WG1985389
Chlorodibromomethane	U		0.00154	0.00628	1.97	01/09/2023 17:54	WG1985389
Chloroethane	U	C3	0.00428	0.0126	1.97	01/09/2023 17:54	WG1985389
Chloroform	U		0.00259	0.00628	1.97	01/09/2023 17:54	WG1985389
Chloromethane	U	C3	0.0109	0.0314	1.97	01/09/2023 17:54	WG1985389
2-Chlorotoluene	U		0.00217	0.00628	1.97	01/09/2023 17:54	WG1985389
4-Chlorotoluene	U		0.00113	0.0126	1.97	01/09/2023 17:54	WG1985389
1,2-Dibromo-3-Chloropropane	U		0.00980	0.0629	1.97	01/09/2023 17:54	WG1985389
1,2-Dibromoethane	U		0.00163	0.00628	1.97	01/09/2023 17:54	WG1985389
Dibromomethane	U		0.00189	0.0126	1.97	01/09/2023 17:54	WG1985389
1,2-Dichlorobenzene	U		0.00107	0.0126	1.97	01/09/2023 17:54	WG1985389
1,3-Dichlorobenzene	U		0.00151	0.0126	1.97	01/09/2023 17:54	WG1985389
1,4-Dichlorobenzene	U		0.00176	0.0126	1.97	01/09/2023 17:54	WG1985389
Dichlorodifluoromethane	U	C3	0.00405	0.00628	1.97	01/09/2023 17:54	WG1985389
1,1-Dichloroethane	U		0.00123	0.00628	1.97	01/09/2023 17:54	WG1985389
1,2-Dichloroethane	U		0.00163	0.00628	1.97	01/09/2023 17:54	WG1985389
1,1-Dichloroethene	U		0.00152	0.00628	1.97	01/09/2023 17:54	WG1985389

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
cis-1,2-Dichloroethene	U		0.00185	0.00628	1.97	01/09/2023 17:54	WG1985389
trans-1,2-Dichloroethene	U		0.00262	0.0126	1.97	01/09/2023 17:54	WG1985389
1,2-Dichloropropane	U		0.00357	0.0126	1.97	01/09/2023 17:54	WG1985389
1,1-Dichloropropene	U		0.00203	0.00628	1.97	01/09/2023 17:54	WG1985389
1,3-Dichloropropane	U		0.00126	0.0126	1.97	01/09/2023 17:54	WG1985389
cis-1,3-Dichloropropene	U		0.00190	0.00628	1.97	01/09/2023 17:54	WG1985389
trans-1,3-Dichloropropene	U		0.00287	0.0126	1.97	01/09/2023 17:54	WG1985389
2,2-Dichloropropane	U		0.00347	0.00628	1.97	01/09/2023 17:54	WG1985389
Di-isopropyl ether	U		0.00103	0.00251	1.97	01/09/2023 17:54	WG1985389
Ethylbenzene	U		0.00185	0.00628	1.97	01/09/2023 17:54	WG1985389
Hexachloro-1,3-butadiene	U		0.0151	0.0629	1.97	01/09/2023 17:54	WG1985389
Isopropylbenzene	U		0.00107	0.00628	1.97	01/09/2023 17:54	WG1985389
p-Isopropyltoluene	U		0.00641	0.0126	1.97	01/09/2023 17:54	WG1985389
2-Butanone (MEK)	U		0.160	0.251	1.97	01/09/2023 17:54	WG1985389
Methylene Chloride	U		0.0167	0.0629	1.97	01/09/2023 17:54	WG1985389
4-Methyl-2-pentanone (MIBK)	U		0.00573	0.0629	1.97	01/09/2023 17:54	WG1985389
Methyl tert-butyl ether	U		0.000881	0.00251	1.97	01/09/2023 17:54	WG1985389
Naphthalene	U		0.0123	0.0314	1.97	01/09/2023 17:54	WG1985389
n-Propylbenzene	U		0.00239	0.0126	1.97	01/09/2023 17:54	WG1985389
Styrene	U		0.000576	0.0314	1.97	01/09/2023 17:54	WG1985389
1,1,1,2-Tetrachloroethane	U		0.00239	0.00628	1.97	01/09/2023 17:54	WG1985389
1,1,2,2-Tetrachloroethane	U		0.00175	0.00628	1.97	01/09/2023 17:54	WG1985389
1,1,2-Trichlorotrifluoroethane	U		0.00190	0.00628	1.97	01/09/2023 17:54	WG1985389
Tetrachloroethene	0.00786		0.00226	0.00628	1.97	01/09/2023 17:54	WG1985389
Toluene	U		0.00327	0.0126	1.97	01/09/2023 17:54	WG1985389
1,2,3-Trichlorobenzene	U		0.0184	0.0314	1.97	01/09/2023 17:54	WG1985389
1,2,4-Trichlorobenzene	U		0.0111	0.0314	1.97	01/09/2023 17:54	WG1985389
1,1,1-Trichloroethane	U		0.00232	0.00628	1.97	01/09/2023 17:54	WG1985389
1,1,2-Trichloroethane	U		0.00151	0.00628	1.97	01/09/2023 17:54	WG1985389
Trichloroethene	0.0119		0.00147	0.00251	1.97	01/09/2023 17:54	WG1985389
Trichlorofluoromethane	U		0.00208	0.00628	1.97	01/09/2023 17:54	WG1985389
1,2,3-Trichloropropane	U		0.00407	0.0314	1.97	01/09/2023 17:54	WG1985389
1,2,4-Trimethylbenzene	U		0.00397	0.0126	1.97	01/09/2023 17:54	WG1985389
1,2,3-Trimethylbenzene	U		0.00397	0.0126	1.97	01/09/2023 17:54	WG1985389
1,3,5-Trimethylbenzene	U		0.00503	0.0126	1.97	01/09/2023 17:54	WG1985389
Vinyl chloride	U		0.00292	0.00628	1.97	01/09/2023 17:54	WG1985389
Xylenes, Total	U		0.00221	0.0163	1.97	01/09/2023 17:54	WG1985389
(S) Toluene-d8	*89.3*			*75.0-131*		*01/09/2023 17:54*	WG1985389
(S) 4-Bromofluorobenzene	*97.3*			*67.0-138*		*01/09/2023 17:54*	WG1985389
(S) 1,2-Dichloroethane-d4	*80.4*			*70.0-130*		*01/09/2023 17:54*	WG1985389

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	88.4		1	01/10/2023 12:04	WG1985220

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	U		0.0204	0.0453	1	01/09/2023 13:32	WG1985133

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.188	3.39	5	01/09/2023 20:25	WG1985544
Arsenic	2.78		0.113	1.13	5	01/09/2023 20:25	WG1985544
Beryllium	0.416	J	0.156	2.83	5	01/09/2023 20:25	WG1985544
Cadmium	0.128	J	0.0967	1.13	5	01/09/2023 20:25	WG1985544
Chromium	7.73		0.335	5.66	5	01/09/2023 20:25	WG1985544
Copper	13.1		0.149	5.66	5	01/09/2023 20:25	WG1985544
Lead	5.98		0.112	2.26	5	01/09/2023 20:25	WG1985544
Nickel	12.0		0.223	2.83	5	01/09/2023 20:25	WG1985544
Selenium	0.232	J	0.204	2.83	5	01/09/2023 20:25	WG1985544
Silver	U		0.0979	0.566	5	01/09/2023 20:25	WG1985544
Thallium	0.190	J	0.0736	2.26	5	01/09/2023 20:25	WG1985544
Zinc	41.5		0.837	28.3	5	01/09/2023 20:25	WG1985544

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.99	5.87	49	01/16/2023 21:28	WG1989374
(S) a,a,a-Trifluorotoluene(FID)	*89.4*			*77.0-120*		*01/16/2023 21:28*	WG1989374

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.50	4.53	1	01/10/2023 11:40	WG1985175
Residual Range Organics (RRO)	U		3.77	11.3	1	01/10/2023 11:40	WG1985175
(S) o-Terphenyl	*52.2*			*18.0-148*		*01/10/2023 11:40*	WG1985175

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	85.2		1	01/10/2023 12:04	WG1985220

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	U		0.0211	0.0470	1	01/09/2023 13:34	WG1985133

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	1.36	J	0.195	3.52	5	01/09/2023 20:28	WG1985544
Arsenic	3.70		0.117	1.17	5	01/09/2023 20:28	WG1985544
Beryllium	0.392	J	0.162	2.93	5	01/09/2023 20:28	WG1985544
Cadmium	0.249	J	0.100	1.17	5	01/09/2023 20:28	WG1985544
Chromium	9.47		0.348	5.87	5	01/09/2023 20:28	WG1985544
Copper	21.5		0.155	5.87	5	01/09/2023 20:28	WG1985544
Lead	17.6		0.116	2.35	5	01/09/2023 20:28	WG1985544
Nickel	12.7		0.231	2.93	5	01/09/2023 20:28	WG1985544
Selenium	0.265	J	0.211	2.93	5	01/09/2023 20:28	WG1985544
Silver	U		0.102	0.587	5	01/09/2023 20:28	WG1985544
Thallium	0.124	J	0.0763	2.35	5	01/09/2023 20:28	WG1985544
Zinc	77.8		0.869	29.3	5	01/09/2023 20:28	WG1985544

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.15	3.38	25	01/16/2023 22:43	WG1989374
(S) a,a,a-Trifluorotoluene(FID)	*91.1*			*77.0-120*		*01/16/2023 22:43*	WG1989374

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0493	0.0675	1	01/09/2023 18:13	WG1985389
Acrylonitrile	U		0.00488	0.0169	1	01/09/2023 18:13	WG1985389
Benzene	U		0.000631	0.00135	1	01/09/2023 18:13	WG1985389
Bromobenzene	U		0.00122	0.0169	1	01/09/2023 18:13	WG1985389
Bromodichloromethane	U		0.000979	0.00338	1	01/09/2023 18:13	WG1985389
Bromoform	U		0.00158	0.0338	1	01/09/2023 18:13	WG1985389
Bromomethane	U	C3	0.00266	0.0169	1	01/09/2023 18:13	WG1985389
n-Butylbenzene	U		0.00709	0.0169	1	01/09/2023 18:13	WG1985389
sec-Butylbenzene	U		0.00389	0.0169	1	01/09/2023 18:13	WG1985389
tert-Butylbenzene	U		0.00263	0.00675	1	01/09/2023 18:13	WG1985389
Carbon tetrachloride	U		0.00121	0.00675	1	01/09/2023 18:13	WG1985389
Chlorobenzene	U		0.000284	0.00338	1	01/09/2023 18:13	WG1985389
Chlorodibromomethane	U		0.000827	0.00338	1	01/09/2023 18:13	WG1985389
Chloroethane	U	C3	0.00230	0.00675	1	01/09/2023 18:13	WG1985389
Chloroform	U		0.00139	0.00338	1	01/09/2023 18:13	WG1985389
Chloromethane	U	C3	0.00588	0.0169	1	01/09/2023 18:13	WG1985389
2-Chlorotoluene	U		0.00117	0.00338	1	01/09/2023 18:13	WG1985389
4-Chlorotoluene	U		0.000608	0.00675	1	01/09/2023 18:13	WG1985389
1,2-Dibromo-3-Chloropropane	U		0.00527	0.0338	1	01/09/2023 18:13	WG1985389
1,2-Dibromoethane	U		0.000875	0.00338	1	01/09/2023 18:13	WG1985389
Dibromomethane	U		0.00101	0.00675	1	01/09/2023 18:13	WG1985389
1,2-Dichlorobenzene	U		0.000574	0.00675	1	01/09/2023 18:13	WG1985389

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,3-Dichlorobenzene	U		0.000811	0.00675	1	01/09/2023 18:13	WG1985389
1,4-Dichlorobenzene	U		0.000946	0.00675	1	01/09/2023 18:13	WG1985389
Dichlorodifluoromethane	U	C3	0.00218	0.00338	1	01/09/2023 18:13	WG1985389
1,1-Dichloroethane	U		0.000663	0.00338	1	01/09/2023 18:13	WG1985389
1,2-Dichloroethane	U		0.000877	0.00338	1	01/09/2023 18:13	WG1985389
1,1-Dichloroethene	U		0.000819	0.00338	1	01/09/2023 18:13	WG1985389
cis-1,2-Dichloroethene	U		0.000992	0.00338	1	01/09/2023 18:13	WG1985389
trans-1,2-Dichloroethene	U		0.00140	0.00675	1	01/09/2023 18:13	WG1985389
1,2-Dichloropropane	U		0.00192	0.00675	1	01/09/2023 18:13	WG1985389
1,1-Dichloropropene	U		0.00109	0.00338	1	01/09/2023 18:13	WG1985389
1,3-Dichloropropane	U		0.000677	0.00675	1	01/09/2023 18:13	WG1985389
cis-1,3-Dichloropropene	U		0.00102	0.00338	1	01/09/2023 18:13	WG1985389
trans-1,3-Dichloropropene	U		0.00154	0.00675	1	01/09/2023 18:13	WG1985389
2,2-Dichloropropane	U		0.00186	0.00338	1	01/09/2023 18:13	WG1985389
Di-isopropyl ether	U		0.000554	0.00135	1	01/09/2023 18:13	WG1985389
Ethylbenzene	U		0.000996	0.00338	1	01/09/2023 18:13	WG1985389
Hexachloro-1,3-butadiene	U		0.00811	0.0338	1	01/09/2023 18:13	WG1985389
Isopropylbenzene	U		0.000574	0.00338	1	01/09/2023 18:13	WG1985389
p-Isopropyltoluene	U		0.00344	0.00675	1	01/09/2023 18:13	WG1985389
2-Butanone (MEK)	U		0.0858	0.135	1	01/09/2023 18:13	WG1985389
Methylene Chloride	U		0.00897	0.0338	1	01/09/2023 18:13	WG1985389
4-Methyl-2-pentanone (MIBK)	U		0.00308	0.0338	1	01/09/2023 18:13	WG1985389
Methyl tert-butyl ether	U		0.000473	0.00135	1	01/09/2023 18:13	WG1985389
Naphthalene	U		0.00659	0.0169	1	01/09/2023 18:13	WG1985389
n-Propylbenzene	U		0.00128	0.00675	1	01/09/2023 18:13	WG1985389
Styrene	0.00169	B J	0.000309	0.0169	1	01/09/2023 18:13	WG1985389
1,1,1,2-Tetrachloroethane	U		0.00128	0.00338	1	01/09/2023 18:13	WG1985389
1,1,2,2-Tetrachloroethane	U		0.000939	0.00338	1	01/09/2023 18:13	WG1985389
1,1,2-Trichlorotrifluoroethane	U		0.00102	0.00338	1	01/09/2023 18:13	WG1985389
Tetrachloroethene	0.00815		0.00121	0.00338	1	01/09/2023 18:13	WG1985389
Toluene	U		0.00176	0.00675	1	01/09/2023 18:13	WG1985389
1,2,3-Trichlorobenzene	U		0.00990	0.0169	1	01/09/2023 18:13	WG1985389
1,2,4-Trichlorobenzene	U		0.00594	0.0169	1	01/09/2023 18:13	WG1985389
1,1,1-Trichloroethane	U		0.00125	0.00338	1	01/09/2023 18:13	WG1985389
1,1,2-Trichloroethane	U		0.000807	0.00338	1	01/09/2023 18:13	WG1985389
Trichloroethene	0.00434		0.000789	0.00135	1	01/09/2023 18:13	WG1985389
Trichlorofluoromethane	U		0.00112	0.00338	1	01/09/2023 18:13	WG1985389
1,2,3-Trichloropropane	U		0.00219	0.0169	1	01/09/2023 18:13	WG1985389
1,2,4-Trimethylbenzene	U		0.00213	0.00675	1	01/09/2023 18:13	WG1985389
1,2,3-Trimethylbenzene	U		0.00213	0.00675	1	01/09/2023 18:13	WG1985389
1,3,5-Trimethylbenzene	U		0.00270	0.00675	1	01/09/2023 18:13	WG1985389
Vinyl chloride	U		0.00157	0.00338	1	01/09/2023 18:13	WG1985389
Xylenes, Total	U		0.00119	0.00878	1	01/09/2023 18:13	WG1985389
(S) Toluene-d8	*101*			*75.0-131*		*01/09/2023 18:13*	WG1985389
(S) 4-Bromofluorobenzene	*98.4*			*67.0-138*		*01/09/2023 18:13*	WG1985389
(S) 1,2-Dichloroethane-d4	*78.7*			*70.0-130*		*01/09/2023 18:13*	WG1985389

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	4.47	J	1.56	4.70	1	01/10/2023 15:09	WG1985175
Residual Range Organics (RRO)	18.3		3.91	11.7	1	01/10/2023 15:09	WG1985175
(S) o-Terphenyl	*63.0*			*18.0-148*		*01/10/2023 15:09*	WG1985175

Method Blank (MB)

(MB) R3879836-1 01/10/23 12:25

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00300			

L1573801-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1573801-03 01/10/23 12:25 • (DUP) R3879836-3 01/10/23 12:25

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	81.9	81.9	1	0.0214		10

Laboratory Control Sample (LCS)

(LCS) R3879836-2 01/10/23 12:25

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3879834-1 01/10/23 12:04

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1573816-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1573816-04 01/10/23 12:04 • (DUP) R3879834-3 01/10/23 12:04

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	86.0	85.8	1	0.196		10

Laboratory Control Sample (LCS)

(LCS) R3879834-2 01/10/23 12:04

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

QUALITY CONTROL SUMMARY

L1573805-01,02,03,05,07,08

Method Blank (MB)

(MB) R3879222-1 01/09/23 12:18

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3879222-2 01/09/23 12:20

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.500	0.498	99.6	80.0-120	

L1573683-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1573683-04 01/09/23 12:22 • (MS) R3879222-3 01/09/23 12:25 • (MSD) R3879222-4 01/09/23 12:27

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.625	U	0.525	0.589	84.1	94.3	1	75.0-125			11.4	20

Method Blank (MB)

(MB) R3879329-1 01/09/23 19:25

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Antimony	U		0.166	3.00
Arsenic	U		0.100	1.00
Beryllium	U		0.138	2.50
Cadmium	U		0.0855	1.00
Chromium	U		0.297	5.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Thallium	U		0.0650	2.00
Zinc	U		0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R3879329-2 01/09/23 19:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	100	94.5	94.5	80.0-120	
Arsenic	100	94.7	94.7	80.0-120	
Beryllium	100	95.6	95.6	80.0-120	
Cadmium	100	98.2	98.2	80.0-120	
Chromium	100	95.7	95.7	80.0-120	
Copper	100	93.8	93.8	80.0-120	
Lead	100	97.4	97.4	80.0-120	
Nickel	100	96.5	96.5	80.0-120	
Selenium	100	102	102	80.0-120	
Silver	20.0	19.8	98.9	80.0-120	
Thallium	100	98.4	98.4	80.0-120	
Zinc	100	92.1	92.1	80.0-120	

L1573801-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1573801-02 01/09/23 19:31 • (MS) R3879329-5 01/09/23 19:41 • (MSD) R3879329-6 01/09/23 19:45

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	139	0.383	119	118	85.7	85.1	5	75.0-125			0.704	20
Arsenic	139	2.57	138	137	97.6	96.9	5	75.0-125			0.669	20

L1573801-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1573801-02 01/09/23 19:31 • (MS) R3879329-5 01/09/23 19:41 • (MSD) R3879329-6 01/09/23 19:45

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Beryllium	139	0.515	138	139	99.4	99.6	5	75.0-125			0.143	20
Cadmium	139	0.151	144	146	104	105	5	75.0-125			1.03	20
Chromium	139	6.76	143	146	98.3	101	5	75.0-125			2.34	20
Copper	139	11.5	149	148	99.0	98.8	5	75.0-125			0.116	20
Lead	139	6.85	151	147	104	101	5	75.0-125			2.64	20
Nickel	139	10.0	146	149	98.2	100	5	75.0-125			2.08	20
Selenium	139	U	140	141	101	102	5	75.0-125			1.22	20
Silver	27.7	U	29.1	28.9	105	104	5	75.0-125			0.629	20
Thallium	139	0.153	145	141	104	101	5	75.0-125			2.67	20
Zinc	139	34.5	165	168	93.9	96.5	5	75.0-125			2.15	20

Method Blank (MB)

(MB) R3881635-3 01/16/23 16:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPHG C6 - C12	U		0.848	2.50
(S) a,a,a-Trifluorotoluene(FID)	*88.8*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3881635-2 01/16/23 12:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPHG C6 - C12	5.50	5.05	91.8	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*102*	*77.0-120*	

L1574882-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1574882-11 01/16/23 23:08 • (MS) R3881635-6 01/17/23 01:49 • (MSD) R3881635-7 01/17/23 02:14

Analyte	Spike Amount (dry) mg/kg	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	795	1680	558	740	0.000	0.000	100	50.0-150	J6	J3 J6	28.1	27
(S) a,a,a-Trifluorotoluene(FID)					*98.3*	*101*		*77.0-120*				

Method Blank (MB)

(MB) R3879936-2 01/09/23 11:36

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

Method Blank (MB)

(MB) R3879936-2 01/09/23 11:36

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	0.000925	J	0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*97.7*			*75.0-131*
(S) 4-Bromofluorobenzene	*99.0*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*86.9*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3879936-1 01/09/23 10:40

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.625	0.678	108	10.0-160	
Acrylonitrile	0.625	0.634	101	45.0-153	
Benzene	0.125	0.124	99.2	70.0-123	
Bromobenzene	0.125	0.132	106	73.0-121	
Bromodichloromethane	0.125	0.140	112	73.0-121	

Laboratory Control Sample (LCS)

(LCS) R3879936-1 01/09/23 10:40

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromoform	0.125	0.130	104	64.0-132	
Bromomethane	0.125	0.0921	73.7	56.0-147	
n-Butylbenzene	0.125	0.105	84.0	68.0-135	
sec-Butylbenzene	0.125	0.117	93.6	74.0-130	
tert-Butylbenzene	0.125	0.120	96.0	75.0-127	
Carbon tetrachloride	0.125	0.129	103	66.0-128	
Chlorobenzene	0.125	0.121	96.8	76.0-128	
Chlorodibromomethane	0.125	0.136	109	74.0-127	
Chloroethane	0.125	0.0917	73.4	61.0-134	
Chloroform	0.125	0.136	109	72.0-123	
Chloromethane	0.125	0.0979	78.3	51.0-138	
2-Chlorotoluene	0.125	0.132	106	75.0-124	
4-Chlorotoluene	0.125	0.137	110	75.0-124	
1,2-Dibromo-3-Chloropropane	0.125	0.110	88.0	59.0-130	
1,2-Dibromoethane	0.125	0.122	97.6	74.0-128	
Dibromomethane	0.125	0.131	105	75.0-122	
1,2-Dichlorobenzene	0.125	0.124	99.2	76.0-124	
1,3-Dichlorobenzene	0.125	0.118	94.4	76.0-125	
1,4-Dichlorobenzene	0.125	0.118	94.4	77.0-121	
Dichlorodifluoromethane	0.125	0.0872	69.8	43.0-156	
1,1-Dichloroethane	0.125	0.131	105	70.0-127	
1,2-Dichloroethane	0.125	0.125	100	65.0-131	
1,1-Dichloroethene	0.125	0.119	95.2	65.0-131	
cis-1,2-Dichloroethene	0.125	0.130	104	73.0-125	
trans-1,2-Dichloroethene	0.125	0.123	98.4	71.0-125	
1,2-Dichloropropane	0.125	0.126	101	74.0-125	
1,1-Dichloropropene	0.125	0.124	99.2	73.0-125	
1,3-Dichloropropane	0.125	0.123	98.4	80.0-125	
cis-1,3-Dichloropropene	0.125	0.141	113	76.0-127	
trans-1,3-Dichloropropene	0.125	0.131	105	73.0-127	
2,2-Dichloropropane	0.125	0.118	94.4	59.0-135	
Di-isopropyl ether	0.125	0.121	96.8	60.0-136	
Ethylbenzene	0.125	0.115	92.0	74.0-126	
Hexachloro-1,3-butadiene	0.125	0.129	103	57.0-150	
Isopropylbenzene	0.125	0.123	98.4	72.0-127	
p-Isopropyltoluene	0.125	0.112	89.6	72.0-133	
2-Butanone (MEK)	0.625	0.679	109	30.0-160	
Methylene Chloride	0.125	0.130	104	68.0-123	
4-Methyl-2-pentanone (MIBK)	0.625	0.611	97.8	56.0-143	
Methyl tert-butyl ether	0.125	0.150	120	66.0-132	

Laboratory Control Sample (LCS)

(LCS) R3879936-1 01/09/23 10:40

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Naphthalene	0.125	0.116	92.8	59.0-130	
n-Propylbenzene	0.125	0.127	102	74.0-126	
Styrene	0.125	0.116	92.8	72.0-127	
1,1,1,2-Tetrachloroethane	0.125	0.135	108	74.0-129	
1,1,2,2-Tetrachloroethane	0.125	0.134	107	68.0-128	
1,1,2-Trichlorotrifluoroethane	0.125	0.106	84.8	61.0-139	
Tetrachloroethene	0.125	0.114	91.2	70.0-136	
Toluene	0.125	0.115	92.0	75.0-121	
1,2,3-Trichlorobenzene	0.125	0.138	110	59.0-139	
1,2,4-Trichlorobenzene	0.125	0.134	107	62.0-137	
1,1,1-Trichloroethane	0.125	0.139	111	69.0-126	
1,1,2-Trichloroethane	0.125	0.130	104	78.0-123	
Trichloroethene	0.125	0.135	108	76.0-126	
Trichlorofluoromethane	0.125	0.103	82.4	61.0-142	
1,2,3-Trichloropropane	0.125	0.155	124	67.0-129	
1,2,4-Trimethylbenzene	0.125	0.125	100	70.0-126	
1,2,3-Trimethylbenzene	0.125	0.120	96.0	74.0-124	
1,3,5-Trimethylbenzene	0.125	0.140	112	73.0-127	
Vinyl chloride	0.125	0.103	82.4	63.0-134	
Xylenes, Total	0.375	0.359	95.7	72.0-127	
(S) Toluene-d8			*94.5*	*75.0-131*	
(S) 4-Bromofluorobenzene			*98.9*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*96.6*	*70.0-130*	

L1573805-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1573805-05 01/09/23 17:54 • (MS) R3879936-3 01/09/23 18:50 • (MSD) R3879936-4 01/09/23 19:08

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	1.57	U	0.759	1.03	48.4	65.4	1.97	10.0-160			30.0	40
Acrylonitrile	1.57	U	1.35	1.29	86.2	82.1	1.97	10.0-160			4.83	40
Benzene	0.315	U	0.318	0.374	101	119	1.97	10.0-149			16.2	37
Bromobenzene	0.315	U	0.280	0.356	88.7	113	1.97	10.0-156			24.1	38
Bromodichloromethane	0.315	U	0.311	0.378	98.8	120	1.97	10.0-143			19.3	37
Bromoform	0.315	U	0.277	0.332	87.9	105	1.97	10.0-146			18.0	36
Bromomethane	0.315	U	0.148	0.177	47.0	56.3	1.97	10.0-149			18.0	38
n-Butylbenzene	0.315	U	0.287	0.369	91.1	117	1.97	10.0-160			24.9	40
sec-Butylbenzene	0.315	U	0.315	0.376	100	119	1.97	10.0-159			17.7	39
tert-Butylbenzene	0.315	U	0.308	0.379	97.6	120	1.97	10.0-156			20.8	39

L1573805-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1573805-05 01/09/23 17:54 • (MS) R3879936-3 01/09/23 18:50 • (MSD) R3879936-4 01/09/23 19:08

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Carbon tetrachloride	0.315	U	0.365	0.412	116	131	1.97	10.0-145			12.2	37
Chlorobenzene	0.315	U	0.305	0.362	96.8	115	1.97	10.0-152			17.2	39
Chlorodibromomethane	0.315	U	0.309	0.350	98.0	111	1.97	10.0-146			12.4	37
Chloroethane	0.315	U	0.118	0.140	37.4	44.5	1.97	10.0-146			17.5	40
Chloroform	0.315	U	0.325	0.384	103	122	1.97	10.0-146			16.5	37
Chloromethane	0.315	U	0.227	0.191	72.1	60.7	1.97	10.0-159			17.1	37
2-Chlorotoluene	0.315	U	0.291	0.336	92.3	106	1.97	10.0-159			14.3	38
4-Chlorotoluene	0.315	U	0.292	0.350	92.7	111	1.97	10.0-155			17.9	39
1,2-Dibromo-3-Chloropropane	0.315	U	0.194	0.223	61.5	70.9	1.97	10.0-151			14.1	39
1,2-Dibromoethane	0.315	U	0.281	0.327	89.1	104	1.97	10.0-148			15.1	34
Dibromomethane	0.315	U	0.280	0.348	88.7	111	1.97	10.0-147			22.0	35
1,2-Dichlorobenzene	0.315	U	0.322	0.397	102	126	1.97	10.0-155			21.0	37
1,3-Dichlorobenzene	0.315	U	0.311	0.374	98.8	119	1.97	10.0-153			18.2	38
1,4-Dichlorobenzene	0.315	U	0.296	0.352	93.9	112	1.97	10.0-151			17.3	38
Dichlorodifluoromethane	0.315	U	0.276	0.314	87.4	99.6	1.97	10.0-160			13.0	35
1,1-Dichloroethane	0.315	U	0.329	0.406	104	129	1.97	10.0-147			20.8	37
1,2-Dichloroethane	0.315	U	0.267	0.325	84.6	103	1.97	10.0-148			19.8	35
1,1-Dichloroethene	0.315	U	0.347	0.393	110	125	1.97	10.0-155			12.4	37
cis-1,2-Dichloroethene	0.315	U	0.324	0.380	103	121	1.97	10.0-149			15.9	37
trans-1,2-Dichloroethene	0.315	U	0.336	0.393	106	125	1.97	10.0-150			15.8	37
1,2-Dichloropropane	0.315	U	0.313	0.374	99.2	119	1.97	10.0-148			17.8	37
1,1-Dichloropropene	0.315	U	0.347	0.402	110	128	1.97	10.0-153			14.7	35
1,3-Dichloropropane	0.315	U	0.301	0.345	95.5	109	1.97	10.0-154			13.4	35
cis-1,3-Dichloropropene	0.315	U	0.337	0.393	107	125	1.97	10.0-151			15.4	37
trans-1,3-Dichloropropene	0.315	U	0.317	0.356	100	113	1.97	10.0-148			11.8	37
2,2-Dichloropropane	0.315	U	0.265	0.308	84.2	97.6	1.97	10.0-138			14.7	36
Di-isopropyl ether	0.315	U	0.285	0.357	90.3	113	1.97	10.0-147			22.7	36
Ethylbenzene	0.315	U	0.310	0.361	98.4	115	1.97	10.0-160			15.2	38
Hexachloro-1,3-butadiene	0.315	U	0.355	0.448	113	142	1.97	10.0-160			23.2	40
Isopropylbenzene	0.315	U	0.324	0.375	103	119	1.97	10.0-155			14.6	38
p-Isopropyltoluene	0.315	U	0.297	0.368	94.3	117	1.97	10.0-160			21.1	40
2-Butanone (MEK)	1.57	U	1.21	1.42	76.9	90.2	1.97	10.0-160			16.0	40
Methylene Chloride	0.315	U	0.323	0.368	102	117	1.97	10.0-141			12.9	37
4-Methyl-2-pentanone (MIBK)	1.57	U	1.22	1.37	78.0	87.0	1.97	10.0-160			10.9	35
Methyl tert-butyl ether	0.315	U	0.309	0.401	98.0	127	1.97	11.0-147			25.9	35
Naphthalene	0.315	U	0.241	0.310	76.5	98.4	1.97	10.0-160			25.0	36
n-Propylbenzene	0.315	U	0.294	0.370	93.1	117	1.97	10.0-158			23.1	38
Styrene	0.315	U	0.290	0.339	91.9	108	1.97	10.0-160			15.8	40
1,1,1,2-Tetrachloroethane	0.315	U	0.302	0.378	96.0	120	1.97	10.0-149			22.1	39

L1573805-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1573805-05 01/09/23 17:54 • (MS) R3879936-3 01/09/23 18:50 • (MSD) R3879936-4 01/09/23 19:08

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,1,2,2-Tetrachloroethane	0.315	U	0.267	0.322	84.6	102	1.97	10.0-160			18.7	35
1,1,2-Trichlorotrifluoroethane	0.315	U	0.356	0.408	113	130	1.97	10.0-160			13.7	36
Tetrachloroethene	0.315	0.00786	0.333	0.368	103	114	1.97	10.0-156			9.84	39
Toluene	0.315	U	0.313	0.343	99.2	109	1.97	10.0-156			9.34	38
1,2,3-Trichlorobenzene	0.315	U	0.300	0.382	95.1	121	1.97	10.0-160			24.0	40
1,2,4-Trichlorobenzene	0.315	U	0.318	0.426	101	135	1.97	10.0-160			29.2	40
1,1,1-Trichloroethane	0.315	U	0.369	0.420	117	133	1.97	10.0-144			12.9	35
1,1,2-Trichloroethane	0.315	U	0.308	0.352	97.6	112	1.97	10.0-160			13.5	35
Trichloroethene	0.315	0.0119	0.365	0.415	112	128	1.97	10.0-156			12.8	38
Trichlorofluoromethane	0.315	U	0.160	0.189	50.6	59.9	1.97	10.0-160			16.8	40
1,2,3-Trichloropropane	0.315	U	0.287	0.336	91.1	106	1.97	10.0-156			15.6	35
1,2,4-Trimethylbenzene	0.315	U	0.301	0.356	95.5	113	1.97	10.0-160			16.7	36
1,2,3-Trimethylbenzene	0.315	U	0.286	0.351	90.7	111	1.97	10.0-160			20.4	36
1,3,5-Trimethylbenzene	0.315	U	0.304	0.357	96.4	113	1.97	10.0-160			16.2	38
Vinyl chloride	0.315	U	0.292	0.324	92.7	103	1.97	10.0-160			10.4	37
Xylenes, Total	0.944	U	0.937	1.06	99.2	112	1.97	10.0-160			12.5	38
(S) Toluene-d8					*97.6*	*93.3*		*75.0-131*				
(S) 4-Bromofluorobenzene					*96.1*	*103*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*87.3*	*90.3*		*70.0-130*				

Method Blank (MB)

(MB) R3879661-1 01/10/23 10:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	*80.0*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3879661-2 01/10/23 10:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	32.9	65.8	50.0-150	
(S) o-Terphenyl			*67.7*	*18.0-148*	

L1573645-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1573645-01 01/10/23 14:03 • (MS) R3879661-3 01/10/23 14:16 • (MSD) R3879661-4 01/10/23 14:29

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	59.1	U	39.0	42.6	66.0	72.0	1	50.0-150			8.70	20
(S) o-Terphenyl					*57.2*	*61.7*		*18.0-148*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
NV5 - Wilsonville, OR

9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Billing Information:
Accounts Payable
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Pres Chk

Report to: Andre DeJonge

Email To: Andre.DeJonge@nv5.com;Colby.Hunt@nv5.com

Project Description: Block 9 Site

City/State Collected: PORTLAND, OR

Please Circle: (PT) MT CT ET

Phone: 503-968-8787

Client Project # Streimer -2-02

Lab Project # GEODESPOR-STREIM202

Collected by (print): ADD

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

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PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1573605
F183

Acctnum: GEODESPOR
Template: T221764
Prelogin: P970640
PM: 110 - Brian Ford
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NWTPHDX no silica 8ozClr-NoPres	NWTPHGX 40mlAmb/MeOH10ml/Syr	PAHs 8270ESIM 8ozClr-NoPres	PCBs 8082 8ozClr-NoPres	PP Metals 6020 4ozClr-NoPres	VOCs 8260D 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
DP-15 (8-9)	GRAB	SS		1/5/23	1525	3	✓	✓	✓	✓	✓	✓	HOLD VOCs, PAHs, PCBs	-01
DP-16 (9-10)	GRAB	SS		1/5/23	1600	3	✓	✓	✓	✓	✓	✓	HOLD VOCs, PAHs, PCBs	-02
DP-17 (8-9)	GRAB	SS		1/6/23	0900	2					✓	✓		-03
DP-17 (13-14)	GRAB	SS		1/6/23	0915	2					✓	✓	HOLD	-04
DP-18 (12-13)	GRAB	SS		1/6/23	0945	2					✓	✓		-05
DP-18 (1-2)	GRAB	SS		1/6/23	0940	2					✓	✓	HOLD	-06
DP-19 (8.5-9.5)	GRAB	SS		1/6/23	1050	3	✓	✓	✓	✓	✓	✓	HOLD VOCs, PAHs, PCBs	-07
DP-20 (11-12)	GRAB	SS		1/6/23	1120	3	✓	✓	✓	✓	✓	✓	HOLD PAHs, PCBs	-08

Sample Ids updated upon Client Request
DP-15(8-9) → DP-1(8-9)
DP-16(9-10) → DP-2(9-10)
DP-17(8-9) → DP-3(8-9)
DP-18(12-13) → DP-4(12-13)
DP-19(8.5-9.5) → DP-5(8.5-9.5)
DP-20(11-12) → DP-6(11-12)

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

Samples returned via: __ UPS __ FedEx __ Courier ___

Temp _____
Other _____

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp:	Bottles Received:	If preservation required by Login: Date/Time
	1/6/23					
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 0.7+0=0.7 °C	Bottles Received: 20	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1-7-23	Time: 0900	Hold: / Condition: NCF / OK

k Received: (Yes) No
HCl / MeoH
TBR

ANALYTICAL REPORT

January 24, 2023

NV5 - Wilsonville, OR

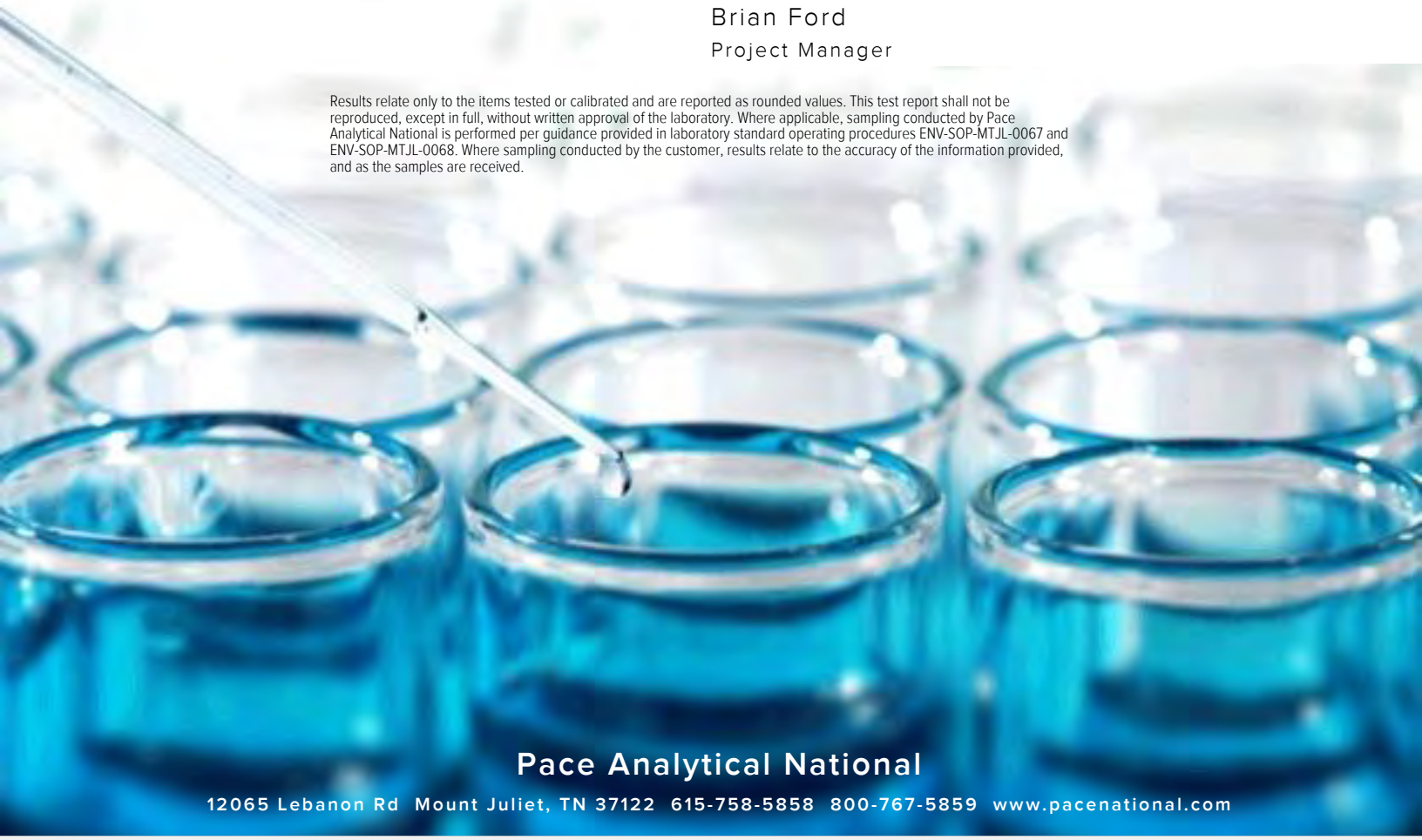
Sample Delivery Group:	L1576664
Samples Received:	01/07/2023
Project Number:	Streimer -2-02
Description:	Block 9 Site

Report To:

Andre DeJonge
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Entire Report Reviewed By:

Brian Ford
Project Manager



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SAMPLE SUMMARY

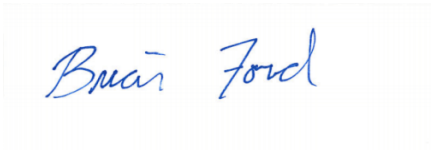
DP-6(11-12) L1576664-01 Solid

Collected by: ADD
Collected date/time: 01/06/23 11:20
Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1985220	1	01/10/23 11:45	01/10/23 12:04	JAV	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1991014	1	01/20/23 13:20	01/21/23 15:56	JDJ	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1990365	1	01/18/23 11:42	01/18/23 23:52	AGW	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	85.2		1	01/10/2023 12:04	WG1985220

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
PCB 1016	U		0.0139	0.0399	1	01/21/2023 15:56	WG1991014
PCB 1221	U		0.0139	0.0399	1	01/21/2023 15:56	WG1991014
PCB 1232	U		0.0139	0.0399	1	01/21/2023 15:56	WG1991014
PCB 1242	U		0.0139	0.0399	1	01/21/2023 15:56	WG1991014
PCB 1248	U		0.00866	0.0200	1	01/21/2023 15:56	WG1991014
PCB 1254	U		0.00866	0.0200	1	01/21/2023 15:56	WG1991014
PCB 1260	U		0.00866	0.0200	1	01/21/2023 15:56	WG1991014
(S) Decachlorobiphenyl	*80.9*			*10.0-135*		*01/21/2023 15:56*	WG1991014
(S) Tetrachloro-m-xylene	*74.0*			*10.0-139*		*01/21/2023 15:56*	WG1991014

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Anthracene	U		0.00270	0.00704	1	01/18/2023 23:52	WG1990365
Acenaphthene	U		0.00245	0.00704	1	01/18/2023 23:52	WG1990365
Acenaphthylene	U		0.00254	0.00704	1	01/18/2023 23:52	WG1990365
Benzo(a)anthracene	U		0.00203	0.00704	1	01/18/2023 23:52	WG1990365
Benzo(a)pyrene	U		0.00210	0.00704	1	01/18/2023 23:52	WG1990365
Benzo(b)fluoranthene	U		0.00180	0.00704	1	01/18/2023 23:52	WG1990365
Benzo(g,h,i)perylene	U		0.00208	0.00704	1	01/18/2023 23:52	WG1990365
Benzo(k)fluoranthene	U		0.00252	0.00704	1	01/18/2023 23:52	WG1990365
Chrysene	U		0.00272	0.00704	1	01/18/2023 23:52	WG1990365
Dibenz(a,h)anthracene	U		0.00202	0.00704	1	01/18/2023 23:52	WG1990365
Fluoranthene	U		0.00266	0.00704	1	01/18/2023 23:52	WG1990365
Fluorene	U		0.00241	0.00704	1	01/18/2023 23:52	WG1990365
Indeno(1,2,3-cd)pyrene	U		0.00212	0.00704	1	01/18/2023 23:52	WG1990365
Naphthalene	U		0.00479	0.0235	1	01/18/2023 23:52	WG1990365
Phenanthrene	U		0.00271	0.00704	1	01/18/2023 23:52	WG1990365
Pyrene	U		0.00235	0.00704	1	01/18/2023 23:52	WG1990365
1-Methylnaphthalene	U		0.00527	0.0235	1	01/18/2023 23:52	WG1990365
2-Methylnaphthalene	U		0.00501	0.0235	1	01/18/2023 23:52	WG1990365
2-Chloronaphthalene	U		0.00547	0.0235	1	01/18/2023 23:52	WG1990365
(S) p-Terphenyl-d14	*51.1*			*23.0-120*		*01/18/2023 23:52*	WG1990365
(S) Nitrobenzene-d5	*68.1*			*14.0-149*		*01/18/2023 23:52*	WG1990365
(S) 2-Fluorobiphenyl	*58.1*			*34.0-125*		*01/18/2023 23:52*	WG1990365

Method Blank (MB)

(MB) R3879834-1 01/10/23 12:04

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1573816-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1573816-04 01/10/23 12:04 • (DUP) R3879834-3 01/10/23 12:04

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	86.0	85.8	1	0.196		10

Laboratory Control Sample (LCS)

(LCS) R3879834-2 01/10/23 12:04

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3883533-1 01/21/23 15:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1016	U		0.0118	0.0340
PCB 1221	U		0.0118	0.0340
PCB 1232	U		0.0118	0.0340
PCB 1242	U		0.0118	0.0340
PCB 1248	U		0.00738	0.0170
PCB 1254	U		0.00738	0.0170
PCB 1260	U		0.00738	0.0170
(S) Decachlorobiphenyl	*96.5*			*10.0-135*
(S) Tetrachloro-m-xylene	*77.3*			*10.0-139*

Laboratory Control Sample (LCS)

(LCS) R3883533-2 01/21/23 15:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
PCB 1016	0.167	0.152	91.0	36.0-141	
PCB 1260	0.167	0.167	100	37.0-145	
(S) Decachlorobiphenyl			*95.0*	*10.0-135*	
(S) Tetrachloro-m-xylene			*77.6*	*10.0-139*	

L1576762-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1576762-01 01/21/23 15:28 • (MS) R3883533-3 01/21/23 15:38 • (MSD) R3883533-4 01/21/23 15:47

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1016	0.180	U	0.119	0.148	66.5	82.6	1	10.0-160			21.7	37
PCB 1260	0.180	U	0.129	0.148	71.9	82.6	1	10.0-160			14.0	38
(S) Decachlorobiphenyl					*74.2*	*66.1*		*10.0-135*				
(S) Tetrachloro-m-xylene					*59.8*	*62.3*		*10.0-139*				

Method Blank (MB)

(MB) R3882627-1 01/18/23 21:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) p-Terphenyl-d14	*72.1*			*23.0-120*
(S) Nitrobenzene-d5	*74.6*			*14.0-149*
(S) 2-Fluorobiphenyl	*76.7*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3882627-2 01/18/23 21:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0545	68.1	50.0-126	
Acenaphthene	0.0800	0.0565	70.6	50.0-120	
Acenaphthylene	0.0800	0.0578	72.3	50.0-120	
Benzo(a)anthracene	0.0800	0.0564	70.5	45.0-120	
Benzo(a)pyrene	0.0800	0.0515	64.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0551	68.9	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0569	71.1	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0553	69.1	49.0-125	
Chrysene	0.0800	0.0579	72.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0558	69.8	47.0-125	
Fluoranthene	0.0800	0.0593	74.1	49.0-129	

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Laboratory Control Sample (LCS)

(LCS) R3882627-2 01/18/23 21:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0597	74.6	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0576	72.0	46.0-125	
Naphthalene	0.0800	0.0604	75.5	50.0-120	
Phenanthrene	0.0800	0.0551	68.9	47.0-120	
Pyrene	0.0800	0.0573	71.6	43.0-123	
1-Methylnaphthalene	0.0800	0.0616	77.0	51.0-121	
2-Methylnaphthalene	0.0800	0.0637	79.6	50.0-120	
2-Chloronaphthalene	0.0800	0.0570	71.3	50.0-120	
(S) p-Terphenyl-d14			*73.3*	*23.0-120*	
(S) Nitrobenzene-d5			*70.0*	*14.0-149*	
(S) 2-Fluorobiphenyl			*77.6*	*34.0-125*	

L1576375-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1576375-01 01/19/23 02:49 • (MS) R3882627-3 01/19/23 03:08 • (MSD) R3882627-4 01/19/23 03:28

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0912	0.0307	0.105	0.284	81.3	277	1	10.0-145		J3 J5	92.2	30
Acenaphthene	0.0912	0.00955	0.0731	0.124	69.7	125	1	14.0-127		J3	51.9	27
Acenaphthylene	0.0912	0.00563	0.0678	0.0664	68.2	66.3	1	21.0-124			2.06	25
Benzo(a)anthracene	0.0912	0.0859	0.183	0.611	107	573	1	10.0-139		J3 J5	108	30
Benzo(a)pyrene	0.0912	0.0907	0.196	0.574	115	528	1	10.0-141		J3 J5	98.4	31
Benzo(b)fluoranthene	0.0912	0.153	0.245	0.685	101	580	1	10.0-140		J3 J5	94.6	36
Benzo(g,h,i)perylene	0.0912	0.275	0.325	0.490	54.3	235	1	10.0-140		J3 J5	40.7	33
Benzo(k)fluoranthene	0.0912	0.0322	0.111	0.267	86.7	256	1	10.0-137		J3 J5	82.3	31
Chrysene	0.0912	0.0533	0.142	0.506	96.8	495	1	10.0-145		J3 J5	113	30
Dibenz(a,h)anthracene	0.0912	0.0150	0.0723	0.119	62.9	113	1	10.0-132		J3	48.5	31
Fluoranthene	0.0912	0.140	0.275	1.07	148	1010	1	10.0-153		J3 J5	118	33
Fluorene	0.0912	0.0113	0.0802	0.153	75.6	155	1	11.0-130		J3 J5	62.5	29
Indeno(1,2,3-cd)pyrene	0.0912	0.0778	0.154	0.376	83.8	326	1	10.0-137		J3 J5	83.7	32
Naphthalene	0.0912	0.00869	0.0753	0.0830	73.0	81.1	1	10.0-135			9.75	27
Phenanthrene	0.0912	0.0968	0.201	0.783	115	749	1	10.0-144		J3 J5	118	31
Pyrene	0.0912	0.192	0.318	0.908	138	781	1	10.0-148		J3 J5	96.3	35
1-Methylnaphthalene	0.0912	U	0.0737	0.0764	80.8	83.4	1	10.0-142			3.68	28
2-Methylnaphthalene	0.0912	0.00737	0.0803	0.0869	80.1	86.8	1	10.0-137			7.85	28
2-Chloronaphthalene	0.0912	U	0.0594	0.0577	65.2	62.9	1	29.0-120			2.95	24
(S) p-Terphenyl-d14					*76.4*	*79.0*		*23.0-120*				
(S) Nitrobenzene-d5					*55.0*	*45.9*		*14.0-149*				
(S) 2-Fluorobiphenyl					*72.2*	*68.2*		*34.0-125*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
NV5 - Wilsonville, OR

9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Billing Information:
Accounts Payable
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Pres Chk

Report to:
Andre DeJonge

Email To:
Andre.DeJonge@nv5.com;Colby.Hunt@nv5.com

Project Description: Block 9 Site

City/State Collected: PORTLAND, OR

Please Circle: (PT) MT CT ET

Phone: 503-968-8787

Client Project #
Streimer -2-02

Lab Project #
GEODESPOR-STREIM202

Collected by (print): ADD

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NWTPHDX no silica 8ozClr-NoPres	NWTPHGX 40mlAmb/MeOH10ml/Syr	PAHs 8270ESIM 8ozClr-NoPres	PCBs 8082 8ozClr-NoPres	PP Metals 6020 4ozClr-NoPres	VOCs 8260D 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
DP-15 (8-9)	GRAB	SS		1/5/23	1525	3	✓	✓	✓	✓	✓	✓	HOLD VOCs, PAHs, PCBs	~~01~~
DP-16 (9-10)	GRAB	SS		1/5/23	1600	3	✓	✓	✓	✓	✓	✓	HOLD VOCs, PAHs, PCB	~~02~~
DP-17 (8-9)	GRAB	SS		1/6/23	0900	2					✓	✓		~~03~~
DP-17 (13-14)	GRAB	SS		1/6/23	0915	2					✓	✓	HOLD	~~04~~
DP-18 (12-13)	GRAB	SS		1/6/23	0945	2					✓	✓		~~06~~
DP-18 (1-2)	GRAB	SS		1/6/23	0940	2					✓	✓	HOLD	~~00~~
DP-19 (8.5-9.5)	GRAB	SS		1/6/23	1050	3	✓	✓	✓	✓	✓	✓	HOLD VOCs, PAHs, PCBs	~~07~~
DP-20 (11-12)	GRAB	SS		1/6/23	1120	3	✓	✓	✓	✓	✓	✓	HOLD PAHs, PCBs	~~06~~ -01

update per request of Connor Ellis DP-20 (11-12) → DP-6(11-12)

-bjf 01/17/23

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 6116 6971 5845

Relinquished by : (Signature)

Date: 1/6/23 Time: 1330

Received by: (Signature)

Trip Blank Received: Yes (No) HCL / MeoH TBR

Relinquished by : (Signature)

Date: Time:

Received by: (Signature)

Temp: 0.7+0.2=0.9°C Bottles Received: 20

If preservation required by Login: Date/Time

Relinquished by : (Signature)

Date: Time:

Received for lab by: [Signature]

Date: 1-7-23 Time: 0700

Hold: Condition: NCF / OK

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Chain of Custody Page ___ of ___

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # ~~L1573805~~ PM 1/17/23
F183
L1574664

Acctnum: GEODESPOR
Template: T221764
Prelogin: P970640
PM: 110 - Brian Ford
PB:

Shipped Via:

L1573805 GEODESPOR re-log

R5

Please re-log L1573805-08 (DP-20(11-12) for SV8270PAHSIM, SV8082,TS as R5 due 01/24.

Time estimate: oh

Time spent: oh

Members

Brian Ford

ANALYTICAL REPORT

January 17, 2023

Revised Report

NV5 - Wilsonville, OR

Sample Delivery Group:	L1573884
Samples Received:	01/09/2023
Project Number:	Streimer -2-02
Description:	Streimer Metal Works

Report To:

Andre DeJonge
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Entire Report Reviewed By:

Brian Ford
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

VP-13(010623) L1573884-01 Air

Collected by: Andre D. DeJonge | Collected date/time: 01/06/23 13:25 | Received date/time: 01/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1985423	1	01/09/23 15:35	01/09/23 15:35	DBB	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1987529	10	01/12/23 17:03	01/12/23 17:03	CEP	Mt. Juliet, TN

SSV-1 L1573884-02 Air

Collected by: Andre D. DeJonge | Collected date/time: 01/06/23 12:51 | Received date/time: 01/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1985423	1	01/09/23 16:16	01/09/23 16:16	DBB	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1987529	10	01/12/23 17:41	01/12/23 17:41	CEP	Mt. Juliet, TN

SG-1 L1573884-03 Air

Collected by: Andre D. DeJonge | Collected date/time: 01/05/23 14:21 | Received date/time: 01/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1985423	1	01/09/23 16:56	01/09/23 16:56	DBB	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1987529	10	01/12/23 18:20	01/12/23 18:20	CEP	Mt. Juliet, TN

SG-2 L1573884-04 Air

Collected by: Andre D. DeJonge | Collected date/time: 01/05/23 14:21 | Received date/time: 01/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1985423	1	01/09/23 17:36	01/09/23 17:36	DBB	Mt. Juliet, TN

SG-3 L1573884-05 Air

Collected by: Andre D. DeJonge | Collected date/time: 01/05/23 14:38 | Received date/time: 01/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1985423	1	01/09/23 18:17	01/09/23 18:17	DBB	Mt. Juliet, TN

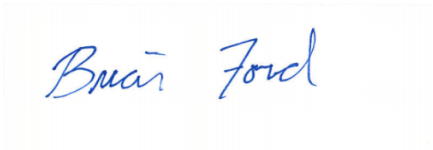
SG-4 L1573884-06 Air

Collected by: Andre D. DeJonge | Collected date/time: 01/05/23 14:38 | Received date/time: 01/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1985423	1	01/09/23 18:58	01/09/23 18:58	DBB	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Report Revision History

Level II Report - Version 1: 01/13/23 10:12

Project Narrative

Sample IDs updated per Client Request

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	1.92	4.56		1	WG1985423
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1985423
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1985423
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1985423
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1985423
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1985423
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1985423
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1985423
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1985423
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1985423
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1985423
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1985423
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1985423
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1985423
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1985423
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1985423
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1985423
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1985423
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1985423
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1985423
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1985423
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1985423
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1985423
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1985423
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1985423
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1985423
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1985423
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1985423
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1985423
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1985423
Ethanol	64-17-5	46.10	1.25	2.36	67.2	127		1	WG1985423
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1985423
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1985423
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	ND	ND		1	WG1985423
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.288	1.42		1	WG1985423
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1985423
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1985423
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1985423
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1985423
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1985423
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1985423
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1985423
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1985423
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1985423
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1985423
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1985423
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1985423
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1985423
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1985423
Propene	115-07-1	42.10	1.25	2.15	ND	ND		1	WG1985423
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1985423
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1985423
Tetrachloroethylene	127-18-4	166	2.00	13.6	122	828		10	WG1987529
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1985423
Toluene	108-88-3	92.10	0.500	1.88	ND	ND		1	WG1985423
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1985423

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	0.222	1.21		1	WG1985423
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1985423
Trichloroethylene	79-01-6	131	0.200	1.07	2.07	11.1		1	WG1985423
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1985423
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1985423
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1985423
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1985423
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1985423
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1985423
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1985423
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1985423
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	ND	ND		1	WG1985423
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.5*				WG1985423
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*94.3*				WG1987529

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	12.5	29.7	443	1050		10	WG1987529
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1985423
Benzene	71-43-2	78.10	0.200	0.639	1.16	3.71		1	WG1985423
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1985423
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1985423
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1985423
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1985423
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1985423
Carbon disulfide	75-15-0	76.10	0.200	0.622	6.89	21.4		1	WG1985423
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1985423
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1985423
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1985423
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1985423
Chloromethane	74-87-3	50.50	0.200	0.413	0.374	0.772		1	WG1985423
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1985423
Cyclohexane	110-82-7	84.20	0.200	0.689	0.759	2.61		1	WG1985423
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1985423
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1985423
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1985423
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1985423
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1985423
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1985423
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1985423
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1985423
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1985423
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1985423
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1985423
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1985423
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1985423
1,4-Dioxane	123-91-1	88.10	0.200	0.721	0.787	2.84		1	WG1985423
Ethanol	64-17-5	46.10	12.5	23.6	117	221		10	WG1987529
Ethylbenzene	100-41-4	106	0.200	0.867	0.606	2.63		1	WG1985423
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.634	3.11		1	WG1985423
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.216	1.21		1	WG1985423
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.311	1.54		1	WG1985423
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1985423
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1985423
Heptane	142-82-5	100	0.200	0.818	0.486	1.99		1	WG1985423
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1985423
n-Hexane	110-54-3	86.20	0.630	2.22	53.6	189		1	WG1985423
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1985423
Methylene Chloride	75-09-2	84.90	0.200	0.694	1.15	3.99		1	WG1985423
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1985423
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	8.17	24.1		1	WG1985423
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1985423
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1985423
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1985423
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1985423
2-Propanol	67-63-0	60.10	1.25	3.07	15.6	38.3		1	WG1985423
Propene	115-07-1	42.10	1.25	2.15	ND	ND		1	WG1985423
Styrene	100-42-5	104	0.200	0.851	0.297	1.26		1	WG1985423
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1985423
Tetrachloroethylene	127-18-4	166	0.200	1.36	4.88	33.1		1	WG1985423
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1985423
Toluene	108-88-3	92.10	0.500	1.88	3.64	13.7		1	WG1985423
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1985423

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1985423
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1985423
Trichloroethylene	79-01-6	131	0.200	1.07	0.991	5.31		1	WG1985423
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.840	4.12		1	WG1985423
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.230	1.13		1	WG1985423
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1985423
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1985423
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1985423
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1985423
m&p-Xylene	1330-20-7	106	0.400	1.73	2.11	9.15		1	WG1985423
o-Xylene	95-47-6	106	0.200	0.867	0.763	3.31		1	WG1985423
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	223	921		1	WG1985423
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*97.4*				WG1985423
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*94.8*				WG1987529

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	35.4	84.1		1	WG1985423
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1985423
Benzene	71-43-2	78.10	0.200	0.639	24.6	78.6		1	WG1985423
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1985423
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1985423
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1985423
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1985423
1,3-Butadiene	106-99-0	54.10	2.00	4.43	10.8	23.9		1	WG1985423
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.663	2.06		1	WG1985423
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1985423
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1985423
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1985423
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1985423
Chloromethane	74-87-3	50.50	0.200	0.413	0.733	1.51		1	WG1985423
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1985423
Cyclohexane	110-82-7	84.20	0.200	0.689	2.09	7.20		1	WG1985423
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1985423
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1985423
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1985423
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1985423
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1985423
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1985423
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1985423
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1985423
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1985423
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1985423
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1985423
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1985423
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1985423
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1985423
Ethanol	64-17-5	46.10	1.25	2.36	51.1	96.3		1	WG1985423
Ethylbenzene	100-41-4	106	0.200	0.867	0.587	2.54		1	WG1985423
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1985423
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.227	1.28		1	WG1985423
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.324	1.60		1	WG1985423
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1985423
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1985423
Heptane	142-82-5	100	0.200	0.818	1.84	7.53		1	WG1985423
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1985423
n-Hexane	110-54-3	86.20	0.630	2.22	4.66	16.4		1	WG1985423
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1985423
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1985423
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1985423
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	6.60	19.5		1	WG1985423
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1985423
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1985423
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1985423
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1985423
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1985423
Propene	115-07-1	42.10	12.5	21.5	140	241		10	WG1987529
Styrene	100-42-5	104	0.200	0.851	0.211	0.898		1	WG1985423
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1985423
Tetrachloroethylene	127-18-4	166	0.200	1.36	1.69	11.5		1	WG1985423
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1985423
Toluene	108-88-3	92.10	0.500	1.88	3.22	12.1		1	WG1985423
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1985423

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1985423
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1985423
Trichloroethylene	79-01-6	131	0.200	1.07	0.411	2.20		1	WG1985423
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1985423
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1985423
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.414	1.93		1	WG1985423
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1985423
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1985423
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1985423
m&p-Xylene	1330-20-7	106	0.400	1.73	1.38	5.98		1	WG1985423
o-Xylene	95-47-6	106	0.200	0.867	0.570	2.47		1	WG1985423
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	ND	ND		1	WG1985423
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*97.0*				WG1985423
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*94.3*				WG1987529

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	16.2	38.5		1	WG1985423
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1985423
Benzene	71-43-2	78.10	0.200	0.639	1.03	3.29		1	WG1985423
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1985423
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1985423
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1985423
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1985423
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1985423
Carbon disulfide	75-15-0	76.10	0.200	0.622	1.04	3.24		1	WG1985423
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1985423
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1985423
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1985423
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1985423
Chloromethane	74-87-3	50.50	0.200	0.413	0.671	1.39		1	WG1985423
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1985423
Cyclohexane	110-82-7	84.20	0.200	0.689	0.756	2.60		1	WG1985423
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1985423
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1985423
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1985423
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1985423
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1985423
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1985423
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1985423
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1985423
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1985423
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1985423
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1985423
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1985423
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1985423
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1985423
Ethanol	64-17-5	46.10	1.25	2.36	30.5	57.5		1	WG1985423
Ethylbenzene	100-41-4	106	0.200	0.867	0.487	2.11		1	WG1985423
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.216	1.06		1	WG1985423
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.326	1.83		1	WG1985423
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.317	1.57		1	WG1985423
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1985423
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1985423
Heptane	142-82-5	100	0.200	0.818	0.724	2.96		1	WG1985423
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1985423
n-Hexane	110-54-3	86.20	0.630	2.22	0.989	3.49		1	WG1985423
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1985423
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.409	1.42		1	WG1985423
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1985423
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	2.73	8.05		1	WG1985423
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1985423
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1985423
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1985423
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1985423
2-Propanol	67-63-0	60.10	1.25	3.07	12.7	31.2		1	WG1985423
Propene	115-07-1	42.10	1.25	2.15	5.23	9.01		1	WG1985423
Styrene	100-42-5	104	0.200	0.851	0.230	0.978		1	WG1985423
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1985423
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1985423
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1985423
Toluene	108-88-3	92.10	0.500	1.88	10.2	38.4		1	WG1985423
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1985423

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1985423
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1985423
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1985423
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.204	1.00		1	WG1985423
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1985423
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.873	4.08		1	WG1985423
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1985423
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1985423
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1985423
m&p-Xylene	1330-20-7	106	0.400	1.73	1.48	6.42		1	WG1985423
o-Xylene	95-47-6	106	0.200	0.867	0.665	2.88		1	WG1985423
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	ND	ND		1	WG1985423
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.5*				WG1985423

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	8.81	20.9		1	WG1985423
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1985423
Benzene	71-43-2	78.10	0.200	0.639	0.488	1.56		1	WG1985423
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1985423
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1985423
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1985423
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1985423
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1985423
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1985423
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1985423
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1985423
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1985423
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1985423
Chloromethane	74-87-3	50.50	0.200	0.413	0.505	1.04		1	WG1985423
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1985423
Cyclohexane	110-82-7	84.20	0.200	0.689	0.402	1.38		1	WG1985423
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1985423
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1985423
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1985423
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1985423
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1985423
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1985423
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1985423
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1985423
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1985423
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1985423
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1985423
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1985423
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1985423
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1985423
Ethanol	64-17-5	46.10	1.25	2.36	17.7	33.4		1	WG1985423
Ethylbenzene	100-41-4	106	0.200	0.867	0.235	1.02		1	WG1985423
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1985423
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.220	1.24		1	WG1985423
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.314	1.55		1	WG1985423
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1985423
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1985423
Heptane	142-82-5	100	0.200	0.818	0.316	1.29		1	WG1985423
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1985423
n-Hexane	110-54-3	86.20	0.630	2.22	0.717	2.53		1	WG1985423
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1985423
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.319	1.11		1	WG1985423
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1985423
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	2.78	8.20		1	WG1985423
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1985423
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1985423
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1985423
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1985423
2-Propanol	67-63-0	60.10	1.25	3.07	7.90	19.4		1	WG1985423
Propene	115-07-1	42.10	1.25	2.15	ND	ND		1	WG1985423
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1985423
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1985423
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1985423
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1985423
Toluene	108-88-3	92.10	0.500	1.88	1.70	6.40		1	WG1985423
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1985423

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1985423
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1985423
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1985423
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1985423
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1985423
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.200	0.934		1	WG1985423
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1985423
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1985423
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1985423
m&p-Xylene	1330-20-7	106	0.400	1.73	0.745	3.23		1	WG1985423
o-Xylene	95-47-6	106	0.200	0.867	0.272	1.18		1	WG1985423
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	ND	ND		1	WG1985423
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.0*				WG1985423

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	16.2	38.5		1	WG1985423
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1985423
Benzene	71-43-2	78.10	0.200	0.639	0.515	1.65		1	WG1985423
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1985423
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1985423
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1985423
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1985423
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1985423
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1985423
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1985423
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1985423
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1985423
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1985423
Chloromethane	74-87-3	50.50	0.200	0.413	0.498	1.03		1	WG1985423
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1985423
Cyclohexane	110-82-7	84.20	0.200	0.689	0.608	2.09		1	WG1985423
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1985423
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1985423
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1985423
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1985423
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1985423
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1985423
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1985423
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1985423
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1985423
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1985423
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1985423
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1985423
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1985423
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1985423
Ethanol	64-17-5	46.10	1.25	2.36	18.2	34.3		1	WG1985423
Ethylbenzene	100-41-4	106	0.200	0.867	0.316	1.37		1	WG1985423
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1985423
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.228	1.28		1	WG1985423
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.340	1.68		1	WG1985423
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1985423
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1985423
Heptane	142-82-5	100	0.200	0.818	0.419	1.71		1	WG1985423
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1985423
n-Hexane	110-54-3	86.20	0.630	2.22	1.06	3.74		1	WG1985423
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1985423
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1985423
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1985423
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	5.31	15.7		1	WG1985423
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1985423
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1985423
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1985423
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1985423
2-Propanol	67-63-0	60.10	1.25	3.07	98.5	242		1	WG1985423
Propene	115-07-1	42.10	1.25	2.15	4.97	8.56		1	WG1985423
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1985423
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1985423
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1985423
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1985423
Toluene	108-88-3	92.10	0.500	1.88	1.93	7.27		1	WG1985423
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1985423

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1985423
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1985423
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1985423
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1985423
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1985423
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.255	1.19		1	WG1985423
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1985423
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1985423
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1985423
m&p-Xylene	1330-20-7	106	0.400	1.73	0.865	3.75		1	WG1985423
o-Xylene	95-47-6	106	0.200	0.867	0.333	1.44		1	WG1985423
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	ND	ND		1	WG1985423
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*95.3*				WG1985423

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3879237-3 01/09/23 12:09

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl Chloride	U		0.114	0.200
Benzene	U		0.0715	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0702	0.200
Bromoform	U		0.0732	0.600
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chlorobenzene	U		0.0832	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
2-Chlorotoluene	U		0.0828	0.200
Cyclohexane	U		0.0753	0.200
Dibromochloromethane	U		0.0727	0.200
1,2-Dibromoethane	U		0.0721	0.200
1,2-Dichlorobenzene	U		0.128	0.200
1,3-Dichlorobenzene	U		0.182	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0700	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
1,2-Dichloropropane	U		0.0760	0.200
cis-1,3-Dichloropropene	U		0.0689	0.200
trans-1,3-Dichloropropene	U		0.0728	0.200
1,4-Dioxane	U		0.0833	0.200
Ethanol	U		0.265	1.25
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Trichlorofluoromethane	U		0.0819	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
Heptane	U		0.104	0.200
Hexachloro-1,3-butadiene	U		0.105	0.630
n-Hexane	U		0.206	0.630

Method Blank (MB)

(MB) R3879237-3 01/09/23 12:09

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Isopropylbenzene	U		0.0777	0.200
Methylene Chloride	U		0.0979	0.200
Methyl Butyl Ketone	U		0.133	1.25
2-Butanone (MEK)	U		0.0814	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0765	1.25
Methyl Methacrylate	U		0.0876	0.200
MTBE	U		0.0647	0.200
Naphthalene	U		0.350	0.630
2-Propanol	0.575	J	0.264	1.25
Propene	U		0.0932	1.25
Styrene	U		0.0788	0.200
1,1,2,2-Tetrachloroethane	U		0.0743	0.200
Tetrachloroethylene	U		0.0814	0.200
Tetrahydrofuran	U		0.0734	0.200
Toluene	U		0.0870	0.500
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0736	0.200
1,1,2-Trichloroethane	U		0.0775	0.200
Trichloroethylene	U		0.0680	0.200
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
TPH (GC/MS) Low Fraction	U		39.7	200
(S) 1,4-Bromofluorobenzene	*96.4*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3879237-1 01/09/23 09:43 • (LCSD) R3879237-2 01/09/23 10:24

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	3.75	3.32	3.33	88.5	88.8	70.0-130			0.301	25
Allyl Chloride	3.75	3.51	3.54	93.6	94.4	70.0-130			0.851	25
Benzene	3.75	3.91	3.93	104	105	70.0-130			0.510	25
Benzyl Chloride	3.75	4.17	4.15	111	111	70.0-152			0.481	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3879237-1 01/09/23 09:43 • (LCSD) R3879237-2 01/09/23 10:24

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromodichloromethane	3.75	3.87	3.86	103	103	70.0-130			0.259	25
Bromoform	3.75	3.96	3.98	106	106	70.0-130			0.504	25
Bromomethane	3.75	3.99	4.03	106	107	70.0-130			0.998	25
1,3-Butadiene	3.75	3.55	3.68	94.7	98.1	70.0-130			3.60	25
Carbon disulfide	3.75	3.98	4.02	106	107	70.0-130			1.00	25
Carbon tetrachloride	3.75	3.83	3.84	102	102	70.0-130			0.261	25
Chlorobenzene	3.75	3.96	4.02	106	107	70.0-130			1.50	25
Chloroethane	3.75	3.83	3.90	102	104	70.0-130			1.81	25
Chloroform	3.75	3.82	3.83	102	102	70.0-130			0.261	25
Chloromethane	3.75	3.64	3.70	97.1	98.7	70.0-130			1.63	25
2-Chlorotoluene	3.75	3.94	4.00	105	107	70.0-130			1.51	25
Cyclohexane	3.75	3.86	3.88	103	103	70.0-130			0.517	25
Dibromochloromethane	3.75	3.95	3.94	105	105	70.0-130			0.253	25
1,2-Dibromoethane	3.75	3.99	4.01	106	107	70.0-130			0.500	25
1,2-Dichlorobenzene	3.75	4.07	4.08	109	109	70.0-130			0.245	25
1,3-Dichlorobenzene	3.75	4.10	4.14	109	110	70.0-130			0.971	25
1,4-Dichlorobenzene	3.75	4.13	4.16	110	111	70.0-130			0.724	25
1,2-Dichloroethane	3.75	3.73	3.78	99.5	101	70.0-130			1.33	25
1,1-Dichloroethane	3.75	3.80	3.81	101	102	70.0-130			0.263	25
1,1-Dichloroethene	3.75	3.74	3.76	99.7	100	70.0-130			0.533	25
cis-1,2-Dichloroethene	3.75	3.79	3.78	101	101	70.0-130			0.264	25
trans-1,2-Dichloroethene	3.75	3.73	3.80	99.5	101	70.0-130			1.86	25
1,2-Dichloropropane	3.75	3.76	3.81	100	102	70.0-130			1.32	25
cis-1,3-Dichloropropene	3.75	3.88	3.88	103	103	70.0-130			0.000	25
trans-1,3-Dichloropropene	3.75	3.90	3.86	104	103	70.0-130			1.03	25
1,4-Dioxane	3.75	3.79	3.90	101	104	70.0-140			2.86	25
Ethanol	3.75	3.39	3.46	90.4	92.3	55.0-148			2.04	25
Ethylbenzene	3.75	3.89	3.91	104	104	70.0-130			0.513	25
4-Ethyltoluene	3.75	4.02	4.07	107	109	70.0-130			1.24	25
Trichlorofluoromethane	3.75	3.66	4.05	97.6	108	70.0-130			10.1	25
Dichlorodifluoromethane	3.75	3.30	3.38	88.0	90.1	64.0-139			2.40	25
1,1,2-Trichlorotrifluoroethane	3.75	3.93	3.96	105	106	70.0-130			0.760	25
1,2-Dichlorotetrafluoroethane	3.75	3.98	4.02	106	107	70.0-130			1.00	25
Heptane	3.75	3.67	3.67	97.9	97.9	70.0-130			0.000	25
Hexachloro-1,3-butadiene	3.75	4.04	4.14	108	110	70.0-151			2.44	25
n-Hexane	3.75	3.70	3.66	98.7	97.6	70.0-130			1.09	25
Isopropylbenzene	3.75	3.89	3.95	104	105	70.0-130			1.53	25
Methylene Chloride	3.75	3.57	3.60	95.2	96.0	70.0-130			0.837	25
Methyl Butyl Ketone	3.75	3.48	3.52	92.8	93.9	70.0-149			1.14	25
Methyl Ethyl Ketone	3.75	3.86	3.87	103	103	70.0-130			0.259	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3879237-1 01/09/23 09:43 • (LCSD) R3879237-2 01/09/23 10:24

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
4-Methyl-2-pentanone (MIBK)	3.75	3.53	3.58	94.1	95.5	70.0-139			1.41	25
Methyl Methacrylate	3.75	3.81	3.89	102	104	70.0-130			2.08	25
MTBE	3.75	4.17	4.19	111	112	70.0-130			0.478	25
Naphthalene	3.75	4.10	4.14	109	110	70.0-159			0.971	25
2-Propanol	3.75	3.65	3.73	97.3	99.5	70.0-139			2.17	25
Propene	3.75	3.35	3.40	89.3	90.7	64.0-144			1.48	25
Styrene	3.75	3.98	4.03	106	107	70.0-130			1.25	25
1,1,2,2-Tetrachloroethane	3.75	3.95	4.02	105	107	70.0-130			1.76	25
Tetrachloroethylene	3.75	3.94	3.99	105	106	70.0-130			1.26	25
Tetrahydrofuran	3.75	3.58	3.58	95.5	95.5	70.0-137			0.000	25
Toluene	3.75	3.94	3.97	105	106	70.0-130			0.759	25
1,2,4-Trichlorobenzene	3.75	4.11	4.19	110	112	70.0-160			1.93	25
1,1,1-Trichloroethane	3.75	3.90	3.92	104	105	70.0-130			0.512	25
1,1,2-Trichloroethane	3.75	3.93	3.97	105	106	70.0-130			1.01	25
Trichloroethylene	3.75	3.87	3.92	103	105	70.0-130			1.28	25
1,2,4-Trimethylbenzene	3.75	3.98	4.01	106	107	70.0-130			0.751	25
1,3,5-Trimethylbenzene	3.75	3.95	4.02	105	107	70.0-130			1.76	25
2,2,4-Trimethylpentane	3.75	3.68	3.70	98.1	98.7	70.0-130			0.542	25
Vinyl chloride	3.75	3.95	4.03	105	107	70.0-130			2.01	25
Vinyl Bromide	3.75	3.50	3.97	93.3	106	70.0-130			12.6	25
Vinyl acetate	3.75	3.63	3.66	96.8	97.6	70.0-130			0.823	25
m&p-Xylene	7.50	7.79	7.91	104	105	70.0-130			1.53	25
o-Xylene	3.75	3.89	3.92	104	105	70.0-130			0.768	25
TPH (GC/MS) Low Fraction	203	209	212	103	104	70.0-130			1.43	25
(S) 1,4-Bromofluorobenzene				*97.2*	*97.3*	*60.0-140*				

Method Blank (MB)

(MB) R3880494-3 01/12/23 09:42

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Ethanol	U		0.265	1.25
Propene	0.167	J	0.0932	1.25
Tetrachloroethylene	U		0.0814	0.200
(S) 1,4-Bromofluorobenzene	*94.9*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3880494-1 01/12/23 08:21 • (LCSD) R3880494-2 01/12/23 09:02

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	3.75	3.63	3.75	96.8	100	70.0-130			3.25	25
Ethanol	3.75	3.65	3.67	97.3	97.9	55.0-148			0.546	25
Propene	3.75	3.69	3.68	98.4	98.1	64.0-144			0.271	25
Tetrachloroethylene	3.75	3.79	3.84	101	102	70.0-130			1.31	25
(S) 1,4-Bromofluorobenzene				*97.9*	*97.3*	*60.0-140*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
NV5 - Wilsonville, OR

9450 SW Commerce Circle

Ste. 300

Billing Information:
Accounts Payable
9450 SW Commerce Circle

Ste. 300
Wilsonville, OR 97070

Report To:
Andre DeJonge

Email To:
Andre.DeJonge@nv5.com;Colby.Hunt@nv5.com

Project Description: Streimer Metal Works

City/State Collected: Portland, OR.

Please Circle: (PT) MT CT ET

Phone:
503-968-8787

Client Project #
Streimer -2-02

Lab Project #
GEODESPOR-STREIM202

Collected by (print): Andre D. DeJonge

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Three Day
___ Next Day ___ Five Day
___ Two Day

Date Results Needed

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE
MT JULIET, TN
12065 Lebanon Road Mt Juliet, TN 37122
Phone: 615-758-5858 Alt: 800-767-5859
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L577884
F199

Acctnum: **GEODESPOR**
Template: **T221762**
Prelogin: **P970630**
PM: 110 - Brian Ford
PB: BF 12/28/22
Shipped Via: **FedEX Ground**

Sample ID	Can #	Flow Cont. #	Collection Date	Collection Time	Canister Pressure/Vacuum Initial	Canister Pressure/Vacuum Final	Analysis: VOCs/GRO TO-15 Summa	Rem./Contaminant	Sample # (lab only)
VP-13(010623)	022079	020340	010623	1325	29Hg	4Hg	X		01
SG-9	012156	009598	010623	1251	29Hg	4Hg	X		02
SG-5	020635	010164	010523	1421	30Hg	4Hg	X		03
SG-6	020615	011495	"	1421	22Hg	4Hg	X		04
SG-7	020588	011171	"	1438	29Hg	4Hg	X		05
SG-8	020230	009588	"	1438	28Hg	4Hg	X		06

Sample IDs updated per Client Request

SG-5 → SG-1
SG-6 → SG-2
SG-7 → SG-3
SG-8 → SG-4
SG-9 → SSV-1

Remarks:

Cans = 6 +2 emPty

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 612665314154

Hold #

Condition: (lab use only) OK

COC Seal Intact: ___Y ___N ___NA

NCF:

Relinquished by : (Signature)	010623		Received by: (Signature)	Date:	Time:
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/5/23	Time: 0901

NV5

Delivering Solutions
Improving Lives