

January 31, 2022

Andrew Smith, Site Manager
Department of Ecology
PO Box 47775
Olympia, Washington 98504-7775

Subject: 2021 Groundwater Monitoring Report

NuStar Vancouver Annex Facility 5420 NW Fruit Valley Road

Vancouver, Washington

019001-008-03

Styshami & Sately

Dear Mr. Smith:

Enclosed, please find the *2021 Groundwater Monitoring Report* that has been prepared on behalf of NuStar Terminals Operations Partnership, L.P. (NuStar) by GeoEngineers, Inc. (GeoEngineers). The enclosed report presents the results of four quarters of groundwater monitoring conducted in 2021 at the NuStar Vancouver Annex Facility.

If you have any questions or would like to discuss this further, please contact Amanda Spencer at (503) 577-1535 or myself at (503) 807-3835.

Sincerely,

Stephanie Salisbury, L.G.

Associate Geologist

Enclosure

2021 Groundwater Monitoring Report (electronic via email and 2 hard copies)

cc: Renee Robinson, NuStar Energy, L.P. (electronic deliverable)

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2021 Annual Groundwater Monitoring Report

NuStar Vancouver Annex Terminal 5420 NW Fruit Valley Road Vancouver, Washington

for

NuStar Terminals Operations Partnership, L.P.

January 31, 2022



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2021 Annual Groundwater Monitoring Report

NuStar Vancouver Annex Terminal 5420 NW Fruit Valley Road Vancouver, Washington

File No. 19001-008-03

January 31, 2022

Prepared for:

NuStar Terminals Operations Partnership, L.P.

Prepared by:

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Table of Contents

1.0	INTRO	DDUCTION	. 1
		ocation, Description and History	
1.1.	Geolo	gy and Hydrogeology	. 2
		Geology	
		Hydrogeology	
		NDWATER MONITORING-2021	
		ndwater Elevation Measurements	
		Separate Phase Hydrocarbons	
		Groundwater Elevation	
		ndwater Sampling and Analysis	
		Methods and Procedures	
	2.2.2.	Analytical Methods	.6
		Quality Assurance/Quality Control (QA/QC)	
3.0	FUTU	RE WORK	. 8
		RENCES	

LIST OF TABLES

Table 1. Groundwater Elevation Data—2021

Table 2. Summary of Analytical Results—Monitoring Wells, 2021

LIST OF FIGURES

Figure 1. Facility Location Map

Figure 2. Site Plan

Figure 3. Groundwater Elevation Contour Map—February 2021

Figure 4. Groundwater Elevation Contour Map—May 2021

Figure 5. Groundwater Elevation Contour Map—August 2021

Figure 6. Groundwater Elevation Contour Map—November 2021

Figure 7. BTEX and Naphthalene in Groundwater—2021

Figure 8. TPHg and TPHd in Groundwater—2021

LIST OF APPENDICES

Appendix A. Standard Operating Procedures

Appendix B. Historical Groundwater Elevation Data

Appendix C. Field Gauging and Sampling Forms

Appendix D. Historical Groundwater Analytical Data

Appendix E. Laboratory Results and Data Quality Review



1.0 INTRODUCTION

This groundwater monitoring report was prepared by GeoEngineers, Inc. (GeoEngineers) on behalf of NuStar Terminals Operations Partnership L.P. (NuStar) for groundwater monitoring conducted in 2021 at the NuStar Vancouver Annex Terminal located at 5420 NW Fruit Valley Road, Vancouver, Washington (the Facility). A location map for the Facility is provided on Facility Location Map, Figure 1; a site plan is provided on Site Plan, Figure 2.

On July 12, 2012, NuStar submitted a draft Feasibility Study (FS) to the Washington State Department of Ecology (Ecology) in accordance with Agreed Order (AO) No. 09-TC-S DE5250 between Ecology and NuStar (Ash Creek, 2012). The technical basis of the FS was the Remedial Investigation (RI) and Risk Assessment (RA) documented in the Remedial Investigation and Risk Assessment Report (RI/RA Report) submitted to Ecology in December 2010 (Ash Creek, 2010) and approved by Ecology on June 23, 2011. The draft FS proposed monitored natural attenuation to address residual hydrocarbon constituents in groundwater in the eastern portion of the Facility. On October 16, 2013, Ecology provided NuStar with comments on the draft FS. In the months following receipt, NuStar held several meetings with Ecology to discuss Ecology's comments on the FS, as well as additional comments that were presented to NuStar in a February 4, 2014 meeting. The meetings culminated in a Final Project Coordinator's Decision (the "Decision") issued by Ecology on August 26, 2014, which established a series of steps for collecting additional data to support submittal of a revised FS.

Between 2014 and 2020, multiple soil and groundwater investigations were conducted as part of the Supplemental Remedial Investigation process. The additional data requested by Ecology included additional sitewide groundwater monitoring and additional groundwater investigation near historical borings SB-8 and SB-9 located in the western portion of the terminal. Results of the additional investigation indicated the presence of petroleum hydrocarbons in groundwater at concentrations above Washington Model Toxics Control Act (MTCA) Method A Cleanup Levels in two apparently isolated areas in the vicinity of historical borings SB-8 and SB-9 (Apex, 2015). Seven additional monitoring wells (MW-5 through MW-10 and MW-8D) were installed at the locations shown on Figure 2 for continued groundwater monitoring. Additionally, a limited area of affected groundwater was identified in the central portion of the facility near the vapor recovery unit. A pilot study was conducted in the vicinity of well MW-5 in 2017 to evaluate the efficacy of injecting chemical oxidants to address the petroleum hydrocarbons and to support preparation of the Feasibility Study (Cascadia, 2019a).

In total, more than 90 soil borings have been installed at the site, facilitating the collection and analysis of 115 soil samples and 108 grab groundwater samples. Thirteen monitoring wells in total have been installed over the course of the project, which are currently monitored on a quarterly basis.

In accordance with the Final Project Coordinator's Decision, a Supplemental RI and Revised FS report was submitted to Ecology on June 1, 2020. The report was revised per Ecology comments and resubmitted on October 23, 2020, for final approval. Ecology approved the report on October 30, 2020. The report detailed the aforementioned investigations conducted between 2014 and 2020, evaluated potential cleanup alternatives and provided a recommended cleanup action for the Facility. The approved cleanup actions include source area soil removal followed by installation of a groundwater recirculation system in two limited areas in the western portion of the Facility. The approved cleanup action also includes the injection of plume stabilization compounds to address the limited area of affected groundwater in the central area near the vapor recovery unit. Institutional controls and soil management plans will be implemented in the



limited area of affected soil in the eastern portion of the Facility near the truck loading areas. The approved cleanup action also includes continued routine groundwater monitoring at the Facility.

Ecology has prepared a draft Agreed Order for cleanup action. NuStar has reviewed and provided feedback on the draft Agreed Order and Ecology is currently finalizing its review of the draft Agreed Order. The Agreed Order will then be made available for public comment and will include a Draft Corrective Action Plan. Following public comment, the Cleanup Action Plan will be finalized and included as an exhibit to the Agreed Order, and the Agreed Order will be finalized for execution by Ecology and NuStar.

NuStar initiated quarterly monitoring at the Facility in the fourth quarter of 2017. This report presents the results of the quarterly monitoring program conducted in 2021.

1.1. Site location, Description and History

Location. The Facility address is 5420 NW Fruit Valley Road, Vancouver, Washington 98660 (Latitude: N45° 39.70', Longitude: W122° 41.66'), as shown on Figure 1. The Facility is located on Clark County Tax Lot (TL) No. 147360.

Physical Features. Figure 2 is a Site Plan. The Facility is approximately 31 acres and is roughly rectangular, with dimensions of approximately 800 by 1,800 feet. The Facility is located in a mixed industrial-agricultural area and currently includes aboveground storage tanks (ASTs) containing jet fuel and methanol (seven ASTs ranging in size from 30,000 to 3,000,000 gallons); a covered truck refueling rack with two smaller volume ASTs (an approximately 400-gallon AST, which stores anti-static additive [ASA] and a 7,500-gallon AST containing fuel system icing inhibitor [FSII] additive); and several buildings used for equipment storage and offices. A former underground storage tank (UST) associated with a vapor recovery system was also located on the Facility and was removed in 2001. The vapor recovery system remains on site but is no longer used. The surface of the Facility is comprised of graveled areas and grass fields, with asphalt-paved roads providing access to the fueling areas, ASTs and office buildings.

Property History. Support Terminals Operating Partnership, L.P. (STOP) purchased the Facility from Cenex Harvest States Cooperative (Cenex) in 2003. In March 2008, NuStar acquired STOP.

The property was developed in 1957 as a truck loading terminal. Records are unclear if the Facility was developed by Cenex. Historically, chemicals and other products stored at the Facility included liquid fertilizers and refined petroleum products such as gasoline, diesel and kerosene, denatured alcohol and petroleum product additives. A transmix tank is present in the western portion of the Facility (Figure 2), and this is typically where waste (such as from tank-bottom cleanouts or the oil/water separator) would be stored prior to off-site disposal or recycling. The transmix tank is no longer in use.

1.2. Geology and Hydrogeology

This section presents the geology and hydrogeology as discussed in the RI/RA Report (Ash Creek, 2010).

1.2.1. Geology

Regional Geology. The regional geology is summarized below and is based on reports prepared by Pacific Groundwater Group (PGG; 2001) and AMEC (2002). The vicinity of the Facility is dominated by three primary units: Recent Alluvial deposits, the Pleistocene Alluvial deposits and the Troutdale Formation.



The Recent Alluvial deposits are the upper unit with deposits approximately 55 feet thick and consist of fine-grained silt and sand within the areas investigated near Vancouver Lake. The Pleistocene Alluvial deposits are approximately 95 to 115 feet thick and consist of coarse-grained sand and gravel. The Pleistocene Alluvial deposits originate from alluvial deposits from the Columbia River and deposits from the catastrophic Missoula Floods. The Troutdale Formation underlies the Pleistocene Alluvial deposits and can be greater than 1,000 feet thick. It is made up of cemented sandy gravels and semi-consolidated sands, silts and clays.

Site Geology. During previous Facility investigations performed by others, soil borings have been installed to depths of up to 50 feet below ground surface (bgs) at the Facility. During a 2007 Facility investigation conducted by Ash Creek Associates (Ash Creek, 2007), one boring was completed to a depth of 72 feet bgs. Recent investigations in the western portion of the Facility included installing borings up to depths of 65 feet bgs.

The Recent Alluvial deposits underlying the western portion of the Facility consist of silt and silty clay with some fine sand to depths of approximately 20 to 25 feet bgs. Below 20 to 25 feet bgs, the Recent Alluvial deposits consist of layers of fine- to medium-grained sand to a depth of at least 65 feet bgs. On the eastern portion of the Facility, fine sand or sandy silt with variable layers of sand or silty sand is encountered to a depth of approximately 10 feet bgs. Below 10 feet bgs, the Recent Alluvial deposits in the eastern portion of the Facility consist of layers of fine- to medium-grained sand to a depth of approximately 50 to 60 feet bgs. The Pleistocene Alluvial deposits are encountered below the Recent Alluvial deposits and consist of sand and/or gravel layers of varying thicknesses.

1.2.2. Hydrogeology

Regional Hydrogeology. The regional aquifers, Recent Alluvial Aquifer (RAA); Pleistocene Alluvial Aquifer (PAA); and the aquifers of the Troutdale Formation, follow the regional geology discussed above. The regional hydrogeology summarized below is based on reports prepared in support of Clark Public Utilities (CPU) South Lake Wellfield (PGG, 2001; PGG, 2009) and by Ash Creek (2008a and 2008b).

The RAA is unconfined and receives recharge directly from the land surface and/or surface water features. The PAA directly underlies the RAA and is a productive aquifer with high well yields (several thousand gallons per minute [gpm] without significant drawdown). The groundwater flow system is highly influenced by local surface water bodies. The Columbia River, Vancouver Lake, Vancouver Lake Flushing Channel and Lake River form natural hydrologic boundaries to the groundwater flow system. Tidal influences and seasonal variations in surface water runoff cause dynamic variation in the stage of the Columbia River and resulting adjustments in the stages of the other three connected surface water bodies. The groundwater flow system is also influenced by tidal and seasonal variations in the surface water bodies. Regionally, it is anticipated that groundwater within the RAA and PAA near the Facility would have a net gradient toward Vancouver Lake and the Columbia River.

Site Hydrogeology. In the west tank farm area, depth to first encountered groundwater is typically 16 to 20 feet bgs and in the eastern portion of the site, near the former truck loading area; depth to groundwater typically ranges from 13 to 32 feet bgs.



First encountered groundwater at the Facility corresponds to the silt and fine- to medium-grained sand of the RAA. Shallow groundwater flow at the Facility is typically, under static conditions, flat with a slight gradient (0.0002 foot per foot [ft/ft]) to the southeast (AMEC, 2002; SECOR, 2003; Ash Creek, 2009).

2.0 GROUNDWATER MONITORING—2021

A comprehensive quarterly groundwater monitoring program was conducted in 2021 to monitor groundwater conditions at the site. The monitoring included the gauging and sampling of shallow monitoring wells MW-1 through MW-11, and deeper monitoring wells MW-5D and MW-8D using the Standard Operating Procedures (SOPs) included as Appendix A. The quarterly events were conducted from February 25 through 26; May 4 through 5; August 10 through 11; and November 16 through 17, 2021.

2.1. Groundwater Elevation Measurements

Fluid level measurements were recorded to the nearest 0.01 foot from the surveyed top of monitoring well casing. (Note: Well MW-11 was installed in February 2019 and the top of casing has not been surveyed; however, depth to groundwater measurements were recorded during each monitoring event.) Depth to groundwater was measured using an electronic water level indicator probe. Although separate phase hydrocarbons (SPH) have not been observed at the site, the wells are assessed using an electronic water/hydrocarbon interface probe to document their absence.

Depth to groundwater and groundwater elevations for 2021 are provided in Groundwater Elevation Data—2021, Table 1. Historical groundwater elevation data collected from 2007 through 2021 are included in Appendix B. Copies of the well gauging forms are provided in Appendix C.

Figures 3 through 6 present groundwater elevation contour maps for each of the four quarterly monitoring events. The groundwater elevations in well MW-1 appeared anomalous in several of the events relative to nearby well data and historical measurements; therefore, the groundwater elevations for well MW-1 were not used in the contouring. The top of casing elevation for well MW-1 will be verified by a licensed surveyor in the first quarter 2022. If the current top of casing elevation is no longer accurate, the survey information will be updated in future reports.

2.1.1. Separate Phase Hydrocarbons

SPH or sheen have not been observed in Facility wells, to date, and were not observed during 2021.

2.1.2. Groundwater Elevation

Consistent with previous years, the groundwater gradient was generally flat with a magnitude across the site that ranged between 0.00009 to 0.0005 ft/ft in 2021. The following subsections discuss the depth to groundwater and groundwater gradients observed for each quarterly event.

2.1.2.1. First Quarter 2021

Depths to groundwater ranged from 14.52 to 29.01 feet bgs in wells MW-1 through MW-4 located in the eastern portion of the Facility, corresponding to a range in groundwater elevations of 11.16 to 12.20 feet above Mean Sea Level (MSL). Depths to groundwater in wells MW-5 through MW-10, located in the western area, ranged from 10.53 to 18.15 feet bgs, corresponding to elevations of 10.91 to 11.24 feet above MSL.



Groundwater Elevation Contour Map—February 2021, Figure 3, provides a groundwater elevation contour map for the groundwater measurements collected in February 2021 during the first quarter 2021 monitoring event. As shown on Figure 3, the groundwater gradient was to the south at a magnitude of approximately 0.0005 ft/ft.

2.1.2.2. Second Quarter 2021

Depths to groundwater ranged from 17.08 to 30.52 feet bgs in wells MW-1 through MW-4 located in the eastern portion of the Facility, corresponding to a range in groundwater elevations of 9.64 to 9.71 feet above MSL. Depths to groundwater in wells MW-5 through MW-10, located in the western tank area, ranged from 12.07 to 19.69 feet bgs, corresponding to elevations of 9.60 to 9.70 feet above MSL.

Groundwater Elevation Contour Map—May 2021, Figure 4, provides a groundwater elevation contour map for the groundwater measurements collected in May 2021 during the second quarter 2021 monitoring event. As shown on Figure 4, the groundwater gradient was essentially flat, with a magnitude measuring approximately 0.00009 ft/ft. The measured groundwater elevation was slightly higher in wells MW-3, MW-4, MW-8 and MW-9 than other monitoring wells, indicating a slight flow direction to the southwest.

2.1.2.3. Third Quarter 2021

Depths to groundwater ranged from 19.77 to 32.30 feet bgs in wells MW-1 through MW-4 located in the eastern portion of the site, corresponding to a range in groundwater elevations of 6.95 to 7.95 feet above MSL. Depths to groundwater in wells MW-5 through MW-10, located in the western tank area, ranged from 13.59 to 21.45 feet bgs, corresponding to elevations ranging between 7.94 to 8.08 feet above MSL.

Groundwater Elevation Contour Map—August 2021, Figure 5, provides a groundwater elevation contour map for the groundwater measurements collected in August 2021 during the third quarter 2021 monitoring event. As shown on Figure 5, the groundwater gradient was essentially flat, with a magnitude measuring approximately 0.0001 ft/ft across the site. The measured groundwater elevation was slightly higher in wells MW-5, MW-7 and MW-8 than other monitoring wells, indicating a slight flow direction to the southeast.

2.1.2.4. Fourth Quarter 2021

Depths to groundwater ranged from 16.74 to 30.11 feet bgs in wells MW-1 through MW-4 located in the eastern portion of the site, corresponding to a range in groundwater elevations of 9.98 to 10.14 feet above MSL. Depths to groundwater in wells MW-5 through MW-10, located in the western tank area, ranged from 11.41 to 19.27 feet bgs, corresponding to elevations ranging between 10.01 to 10.26 feet above MSL.

Groundwater Elevation Contour Map—November 2021, Figure 6, provides a groundwater elevation contour map for the groundwater measurements collected in November 2021 during the fourth quarter 2021 groundwater monitoring event. At the western portion of the Site, there was a groundwater gradient of approximately 0.0003 ft/ft to the east and at the eastern portion of the site, there was a gradient of 0.0005 ft/ft to the west.

2.2. Groundwater Sampling and Analysis

The following describes the field methods, analytical results and quality assurance/quality control (QA/QC) procedures for groundwater sampling conducted at the Facility in 2021.



2.2.1. Methods and Procedures

Samples were collected from each well in accordance with the low-flow sampling SOPs provided in Appendix A. In brief, Facility monitoring wells were purged prior to sample collection, utilizing a peristaltic pump with the intake of the tubing placed midway within the screened interval of the monitoring well. Monitoring wells were purged until field parameters (pH, conductivity, temperature, oxidation-reduction potential [ORP] and dissolved oxygen [DO]) stabilized. Following stabilization of parameters, groundwater samples were collected directly from the discharge tube of the peristaltic pump into laboratory-supplied containers. Field sampling forms are provided in Appendix C.

Samples were labeled and placed in ice-cooled chests for transport, under chain-of-custody protocol, to Apex Laboratories of Tigard, Oregon, for the following analyses:

- Benzene, toluene, ethylbenzene and xylenes (BTEX), methyl tert-butyl ether (MTBE) and naphthalene by U.S. Environmental Protection Agency (EPA) Method 8260D; and
- Total petroleum hydrocarbons gasoline (TPHg) by Method NWTPH-Gx and total petroleum hydrocarbons diesel (TPHd) and total petroleum hydrocarbons in the motor oil carbon range (TPHo) by Method NWTPH-Dx.

2.2.2. Analytical Methods

Analytical results for the 2021 groundwater monitoring events are summarized in Summary of Analytical Results – Monitoring Wells, Table 2. Historical analytical groundwater data collected from 2007 through 2021 are tabulated in Appendix D. Copies of the laboratory analytical reports are contained in Appendix E. It should be noted that the reporting limit for benzene and toluene for samples from well MW-5 was elevated during the May 4, 2021 sampling event. The well was resampled for BTEX (only) on June 15, 2021. Table 2 includes the results from both sampling events. The results on Figure 7 depict the results from June 15, 2021.

Groundwater analytical results for 2021 for BTEX/Naphthalene and TPHg and TPHd concentrations are displayed for each Facility monitoring well on BTEX and Naphthalene in Groundwater—2021, Figure 7, and TPHg and TPHd in Groundwater—2021, Figure 8, respectively.

Eastern Area (Wells MW-1 through MW-4, and MW-11)

TPHg, TPHd, BTEX, MTBE and naphthalene were all either non-detect or below MTCA Method A Levels in wells MW-1 through MW-4. Well MW-11, located adjacent to the vapor recovery unit, had variable BTEX, TPHg, TPHd and naphthalene concentrations with some results above MTCA Method A Cleanup Levels. Specifically, ethylbenzene and xylenes were below MTCA Method A Cleanup Levels during the first and fourth quarters of 2021, but above during quarters two and three. TPHd was below MTCA Method A Cleanup Levels during the first quarter and not detected (above the reporting limit of <0.189 mg/L) in the fourth quarter of 2021, but slightly above during the second and third quarters. Naphthalene was below MTCA Method A Cleanup Levels during the first quarter and not detected (above the reporting limit of <0.2 and <0.02 mg/L, respectively) in the third and fourth quarters. Toluene, TPHo and MTBE concentrations were either non-detect or below MTCA Method A Cleanup Levels in well M-11. As shown on Figures 7 and 8, well MW-11 is surrounded by wells MW-1 through MW-4, demonstrating that the TPH and BTEX concentrations in groundwater remain limited in extent in this area.



Western Area (Shallow Wells MW-5 through MW-10, and Deeper Wells MW-5D and MW-8D)

Compliance Wells (Shallow Wells MW-7 through MW-10 and Deeper Well MW-8D)

Throughout the year, TPH, BTEX, MTBE and naphthalene were non-detect in wells MW-7 through MW-10, and MW-8D; these results are consistent with historical data.

Monitoring Wells (Shallow Wells MW-5 and MW-6 and Deeper Well MW-5D)

TPH was detected slightly above method reporting limits in well MW-5D during the first through third quarter of 2021; TPH was non-detect in well MW-5D during the fourth quarter of 2021. TPHg, TPHd and naphthalene were detected in well MW-5 at concentrations above MTCA Method A Cleanup Levels during each quarterly event. Benzene, ethylbenzene, toluene, xylenes, MTBE and TPHo were either not detected or were below MTCA Method A Cleanup Levels in the groundwater samples from well MW-5.

TPHo and MTBE were not detected above method reporting limits in well MW-6 during 2021. Toluene and xylene concentrations were below MTCA Method A Cleanup Levels in well MW-6. Consistent with previous results, TPHg, TPHd, benzene, ethylbenzene and naphthalene were detected above MTCA Method A Cleanup Levels.

The groundwater monitoring results during 2021 are consistent with previous results that indicate the dissolved-phase hydrocarbons are limited both vertically and laterally, and appear to be in two distinct and separate plumes, each localized around wells MW-5 and MW-6, respectively.

2.2.3. Quality Assurance/Quality Control (QA/QC)

QA/QC samples consisted of field duplicate samples, field trip blanks, laboratory method blanks, matrix spike/matrix spike duplicates (MS/MSD), laboratory control samples (LCS) and surrogate spike samples. The field and laboratory QA/QC results and an evaluation of the results to ascertain the usability of the data are included with the laboratory data sheets in Appendix E.

The QA/QC review of the data indicates:

- Samples were received by the analytical laboratory on ice below 6°C in good condition and in the appropriate laboratory-supplied sample containers.
- The samples were analyzed within their respective method holding times.
- The reporting limits for BTEX in well MW-5 from the second quarter sampling event (May 4, 2021) were elevated due to an excessive dilution at the laboratory. Well MW-5 was re-sampled on June 15, 2021, and the reporting limits were not elevated. The analytical results for the resampling event are reported in Table 2 and on Figure 7.
- The recovery for the MS sample was within control limits with the following exceptions:
 - From report A1K0890 (fourth quarter 2021), a matrix spike analysis was performed on a blank (batch 21K0914) and percent recovery for benzene, toluene, ethylbenzene and xylenes was outside of control limits. Because a duplicate matrix spike analysis had percent recovery within method control limits for the same batch, no data were flagged.
- The recovery for the LCS sample was within control limits, with the following exceptions:



- From report A1E0226 (second quarter 2021), a LCS analysis was performed on a blank (batch 1050334) and percent recovery for naphthalene was outside of EPA criteria for method 8260D. Because there was adequate sensitivity for analysis, no data were flagged.
- From report A1E0226 (second quarter 2021), an LCS/LCSD analysis was performed on a blank (batch 1050234) and the relative percent difference (RPD) for xylenes was outside of the acceptable range of +-/- 30 percent. A second LCSD duplicate was analyzed and was within acceptable criteria; therefore, no data were flagged.
- Surrogate recoveries were within the acceptable range.
- No compounds were detected in the trip blanks or laboratory method blanks with the exception of benzene and toluene in well MW-5 during third quarter 2021 (report A1H0365) and benzene in well MW-5 during fourth quarter 2021 (report A1K0890). The reporting level was raised due to possible carryover from a previous sample. The data were flagged R-06.
- The RPD between the field samples and field duplicates was within control range, with the exception (report A1C0004; first quarter 2021) that the RPD for the samples from well MW-5 was greater than 30 percent for benzene. The data were flagged 0-42.

The overall QA objectives have been met and the data are of acceptable quality for use in this project.

3.0 FUTURE WORK

In December 2021, Ecology approved a revised Monitoring Well Installation Work Plan, which proposed installation of additional monitoring wells to supplement the existing well network to aid in monitoring remedial progress following implementation of the cleanup action plan at the Facility. One additional shallow well and two deeper (sand zone) wells will be installed. One of the deeper wells will be installed near existing well MW-6 to form a shallow/deeper well pair. The second deeper and one shallow well will be installed as a shallow/deeper well pair located downgradient of existing well MW-11. Fieldwork is planned for early February 2022. The new wells and well MW-11 will be surveyed by a licensed surveyor for vertical and lateral control. As mentioned in Section 2.1, the top of casing elevation for well MW-1 will also be verified during the well installation and surveying event. A summary of well installation activities and the results from the first round of well monitoring will be provided in a brief letter report to Ecology within 45 days of receiving analytical data from the well sampling.

Quarterly groundwater monitoring will continue in 2022. Following the completion of quarterly monitoring in 2022, an Annual 2022 Groundwater Monitoring Report will be prepared during the first quarter of 2023. A supplemental remedial investigation and revised feasibility study was submitted to and approved by Ecology in October 2020. A draft cleanup action plan for the site has been prepared and will be implemented under a future Agreed Order with Ecology.



4.0 REFERENCES

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Pacific Groundwater Group (PGG), 2001. Clark Public Utilities Lakeshore Wellfield Exploration and Testing Program. February 2001.

PGG, 2009. Hydrogeologic Evaluation for Clark Public Utilities South Lake Wellfield, SGA Production Wells PW-2 and PW-3. July 2009.

SECOR, 2003. Results of Phase II Environmental Site Assessment. June 6, 2003.





Table 1

Groundwater Elevation Data

NuStar Terminals Operations Partnership, L.P. – Annex Terminal Vancouver, Washington

Well Number	Date of Measurement	Top of Casing Elevation (feet above MSL)	Screened Interval (feet bgs)	Depth To SPH (feet)	Depth to Groundwater (feet)	SPH Thickness (feet)	Groundwater Elevation (feet)
	02/25/21	26.72			14.52	-	12.20
MW-1	05/04/21	26.72	14.5-24.5		17.08	_	9.64
IVIVV-T	08/10/21	26.72	14.5-24.5		19.77		6.95
	11/16/21	26.72			16.74		9.98
	02/25/21	38.27			27.11		11.16
MW-2	05/04/21	38.27	20-35		28.59	_	9.68
IVI VV-Z	08/10/21	38.27	20-35		30.34	_	7.93
	11/16/21	38.27			28.13		10.14
	02/25/21	39.17			27.91		11.26
NAVA/ O	05/04/21	39.17	045 245		29.47		9.70
MW-3	08/10/21	39.17	24.5-34.5		31.22		7.95
	11/16/21	39.17			29.06		10.11
	02/25/21	40.23			29.01		11.22
B 4347 4	05/04/21	40.23	00.05	-	30.52		9.71
MW-4	08/10/21	40.23	20-35	-	32.30		7.93
	11/16/21	40.23		-	30.11		10.12
	02/25/21	27.03			15.83		11.20
	05/04/21	27.03		-	17.42		9.61
MW-5	08/10/21	27.03	10-25		18.98	_	8.05
	11/16/21	27.03			16.80	-	10.23
	02/25/21	26.71			15.63	_	11.08
	05/04/21	26.71			17.05	_	9.66
MW-5D	08/10/21	26.71	35-45		18.64	_	8.07
	11/16/21	26.71			16.50	-	10.21
	02/25/21	27.33			16.16	-	11.17
	05/04/21	27.33	40.05		17.72	-	9.61
MW-6	08/10/21	27.33	10-25		19.39	_	7.94
	11/16/21	27.33			17.09	_	10.24
	02/25/21	21.67			10.53		11.14
	05/04/21	21.67	40.05		12.07	_	9.6
MW-7	08/10/21	21.67	10-25		13.59	_	8.08
	11/16/21	21.67			11.41	_	10.26
	02/25/21	27.68			16.44		11.24
	05/04/21	27.68			17.98		9.70
MW-8	08/10/21	27.68	10-25		19.64		8.04
	11/16/21	27.68			17.67		10.01



Well Number	Date of Measurement	Top of Casing Elevation (feet above MSL)	Screened Interval (feet bgs)	Depth To SPH (feet)	Depth to Groundwater (feet)	SPH Thickness (feet)	Groundwater Elevation (feet)
	02/25/21	27.87		-	16.76	-	11.11
MW-8D	05/04/21	27.87	35-45		18.24		9.63
IVIVV-OD	08/10/21	27.87	35-45		19.80		8.07
	11/16/21	27.87			17.42		10.45
	02/25/21	29.39		-	18.15		11.24
MW-9	05/04/21	29.39	10-25		19.69		9.70
10100-9	08/10/21	29.39	10-23		21.45		7.94
	11/16/21	29.39			19.27		10.12
	02/25/21	28.71		-	17.80		10.91
MW-10	05/04/21	28.71	10-25		19.06		9.65
IVIVV-TO	08/10/21	28.71	10-23		20.74		7.97
	11/16/21	28.71			18.48		10.23
	02/25/21	NS			15.91		NS
MW-11	05/04/21	NS	10-25		17.79		NS
14144-TT	08/10/21	NS	10-23		19.31		NS
	11/16/21	NS			17.75		NS

Notes:

- ${\bf 1.}\ \ {\bf Survey}\ {\bf elevations}\ {\bf determined}\ {\bf by}\ {\bf Bluedot}\ {\bf Group}\ {\bf surveying}, \ {\bf November}\ {\bf 2017}.$
- 2. Reference elevation (i.e., top of casing) relative to NAVD 88 (North American Vertical Datum of 1988), feet above mean sea level.
- 3. feet above MSL = feet above mean sea level.
- 4. NS = Not surveyed
- 5. -- = SPH (separate phase hydrocarbons) not measured/observed.
- 6. bgs = below ground surface.



Table 2Summary of Analytical Results - Monitoring Wells
NuStar Terminals Operations Partnership, L.P. - Annex Terminal

Vancouver, Washington

Well Number	Sample Date	TPHg Gasoline (mg/L)	TPHd Diesel (mg/L)	TPHo Heavy Oil (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	Naphthalene (mg/L)
	2/26/2021	<0.100	0.313 F-11	<0.152	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	5/5/2021	<0.100	0.152 F-11	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
MW-1	8/11/2021	<0.100	0.250 F-11	<0.381	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	11/17/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/25/2021	<0.100	<0.0792	<0.158	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
N 40 4 / O	5/5/2021	<0.100	<0.0748	<0.15	<0.0002	<0.001	<0.0005	<0.0015	0.0053	<0.004
MW-2	8/10/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	0.0113	<0.004
	11/17/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	0.00278	<0.002
	2/25/2021	<0.100	<0.0792	<0.158	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
NAVA/ 2	5/5/2021	<0.100	<0.0762	<0.152	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
10100-3	8/10/2021	<0.100	<0.187	< 0.374	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
MW-3	11/17/2021	<0.100	<0.190	<0.381	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/26/2021	<0.100	<0.0800	<0.160	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	5/5/2021	<0.100	<0.0748	<0.150	<0.0002	<0.001	0.00073	0.00181	<0.001	<0.004
MW-4	8/10/2021	<0.100	<0.189	< 0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	11/17/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/25/2021	27.5	1.82 F-18	<0.150	0.0026 Q-42	<0.01	0.13	0.626	<0.01	1.55
	2/25/2021 DUP	27.2	2.14 F-18	< 0.163	<0.002	<0.01	0.127	0.616	<0.01	1.55
	5/4/2021	15.8	2.09 F-20	<0.151	<0.01	<0.05	0.108	0.458	<0.05	1.31
MW-5	6/15/2021	NS	NS	NS	<0.001	<0.005	0.142	0.655	NS	NS
	8/10/2021	15.2	2.59 F-13, F-20	<0.381	<0.00024 R-06	<0.0012 R-06	0.135	0.628	<0.001	1.36
	11/16/2021	13.9	2.15 F-18	<0.381	<0.000220 R-06	0.00116	0.197	0.610	<0.001	1.43
	11/16/2021 DUP	11.5	1.84 F-18	<0.381	<0.0002	0.00117	0.164	0.468	<0.001	1.19



Well Number	Sample Date	TPHg Gasoline (mg/L)	TPHd Diesel (mg/L)	TPHo Heavy Oil (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	Naphthalene (mg/L)
	2/25/2021	0.126	0.240 F-11 F-20	<0.154	<0.0002	<0.001	0.00093	<0.0015	<0.001	<0.002
	5/4/2021	0.208	0.158 F-11F-20	<0.152	<0.0002	<0.001	0.00359	<0.0015	<0.001	<0.002
MW-5D	8/10/2021	<0.100	0.470	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	11/16/2021	<0.100	<0.190	<0.381	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/25/2021	15.2	5.66 F-11 F-20	<0.154	0.230	0.0325	1.86	0.263	<0.01	0.371
	5/5/2021	11.2	5.83 F-20	<0.152	0.152	<0.05	1.75	0.186	<0.05	0.248
MW-6	8/11/2021	14.0	6.07 F-20	<0.377	0.175	0.0287	1.88	0.327	<0.001	0.384
	8/11/2021 DUP	13.8	6.36 F-20	<0.377	0.174	0.0289	1.89	0.312	<0.001	0.386
	11/17/2021	11.1	8.27	<0.388	0.181	0.0223	1.50	0.208	<0.001	0.281
	2/25/2021	<0.100	<0.0769	<0.154	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
NAVA / 7	5/4/2021	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
IVIVV-7	8/10/2021	<0.100	<0.190	<0.381	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
MW-7	11/16/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/25/2021	<0.100	<0.0833	<0.167	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
MW-8	5/4/2021	<0.100	<0.0762	<0.152	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
10100-8	8/10/2021	<0.100	<0.190	<0.381	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	11/16/2021	<0.100	<0.192	<0.385	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/25/2021	<0.100	<0.0833	<0.167	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
MW-8D	5/4/2021	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
IVIVV-8D	8/10/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	11/16/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/25/2021	<0.100	<0.0777	<0.155	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
MW-9	5/4/2021	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
IVIVV-9	8/11/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	11/16/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002



Well Number	Sample Date	TPHg Gasoline (mg/L)	TPHd Diesel (mg/L)	TPHo Heavy Oil (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	Naphthalene (mg/L)
	2/26/2021	<0.100	<0.0792	<0.158	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
NAVA 4.0	5/5/2021	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
MW-10	8/11/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	11/17/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/26/2021	3.42	0.152 F-11 F-20	<0.151	0.0044	0.00563	0.370	0.594	<0.001	0.0575
	5/5/2021	49.4	0.598 F-11F-20	<0.151	0.0250	0.620	4.54	10.8	<0.05	0.287
MW-11	5/5/2021 DUP	49.6	0.644 F-11F-20	<0.151	0.0245	0.620	4.53	10.6	<0.05	0.284
	8/11/2021	41.4	0.673 F-11 F-20	<0.381	0.00902	0.196	2.58	8.60	<0.001	<0.2
	11/17/2021	2.26	<0.189	<0.377	0.0218	0.00502	0.544	0.0218	<0.001	<0.02
Washington DOE MTCA Method A Cleanup Level		0.8	0.5	0.5	0.005	1	0.7	1	0.02	0.16

Notes:

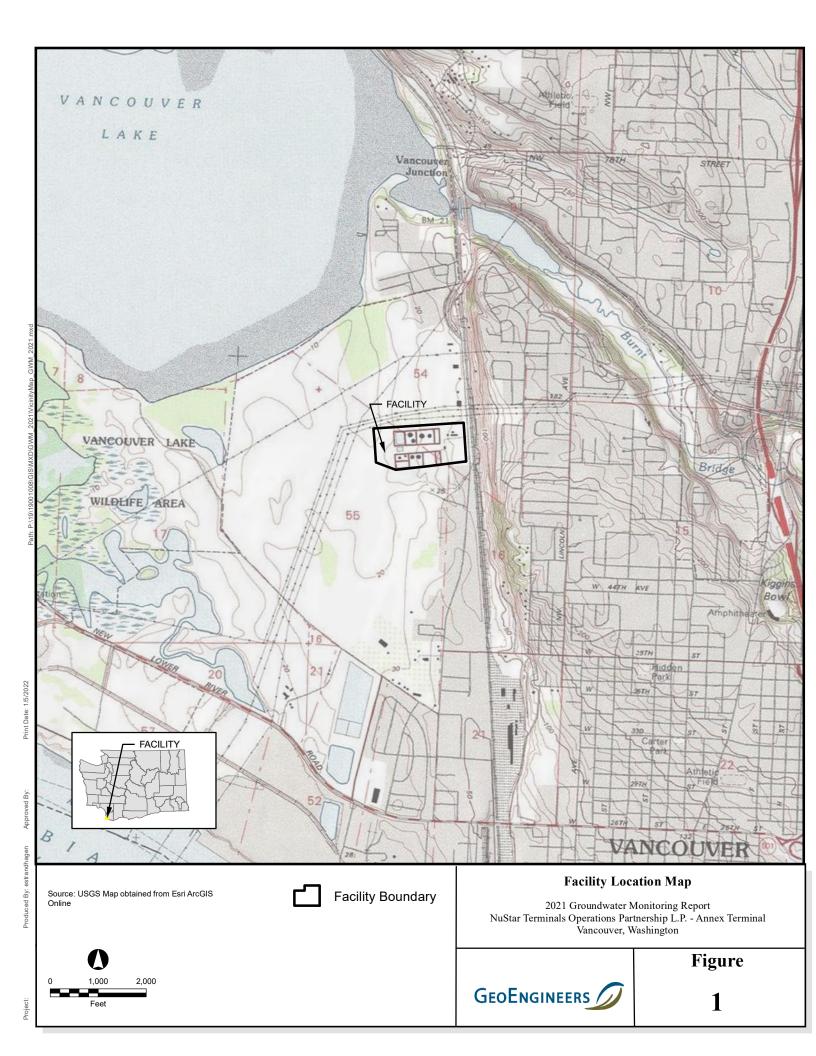
- 1. TPHg = Total petroleum hydrocarbons in gasoline carbon range by NW-TPHgx method.
- 2. TPHd = Total petroleum hydrocarbons in diesel carbon range by NW-TPHdx method.
- 3. TPHho = Total petroleum hydrocarbons ion heavy oil carbon range NW-TPHdx method.
- 4. **Bold** values represent concentration that exceeds MTCA Method A cleanup level.
- 5. mg/L (ppm) = Milligrams per liter (parts per million).
- 6. TPHg cleanup level dependent on presence of benzene in groundwater. Cleanup level = 0.800 mg/L if benzene is present and 1.00 mg/L if benzene is not present.
- 7. Washington DOE MTCA Method A cleanup level = Washington Department of Ecology Model Toxics Control Act Method A cleanup level.
- 8. < = Not detected at or above the specified laboratory method reporting limit (MRL).
- 9. bgs = below ground surface
- 10. -- = Sample not analyzed for constituent.

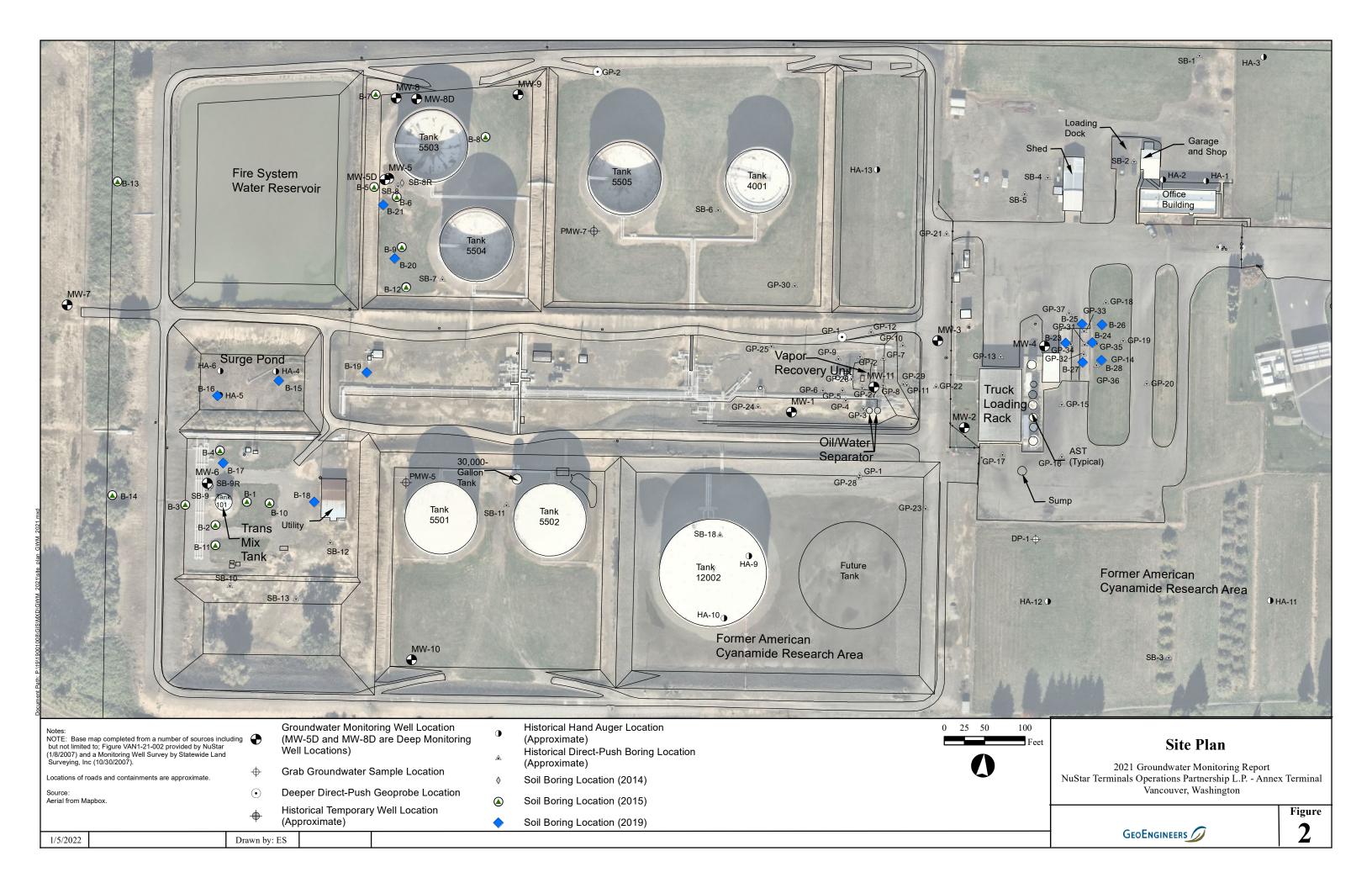
Notes on Quality Assurance/Quality Control Data Qualifiers

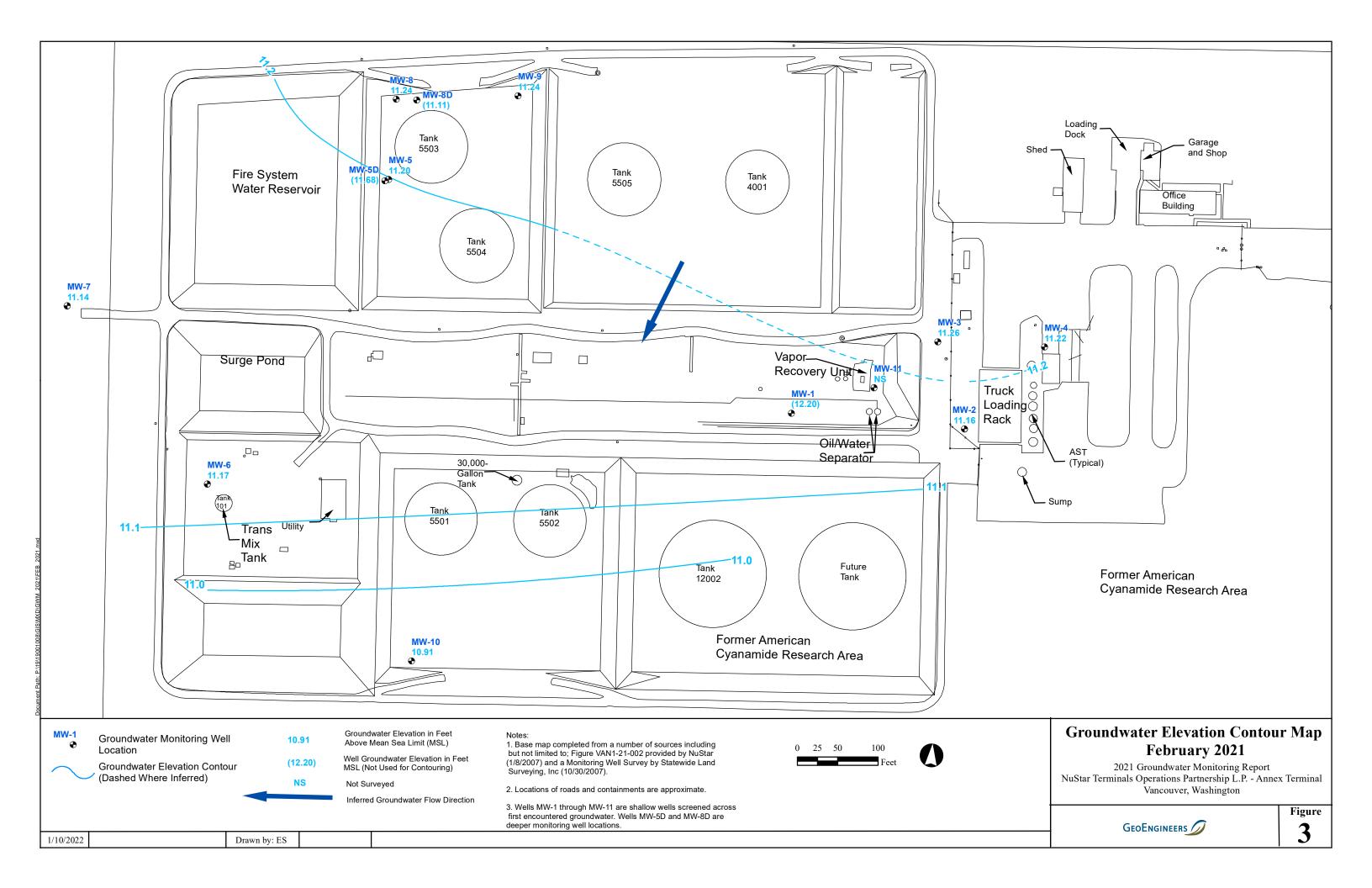
- A: Data flagged F-11 = The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.
- B: Data flagged F-13 = The chromatographic pattern does not resemble the fuel standard used for quantitation.
- C: Data flagged F-16 = Results for oil are estimated due to overlap from the reported diesel result.
- D: Data flagged F-18 = Result for Diesel (Diesel Range Organics, C12-C24) is due to overlap from Gasoline or a Gasoline Range product.
- E: Data flagged F-19 = Results are estimated due to the presence of multiple fuel products.
- F: Data flagged F-20 = Result for Diesel is estimated due to overlap from Gasoline Range Organics or other VOCs.
- R: Data flagged R = The relative percent difference between the sample and duplicate sample is above 30%.
- Q: Data flagged Q = Duplicate analysis was performed on this sample. Relative percent difference for this analyte is outside laboratory control limits.

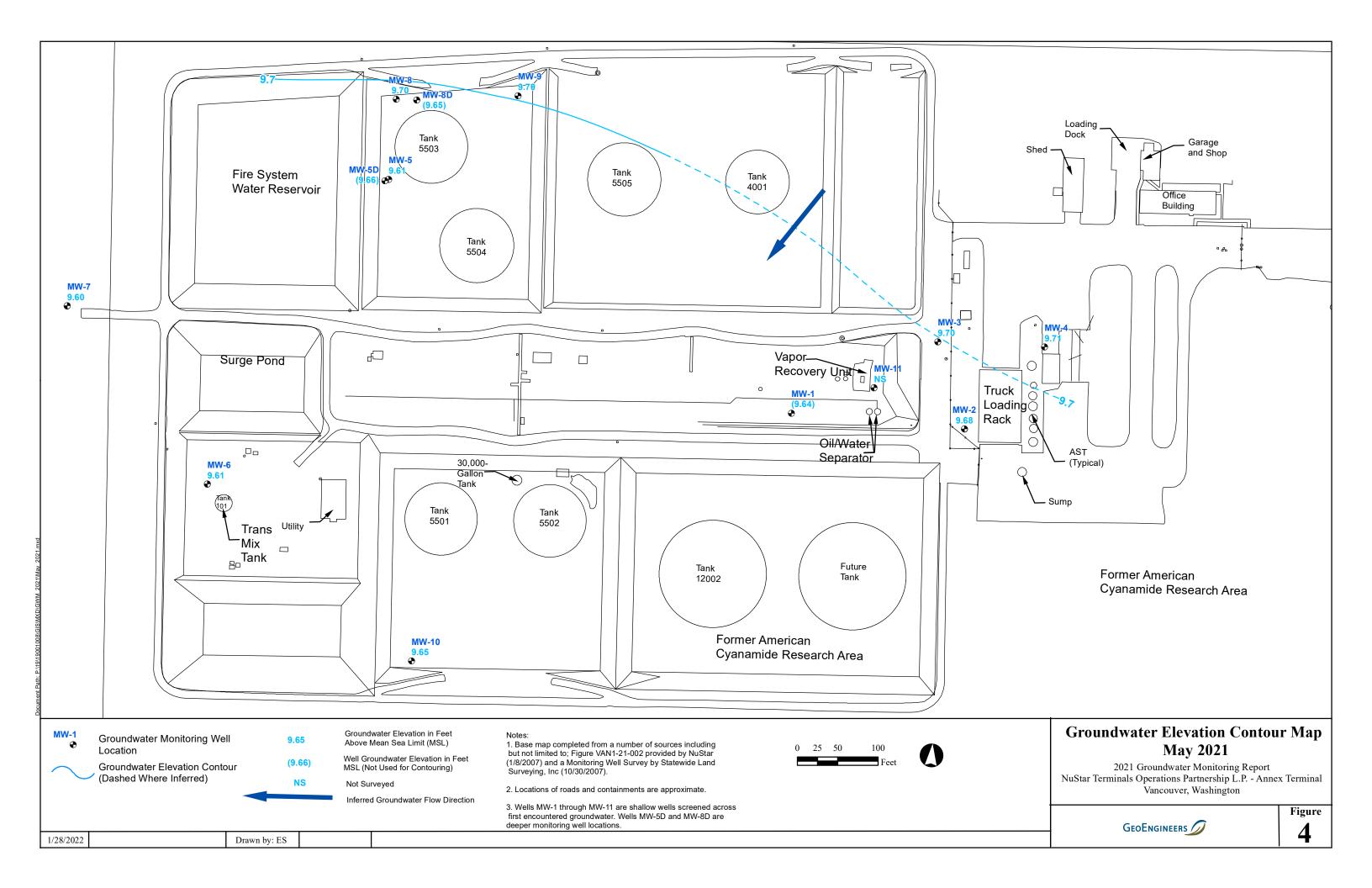


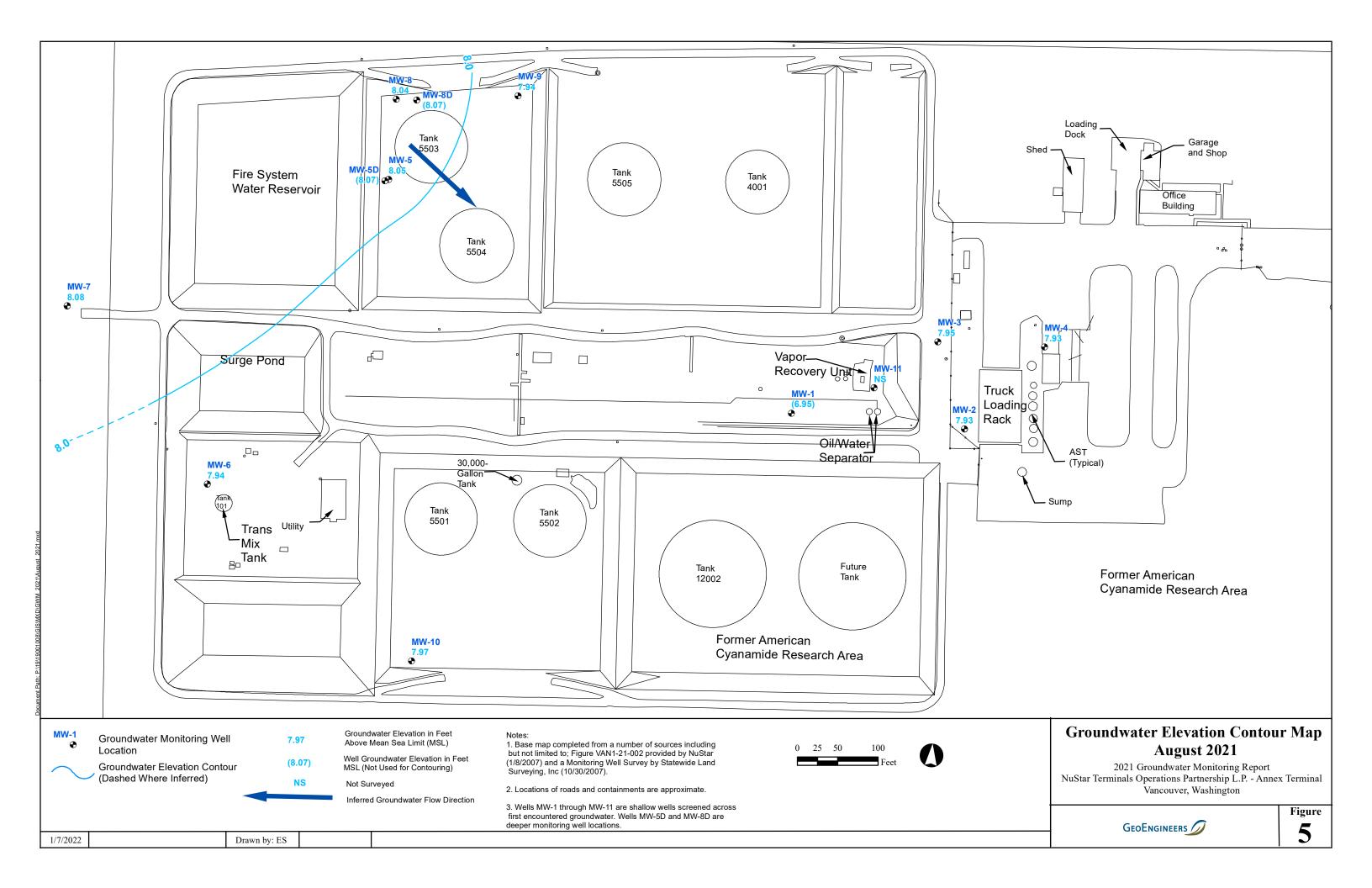


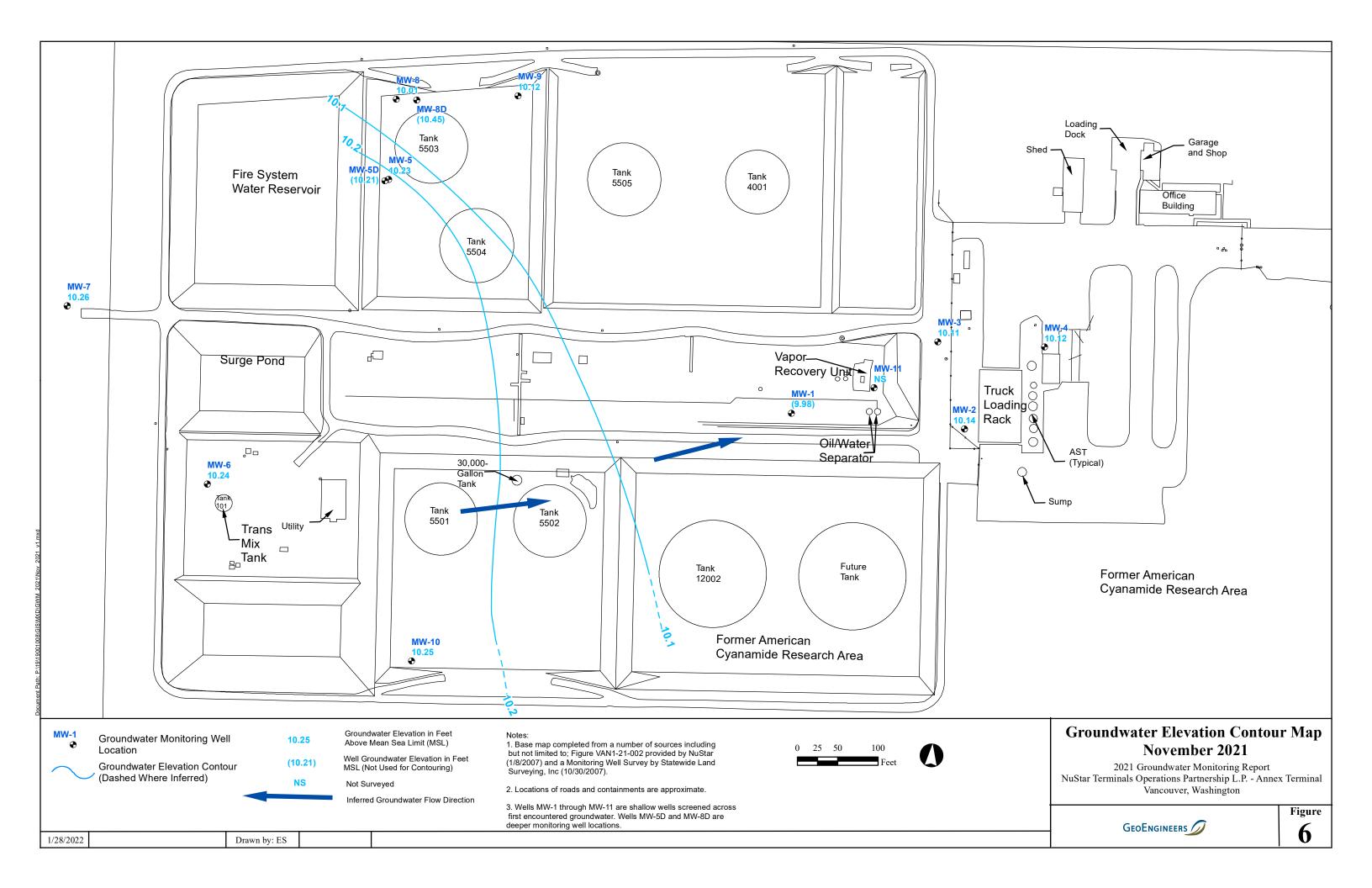


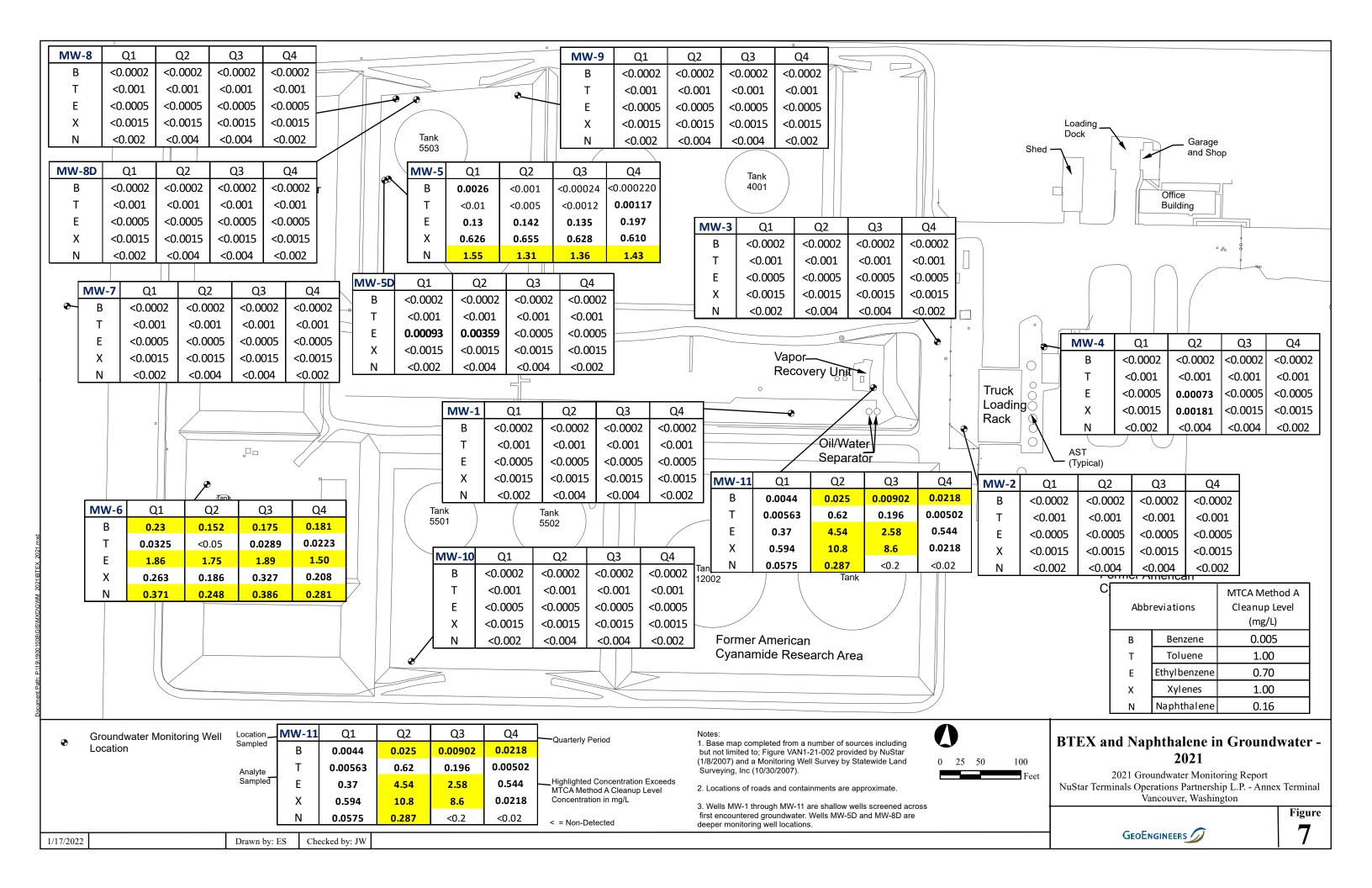


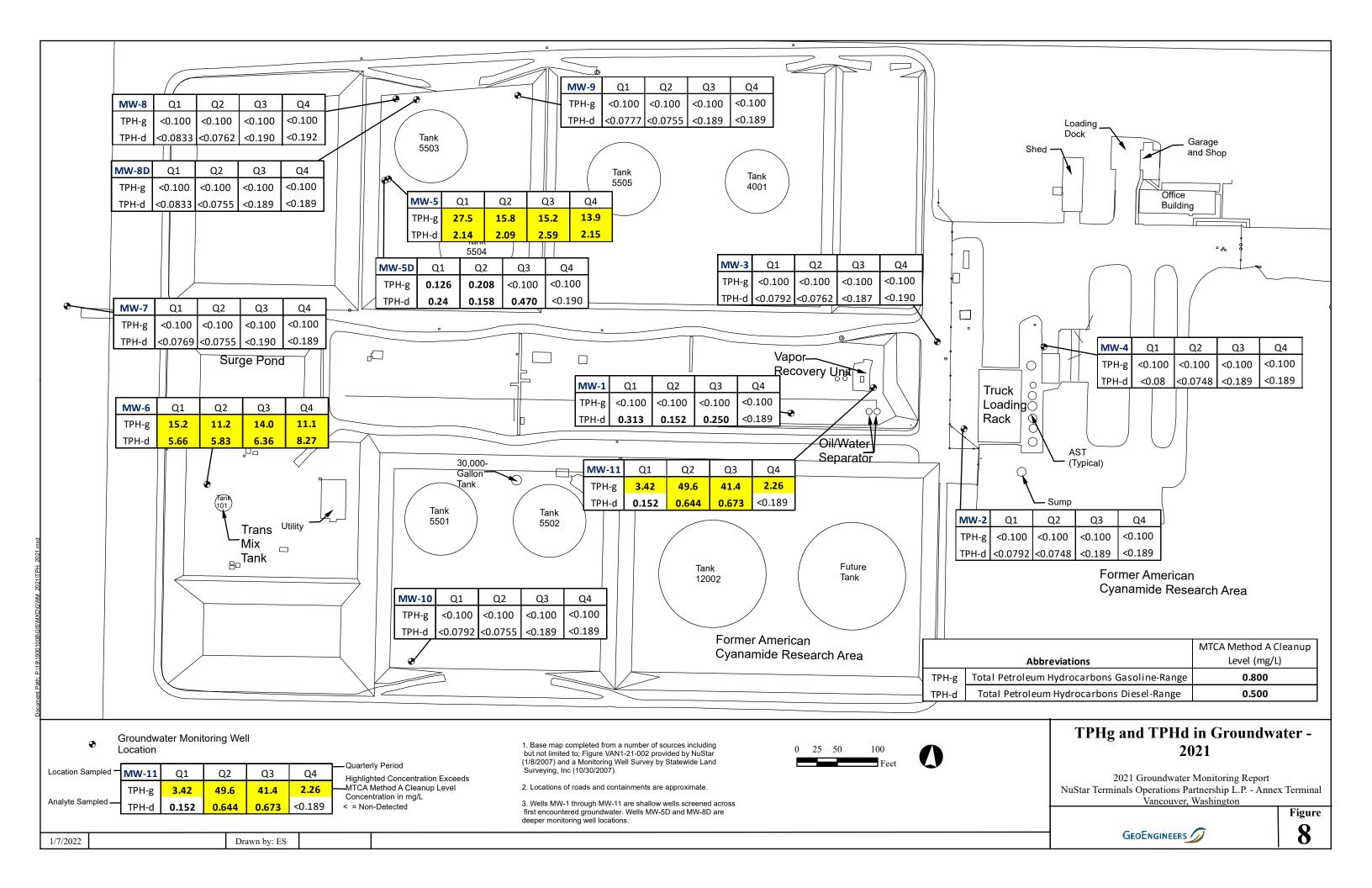














APPENDIX AStandard Operating Procedures

SOP Number: 17.3

Date: July 25, 2017

Revision Number: 0

Page: 1 of 4

FIELD NOTES AND DOCUMENTATION

1. PURPOSE AND SCOPE

This Standard Operating Procedure (SOP) describes the methods for documenting environmental field activities. The purpose of establishing SOPs for field notes and documentation is to establish a consistent method and format for the use and control of documentation generated during daily field activities. Field notes and records are intended to provide sufficient information that can be used to recreate the field activities, as well as, the collection of environmental data. Information placed in these documents and/or records shall be factual, detailed and objective.

2. EQUIPMENT AND MATERIALS

The following materials are necessary for this procedure:

- Bound field books;
- Black waterproof and/or indelible ink pens; and
- Field forms.

3. METHODOLOGY

This SOP primarily includes the documentation procedures for the field logbooks. However, procedures discussed in this SOP are applicable to all other types of field documentation collected, and should be universal in application. Details of other field records and forms (e.g. boring logs, sample labels, chain of custody records, and waste containment labels are discussed in the specific SOP associated with that field activity (e.g. borehole drilling, sample handling, investigative derived waste), and not covered in detail in this SOP.

Field Logbooks:

Field personnel will keep accurate written records of their daily activities in a bound logbook that will be sufficient to recreate the project field activities without reliance on memory. This information will be recorded in chronological order. All entries will be legible, written in black waterproof or indelible ink, and contain accurate and inclusive documentation of field activities, including field data observations, deviations from project plans, problems encountered, and actions taken to solve the problem. Each page of the field logbook will be consecutively numbered, signed and dated by the field author(s). Pages should not be removed for any reason.

There should be no blank lines on a page. A single blank line or a partial blank line (such as at the end of a paragraph) should be lined to the end of the page. If only part of a page is used, the remainder of the page should have an "X" drawn across it.

In addition to documenting field activities, field logbooks will include the following:

- Date and time of activities,
- Site location,
- Purpose of site visit,
- Site and weather conditions.

SOP Number: 17.3

Date: July 25, 2017

Revision Number: 0

Page: 2 of 4

FIELD NOTES AND DOCUMENTATION

- Personnel present, including sampling crew, facility/site personnel and representatives (including site arrival and departure times),
- Subcontractors present,
- Regulatory agencies and their representatives (including phone numbers, site arrival and departure times),
- · Level of health and safety protection,
- Sampling methodology and information,
- Sample locations (sketches are helpful),
- Source of sample(s), sample identifications, sample container types and preservatives used, and lot numbers for bottles and preservatives (if applicable and if not recorded on other forms or in a sample control logbook),
- · A chronological description of the field observations and events,
- Specific considerations associated with sample acquisition (e.g., field parameter measurements, field screening data, HASP monitoring data, etc.) (if not recorded on another form),
- Wastes generated, containment units (including volumes, matrix, etc), and storage location (if not recorded on another form),
- Field quality assurance/quality control samples collection, preparation, and origin (if not recorded on other forms or in a sample control logbook),
- The manufacturer, model and serial number of field instruments (e.g., PID, water quality, etc.) shall be recorded, if not using a calibration form. Also, source lot # and expiration date of standard shall be recorded if calibrated in the field.
- Well construction materials, water source(s), and other materials used on-site (if not recorded on another form).
- Sample conditions that could potentially affect the sample results,
- If deviating from plan, clearly state the reason(s) for deviation,
- Persons contacted and topics discussed,
- Documentation of exclusion zone set-up and location,
- Documentation of decontamination procedures, and
- Daily Summary.

Field situations vary widely. No general rules can specify the extent of information that must be entered in a logbook. However, records should contain sufficient information so that someone can reconstruct the field activity without relying on the collector's memory. Language used shall be objective, factual, and free of personal opinions. Hypothesis for observed phenomena may be

SOP Number: 17.3

Date: July 25, 2017

Revision Number: 0

Page: 3 of 4

FIELD NOTES AND DOCUMENTATION

recorded, however, they must be clearly indicated as such and only relate to the subject observation.

Logbooks will be assigned to a specific sampling team. If it is necessary to transfer the log book to alternative team member during field work, the person relinquishing the log book will sign and date the log book at the time of transfer.

Field logbooks should consist of a bound book, in which the insertion or removal of pages will be visibly noticeable after the logbook has been assembled. Logbooks can be prepared by gluing or laminating pages together either at the left side or top of the page. If inclement weather is expected, logbooks may have plastic laminated front and back covers to protect the interior pages, and should not be broken apart for coping. Loose-leaf binding, such as comb binding is not considered hard binding. To maintain the integrity of the logbook, pages should be consecutively numbered prior to use. Logbook pages can be of any format, and may include blank pages for recording or field forms that are used for specific tasks. As an alternative, commercially bound and consecutive page numbered field logbooks may also be used.

Additional Field Forms/Records:

Additional field records may be required for each specific field event. The use of these records and examples are described in other SOPs specific for the activity (e.g. Borehole Logging SOP, Groundwater Sampling and Purging SOP, etc.). These other records may include:

- · Borehole Logs during drilling,
- Well Construction and Development records,
- Groundwater Purge and Sample Collection Records,
- · Water Level Monitoring,
- Investigation Derived Waste (IDW) Tracking Records,
- Instrument Calibration Records, and
- Health and Safety Monitoring Records and sign-off sheets.

Prior to field activities, the field sampling personnel will coordinate with the Project Manager, or designee, to determine which additional records will be required for the specific field task. These additional records will be maintained in a field file or a three-ring notebook throughout the duration of the field activities, or included in a specially prepared site-specific notebook. If the field notebook is being created, the forms may be part of the laminated book.

Corrections:

If an error is made in the field, logbook corrections will be made by drawing a single line through the error, entering the correct information, and initialing and dating the change. Materials that obliterate the original information, such as correction fluids and/or mark-out tapes, are prohibited. All corrections will be initialed and dated. Some projects require that a brief reason for the change must also be added where the correction was made. Ask the Project Manager, if this requirement is necessary.

FIELD NOTES AND DOCUMENTATION

SOP Number: 17.3

Date: July 25, 2017

Revision Number: 0

Page: 4 of 4

Documentation Reviews:

Periodically, the Project Manager, or designee, will review the field logbooks pertaining to the activities under their supervision. The elements of this review will include technical content, consistency, and compliance with the project plans and SOPs. Discrepancies and errors identified during the review should be resolved between reviewer and author of the field documentation. Corrections and/or additions of information shall be initialed and dated by the field author or reviewer.

SOP Number: 17.5

Date: July 25, 2017

Revision Number: 0

Page: 1 of 2

Low Flow Groundwater Sampling

1. PURPOSE AND SCOPE

The objective of this standard operating procedure (SOP) is to define the methods and requirements for collection of groundwater samples from monitoring wells applying low flow protocols. Low flow sampling is a technique for collecting samples that does not require the removal of large volumes of water and therefore does not overly agitate the water, suspend particles, or potentially aspirate VOCs. Typical flow rates for low flow sampling should range from 0.1 L/min to 0.5 L/min depending on site characteristics. The groundwater monitoring activities will consist of measuring water levels, purging and sampling groundwater, and measuring groundwater field parameters. This procedure is applicable during all Cascadia Associates, LLC low flow groundwater sampling activities.

2. EQUIPMENT AND MATERIALS

The following materials are necessary for this procedure:

- Traffic cones, tools, keys, and buckets/drums;
- Water quality meter with calibration solutions (record daily calibration/calibration check in field notes);
- Sampling equipment (water level indicator, pump, tubing);
- Laboratory-supplied sample containers (Consult the project-specific sampling and analysis plan (SAP) for sampling requirements);
- Field documentation materials;
- · Decontamination materials; and
- Personal protective equipment (consult the site-specific Health and Safety Plan).

3. METHODOLOGY

Water Levels:

Water levels in the wells will be measured and recorded for the purpose of determining groundwater elevations and gradient. The wells will be opened and the water level allowed to equilibrate before the measurements are taken. Measurements of the depth to water will be made to the nearest 0.01 foot using an electronic water level indicator.

Purging:

Purge using low-flow sampling equipment (e.g., peristaltic or bladder pump) at a rate no greater than the recharge rate of the groundwater to prevent water table drawdown. Unless specified otherwise in the project-specific SAP the sample tubing/pump will be lowered to the middle of the screened interval. Groundwater field parameters (pH, electrical conductivity, and temperature) will be measured using a water quality meter and flow cell connected to the discharge tubing of the sample pump to assess the effectiveness of purging. Purging will be considered complete when the water quality parameters (i.e., pH, temperature, and specific conductance) stabilize within 10 percent for three consecutive 3-minute intervals. Consult the

STANDARD OPERATING PROCEDURE

SOP Number: 17.5

Date: July 25, 2017

Revision Number: 0

Page: 2 of 2

Low Flow Groundwater Sampling

project-specific SAP for additional parameters and stabilization criteria. Purge water will be placed in Department of Transportation (DOT) approved drums.

Sample Collection:

After the purging of each well is complete, collect groundwater samples for chemical analyses using the same pump used for the well purging.

Low Yield Sampling Procedure:

If a well pumps dry during purging discontinue measurement of water quality parameters. Collect groundwater samples once the water level recovers to 90 percent of the pre-purge water column. Contact project manager in the event of slow recharge conditions. Always collect samples for VOC analysis as soon after recharge as possible.

APPENDIX BHistorical Groundwater Elevation Data

Groundwater Elevation Data

NuStar Terminals Operations Partnership, L.P. – Annex Terminal

Vancouver, Washington

Well Number	Date of Measurement	Top of Casing Elevation (feet above MSL)	Screened Interval (feet bgs)	Depth To SPH (feet)	Depth to Groundwater (feet)	SPH Thickness (feet)	Groundwater Elevation (feet)
	05/14/02	NS		_	16.00		NS
	05/25/07	26.66		-	14.92		11.74
	08/24/07	26.66			18.67		7.99
	11/26/07	26.66		_	17.91		8.75
	02/27/08	26.66		_	16.92		9.74
	03/30/10	26.66		_	17.09		9.57
	09/01/10	26.66		_	19.19		7.47
	12/16/14	26.66		_	16.19		10.47
	03/25/15	26.66		_	15.25		11.41
	06/24/15	26.66		_	18.43		8.23
	09/15/15	26.66		_	19.05		7.61
	11/30/17	26.72			16.16		10.56
	02/28/18	26.72	14.5 - 24.5	_	15.07		11.65
MW-1	05/29/18	26.72		_	8.43		18.29
14144 ±	08/30/18	26.72		_	18.37		8.35
	02/18/19	26.72		_	16.51		10.21
	05/20/19			_	13.22		13.50
	08/28/19	26.72		_	19.04		7.68
	11/18/19	26.72		_	18.64		8.08
	02/24/20	26.72		_	16.26		10.46
	06/01/20	26.72		_	12.97		13.75
	08/17/20	26.72		-	18.19		8.53
	11/16/20	26.72		_	17.59		9.13
	02/25/21	26.72		_	14.52		12.20
	05/04/21	26.72		_	17.08		9.64
				_			
	08/10/21	26.72		_	19.77		6.95
	11/16/21	26.72			16.74		9.98
	05/14/02	NS		-	27.46		NS
	05/25/07	38.21		-	26.46		11.75
	08/24/07	38.21		-	30.17		8.04
	11/26/07	38.21		-	29.42		8.79
	02/27/08	38.21		-	28.50		9.71
	03/30/10	38.21		-	28.66		9.55
	09/01/10	38.21			30.74	-	7.47
	12/16/14	38.21			27.77	-	10.44
	03/25/15	38.21			26.79	-	11.42
MW-2	06/24/15	38.21		-	30.05	-	8.16
	09/15/15	38.21		-	30.65		7.56
	11/30/17	38.27	20 - 35	-	27.66		10.61
	02/28/18	38.27	20-33	-	26.70		11.57
	05/29/18	38.27		-	19.96	-	18.31
	08/30/18	38.27		-	29.94	-	8.33
	02/18/19	38.27		-	28.04	-	10.23
	05/20/19	38.27		-	24.73	-	13.54
	08/28/19	38.27		-	30.63		7.64
	11/18/19	38.27			30.16		8.11
	02/24/20	38.27 38.27	-	27.91		10.36	
	06/01/20	38.27	88.27	-	24.51		13.76
	08/17/20	38.27		_	29.81	_	8.46
	11/16/20	38.27			29.01	_	9.26
	02/25/21	38.27			27.11		11.16



Groundwater Elevation Data

NuStar Terminals Operations Partnership, L.P. – Annex Terminal

Vancouver, Washington

Well Number	Date of Measurement	Top of Casing Elevation (feet above MSL)	Screened Interval (feet bgs)	Depth To SPH (feet)	Depth to Groundwater (feet)	SPH Thickness (feet)	Groundwater Elevation (feet)
MW-2	05/04/21	38.27		-	28.59	_	9.68
(cont'd)	08/10/21	38.27		-	30.34		7.93
(conta)	11/16/21	38.27			28.13	-	10.14
	05/14/02	NS			28.15		NS
	05/25/07	39.11		-	27.17	-	11.94
	08/24/07	39.11		-	31.04	-	8.07
	11/06/07	39.11		-	30.36	-	8.75
	02/27/08	39.11		-	28.71	-	10.40
	03/30/10	39.11		-	29.55	-	9.56
	09/01/10	39.11		-	31.65	-	7.46
	12/16/14	39.11		-	28.54	-	10.57
	03/25/15	39.11		-	27.72		11.39
	06/24/15	39.11		-	30.85		8.26
	09/15/15	39.11		-	31.52		7.59
	11/30/17	39.17		-	28.61		10.56
	02/28/18	39.17		-	27.18		11.99
MW-3	05/29/18	39.17	24.5 - 34.5		20.91		18.26
	08/30/18	39.17			30.80		8.37
	02/18/19	39.17			28.94		10.23
	05/20/19	39.17			26.03		13.14
	08/28/19	39.17			31.51		7.66
	11/18/19	39.17			31.06		8.11
	02/24/20	39.17			28.76		10.41
	06/01/20	39.17			25.73		13.44
	08/17/20	39.17			30.53		8.64
	11/16/20	39.17			29.88		9.29
	02/25/21	39.17		-	27.91		11.26
	05/04/21	39.17		-	29.47		9.70
	08/10/21	39.17		-	31.22		7.95
	11/16/21	39.17			29.06		10.11



Groundwater Elevation Data

NuStar Terminals Operations Partnership, L.P. – Annex Terminal

Vancouver, Washington

Well Number	Date of Measurement	Top of Casing Elevation (feet above MSL)	Screened Interval (feet bgs)	Depth To SPH (feet)	Depth to Groundwater (feet)	SPH Thickness (feet)	Groundwater Elevation (feet)
	05/14/02	NS		-	29.40		NS
	05/25/07	40.17		_	28.35		11.82
	08/24/07	40.17		-	32.12		8.05
	11/06/07	40.17		_	31.40		8.77
	02/27/08	40.17		_	30.40		9.77
	03/30/10	40.17		-	30.77		9.40
	09/01/10	40.17		-	32.62		7.55
	12/16/14	40.17	20 - 35	-	29.63		10.54
	03/25/15	40.17		-	28.76		11.41
	06/24/15	40.17		-	31.92		8.25
	09/15/15	40.17			32.61		7.56
	11/30/17	40.23		_	29.59		10.64
	02/28/18	40.23		_	28.60		11.63
MW-4	05/29/18	40.23		_	21.88		18.35
	08/30/18	40.23		_	31.86		8.37
	02/18/19	40.23		_	30.04		10.19
	05/20/19	40.23		_	26.74		13.49
	08/28/19	40.23		_	32.59		7.64
	11/18/19	40.23		_	32.09		8.14
	02/24/20	40.23			29.77		10.46
	06/01/20	40.23			26.46		13.77
	08/17/20	40.23			31.78		8.45
	11/16/20	40.23			31.09		9.14
	02/25/21	40.23			29.01		11.22
	05/04/21	40.23			30.52		9.71
	08/10/21	40.23			32.30		7.93
	11/16/21	40.23		_	30.11		10.12
	12/16/14	27.03			16.60		10.43
	03/25/15	27.03			15.37		11.66
	06/24/15	27.03			18.89		8.14
	09/15/15	27.03			19.35		7.68
	10/23/17	27.03			17.82		9.21
	11/30/17	27.03		_	16.39		10.64
	02/28/18	27.03		_	15.41		11.62
	05/29/18	27.03		_	8.68		18.35
	08/30/18	27.03		_	18.55		8.48
		27.03		-	16.70		10.33
MW-5	02/18/19 05/20/19	27.03	10.05	-	13.19		13.84
C-VVIVI	03/20/19	27.03	10 - 25	-	19.31		7.72
	11/18/19			_	18.92		8.11
		27.03		_	17.00		10.03
	02/24/20 06/01/20	27.03		_			13.82
		27.03		_	13.21	-	
	08/17/20	27.03		-	18.39		8.64
	11/16/20	27.03		_	17.48		9.55
	02/25/21	27.03		-	15.83		11.20
	05/04/21	27.03		-	17.42		9.61
	08/10/21	27.03		-	18.98		8.05
	11/16/21	27.03		-	16.80		10.23



Groundwater Elevation Data

NuStar Terminals Operations Partnership, L.P. – Annex Terminal

Vancouver, Washington

Well Number	Date of Measurement	Top of Casing Elevation (feet above MSL)	Screened Interval (feet bgs)	Depth To SPH (feet)	Depth to Groundwater (feet)	SPH Thickness (feet)	Groundwater Elevation (feet)
	10/24/17	26.71			17.50	-	9.21
	11/30/17	26.71			16.21		10.50
	02/28/18	26.71			15.20		11.51
	05/29/18	26.71			8.37	-	18.34
	08/30/18	26.71		-	18.51	-	8.20
	02/18/19	26.71			16.43	-	10.28
	05/20/19	26.71			12.72	-	13.99
	08/28/19	26.71		-	19.01	-	7.70
MW-5D	11/18/19	26.71	35 - 45	-	18.62	-	8.09
	02/24/20	26.71			16.62		10.09
	06/01/20	26.71		-	12.63		14.08
	08/17/20	26.71		-	18.13		8.58
	11/16/20	26.71		-	17.02		9.69
	02/25/21	26.71		-	15.63		11.08
	05/04/21	26.71		-	17.05		9.66
	08/10/21	26.71		-	18.64		8.07
	11/16/21	26.71		-	16.50	-	10.21
	12/16/14	27.33			16.93		10.40
	03/25/15	27.33			15.73		11.60
	06/24/15	27.33			19.34		7.99
	09/15/15	27.33			19.70		7.63
	10/24/17	27.33		-	18.12		9.21
	11/30/17	27.33		-	16.71		10.62
	02/28/18	27.33			15.77		11.56
	05/29/18	27.33			9.03		18.30
	08/30/18	27.33			18.99		8.34
	02/18/19	27.33			16.99		10.34
MW-6	05/20/19	27.33	10 - 25		13.56		13.77
	08/28/19	27.33			19.66		7.67
	11/18/19	27.33			19.31		8.02
	02/24/20	27.33			17.14		10.19
	06/01/20	27.33			13.45		13.88
	08/17/20	27.33			18.77		8.56
	11/16/20	27.33		-	17.78	-	9.55
	02/25/21	27.33			16.16		11.17
	05/04/21	27.33			17.72		9.61
	08/10/21	27.33			19.39	-	7.94
	11/16/21	27.33			17.09		10.24



Groundwater Elevation Data

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Vancouver, Washington

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	11/30/2017	21.67			11.12		10.55
	2/28/2018	21.67			10.19		11.48
	5/29/2018	21.67			3.4		18.27
	08/30/18	21.67			13.26		8.41
	02/18/19	21.67			11.41		10.26
	05/20/19	21.67			7.73		13.94
	08/28/19	21.67			13.99		7.68
	11/18/19	21.67			13.76		7.91
MW-7	02/24/20	21.67	10 - 25		11.49		10.18
	06/01/20	21.67		-	7.10		14.57
	08/17/20	21.67		_	13.11	_	8.56
	11/16/20	21.67			12.01	_	9.66
	02/25/21	21.67			10.53	_	11.14
	05/04/21	21.67		-	12.07		9.60
	08/10/21	21.67		-	13.59		8.08
	11/16/21	21.67			11.41	-	10.26
	11/30/2017	27.68		-	16.91		10.77
	2/28/2017	27.68			16.01	-	11.67
	5/29/2018	27.68		-	9.31	-	18.37
	08/30/18	27.68		-	19.22		8.46
	02/18/19	27.68			17.28		10.40
	05/20/19	27.68			13.93		13.75
	08/28/19	27.68			19.94		7.74
1414.0	11/18/19	27.68	10 - 25		19.57		8.11
MW-8	02/24/20	27.68			17.38	-	10.30
	06/01/20	27.68		-	13.82	-	13.86
	08/17/20	27.68		-	19.04	-	8.64
	11/16/20	27.68		-	18.11	_	9.57
	02/25/21	27.68		-	16.44	_	11.24
	05/04/21	27.68		-	17.98	_	9.70
	08/10/21	27.68			19.64	_	8.04
	11/16/21	27.68			17.67	-	10.01
	11/30/2017	27.87		-	17.36	-	10.51
	2/28/2018	27.87			16.35		11.52
	5/29/2018	27.87			9.53		18.34
	08/30/18	27.87		-	19.41	-	8.46
	02/18/19	27.87		-	17.59	_	10.28
	05/20/19	27.87		-	13.9	_	13.97
	08/28/19	27.87		-	20.21	-	7.66
	11/18/19	27.87		-	19.80	-	8.07
MW-8D	02/24/20	27.87	35 - 45		17.79		10.08
	06/01/20	27.87			13.80		14.07
	08/17/20	27.87			19.29	-	8.58
	11/16/20	27.87			18.22	-	9.65
	02/25/21	27.87			16.76	-	11.11
	05/04/21	27.87			18.24	-	9.63
	08/10/21	27.87			19.80	-	8.07
	11/16/21	27.87		_	17.42		10.45



Groundwater Elevation Data

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Vancouver, Washington

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	11/30/2017	29.39		-	18.78		10.61
	2/28/2018	29.39		-	17.79		11.60
	5/29/2018	29.39			11.09		18.30
	08/30/18	29.39			21.04		8.35
	02/18/19	29.39			19.13		10.26
	05/20/19	29.39			14.63	-	14.76
	08/28/19	29.39			21.74	-	7.65
MW-9	11/18/19	29.39	10 - 25		21.28		8.11
IVIVV-9	02/24/20	29.39	10 - 25	-	21.08	-	8.31
	06/01/20	29.39		-	15.53		13.86
	08/17/20	29.39		-	20.89	-	8.50
	11/16/20	29.39		-	20.07		9.32
	02/25/21	29.39		-	18.15	-	11.24
	05/04/21	29.39			19.69		9.70
	08/10/21	29.39			21.45		7.94
	11/16/21	29.39		-	19.27		10.12
	11/30/2017	28.71		-	18.16	-	10.55
	2/28/2018	28.71			17.19		11.52
	5/29/2018	28.71	10 - 25	-	10.38	-	18.33
	08/30/18	28.71		-	20.3	-	8.41
	02/18/19	28.71		-	18.42		10.29
	05/20/19	28.71		-	14.76		13.95
	08/28/19	28.71		-	21.02		7.69
MW-10	11/18/19	28.71			20.67		8.04
	02/24/20	28.71			18.57		10.14
	06/01/20	28.71			14.68	_	14.03
	08/17/20	28.71			20.17	-	8.54
	11/16/20	28.71 28.71			19.09	-	9.62 10.91
	02/25/21 05/04/21	28.71		_	17.8 19.06		
	08/10/21	28.71		_	20.74	_	9.65 7.97
	11/16/21	28.71			18.48	_	10.23
	02/18/19	NS		_	17.27		NS
	05/20/19	NS		_	14.32		NS
	08/28/19	NS		_	19.55		NS
	11/18/19	NS		_	19.36	_	NS
	02/24/20	NS		_	16.28		NS
	06/01/20	NS		_	13.95	_	NS
MW-11	08/17/20	NS	10 - 25	_	18.58		NS
	11/16/20	NS			18.70		NS
	02/25/21	NS			15.91		NS
	05/04/21	NS			17.79		NS
	08/10/21	NS			19.31		NS
	11/16/21	NS			17.75		NS

Notes:

- 1. Survey elevations determined by Bluedot Group surveying, November 2017.
- 2. Reference elevation (i.e., top of casing) relative to NAVD 88, feet above mean sea level.
- 3. feet above MSL = feet above mean sea level.
- 4. NS = Not surveyed
- 5. -- = SPH not measured/observed.
- 6. bgs = below ground surface.

File No. 0060-001-005



APPENDIX C Field Gauging and Sampling Forms

Project: 1021 GWM
Client: Nustar Vanny
Sampler: LW

Date: 2/2/2/ Permit:

Well ID:	Time:	DTP:	D. V:	Product Thickness:	Notes:	
MW-	7 823		10.53	1	Ma	
MW-8!	829		(6.76		- 1	
Mur			1444	•		•
MW-5	833		15.83	- 4.	Jan 1	
MW-5		b	15.63			
MW-	9 838	-	18.15			
MN-4	846	_	29.01		12 to the same	
WM-5			27.11	-		
Wh =3		2	27.91	-		
MM-1	900	To the	17.80	Tal.		
WW-I	1 904	_	15.91	_		
mh-	907	-	14.52	-		
MW-1	910	-	16.16			
	1 4				The state of the s	
	Ass.			* S		
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		7. 2				
	3	440	10			
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				Well ID:	MW-			Job Number:			
43 C	750	adia	1. 1	Client:	Nustar	UANN	έ¥	Date:	2/25/21		
Acc.	ociate	s, LLC		Project:		GWM		Sampler:	LW	<i></i>	
- Mar 133	ocidio	3, 220		Weather:			37°/-	Time In/Out:	935/	1015	
					WELL						
Monument Type:		Flust(-mount/	Stick-up		Well Diamete	r:	J" Depth to Free				
		Other:			Well Depth:		_	Free Product	Thickness:		
Monument Condition	on: 🕝	good		Depth to Wate		er:	14.81	Water Column Length:		~	
Well Cap Lock Prese	ent:	Yes No			Screened Inte	erval:	35-45	Purge Volume	:		
Comments:											
Purge Volume = (Wa											
Water height multip	oliers (ga	al):	1-inch well =	0.041	2-inch = 0.16		4-inch = 0.65	3	1 gal = 3.785 l	iters	
D Marthaul		0			PURGIN		110	11 6-0	/ /		
Purge Method:		Pea	1		Pump Intake		100	ff bgs	(Mi)	/ DEDICATED	
Sampling Method:		رس ن Cumulative	+100		Tubing Mater	lai & Type:	(01)	<u> </u>	NEVV	/ DEDICATED	
Time Pu	lume rged ters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks	
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV		
945			14.81	0.2	8.64	12.42	165	13.13	191	clear	
948			16.81	1,	8.25	12.20	143	4.74	193	1	
951	1 4		1		7.73	11.96	167	2.76	201		
954					7.63	11.93	1109	2.37		 	
957					7.44	11.87	173	2.00	209	 	
1000					7.28	11.89	175	1,68	215	1	
1003			1	1	7.02	11.90	175	1.42	224	1	
1006					6.75	11.83	175	1.24	236		
1009					6.70	11.81	175	1.21	238		
10/2				1	6.65	7	175	1.17	242	1	
70/5					(0.0)	11. //	, , ,	1 / / /	010		
0.030									- 4		
	-									0	
									-		
		1									
		_			PURGIN						
Sample ID:		MW-		Sampling Flo		0.7	<u> </u>	Analytical Lab		Apex	
Sample Time:	F :	1	00	Final Depth t		Field File	S /	Did Well Dew		NO	
No. of Containers/T	ype	+	rvative	Analysis/Me	- <i>1</i> .		Filter Size	MS/MSD	Duplicate ID		
3×40		140		Voc	s/GX	N					
2 xil		H	1		2×	N					
											
											
-			MATERIAL TOTAL AL	N(OTES/ADDITIO	NAL COMMEN	TS	1/4		1	
						P'- ,-	7				

-M - C			Well ID: MW - %				Job Number:		
A CUSC	adia		Client:	Nusta	R Jan-	1670	Date:		
Associate	es IIC		Project:	142	1 GW	M	Sampler:	Lu)
/ issociality	33, 220		Weather:	cloudy	13801	Time In/Out:		1015	11000
				WELL		4 -	Y		
Monument Type:	Flush-mount/	Stick-up	- selfenter	Well Diamete	r:	2"	Depth to Free	Product:	
,,,	Other:	75	500	Well Depth:			Free Product		
Monument Condition:	376	od	Depth to Wate		er:	16.46	Water Column	n Length:	
Well Cap Lock Present:	Yes No	de	1.1	Screened Inte	erval:		Purge Volume	:	~
Comments:			2.0			17%	1 1 1 12	J 78	
Purge Volume = (Water He	ight) X (Multip	lier) X (# Casin	g Volumes)	100					
Water height multipliers (g	al):	1-inch well =	0.041	2-inch = 0.162	2	4-inch = 0.65	3	1 gal = 3.785 l	iters
				PURGIN	G DATA				
Purge Method:	per	pin	P	Pump Intake		22:			
Sampling Method:	ing Method: Win f		ر المران	Tubing Mater	ial & Type:	Li	265	NEW	// DEDICATED
Time Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
			(d)	+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
102-7		14.46	0.2	6.93	11.20	177	1.30	219	clear
		19110	1	(,40	11.65	118	-	237	8 1
1030					11.07	110	3.15	01/2	
1033				5,94	174	105	4.46	242	
1034				6.0/	11.79	101	4.02	237	
1039			(6.04	11.80	.96	4.80	231	
		7			1104	95	4.74	234	
1042				5,017	79.0	1	9.19	0.59	
						1 1			
			1						
80			1 Iga		,				
				M					
				2,71	4 8 1			1	
				1. 1					
		1, 1,2				13.7			
	14				No. of the last				
5 454F (66)	440				N 1 1 1 1 1 1 1 1	75,			
		1		PURGIN	G DATA	1	11.20	1	
Sample ID:	MW	-%	Sampling Flo	AND DESCRIPTION OF THE PARTY OF	0.2		Analytical Lab	oratory:	ARIX
Sample Time:		1040	Final Depth t			46	Did Well Dew		No
No. of Containers/Type	Prese	rvative	Analysis/Me			Filter Size	MS/MSD	Duplicate ID	
3440			VU	45 16X					
		121	n	-) 1011					2 1
TXIL	(4	<u> </u>	1	X					- 30
The state of			Supply of the su						and the state of
to de the state of the			-			* 90			
		4			16,03				
	n and								
A Comment	112		111	TEC/ADDITIO	NAL COMMETER	TC			
All Marie Con			N(バモS/ADDIIIO	NAL COMMEN	13 11 1			
All the second second	1840 1					7 9 1		41	
A the second		1				1111		400	

1				Well ID:	Mw	-5		Job Number:		
43	Casc	adia		Client:	1 .	ar va	つってス	Date:	2/25	121
400	Casc	uulu		Project:	102			Sampler:	Lu	
	Associate	es, LLC		Weather:		17741	40 F	Time In/Out:	1050	1/120
					/ WELL					
Manus ant Ti		Flush-mount	Stick-up		Well Diamete	er:	2 4 Depth to Free		Product:	
Monument Ty	/pe.	Other:	1	Well Depth:			Free Product		Thickness:	
Monument Co	ondition:	0	NUO	Depth to Wat		er:	15.89	Water Columr	Length:	1-
Well Cap Lock	Present:	Yes No			Screened Inte	erval:	-	Purge Volume	:	
Comments:								100	- A	
Purge Volume	e = (Water He	ight) X (Multip	lier) X (# Casir	g Volumes)		W			19	(34
Water height			1-inch well =		2-inch = 0.16	2	4-inch = 0.65	3	1 gal = 3.785 l	iters
					PURGIN	G DATA				
Purge Metho	d:	Pepi	PunD		Pump Intake	Depth:	22	.2 69.	S	
Sampling Met	thod:		ow flo		Tubing Mater	rial & Type:	L	OPE	NEW	DEDICATED
	Volume	Cumulative								
Time	Purged (liters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µ\$/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1015			15.89	02	5.81	1223	122	5.05	-28	dear
1058			15.92		11.35	-13.31	857	1.87	-117	CUASE
11					1	17 112			-120	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
1101			16.01		655	15.43	882	1.72	-129	
1103		16.12			6.57	13.48	8.71	1.79	-129	
1105			16.45		6.59	13.53	8601	1.85	-130	1
1107					-					
10										
						7.0				
					 	-11-				
					-				ļ	
		ļ			ļ	7				
					 			J		
					PURGIN	G DATA		and the state of t		
Sample ID:		1/1	1W-5	Sampling Flo			7.2	Analytical Lab	oratory:	D-of V
Sample Time		100	///0	Final Depth 1			89	Did Well Dew		10
No. of Contai		Prese	rvative	Analysis/Me		Field Filtered		MS/MSD	Duplicate ID	, , ,
3240		HC		VUC	. [/ .]	1	1	1,	VN	w-5 Dup
	'			000	5/6X					W-3 Dup
AXI		1+	- (7	DH -1)				VM	W-5 DUT
						41				
2										
-		<u> </u>								
	100			NO	OTES/ADDITIO	NAL COMMEN	TS			
		V								
L										

. 4				Well ID: MW-5D,			Job Number:			
43	Casc	adia		Client:	Nusta	LE Willow	mex	Date:	2/25	21
900	Associate	e IIC		Project:	102	21 C	num	Sampler:	10)
	7133001010	3, LLC		Weather:	pt	10nd-	1,447	Time In/Out:	11201	1055
					WELL	DATA	1		/	
Monument Ty	me:	Flush-mount/	Stick-up	Well Diamete		er:	24 Depth to Free		Product:	
wondinent ry	rpe.	Other:		Well Depth:				Free Product	Thickness:	_
Monument Co	ondition:	000	vod	Depth to Water:		er:	15104	Water Column	n Length:	
Well Cap Lock	Present:	Yes No			Screened Inte	erval:	35-45	Purge Volume	:	_
Comments:		(-			1		1			
	e = (Water He	ight) X (Multip	lier) X (# Casin	g Volumes)				9		
Water height			1-inch well =		2-inch = 0.162	2	4-inch = 0.65	3	1 gal = 3.785 l	iters
	1 (0				PURGIN				<u> </u>	
Purge Method	d:	12	PRI DIA	mD	Pump Intake	Depth:		40	FA 60	3.5
Sampling Method:			1410	Bolo	Tubing Mater	ial & Type:	Li	PZ	MEW	/ DEDICATED
1491	Values	Cumulative		V						
Time	Volume Purged	Volume	DTW	Purge Rate	pН	Temp	Cond	DO	ORP	Clarity/Color
inne	(liters)	Purged	(btc)	(L/min)	"]	(°C)	(μS/cm)	(mg/L)	(mV)	Other Remarks
	()	(liters)								
			1 10 10 1		+/-0.1, 1,00	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1127			15,64	0.2	4.5 2.90	1281	844	2.40	1 -113	clear
1130			ì		4.63	12.29	801	2.31	-105	1
				1	1074	13.21	737		-92	
1133					01/8	1226	737	2.20		
1134					6.80	13.28	742	2.18	-89	
1139					6.82	13.30	1749	2.0	-86	
1142			4	1	6.88	13.31	757	1.91	-81	V
1111					UNU	1 / //	171	1 / / /		
1195										
U (187)									-	
2000										
47 7									1	
10. 2										
Mark										
					PURGIN	1				. ^
Sample ID:		MW		Sampling Flo			2	Analytical Lab		Aprix
Sample Time	the contract of the same of th		150	Final Depth t			5.64	Did Well Dew		No
No. of Contai		Prese	rvative	Analysis/Me	thod	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
34	10	1 4	171	171) [] X					
7	VII		71	TA	1-74	_	- N			
_	NI C	-	, 00		1 1					
1300							-			
			146							
To John										
				B1/	TES/ADDITIO	NAL COMMEN	TS			1
				NC	J I ES/ADDITIO	NAL COMMEN	13			
7 5					-10	1				
								1 Q. Ja		

4				Well ID:	mu	-9		Job Number:		í .
43	Casc	adia		Client:	NUST	1	annex	Date:	2/25	121
460	Associate	aulu		Project:	102	1 6h	M	Sampler:	Ih	7
	Associate	s, LLC		Weather:	Sunn	4 . 4-	4	Time In/Out:	1200	11240
	272	<u> </u>			WELL					
Manumant T		Flush-mount/	Stick-up		Well Diamete	er:	2"	Depth to Free	Product:	
Monument Ty	/pe:	Other:	_		Well Depth:				Γhickness:	/
Monument Co	ondition:	an	2.		Depth to Water:		18: K	Water Column	Length:	4
Well Cap Lock	Present:	Yes No	7		Screened Inte		90-25	Purge Volume		
Comments:		110			Joer cerica inte	or var.	10,57	r dige voidine	•	
	= (Water He	ight) X (Multip	lier) X (# Casin	g Volumes)						
Water height			1-inch well =		2-inch = 0.16	2	4-inch = 0.65	3	1 gal = 3.785 l	iters
Water neight	maraphers (g	ui).	I men wen -	0.041	PURGIN		4 IIICII	3	1 gui - 3.703 i	iters
Purge Metho	d:	Di	R. pur	0	Pump Intake			23.4 1	+ bay	
Sampling Met		1	In It		Tubing Mater		17)197	NEW) DEDICATED
, ,						1				
T:	Volume	Cumulative Volume	DTW	Purge Rate		Temp	Cond	DO	ORP	Clarity/Color
Time	Purged (liters)	Purged	(btc)	(L/min)	рН	(°C)	(µS/cm)	(mg/L)	(mV)	Other Remarks
	(iiters)	(liters)								1/4/2
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	100
1206			18.18	0.2	7.32	13,04	330	16.23	- (0	clear
1209			18:1		6.84		144	6.30	78	1
			18/2:				 ' 			1
1212			18.21		4.71	13.17	150	6.24	92	- 4
1215			12.51		6.52	13.18	135	6,20	111	
1218			1		6.48	13.21	130	6.17	120	: [
1221					1,13	13.22	1		131	
1 7				. /	6.42		125	6.12	1	
1224			V	w .	6.43	13.19	129	5.82	132	V
								-	-	
							27 1			
	275									
	-0					V				
HESSELL VI					PURGIN					
Sample ID:		MW	-9	Sampling Flo	w Rate:).2	Analytical Lab	oratory:	HPIX
Sample Time			220	Final Depth t	o Water:	1	8.21	Did Well Dew	ater:	'No
No. of Contai	ners/Type		rvative	Analysis/Me	thod	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
2,	(4D	L	41	C1X/1	1065					
1	~ ()			T.	V U ~/					
9	XIL	1	cl	1	λ					
				NO	OTES/ADDITIO	NAL COMMEN	TS			

				Well ID:	nw	1-7		Job Number:		
43	Cascadia Associates, LLC				Nusta		nnel	Date:	2/15/3	21
4	Associate	aulu		Project:	10.			Sampler:	Lpw.	
	Associati	55, LLC		Weather:	Clande	1/kain	4504	Time In/Out:	1300	1340/33
					WELL	DATA			- III	
A A - m - m - m t To		Flush-mount	Stick-up		Well Diamete	er:	2"	Depth to Free	Product:	
Monument Ty	/pe:	Other:			Well Depth:			Free Product 1	hickness:	
Monument Co	ondition:				Depth to Wa	ter:	10,70	Water Column	Length:	
Well Cap Lock		Yes No			Screened Into			Purge Volume		
	rresent.	Tes Two			Screened Into	ervar.	10-25	ruige volume		
Comments:	- /\Mator He	ight) X (Multip	lios) V (# Cosis	a Valumas)	T	T				
			1-inch well =		2 in als 0.10		4-inch = 0.65	2	11 2 705 8	
Water height	multipliers (g	aij:	1-inch well =	0.041	2-inch = 0.16 PURGIN	The state of the s	14-inch = 0.65	5	1 gal = 3.785 li	iters
Purge Metho	d·	1 1/4 . 1	v . O		Pump Intake			19.5 C	L 1-0.5	
Sampling Met		Det 1	nap	7	Tubing Mate		LDP		+ bes	/ DEDICATED
Sampling ivie	illou.	Cumulative) flac	<u> </u>	rubing iviate	Тага туре:	LUIC		INCVV	// DEDICATED
Time	Volume Purged	Volume Purged	DTW (btc)	Purge Rate (L/min)	pН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
	(liters)	(liters)	(bic)	(17111111)	7.	()	(μ3/τιιι)	(IIIg/L)	(1117)	Other Kemarks
		(inters)		183	+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
13:05			10.70	0.2	6.00	13.02	11110	19.33	74	Mak
1308			10.89	002	6.19	13.18	1001	213	0	Cour
1300					Cai	12 16	621		-9	
1911			10.92		6.21	13:10	639	2.14	-]]	
1314			10.95		6.37	-13.18	653	1.5	~)	
1217			10.98		6.31	13.19	655	1.34	-14	
1320				1	6.36				-18	1
1320		-	11.02	V	6.70	3.20	45 1	1.22	-13	<u> </u>
				- 1						
				All Property and						
			7 1997							
			100			-				
	224		1 / 1							
					<u> </u>	-				
			L		DUDGU	IC DATA		<u> </u>		
Sample ID:		1000	-	Complia - FI	THE RESIDENCE OF THE PERSON NAMED IN	IG DATA	0.2	Analyticality	oroto ::	1
Sample ID: Sample Time		mw	22.	Sampling Flo		1	1.71	Analytical Lab		Tel
No. of Contai			320 rvative	Final Depth t Analysis/Met	THE RESIDENCE OF THE PERSON NAMED IN COLUMN 1	Field Filtered	Filter Size	Did Well Dew		NO
				7		rieid Filtered	Luiter Size	MS/MSD	Duplicate ID	
5	XYU	tto		GXI	NOCS					
2	XIL	Ho	<u>دا</u>	DX						
					· · · · · · · · · · · · · · · · · · ·					
	. /			NC	DIES/ADDITIO	NAL COMMEN	15	- 15		
	57									
										-
						1				

. 4				Well ID:	MW	1-3		Job Number:	A	
43	Casc	adia		Client:			nnex	Date:	2 25	21
1	Associate	es. II.C		Project:	102			Sampler:	LW	
- Table	7100001011			Weather:	Clo		1506	Time In/Out:	1335	1410
					WELL					/
lonument Ty	pe:	Flush-mount/	/Stick-up		Well Diamete	er:	211	Depth to Free		
		Other:			Well Depth:			Free Product	Thickness:	
lonument Co	ndition:	0 9	500 d		Depth to Wa	ter:	27.95	Water Column	n Length:	
/ell Cap Lock	Present:	Yes No			Screened Inte	erval:	24.5-34.5	Purge Volume		_
omments:				Y Y						
urge Volume	= (Water He	ight) X (Multip	lier) X (# Casi	ng Volumes)	W 1 1					
/ater height i			1-inch well =		2-inch = 0.16	2	4-inch = 0.65	3	1 gal = 3.785 l	iters
					And the second name of the second	IG DATA				Na.
urge Method	:	Del	RIDH	ND	Pump Intake	Depth:	33.	1 ft be	45	
ampling Met	hod:	1	Lun	HOW	Tubing Mate	rial & Type:		Pt	NEW	/ DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
				100	+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1342			27.95	0-2	(0.47	1762	656	3.01	~7	clear
			350 1.	1	4.32	1	0 . 4	2.0	51	yas
1345			28.10		1	13.52	292	dil		Sill Sill Sill Sill Sill Sill Sill Sill
1348			2812		6.20	13.67	239	2.18	82	
1351			2840		(0.13	13.65	227	2.01	102	100
1354			28.55		10 11	13.65	224	1.87	10.8	
			The state of the s		(0,1/			The second secon	1	
1357			28.70	4	(e./)	13.45	22	1.52	112	V
								- 14 = 1		
				9.5						
				70						
				6					11.5%	
									7	
										Maria (1995)
				10						
								<u> </u>		
				1			16	3		
			Take!		PURGIN	IG DATA		118		
ample ID:		M	W-3	Sampling Flo	w Rate:		0.2	Analytical Lab	oratory:	HOLX
ample Time:		13 del*	OUP	Final Depth t	o Water:	/	G. PJ	Did Well Dew	ater:	2
o. of Contain	ers/Type	Prese	rvative	Analysis/Met	thod	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
5X	OK	1	171	100	s lbx					
21	11 (11	7 A	DV	(
- X		100								
		W. J. W.		ļ						
		,								1.53/
	18 / N			/A = A						
				1	TTC/ADDITIO	NAL COLANATA				
S 21				NC	JIES/AUUIIIO	NAL COMMEN	IS			() ()
	B-17					11		1		100

W& Cassadia				Well ID:	- WM			Job Number:		
Cascadia				Client:	Nustas		nex	Date:	2/2	5 2
1	Associate	s, LLC		Project:	1Q			Sampler:	w	
	7 1000 01010	0, 220		Weather:	Pai		Oof	Time In/Out:	1915	
					WELL		24			/
Monument Ty	pe:	Flush-mount/	Stick-up		Well Diamete	r:	24	Depth to Free		
		Other:			Well Depth:			Free Product		
Monument Co	ondition:				Depth to Wat	er:	14.40	Water Columi	n Length:	_
Well Cap Lock	Present:	Yes No			Screened Inte	erval:	10-25	Purge Volume	e: Is	
Comments:								* *		
ourge Volume	e = (Water He	ight) X (Multip	lier) X (# Casin	g Volumes)			.	,		
Water height i	multipliers (g	al):	1-inch well =	0.041	2-inch = 0.16		4-inch = 0.65	3	1 gal = 3.785 l	iters
					PURGIN			77.2	1 0	
Purge Method		per.	pun 1>		Pump Intake		1.01	22.3	095	DEDICATED
Sampling Met	thod:	Lon) flow)	Tubing Mater	rial & Type:	LOI	16	NEW	DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1420			16.40	2.25	(1008	17.108	491	You	-50	deen
1423			11000	0.28	121	12.74	420	2.71	-70	Car
176			10.01		6.0			041/1		
1420			17.05	0.50		12.91	. 2	1.74	-109	
1429			17.85	Ì	10.38	1289	981	1.55	-113	
1432			17.45	~	6,29	12.98	984	1,54	-106	4
			K.			13(1.13	,			
All I			1							
- P										Market III
			,							
4,										
						16				- 10 00 00
	-07			L	PURGIN	G DATA				
Sample ID:		MW-	-10	Sampling Flo		- 6	1.77	Analytical Lab	oratory:	April
Sample Time:		. 44		Final Depth t		17	20	Did Well Dew		13
No. of Contair		Prese	rvative	Analysis/Me		Field Filtered	Filter Size	MS/MSD	Duplicate ID	
	140		121	Cax	ludes					
					1000)					
1	XIL	1 H	21	D,	4					
										The state of
									-	
					2770 /A 221712	NAL COMMEN				
					TIES ADDITIO	NAMED TO BE	115			
	- 1111-1			INC	TESTADDITIO	IVAL COMMITTEE	113			
				N	JIES/ADDITIO	IVAL COMMEN				
		<u> </u>		N	JIES/ADDITIO	NAL COMMEN				

. 4				Well ID:	MW-	/		Job Number:		
43	Casc	nihn		Client:	Nrst	ne vou	nnex	Date:	2/26/	21
100	Associate	cadia es, LLC		Project:	10		sm -	Sampler:	Iw.	
	Associati	es, LLC		Weather:	1	ain, i	-100F	Time In/Out:	7201	800
					WELL	DATA				-
Monument T	vne:	Flush-mount/	Stick-up		Well Diamete	er:	2"	Depth to Free	Product:	
violidinent	урс.	Other:	Λ		Well Depth:			Free Product	Thickness:	
Monument C	ondition:	900	ل د		Depth to Wa	ter:	15.53	Water Columi	n Length:	-
Well Cap Loci	k Present:	Yes No			Screened Into	erval:		Purge Volume	2:	•
Comments:							1.1.2			
	e = (Water He	eight) X (Multip	lier) X (# Casir	ng Volumes)						
	multipliers (g		1-inch well =		2-inch = 0.16	2	4-inch = 0.65	3	1 gal = 3.785 li	iters
	, , , , , ,				PURGIN				1 0	
Purge Metho	d:	Deri	Dunp		Pump Intake	Depth:	2/	9 ft bas	7	
Sampling Me	and the same of th	1	10W 16	W W	Tubing Mate		LDP		NEW	/ DEDICATED
		Cumulative				I		T		
Time	Volume Purged (liters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
	1.53 E.J/1	,,			+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
735			15.53	0.2	4.96		585	13.36	93	cleare
738			1,,,,	1	(e.71		T	1	108	cleare
170						13.66	591	7.34		
741					6.15	13.74	583	3.78	136	Par. The
744					5.71	13.76	572	2.86	162	
747					5.64	13.78	568	2.61	167	(E. 18-6)
750		 	1			13.79	566			1
110					5.65	13,11	300	⟨ ⟨ ′ ′]	167	8
						-		-		
										Tuane N
Carlotte and										
					•					AUG T
	The same of									
						IG DATA				
Sample ID:	2.10	mh	<i>,</i> –	Sampling Flo			. 2	Analytical Lab	oratory:	Aprix
Sample Time			750	Final Depth 1		<u> </u>	5.53	Did Well Dew		
No. of Conta		Prese	rvative	Analysis/Me	thod	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
31	X40 XIL		MLI	GX	Mus					
r	VII	H		D						
0	() ()	110	(V	Х					
				NO	OTES/ADDITIO	NAL COMMEN	TS			
13										

400	W& Cascadia			Well ID: MW - 11 Client: Nu the Warner			Job Number:			
2	Cascadia				Nusta	e Vann	44	Date:	2/26/2	-(
And the same of th	Associate	es. LLC		Project:		1021		Sampler:	LW	
				Weather:	Ra			Time In/Out:	800,	1840
					WELL					
∕lonument Ty _l	pe:	Fluch-mount/	Stick-up		Well Diamete	er:	7 4	Depth to Free		
		Other:			Well Depth:			Free Product 1	hickness:	_
Monument Co	ndition:	67	good		Depth to Wat	ter:	16.68	Water Column	Length:	_
Vell Cap Lock	Present:	Yes (No)		A	Screened Into	erval:	10-25	Purge Volume	:	
Comments:					1	•				
urge Volume	= (Water He	ight) X (Multip								
Vater height r	multipliers (g	al):	1-inch well =	0.041	2-inch = 0.16		4-inch = 0.65	3	1 gal = 3.785 l	iters
	-				PURGIN					
urge Method		per:	puny	2	Pump Intake		2	2.3 (4	695	
Sampling Meth	hod:		N- 15	100	Tubing Mater	rial & Type:		1	NEW	/ DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters) *	DTW (btc)	Purge Rate (L/min)	рН	Temp	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					A 60.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
808			14.68	0.2	0/3.38	-13.38	413	1.99	118	clear
811			14.68		5.82	1366	1	2.53		
						13.67			1	
814			14.68		5.5		A C	1.85	111	
817					5.34	13.71	245	1,64	033	
220	Maria		1	N	5,30	13.72	251	1.52	46	1
823			T		5.28	13.75	256	641	62	J
13					1,20	(): ()	~)0	01 (1	-	
X										
United the second					d,				-	
The state of the s										
A A 188	S. 42									
			di	3						
			3			1				,
								<u> </u>		
1 Bear		I			PURGIN	G DATA				
Sample ID:		Imu	-11	Sampling Flo		O .	2-	Analytical Lab	oratory:	4
Sample Time:		8	20	Final Depth t			.68	Did Well Dew		No
No. of Contair			rvative	Analysis/Me		Field Filtered		MS/MSD	Duplicate ID	TAY HELD IN
34.			21	U00	1	-				
				7.0	-7 / CX					also also
O X	(14	th	1	PY						1 1
										<u> </u>
										8 72
									1 4 1	
				-						
			1		TEC/4 DE '	NAL COLUMN	TC			
				NO	JIES/ADDIIIO	NAL COMMEN	12			
		<u> </u>								

0.4				Well ID:					Job Number:	
44	Cascadia				Nus:		anny	Date:	2/26	121
20	Associate	es, LLC		Project:	10			Sampler:		$\mathcal{S}_{\mathcal{S}_{\mathcal{S}_{\mathcal{S}_{\mathcal{S}_{\mathcal{S}_{\mathcal{S}_{\mathcal{S}}}}}}}$
				Weather:	/Lai	~ UDI		Time In/Out:	845	920
		I ()			WELL		\ \frac{1}{2}\tau			
Monument T	ype:	Flush-mount/	Stick-up		Well Diamete	er:	24	Depth to Free		
		Other:	-		Well Depth:			Free Product	-	
Monument C	ondition:	Yes No			Depth to Wa	ter:	29.05	Water Column	Length:	
Well Cap Loci	Present:	Yes No			Screened Inte	erval:	20-35	Purge Volume	:	
Comments:										
Purge Volume	e = (Water He	eight) X (Multip	lier) X (# Casir	ng Volumes)						
Water height	multipliers (g	gal):	1-inch well =	0.041	2-inch = 0.16	2	4-inch = 0.65	3	1 gal = 3.785	iters
			,		PURGIN		•			
Purge Metho		pel	pun	P	Pump Intake		· ·	33 · 8	It ba	ے
Sampling Me	thod:	1	in f	١٥٠٠	Tubing Mate	rial & Type:	10	PE	NEW	/ DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
854			29.05	0.2	5.93	12.40	725	6.97	31	01 61
801			1	1	6,02	1264	273	7.14	47	
200								2.84	,	/
100					6.09	12.42		0.89	//	//
903		1.17			6-11	12,60	271	2.81	78	
906					4.16	12.61	772	2.69	87	
			1				8			
909		 	U	<u> </u>						
						32				
									:	
						72				
				<u> </u>	-					
					- 1					
4										
		100	1128					11.72		
- 10					CFF					
C		1 101		C!: 51		G DATA	9,05	A		
Sample ID: Sample Time		MV	0 7	Sampling Flo Final Depth t		1	9,05	Analytical Lab Did Well Dew		MAX
No. of Contai		Proce	rvative	Analysis/Me		Field Filtered	Filter Size	MS/MSD	Duplicate ID	100
7 (incray rype			/ Large State	1		I liter 3ize	טפועו (פועו	Duplicate ID	
- 5k	10		tel	CIX	THAT	TULS -				
2×	16	the	(1	497			*		
. 49	1.0				Marine T	U 768				
		†						T V		
		+		-				36		
, 48/2	7									The same
		11/4								
				NO	OTES/ADDITIO	NAL COMMEN	TS			
									*	
						511				

				Well ID:	MW-	2		Job Number:		
413	Case	nihn		Client:	Nhs	tra Un	nny	Date:	2126	121
900	Associate	cadia es, LLC		Project:	102	i		Sampler:	Ln)
- Marie Village	7133001011	03, 220		Weather:	Romi	~ 401	=	Time In/Out:	920	// +0000
					WELL	DATA	,			
Monument Ty	vne.	Flush-mount	Stick-up		Well Diamete	er:	24	Depth to Free	Product:	
World Here	, pc.	Other:			Well Depth:		~	Free Product	Thickness:	
Monument C	ondition:	0 0	Lag		Depth to Wat	ter:	27.13	Water Column	n Length:	~
Well Cap Lock	Present:	Yes No	0		Screened Inte	erval:	20-35	Purge Volume):	
Comments:										
Purge Volume	e = (Water He	eight) X (Multip	lier) X (# Casir	ng Volumes)						v. Alber
Water height	multipliers (g	gal):	1-inch well =	0.041	2-inch = 0.16	2	4-inch = 0.65	3	1 gal = 3.785 l	iters
					PURGIN	G DATA				
Purge Metho	d:	Pe	es pun	0	Pump Intake	Depth:	3	2.9 Ft	693	
Sampling Me	thod:		10h	Mary	Tubing Mater	rial & Type:	1	DPT-	NEW	/ DEDICATED
Time	Volume Purged (liters)	urged Volume DTW 1		Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
924			2713	Dez	(0.07	12.68	2	164	107	Mana
927			0 11)		5.70	12 2 2	V3 x 19	1.10	y	compre
					3.10	15.20	1419	449		
930				- 4	5.71	13.37	180	4	1 3	•
933				1000	5.76	13.20	178	4	7.38	
936				4	6.88	13.24	175	3.44	140	de
939			1	- 1	5.00	13 34	17/	3,00	135	Y
A 1					10 OC	13.66	1-5	2.00	1111	
942			1/1/4	4	3000	1300	177	2.66	19/	
945			V	L	5,88	13.63	178	2.71	142	20
								1 7 10 7 10		
					-			<u> </u>		
								1 711		
	j)				PURGIN	IG DATA	J			
Sample ID:	L. des	PV\ (N-2	Sampling Flo		_	J. Z	Analytical Lab	oratory:	Doel V
Sample Time	:	gi		Final Depth t		- 1	27. 3	Did Well Dew		NO
No. of Contai	THE RESERVE OF THE PERSON NAMED IN COLUMN 2 IS NOT THE PERSON NAME	Prese	rvative	Analysis/Met		Field Filtered	Filter Size	MS/MSD	Duplicate ID	
	40 mL	1	U		15/6X					
2101	JUML		-	1 1	VIIDN			-		
ZXII	<u></u>	1	101	1)	<u> </u>					
		-								
						d Marin	-			
		1.		NIC NIC	TEC/ADDITIO	NAL COMMEN	TS	L		
				NU	סוווטאונטאונט	NAL COMMEN	13			
	7.								W.	Value .

- Marin	,			Well ID:		-10	HLET			
13	Casi	cadia		Client:	NuStar	Vanne	1	Job Number Date:	1 -	
21	Associa	tes, LLC		Project:		25A202	ocum 10	Date:		20121
				Weather:	Ra	in at	.		w	-
		I			WE	LL DATA	Clond	1 Time In/Out:	102	0/100
onument T	ype:	Flush-moun	stick-up		Well Diame	eter:	2.1	Depth to Fre	e Product	
		Other:	0		Well Depth	1:		Free Product		
onument C		6	Noch		Depth to W	/ater:	122	Water Colum		-
ell Cap Lock	k Present:	Yes No)		Screened Ir	nterval:	10-25		-	
	2 - ()4(-+	()	Kellon, Ve.				110-52	Fulge volum	e:	
ter height	multipliers (g	eight) X (Multi	plier) X (# Cas	ing Volumes)						
The Igne	marcipilers (g	(a1):	1-inch well	= 0.041	2-inch = 0.1		4-inch = 0.6	53	1 gal = 3.785	liters
ge Method	d:	Q1	11010	201		NG DATA			- 841 3.703	iitei3
npling Met	hod:	. 1	11/14	700	Pump Intake		0.01	23.0	ff bar	7
	Volume	Cumulative	1	TUN	rubing Mate	erial & Type:	UD	PE	NEW	DEDICATED
Time	Purged (liters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Colo Other Rema
					+/-0.1	+/-0.5 °C	1/50/			
128			17.70	0.2	5.61	T	+/-5%	+/-0.5 ppm	+/-20 mV	
31		1 1 25 4	1	1	5.38	12.78	149	4.43	177	clee
134					, ,	12.93	114	5.56	196	1
					4.39	12.96	108	5.66		
037					6.17	12.99	108	5.46		
040				6	6.25	13.04	107		163	
043					6.27	12.96		5.46	158	1
046			V	1/			107	5.72	161	
	is Me I				6.32	12.95	107	5.45	159	
						5 - 1 2 - 1 1 1 E				
			6 - 1							
					D. Strange					
e ID:		MIA	- DIS		PURGING	DATA				
e Time:		104		ampling Flow I inal Depth to V		01.		Analytical Labora		Apri
Containers	/Туре	Preserva	0.00	nalysis/Metho		Sold File	Committee of the second	Did Well Dewate		NO
3X	40	H	7	MILLE	100	ield Filtered F	ilter Size N	MS/MSD D	uplicate ID	
2X	11		1	10021	UX	AND DESCRIPTION OF THE PARTY OF	Notes and the second second			
		110)	DX		otto proposition de la constitución de la constituc			No. of Lot of Lo	
				MOTE	(ADDITION)	1 000 11				
			4.4.2.1.2	NOTES	ADDITIONA	L COMMENTS				
								-	Total Control of the	

Project: Nu Har Vanner
Client: Sampler: AW

Date: 5/4/7(Permit:

\							(3)
Well ID:	T	DTF	٨	i soli i se		No:	
NW-1	817		12.08				- W. F.
	821	ı	17.79			- E	
nell-4	, ,		30,52				
MW-2	838		28,59				
MWB	843		29.47				
01-LUM	847	-	19.06				
J-WM			17.72		door		A. J. Comment
MW-9			19.69				
NW-3D			18,24		- 4		
MW-8	906		17.93				
MW 50	910		17.05		9	in the second of the second of	
MW-5	914.		17.42		<u>u</u>		7 😽
MW-7	922	~~	12.07		1	9	* 1
				1		1	
		18			The second		
					32	- L	37 h
							1, 3,
			*			, , , , , , , , , , , , , , , , , , , ,	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
							H

1.4				Well ID:	MW	-+		Job Number:		
为全	Case	cadia		Client:	Nu Sto	ur Vann	ex	Date:	5/4	
1	Associat	es IIC		Project:		12021		Sampler:	400	
	, 13300101	03, LLC		Weather:	Pt Su	n 60°		Time In/Out:	1	1010
		1			WELL	DATA			/	
Manus		Flush-mount	Stick-up		Well Diamet	er:	12"	Depth to Free	Product:	
Monument T	Abe:	Other	1		Well Depth:		_	Free Product		
Monument C	Condition:	9000			Depth to Wa	iter:	12.07	Water Colum	n Length:	_
Vell Cap Locl	k Present:	res No			Screened Int	erval:		Purge Volume	2:	
Comments:										
			olier) X (# Casi	ng Volumes)					*	
Vater height	multipliers (g	al):	1-inch well =	0.041	2-inch = 0.16		4-inch = 0.69	53	1 gal = 3.785 l	iters
	4.	1	-		The same of the sa	IG DATA		1		
urge Metho		per	1		Pump Intake		20	<u> </u>		
ampling Met	thod:	L	onto		Tubing Mate	rial & Type:	1	PE	NEW	DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
130			12.07	125	7.46	14.09	624	12.32	-163.1	eloudes
133	17 k		12.21	1	4.75	13.70	598	3.21	-277.7	clear
936	K-b. Th		12.46		6.64	13.63	587	2,98	-301.2	19
739			12.49	4	6.44	13.64	571	2.43	-321,7	
947	1		12.52		6.42	13-40	568	1		
945							1	2.21	-326.1	
143			12,52		6.43	13-61	540	2,07	-3280	19/39
										11 (19)
-										
										y'
					PURGIN	G DATA				
mple ID:	T	mw-	7	Sampling Flov	The second second second second	G DATA		Analytical Labo	araton"	A
nple Time:		94		Final Depth to		12,5		Did Well Dewa		MAID
of Containe		Preser		Analysis/Meth			Filter Size	MS/MSD	Duplicate ID	.100
300	Tr.	1/1	0	0 /0	(N	, IICCI 312C	1.413/14130	pupilicate ID	
000	10	H		'\0	112	N				
TUR	11	·H(TP.	U-D	N	/			
					The state of	. All				
		2031								
			4						[[
			4		9					
		20)	4							
			4	NO	TES/ADDITION	NAI COMMENT	S			
		200	4	NO	TES/ADDITION	NAL COMMENT	S			
			4	NO.	TES/ADDITION	NAL COMMENT	-S			
		263		NO	TES/ADDITION	NAL COMMENT	S			

				Well ID:	MW-	9		Job Number:	<u> </u>	
43	Casc	adia		Client:	Nuc	ter Van	d	Date:	5/4	
444	Associate	e IIC		Project:	GW	M var		Sampler:	AW'	
	Associate	3, LLC		Weather:	Sum	650		Time In/Out:	1015	1050
	-				WELL					
Monument T	vne:	Flush-mount	Stick-up		Well Diamete	r:	2	Depth to Free		
Wionament	,,,,,	Other.	1		Well Depth:			Free Product 1	Thickness:	
Monument C	ondition:	Sook)		Depth to Wat	er:	19.69	Water Column	Length:	
Well Cap Loc	k Present:	res O) No		300	Screened Inte	erval:	-	Purge Volume	:	_
Comments:							7		/	
	e = (Water Hei	ght) X (Multip	lier) X (# Casir	ng Volumes)						
	multipliers (ga		1-inch well =		2-inch = 0.16	2	4-inch = 0.65	3	1 gal = 3.785	liters
					PURGIN	G DATA				
Purge Metho	od:	Re	vi,		Pump Intake	Depth:	-	23		
Sampling Me	thod:	9 0	mikla	لىد	Tubing Mater	ial & Type:	4	DAE	NEW	DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1021			19.69	. 25	6.59	15.67	572	3.67	-189.9	cleer
Ing .			11,5	1	1 1 .	1412	370	4.86	-163.1	1
w 09					le.le!	1-1.17				
1027					6.54	19.0+	290	6.10	-154.7	
1030					6.26	13,99	153	7.46	-150.1	
1033	17.7				6.24	13.80	145	7.60	-148.7	,
			-	1		/				
1036				•	6.19	13-75	131	7.86	-143.0	
	-									
	 									
								-		
			(A.	T		IG DATA		Ta		1000
Sample ID:		Mu		Sampling Flo		1 . 1		Analytical Lab		Aprix
Sample Time		103		Final Depth		IG.	7-0 Filter Size	MS/MSD	Duplicate ID	
No. of Conta	iners/Type	Prese	rvative	Analysis/Me		Field Filtered	riitei Size	INIO/INIOD	Duplicate ID	
SA	40	+	tu	V	o C	-				
2x	12	1 +1	(0	TA	MD.	-				
										,
				-						
	7									
				N	OTES/ADDITIC	NAL COMMEN	TS			
		· · · · · · · · · · · · · · · · · · ·								

WELL MONITORING DATA SHEET
Well ID: MW-5D

4				Well ID:	MW.			Job Number:	, ,	
AZ	Casc	adia		Client:	Nu 3	tar Va	rnex	Date:	5/4	
444	Associate	culc		Project:		1122		Sampler:	90	
	Associate	S, LLC		Weather:	Sun	650		Time In/Out:		
			\		WELL	DATA				
		Flush-mount/	Stick-up		Well Diamete	er:	2"	Depth to Free	Product:	
Ionument Ty	pe.	Other:	1		Well Depth:		_	Free Product T	hickness:	-
lonument Co	ndition:	9001	1)		Depth to Wat	er:	17.03	Water Column	Length:	_
/ell Cap Lock		les No			Screened Inte	en/al:	17,00	Purge Volume		
omments:	Treserie.	9110			Joer Cerrica Inte					
	- (Water Hei	ght) X (Multip	lior) Y [# Casin	ag Volumes)						
	multipliers (ga		1-inch well =		2-inch = 0.16	<u> </u>	4-inch = 0.65	3	1 gal = 3.785 l	ters
ater neight	Illutupiicis (Bi	21/.	I men wen -	0.041	PURGIN			^	- 8	
urge Method	1:	00	101		Pump Intake		L	6	_	
mpling Met		1	owkl	(Dr.)	Tubing Mater		1	PE	NEW	DEDICATED
	PA LA CICA	Cumulative	VW DU							,
Time	Volume Purged (liters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Clarity/Color Other Remarks
	1 2 2 2 2				+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/ 20 mV	
1120			17.03	.25	6.01	15,59	135	9.21	-162.0	deer
			1110			1	2.11	4,26		1
1123				9.0	4:48		671		-275.1	
126				-40)	6.50	14,54	331	1.96	-269.2	- i
1129					6.52	14.47	369	1.89	-270.5	
1132				1	6,53	14.40	377	1.84	-267.1	
V. 0 -					WIJ	1 1 1	011	1.0	04171	
			8.4							
		1							-	
47										
	NE -				-		+			
					DUDGIA	IG DATA				
ample ID:			N-50	Sampling Flo			25	Analytical Lab	oratory:	Anix
ample Time:		Nall	27	Final Depth 1		17	107	Did Well Dew		INIS
o. of Contain		Proce	rvative	Analysis/Me		Field Filtered		MS/MSD	Duplicate ID	
2	, In	11	1 0	/ Indivata/ Ivie	N /	, icid i ittered	11 11.01 3120	1, 11.50	To a pinoace 10	
	X 40	1	U	V	U C					
27	IL	- F	100	1	MD					
				-		-				
				N	OTES/ADDITIC	NAL COMMEN	ITS			
										101
										1/4

WELL MONITORING DATA SHEET Well ID: NW 5

. 4				Well ID:	Mu			Job Number:			
为全	Casc	adia		Client:	Nu	Star Vo	unie	Date:	5/4		
1	Associate	es. LLC		Project:	Gen	JM ZQ	21	Sampler:	40		
	Associate	3, LLC		Weather:	3	un 65°		Time In/Out:	10		
3,12		1			WELL	DATA		18614		417	
Monument Ty	me.	lush-mount,	Stick-up		Well Diamete	er:	2	Depth to Free	Product:	0	
violiument Ty	pc.	Óther:	1		Well Depth:			Free Product	Thickness:		
Monument Co	ondition:	and			Depth to Wat	ter:	17.46	Water Colum	n Length:	_	
Well Cap Lock	Present:	Yes No			Screened Inte		_	Purge Volume			
Comments:											
Purge Volume	= (Water He	ight) X (Multip	olier) X (# Casi	ng Volumes)							
Water height			1-inch well =		2-inch = 0.16	2	4-inch = 0.65	53	1 gal = 3.785 l	iters	
		HE HELDE			PURGIN	The second secon		4			
urge Method	d:	Do	X1		Pump Intake		1	12		relation of the other	
Sampling Met		17	But les	W	Tubing Mater		is	PE	NEW	X DEDICATED	
	Volume	Cumulative	U	HA DE H						A	
Time	Purged (liters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Clarity/Color Other Remarks	
企业 值。					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV		
1148			17.46	.15	6.79	14.63	689	2.09	-233.6	lear	
115	100		17 75								
12				1	6.70	15.97	703	1.50	- 769.3		
1154			18.01		6.65	15.71	750	.91	283.4		
1157			18.26		6.64	15.20	769	.70	290.1		
1200			18,48		6-64	14.93	771	.63	- 292.6		
	787				1		3			1	
1203			18.65	1	6,64	14.90	777	,61	- 291.2		
	Telan Land										
4,544											
	- 14.6	111111111111111111111111111111111111111		7 21 28							
		No Miles	1	1 1 1 1 1 1				-			
T. STATE OF THE ST				1							
			1								
	TOTAL PROPERTY.					-		-			
				11111							
		NA.				G DATA				1 1/0 -00-	
ample ID:		14(W-5	Sampling Flo		,2	5	Analytical Lab		Hyper	
Sample Time:		-	200	Final Depth t		19.0		Did Well Dew		120	
No. of Containers/Type			rvative	Analysis/Met		Field Filtered	Filter Size	MS/MSD	Duplicate ID		
No. of Contain	3~110		le	V	o C						
3x	40	1160			111						
3x 7x	40 1L	11	ce	1	THD					1	
3x	40	H	Cl	1	HD					Below T	
3x	40	H	CL	110	HD					(A-Fr	
3x	40	H	CL.	110	HD						
3x	40	Н	CL	112	HD						
3x	40	Н	CL	10	HD						
No. of Contain	40	H	CL	NC	DTES/ADDITIO	NAL COMMEN	TS				
3x	40	H	CL	NO	DTES/ADDITIO	NAL COMMEN	TS				
3x	40	H	CL	NC	DTES/ADDITIO	NAL COMMEN	TS				
3x	40	H	CL	NC	DTES/ADDITIO	NAL COMMEN	TS				

. 4				Well ID:		N-6		Job Number:	1	
43	Casc	adia		Client:	Nu	Ster	anni	Oate: 5/4		
	Cusc	aula		Project:	Gan			Sampler:	AL D	
	Associate	es, LLC		Weather:	78	650		Time In/Out:	7	
			1	weather.	WELL			Time my Out.		
			ICA:-1		7		- N	D11 : 5	Dan de la	
Monument Ty	pe:	lush-mount/	Stick-up		Well Diamete	er:	7"	Depth to Free		
THO HOLLING TY	r ===	Other:			Well Depth:		-	Free Product	Thickness:	
Monument Co	ndition:	Sono			Depth to Wat	ter:	18.00	Water Columr	Length:	
Well Cap Lock		Yes No			Screened Inte			Purge Volume		
Comments:	1 / CSCIICI	The state of the s			Joi Celled III.			I dige voidine	•	
	(1) (1)	L . \ \ / A A . let .	P - A V /4 C - 3 -	-1/-1	1	Ι				
Purge Volume										
Water height r	nultipliers (g	al):	1-inch well =	0.041	2-inch = 0.16	The same of the sa	4-inch = 0.65	13	1 gal = 3.785 l	iters
					PURGIN			10.01		
Purge Method		Pe			Pump Intake		7	2.5		
Sampling Met	hod:	1	onklis	ω	Tubing Mater	rial & Type:	L	PE	NEW	/ DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	На	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1231			18.00	.25	6.81	18.41	776	1.15	-2290	cleur
					1		T	2.58		
1234			18.54	2	6.35	14.58	312		-181.5	
1237			19.02	.15	De. 48	13.98	179	3.89	-166.4	
1240			19,44		6,45	13.80	146	4.15	-161.3	
1000						4				
147			19.60	4	6.44	13.74	132	4.21	-160.2	Ł J
ya.										
					PURGIN	IG DATA				
Sample ID:		MI	N-8	Sampling Flo	w Rate:	119		Analytical Lab	oratory:	Apex
Sample Time:		12		Final Depth t	o Water:	20.	76	Did Well Dew	ater:	IND
No. of Contain	ers/Type		rvative	Analysis/Met		Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3,	IID	1 1	Y A							
01	40	H	4	V	PHID	-				
20x	1	H	Cl	7	PHIN					
						97				
				NO	OTES/ADDITIO	I NAL COMMEN	TS			
7										
	hada a									

WELL MONITORING DATA SHEET ID: MW-80

				Well ID:	MU	J-85		Job Number:	1	
明	Casc	adia		Client:	Nu	Star Van	nnea	Date:	5/4	f
4	Associate	uulu		Project:	GW	MZQZ		Sampler:	40	
	Associate	S, LLC		Weather:	Sur		Time In/Out:			
		0			WELL	DATA				
Monument Typ	00:	Flush-mount	Stick-up		Well Diamete	er:	2	Depth to Free	Product:	
nonument (y)		other:	2		Well Depth:			Free Product 1	Thickness:	
Monument Co	ndition:	good			Depth to Wat	ter:	18.20	Water Column	Length:	
Well Cap Lock	Present:	Yes No			Screened Inte	erval:		Purge Volume	:	
Comments:										
urge Volume	= (Water He	ight) X (Multip	lier) X (# Casin	ng Volumes)						
Vater height r	multipliers (g	al):	1-inch well =	0.041	2-inch = 0.16	The second secon	4-inch = 0.65	3	1 gal = 3.785	iters
			,		PURGIN			-		
urge Method		Pe	rl,		Pump Intake		4	<u> </u>		
ampling Met	hod:	le	Mou	<u>)</u>	Tubing Mate	rial & Type:	20	PE	NEW	/ DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1310			18:20	, 25	6.13	16.79	86	7.92	-172-2	clar
1313			18.20	4	6.48	13.16	125	4.96	-229.9	1
1316		11 3000	1	V	6.73	12.98	130	2.81	-262.2	
		1	16						1	
1319					6.75	12.96	131	1,54	-296.1	
1322					6.79	12.83	131	80	-302.1	
1325					6.81	12,84	132	.69	-305.3	-
1328		/ - 1			6.82	12.84	132	. 6 (-307.3	
1320			3291		W (E) C	10:04	10-	101		
								1		
							-	ļ		
					<u> </u>					
						10.0474				
iample ID:			40	G " 5"		IG DATA		A1-21 11 1		I A a a Sa
Sample ID:		Mu	1-87	Sampling Flo Final Depth t		.25		Analytical Lab		MYSER
No. of Contain		Proce	rvative	Analysis/Me		18.2 Field Filtered		MS/MSD	Duplicate ID	- No
2 .	1) Type	riese	/ O			r ieiu riitered	I litter Size	טכואו לכואו	Loaplicate 10	
3X	40	H,		V) (-
2×	14	H	le	TP	H.D					
						-				-
					TEG / 1 5		170			
				NO	DIES/ADDITIC	NAL COMMEN	115			
				Au in						
	all-									
		- 17779494								

WELL MONITORING DATA SHEET Well ID:

4				Well ID:	Mu			Job Number:			
为金	Casc	adia		Client:	Nus	Her Vary	us	Date:	5/5		
1	Associate	es, LLC		Project:	GW	n 2021	11/8	Sampler:	gw		
				Weather:	Sun	550		Time In/Out:	815		
			1		1	. DATA	- X	T			
Monument [*]	Type:	Flush-mount	/ tick-up		Well Diamet	er:	2	Depth to Free			
		Other.	0		Well Depth:			Free Product			
Monument		900	U		Depth to Wa	ter:	17.02	Water Column	Length:		
Well Cap Lo	ck Present.	Yes No			Screened Int	erval:	_	Purge Volume			
Comments:				· · · · · · · · · · · · · · · · · · ·							
	ne = (Water He		7	~ ~ ~ ~ ~ ~ ~							
Water heigh	nt multipliers (g	al):	1-inch well =	0.041	2-inch = 0.16		4-inch = 0.65	53	1 gal = 3.785 l	iters	
Purge Meth	od:	0.4	0 001		Pump Intake	IG DATA	2	2 1			
	Sampling Method:				Tubing Mate			PE	NEW	/ DEDICATED	
Samping W	T	Cumulative	emple		Tubing Mate	illar & Type.			INTA	7 DEDICATED	
Time	Volume Purged (liters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Clarity/Color Other Remarks	
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV		
752	-		17.02	,25	7.20	14.10	439	17.90	-249.1	deer	
755			1	4	6.19	14.18	454	3.77	-288.4		
758	1					14.22	454				
	-				4.04	16.		2.02	-293.1		
	80			1.53	5.97	14.23	443	1.90	-279.3		
304			4	4	5.96	14.20	441	1.87	-281.0	¥	
				- 4						-	
*						-		1			
	-			-		-	-				
						1					
	+		-	-	-						
C 1 12						NG DATA				A	
Sample ID:		mw		Sampling Flo		. 2		Analytical Lab		April	
Sample Time No. of Conta		800		Final Depth t		The second secon	,02	Did Well Dew			
2	/// Type		rvative	Analysis/Met		Field Filtered	riiter Size	MS/MSD	Duplicate ID		
10	40	1	u	Vo	oc						
"LX	1	L H	ll	TP	1-D						
	1										
						-					
						-	-				
				NO	DTES/ADDITIO	NAL COMMEN	TS				
										1	

WELL MONITORING PATA SHEET
Well ID:

4				Well ID: NW W - (Job Number:			
为全	Caso	adia		Client:	Nu St	ar Veyn MZQZ	ex	Date:	5/5		
200	Casc	es, LLC		Project:	645	MZQI	1	Sampler:			
				Weather:	Sur	~65°		Time In/Out:			
		Shad a	ICh:	**************************************	WELL			D-41 : 5	Donali i		
Monument T	ype:	Flush-mount,	Stick-up		Well Diamete	er:		Depth to Free			
		Other:	1		Well Depth:		-	Free Product 1			
Monument C	Condition:	9000	7		Depth to Wat	ter:	18.47	Water Column	Length:		
Well Cap Loc	k Present:	Ye. No			Screened Inte	erval:		Purge Volume	: "		
Comments:											
	e = (Water He										
Water height	t multipliers (g	al):	1-inch well =	0.041	2-inch = 0.16	Marin Color	4-inch = 0.65	3	1 gal = 3.785 li	ters	
Dunga Matha	- d.				PURGIN	and the state of t	100	•			
Purge Metho Sampling Me		5	evin	_ (Pump Intake		22 LDP		NEW	DEDICATED	
sampling IVIE	:uiou:	Cumulative	on Dr	m_	Tubing Mater	iai & Type:	LOP	-	INEW	DEDICATED	
Time	Volume Purged (liters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pН	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Clarity/Color Other Remarks	
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	REPORT OF THE STATE OF THE STAT	
844			18.47	.3	6.07	14.80	450	2.40	-276.1	deer	
247			13,80	·n	6.44	14.49	571	1.22	-2919	1	
0				, , ,							
850			18.99		6.61	14.35	527	.84	-2848		
853			19.08		6.68	14.70	535	.66	-284.4	>	
856			19.10	1	6.70	14.72	538	.64	-287.0	C	
•				,							
	Sq.		,							4 . 2 . 3	
1000											
						į.					
					 						
2			1		DIDGIN	IG DATA					
Sample ID:		MW	-11	Sampling Flo		DATA 2	_	Analytical Lab	oratory	Anex	
Sample Time):	85		Final Depth t		19,	14	Did Well Dew		115	
No. of Contai			rvative	Analysis/Me		Field Filtered	Filter Size	MS/MSD	Duplicate ID		
3×1		H		Vo							
		[m]	<u> </u>		17						
ZX	10			TYK	イン						
3×1	10			No	C	-			MW-11	Dup	
2×	12			TPI	10	-			MN-11	Dura	
/ -	10		-	, ,	- W - C				THE PERSON NAMED IN	The state of the s	
				NO	OTES/ADDITIO	NAL COMMEN	TS				
										3/4	

				Well ID:	MM			Job Number:		
河金	Casc	nihn		Client:	Nu	How You	wee	Date:	5/5	
1	Associate	es, LLC		Project:		V1 202	1	Sampler: 40		
V				Weather:	Sun	650		Time In/Out:	,	
)		WELL	DATA				
Monument Ty	/ne:	Flush-mount/	/Stick-up		Well Diameter:		2"	Depth to Free Product:		
		Other:	^)		Well Depth:			Free Product 1	hickness:	
Monument Co	ondition:	CRUO E	/		Depth to Wat	er:	30,44	Water Column	Length:	
Well Cap Lock	Present:	Yes No			Screened Inte	erval:		Purge Volume	•	
Comments:										
		ight) X (Multip								
Water height	multipliers (g	al):	1-inch well =	0.041	2-inch = 0.162		4-inch = 0.65	3	1 gal = 3.785 l	liters
Dunna Matha	J.		1 11	Brund	PURGIN		21	1		
					Pump Intake		30		NEW	// DEDICATED
Sampling Med		Cumulative	long		Tubing Mater	lai & Type:	7	2	INEAA	DEDICATED
Time	Volume Purged (liters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
950			30,44	.3	6.82	16.54	391	6.94	-11de.5	cleer
953			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	t	6.61	15.72	328	4.21	-193.7	
956			1		6.40	15.24	281	3.50	-222.9	
959					6.35	-man F		2.94	-223.4	
									Control of the Contro	
1002	,				6.31	15.02		2.81	-225.3	1
1005			-	1	6.29	14,99	253	2,77	-227.4	
					PURGIN	G DATA				
Sample ID:		Mh	1-4	Sampling Flo		-2	,	Analytical Lab	oratory:	Laco
Sample Time:			175	Final Depth t		30,	44	Did Well Dew		10
No. of Contain			rvative	Analysis/Me		Field Filtered	Filter Size	MS/MSD	Duplicate ID	
34	40	1	tel	1	10 C					N
7	11	1	1.61	1	DU D	C				
	210	1	ru	1	ए ज च		-			
				N	OTES/ADDITIO	NAL COMMEN	TS			

. 4							Job Number:	1			
43	Casc	nihn		Client:	No	1 Stor 1	Jannes	Date:	5/5		
414	Associate	aulu		Project:	Gin	m20	4	Sampler:	400		
	Associate	es, LLC		Weather:	Sun 65°			Time In/Out:			
		0/			WELL	DATA					
		Flush-mount,	/Stick-up		Well Diamete	er:	2"	Depth to Free	Product:		
Monument T	ype:	Other:	1		Well Depth:	Well Depth:		Free Product Thickness:			
Monument C	ondition:	good)	Depth to Wat		er:	28,54	Water Column Length:			
Well Cap Loci	k Present:	Yes No			Screened Inte	erval:		Purge Volume	:		
Comments:											
Purge Volume	e = (Water He	eight) X (Multip	olier) X (# Casir	g Volumes)			,		,		
Water height	multipliers (g	gal):	1-inch well =	0.041	2-inch = 0.16		4-inch = 0.65	3	1 gal = 3.785 l	iters	
			\		PURGIN						
Purge Metho	d:	(Pen,		Pump Intake	Depth:	37				
Sampling Me	thod:		lowly	m	Tubing Mater	ial & Type:	LDF	E	NEW	DEDICATED	
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (μS/cm)	DO (ppm)	ORP (mV)	Clarity/Color Other Remarks	
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV		
1027			28,54	.25	4.15	15,69	252	3,11	-234.5	cleen	
1030			,	4	6.22	16.54	239	2.77	-219.9	1	
1033					6.21	15.78	207	1.90	-260.2		
1036					6.20	15.60	185	.93	-2743		
1039			C.	94	le.18	15.58	181	.80	-1802	•	
,			V	1	1		174	1		J.	
1042	ſ				6.18	15.61	11.64	.72	-287.1		
		A.A				G DATA				1 40 -00	
Sample ID:		Mu	1-7	Sampling Flo			5	Analytical Lab		Moce	
Sample Time		100	12	Final Depth t		28.	54	Did Well Dew		No	
No. of Contai	ners/Type	Prese	rvative	Analysis/Met	thod	Field Filtered	Filter Size	MS/MSD	Duplicate ID		
34	40	H	Cl	V	DC					3	
7~	11.	11	(2	10	4-cl						
	,,,,,			1							
							1.				
,								W.			
				NO	OTES/ADDITIO	NAL COMMEN	ITS				
		***************************************			,						
										- Kary	

. 4				Well ID:	700	N.)		Job Number:		
42	Casc	adia		Client:	Nix	Star Va	her	Date:	5/5	
414	Cusc	autu		Project:		1 2021	1	Sampler:		
	Associate	es, LLC		Weather:	2	1 700		Time In/Out:		
		/		Weather.	WELL	DATA		Time my out.		
				,						
Monument Ty	ne.	Flush-mount/	Stick-up		Well Diamete	er:	2	Depth to Free	Product:	
ionament i	P 5.	Other:			Well Depth:			Free Product		
Ionument Co	ndition:	C-			Depth to Wa	ter:	29.67	Water Column		
		500					01141			
Vell Cap Lock	Present:	Yes No			Screened Int	erval:		Purge Volume	2:	
omments:										
urge Volume	= (Water He	ight) X (Multip	lier) X (# Casi	ng Volumes)			. 1			
/ater height i	multipliers (g	al):	1-inch well =	0.041	2-inch = 0.16	52	4-inch = 0.65	3	1 gal = 3.785 li	ters
					PURGIN	IG DATA				
urge Method	1:)ev l		Pump Intake	Depth:	3	3		
ampling Met			lunka		Tubing Mate		LD		NEW	V DEDICATED
Triping wice	nou.	Cumulative	an you	ســـ	rubing iviate	Tial & Type.	<i></i>		The state of the s) DEDICATED
4.	Volume	Volume	DTW	Purge Rate		Tomp	Cond	DO	ORP	Clarity/Color
Time	Purged	Purged	(btc)	(L/min)	рН	Temp (°C)	(μS/cm)	(ppm)	(mV)	Other Remarks
	(liters)	(liters)	(5(0)	(=/11111)		()	(μω/ επι)	(PP:11)	(1117)	
MARK STATE	SURLEY AND	(IIICE13)		100000000000000000000000000000000000000	+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
11.0					1	1		†		7
1103			29.67	.2	4.09	17.11	180	2.91	-257.0	cleer
ilob					1.05		191		-228.6	1
4 4					6.05	19.25		2.73		
11091				-	6.14	19.40	188	3,30	-221.8	
110			1		6.13	18.36	176	_	-258.2	
116								2.85		
1115					6.10	17,33	172	2.35	-284.7	
1118					1 -	1	171		1	
		-		 	6.08	16,50		2.22	287.8	
1121					6.07	16.32	170	2,14	-2901	
1/24			1	W	6.07	16.25	170	2.09	1	V
1169		ļ			Q.OP	16.07	1.70	2.01	- 290.9	•
				-						
								1		
			-							
						 			-	
		1		l	DUDCIA	UC DATA				Α.
1				I		NG DATA		I. 1 11 .		Ana
ample ID:		Mu		Sampling Flo		.2		Analytical Lab		Lysex
ample Time:		112		Final Depth t				Did Well Dew		'No
o. of Contair	ners/Type	Prese	rvative	Analysis/Met	hod	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3x	UD	11	0	500) (3/
37	-1-	1	<u>~</u>	1 7	-11	-				
2+	11	H	il	-	CHY					
N .				<u> </u>			-	-	-	
						-			-	
				NO	OTES/ADDITIC	NAL COMMEN	TS			

				Well ID:	Mu	1-10		Job Number:	1		
13.2	Casc Associate	adia		Client:		tar Vou		Date:	5/5		
MA	Associate	e IIC		Project:	9W	M 202	1	Sampler:	Aw		
	7133001010	35, 220		Weather:	Sui	1 70°		Time In/Out:			
					WELL	DATA					
Monument Ty	/ne·	Flush-mount/	stick-up		Well Diamete	er:	7	Depth to Free	Product:		
	, , , , , , , , , , , , , , , , , , , ,	Other:	Λ		Well Depth:			Free Product Thickness:			
Monument Co	ondition:	Score (1)		Depth to Wat	ter:	1897	Water Column	Length:		
Well Cap Lock	Present:	res 9 No			Screened Inte	erval:	~	Purge Volume	:	_	
Comments:											
Purge Volume	e = (Water He	ight) X (Multip	lier) X (# Casin	g Volumes)							
Water height	multipliers (ga	al):	1-inch well =	0.041	2-inch = 0.16	2	4-inch = 0.65	3	1 gal = 3.785 l	iters	
			Y		PURGIN	and the first terminal termina					
Purge Method		De	VIM		Pump Intake		23	7			
Sampling Met	thod:	'L	onglo	N .	Tubing Mater	rial & Type:	LDP	<u> </u>	, (NEW	/ DEDICATED	
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Clarity/Color Other Remarks	
\$1.55			22.32		+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV		
1150			18,92	.75	6.19	17,07	133	3.20	-218,6	cleer	
1153				A	6.30	14.17	104	5.41	-169.7		
1156						12/12					
1139					6.28	19.16	101	4/11	-157,4		
115 7					6.10	14.15	123	7.20	-146.1		
1202		·			6,67	14.07	123	7.41	-142.4		
1705			1	4	6.05	14.04	123	7.48	-140.0	4	
										×	
					PURGIN	G DATA		,		Α	
Sample ID:		MW	-10	Sampling Flo		. 2	5	Analytical Lab		Lipex	
Sample Time:			ر <u>ي</u>	Final Depth to		18	77	Did Well Dew		100	
No. of Contain			rvative	Analysis/Met		Field Filtered	Filter Size	MS/MSD	Duplicate ID	N.	
3×4	0	H	u	V	D CA						
2x	12	H	ce	TP	H-V						
										6.07	
							-				
									-	2/2/2	
										1/2	
				NC	TES/ADDITIO	NAL COMMEN	TS				
										He Common to the	

				Well ID:	mw	-6		Job Number:	,	
明念	Caso	adia					anne	Date:	5/5	
44	Casc	e IIC		Project:	Gur	1 297	L(Sampler:	400	
200	7133001010	3, 220		Weather:	Su	n 70°		Time In/Out:		
		-			WELL					
Monument T	vpe:	Flush-mou	Stick-up		Well Diamete	er:	20	Depth to Free	Product:	
11.12.11		Other:			Well Depth:			Free Product 1	Thickness:	
Monument C	ondition:	2000			Depth to Wat	er:	18.30	Water Column	Length:	
Well Cap Lock	Present:	Yes No			Screened Inte	erval:	_	Purge Volume		
Comments:	a figure									Little Market Market
Purge Volume	e = (Water He	ight) X (Multip	lier) X (# Casin	g Volumes)	151					
Water height	multipliers (g	al):	1-inch well =	0.041	2-inch = 0.16	2	4-inch = 0.65	3	1 gal = 3.785 l	iters
					PURGIN	G DATA				
Purge Metho		P	evi		Pump Intake		2	3'	1	
Sampling Met	thod:	10	mux (un	Tubing Mater	ial & Type:	LDI	PE	NEW NEW	DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1248			18,30	.25	5.93	17.17	445	11.66	-185.1	eleen
1251			18.57		6.23	1429	787	9.90		
107						17.71			1	
1254			18.79		6.28	14.59	824	9.03	-249.	
1257			18,90		6.25	14.49	831	8.18	-281.3	
1300			19.22		6,25	14.41	835	8-10	-275,5	
1303	145-00-0	3 2 7 7 7 7		-	6.24	14.39	836	8.04		N
1000			19.31		4.01	11,01	000	0.00	40.9	
	s remain									1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
						7				
		- 44 - 46								
		175-212	W-15 1-1.7							
5-41-4					PURGIN	G DATA				
Sample ID:		MI	J-6	Sampling Flo			25	Analytical Lab	oratory:	Phoe oc
Sample Time:			_	Final Depth t		19	60	Did Well Dew		1/0
No. of Contain				Analysis/Met		Field Filtered		MS/MSD	Duplicate ID	
30	40		ce	Ve						
7	11	+	00	V 0	201					
LX	11	H	u	TP	40					
								-		7
								-		
		Market and			TEC/ADDITION	NAL COLARAS	TC		<u> </u>	7/ 10/ 10/10/10
				NC	JIES/ADDITIO	NAL COMMEN	12			
					4					
	Taran y				VIII					

Project: Vanner GWM 3Q21
Client:
Sampler: AW

Date: 8/10/11

t				Product	
Well ID:	Time:	DTP:	DTW:	Thickness:	Notes:
MW-6	748		19.39		
mw-10	755		20.74		
MW-3	801		31.22		
MW-4	806		32.30		
MW-2	8(0		30.34		
mw/	815	-	19.77		
mw-11	8/8		19.31		
MW-9	374		11.45		\
MW-5D	828		18.64		
MW 5	830		18.98		
MW-8	836		19.64		
mw.80	340	,	19.80		
mw-7	349		13.59		
		1			
					* **
					Ž.

Cilient: No Stor Young Date: Sampler: Weather: Sum 70 Time In/Out: WELL DATA Monument Type: Flush-mount Stick-up Other: Well Diameter: Well Depth: Free Product Thickness: Mell Cap Lock Present: Ves No Screened Interval: Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes) Water height multipliers (gal): 1-inch well = 0.041 2-inch = 0.162 4-inch = 0.653 1 gal = 3.785 liters Purge Method: Purge Method: Tubing Material & Type: New Yolume Sampling Method: Tubing Material & Type: New Yolume Purged (liters) Volume Purged (liters)					To the second	1 00			T. C. C.		
Associates, LLC Project Gust Gard Gard Firms In/Out	NA A	72			Well ID:	Mu	- +		Job Number:	-1	
Associates, LLC	19 3	Case	nihn		Client:	Nus	stor You	mea	Date:	8/10	121
Westbarn	4	C436	dulu		Project:	GWSV	M 36	2	Sampler:	Ma)
Well Dame Well Depth Well		Associat	es, LLC			2.4	200			100	
Monument Type:			-		Wedther.	WELL			Trine in out.		
Well Depth: Free Product Thickness: Depth to Water: 13.5 Water Column Length: Well Cap Lock Present: Purge Volume: Water Height (Multiplier) X (# Casing Volumes) Purge Volume Water Height (Multiplier) X (# Casing Volumes) Purge Volume Water Height (Multiplier) X (# Casing Volumes) Purge Wathod: Purge Water Height (Multiplier) X (# Casing Volumes) Purge Mathod: Purge Mathod: Purge Mathod: Purged (btc) (Julian) Purge Rate Purged (btc) (Julian) Ph (*C) (JuS/cm) (mg/L) (my/L) (mt/L) (other Rems Volumes) Purge Rate Purged (btc) (Julian) Ph (*C) (JuS/cm) (mg/L) (mt/L) (mt/L) (mt/L) Ph (*C) (JuS/cm) (mt/L) Ph (*C) (JuS/cm) (mt/L) Ph (*C) (JuS/cm) (mt/L)		*	V.	to it i		7	The second second second	1 - 5			
Well Depth: Free Product Trickness: Fr	Monument T	vpe:	Flush-mount	Stick-up		Well Diamete	er:	7	Depth to Free	Product:	17 7 1
Well Cap Lock Present: Yes No			Other:)		Well Depth:		_	Free Product	Thickness:	
Well Cap Lock Present: Yes No	Monument C	ondition:	exten 1			Denth to Wa	ter.	135	Water Column	length:	
Comments								17.3	-		
Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes) Water height multipliers (gal): 1-inch well = 0.041 2-inch = 0.152 4-inch = 0.653 1 gal = 3.785 liters PURGING DATA Pump Intake Depth: Sampling Method: Cumulative Volume Purged ((liters) 1	Well Cap Lock	c Present:	Yes	5		Screened Int	erval:		Purge Volume	11	
1-inch well = 0.041 2-inch = 0.152 4-inch = 0.653 1 gal = 3.785 liters	Comments:										
Water height multipliers (gal):	Purge Volume	e = (Water He	eight) X (Multip	lier) X (# Casi	ing Volumes)						
Purge Method: Sampling Method: Time						2 inch = 0.16	2	14 inch = 0.65	:2	1 02 - 2 705	itors
Pump Intake Depth: Pump In	water neight	martipliers (g	gai).	1-inch wen -	- 0.041		A variable has been been been been been been been bee	14-111011 - 0.02)3	1 gal - 3.763 l	iters
Tubing Material & Type: Type Temp	2			1		THE RESERVE TO THE PERSON NAMED IN	and the same of the same		_	3.8	
Volume Purged DTW Purge Rate PH Temp Cond (µS/cm) (mg/L) (my/) Clarity/Col Clarity/Col (µS/cm) (mg/L) (my/) Clarity/Col Clarity/Col (µS/cm) (mg/L) (my/) Clarity/Col Cla			Per	1,,				Mid	Deveen		
Volume	ampling Met	thod:	\ Ues	who	1	Tubing Mate	rial & Type:	1 20	PE	NEW	DEDICATED
(liters)	Time		Volume			рН		1	1	1	Clarity/Color
903 13.59 .3 7.07 15.4(2 650 19.71 -35.2 620 909 13.95 6.80 15.12 609 1.71 -19.3 115 14.00 6.82 15.11 609 1.71 -19.3 115 14.10 6.87 15.13 609 1.53 -19.0 918 PURGING DATA Sample ID: Sample Time: 10. of Containers/Type Preservative Analysis/Method Field Filtered Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS		(liters)		(500)	(5,11111)		()	(μω/ επτ)	(108/4)	(''''	Other Remarks
903 3.59 . 3 7.07 5.4(0 650 19.71 - 35.2 Clear 906 13.76 . 7 6.90 15.19 614 7.81 - 22.5 909 13.95 6.80 15.12 600 3.52 - 20.9 912 14.06 6.82 15.11 609 1.71 19.3 915 14.10 6.87 15.13 609 1.53 - 19.0 918 14.13 6.87 15.14 60.5 1.48 - 18.7 919 14.15 14.15 14.15 14.15 910 14.15 15.15 15.15 15.15 910 14.15 15.15 15.15 910 14.15 15.15 15.15 910 14.15 15.15 15.15 910 15.15 1			(110013)			1/01	1/0500	1/50/	1/05	+/ 20 1/	
13.71	0				+				+/-0.5 ppm	 	,
13.71	903		. 5	13.59	1.3	7.07	15,40	650	19.71	-35,2	clear
13.95	2			1221				1			
14.00 6.82 15.11 609 1.71 -19.3	906			12.46	1.6	4.70	15.19	414	1.8	-66.5	
14.10 6.82 15.11 609 1.71 -19.3 1.5 1.4 1.5 1.4 1.5 1.4 1.5 1.4 1.5 1.4 1.5 1.5	909			13.95		6.80	15 12	620	352	- 209	
14 10 6 87 15 13 6 6 9 1 5 3 - 19 0	410			1							
PURGING DATA ample ID: The sampling Flow Rate: The sampling Flow Rate: The sample Time: The sampl	710			14,00		6.82	15.11	609	1. +1	-19.5	
PURGING DATA ample ID: My-7 Sampling Flow Rate: Analytical Laboratory: Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID TX IV HCL WOCGY NOTES/ADDITIONAL COMMENTS	115			14.10		C. 27	15 13	609	1.53	-19.0	1 . 1
PURGING DATA Sampling Flow Rate: Analytical Laboratory: Apply Analytical Laboratory: Did Well Dewater: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID TX	010										
Sampler ID: Sampler Time: So. of Containers/Type Preservative Analysis/Method Field Filter Size Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS Analytical Laboratory: Analytical Laboratory: Analytical Laboratory: Did Well Dewater: No MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS	710			14.15	V	6.82	15,14	603	1.48	-18,7	•
Analytical Laboratory:			T				,			·	
Sampler ID: Sampler Time: So. of Containers/Type Preservative Analysis/Method Field Filter Size Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS Analytical Laboratory: Analytical Laboratory: Analytical Laboratory: Did Well Dewater: No MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS					<u> </u>						
Analytical Laboratory:											
Analytical Laboratory:											13
Analytical Laboratory:									ļ		
Analytical Laboratory:											
ample ID: ample Time: IIG		N-10									
Analytical Laboratory:					-						
ample ID: ample Time: IIG							:=:				
ample ID: ample Time: IIG											17
Analytical Laboratory:		0 11									
Analytical Laboratory:								,			
Analytical Laboratory:						PLIRGIN	G DATA	1	1	1	
Ample Time: O. of Containers/Type Preservative Analysis/Method Field Filtered Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS	ample ID:		M	7.	Campling Fla			<u> </u>	Applytical Lab	oratory:	Anna
O. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID 2x / U HCL							11		+		TO THE
2×10 HCl 3x 3×10 HCl VOC Gx NOTES/ADDITIONAL COMMENTS					-		14.	<u> </u>			No
NOTES/ADDITIONAL COMMENTS	o. of Contain	ers/Type	Preser	vative	Analysis/Met	hod	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
NOTES/ADDITIONAL COMMENTS	12	11.	211	1	1.						
NOTES/ADDITIONAL COMMENTS	-	10			ント			,			
NOTES/ADDITIONAL COMMENTS	SX	40	H	Q.	VOC	6×	-				
NOTES/ADDITIONAL COMMENTS NOA no headspace a 932						-					149
NOTES/ADDITIONAL COMMENTS NOA no headspace a 932			-		_						1 100
NOA no headspace a 932											
NOA no headspace a 932					†						
NOA no headspace a 932											
NOA no headspace a 932											
NOA no headspare a 932					NO	TES/ADDITIO	VAL COMMENT	TS.	1		
NUA no headspace (a 75'L	100				140		TAL COMMINICIAL				
	NU	t no	heads	nace	100 9	57					
				1							
									*		
					j)						

4				Well ID:	mw	-5.		Job Number:		
11/2	Casc	adia		Client:	Nu 5	tar Vano	us	Date:	8/10	
4	Associate	SIIC		Project:	Gus	M 3Q2		Sampler:	900	
- Tenta Little	7133001410	.3,		Weather:	Su	1750	2	Time In/Out:	l	
		1			WELL	DATA				
Monument Ty	me.	Flush-mount	/Stick-up		Well Diamete	er:	1	Depth to Free	Product:	
ivionalinent i	ypc.	Other:			Well Depth:		-	Free Product	Thickness:	~
Monument Co	ondition:	800	el		Depth to Wa	ter:	18.99	Water Column	n Length:	~
Well Cap Lock	: Present:	Yes No			Screened Inte		10:11	Purge Volume		~
Comments:		9110			15dreened me	CI Val.		Targe volume		
Purge Volume	= (Water He	ight) X (Multir	dierl Y /# Casi	ng Volumes)	T					
Water height		V-101	1-inch well =		2-inch = 0.16	2	4-inch = 0.65	:3	1 gal = 3.785 l	ters
Water height	manipher 3 (8	41).	I men wen	0.041	PURGIN	-	+ IIICII - 0.03	,3	11 gai - 3.763 i	iters
Purge Method	d:	Q:	xi is		Pump Intake		M	5 22	1	
Sampling Met		10	onthe	77)	Tubing Mater		LD	PE	NEW	/ DEDICATED
		Cumulative	1000							77 220101120
Time	Volume Purged (liters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
950		1	18.95	,25	6.37	16.04	739	21.04	-70.5	clear
953			19.25	.15	6.53	15.75		9.91	-44.9	1
456				b ()	- 1		-			107
1			19.70		6.64	15,60	689	4.10	-404	
959			20.08		6-66	15.49	684	3.89	-39.9	The state of the s
1002			20.10	1	6.67	15.51	680	3,71	-39.0	+
i										
Sec. 1. 10	1			a 1: =:	PURGIN			T		
Sample ID:		mw		Sampling Flov		1/3		Analytical Labo		Apra
Sample Time:	/		N .	Final Depth to			80	Did Well Dewa		110
No. of Contain			rvative	Analysis/Met	ngd	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3x	40	H	u	VOC	1 Gx					
2 x		H	a	To	S	•				
	À									
	Tit.								-	
								\		
				NO	TES/ADDITION	NAL COMMENT	S			
NOI	ts no	head	pacel	0, 101	5					
			0							

				1	- Interiordi	TO BATA OTT				
No offer				Well ID:	MM	-5D		Job Number:	1	/
19	Casc	nihn		Client:	Nu		mek	Date:	8/10/	11
4	Associate	dura		Project:	GISN	13021		Sampler:	Nas	
	Associate	es, LLC		Weather:	Same	750		Time In/Out:	t	
				Tredition.	WELL	DATA		Trime in out.		
	1	[5]	Ic.		_		1	[5] J. J. E	0 1 1	
Monument T	ype:	Flush-mount,	/Stick-up		Well Diamete	er:	1	Depth to Free	Product:	
		Other:			Well Depth:		-	Free Product	Thickness:	
Monument Co	ondition:	0.			Depth to Wat	ter:	18,66	Water Column	length:	~
		gros c	/				10,60			
Well Cap Lock	Present:	Yes No			Screened Inte	erval:	_	Purge Volume	i i	
Comments:										
Purge Volume	= (Water He	ight) X (Multip	lier) X (# Casi	ng Volumes)						
Water height			1-inch well =		2-inch = 0.16	2	4-inch = 0.65	3	1 gal = 3.785 l	iters
Tatal Height	11101010101010	,317.	I men wen	0.011	PURGIN		+ IIICII - 0.05	,5	11 gui 3.703 i	iters
Purgo Motho	4.		1	21	THE RESERVE AND ADDRESS OF THE PERSON NAMED IN		1	15	165	1
Purge Metho		1	eristal		Pump Intake		N/	id Scree		
Sampling Met	:hod:	`	land	(on)	Tubing Mater	rial & Type:	2	DPE	NEW	/ DEDICATED
	Volume	Cumulative	U							
Time	Purged	Volume	DTW	Purge Rate	, L	Temp	Cond	DO	ORP	Clarity/Color
rane	(liters)	Purged	(btc)	(L/min)	рН	(°C)	(μS/cm)	(mg/L)	(mV)	Other Remarks
	(ureis)	(liters)								
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
IDAA			12 1-1	1 1				—		
1020			13.66	.25	6.96	18.72	499	18-14	24.0	clear
1023			18.69		7.11	16.02	462	10.22	19.9	1
			10/4							
1026			1 1		7.20	15.70	455	4.16	18:2	
1029			· ·	4	7.24	15.49	448	1-94	16.9	
					_	1				
1032					7-23	15.10	441	-98	17,0	
1035			1	L	7.23	15.02	445	75	16.60	
			(W	793	. 75	16.0	J
1038			2	*	7.24	14.96	438	.70	16.4	4
1		1							1	
								-		
				-						
							_			
				 						
							L			
					PURGIN					A .
ample ID:		MW	-5D	Sampling Flo	w Rate:	.25		Analytical Lab	oratory:	Apex
ample Time:		103		Final Depth t	o Water:	18.	69	Did Well Dewa	ater:	400
o. of Contair	ers/Type		rvative	Analysis/Met	hod		Filter Size	MS/MSD	Duplicate ID	
2						e				
OX	40	H	ا	BTE	EX/GX					
2x	11-	H	Cl.	Dr	_ 1	0				
	10	1)		1	-			 		
								-	-	-
· · · · · · · · · · · · · · · · · · ·										
					TEC/: 5.7:					
				the later with the la	I ES/ADDITION	NAL COMMENT	5			
1101	000	head	30 110	@ 1	050					
70	1 400	iv ~acc	Much							
		0.	V							

Client: Nu Ster Vounce Date: Sampler: Weather: Sun SO Time In/Out: Weather: Weather: Well Data Monument Type: Other: Well Data Monument Condition: Well Cap Lock Present: Ves No Screened Interval: Purge Volume: Purge Volume Sampling Method: Purged (liters) Volume Purged (liters) Purge Rate Purged (liters) Purged (liters) Purge Volume + V-0.1 +/-0.5 °C +/-5% +/-0.5 ppm +/-20 mV					******	MONTON	TO DATA OTT			,	
Associates, LIC Project: GUSM 382 Sample: AU					Well ID:				Job Number:	1	
Associates, LLC	MI	Casa	adia		Client:	NI	Star Vo	mnla	Date:	8/10	
Weather:		Cusc	.aaia		Project:	61.5	W 30	7.1	Sampler:		
Well DaTA Well DaTA Well Dameter Z Daph to Free Product:	74	Associate	es, LLC			300		- (7~	
Monument Type: Aush-mount/shck-up					weather:	MELL			rime in/Out:		
Monument Condition				1							
Well Depth:	Monument T	vna.	Flush-mount/	Stick-up		Well Diamete	er:	2	Depth to Free	Product:	
Monument Condition:	Mondinenci	ypc.	Other.	()		Well Depth:			Free Product	Thickness:	_
Well Cap Lock Present:	Manumant C	andition:	-	()			tor.	19 (15	Matas Caluma	l anath.	_
Comments: Purge Volume Water Height X (Multiplier) X (# Casing Volumes) 2-inch = 0.162			M.	<u> </u>				17.03			
Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes) 2-inch = 0.162	Well Cap Locl	k Present:	Yes No			Screened Inte	erval:		Purge Volume	1	
Volume Purged P	Comments:										
Volume Purged P	Purge Volume	e = (Water He	eight) X (Multin	lier\ X (# Casir	og Volumes)			***************************************			
Purge Method:						2 inch = 0.16	1	14 inch = 0.65	2	1 401 - 2 705 1	litore
Pump Intake Depth:	water neight	multipliers (g	(d1).	1-inch wen =	0.041			4-Inch = 0.65	3	1 gal = 3.785 l	illers
Tubing Material & Type: LDVE NEW / DEDICATED						1-2-2-1		I AA. (-		
Tubing Material & Type: LDVE NEW / PEDICATEC			Pa	X1		Pump Intake	Depth:	Mid	Deven	20	5
Volume	Sampling Met	thod:	· l	Bushler	<u>د</u>	Tubing Mate	rial & Type:	LD	PE		/ DEDICATED
Time Purged (liters)		Values	Cumulative	U							
C	Time		Volume	DTW	Purge Rate	nH nH	Temp	Cond	DO	ORP	Clarity/Color
(liters) (liters) (liters) 1/0.1 1/0.5 °C 1/5% 1/0.5 pm 1/20mV 1/20mV 1/0.5 °C 1/5% 1/0.5 pm 1/20mV 1/0.5 °C	ime		Purged	(btc)	(L/min)	pH	(°C)	(µS/cm)	(mg/L)	(mV)	Other Remarks
100		(liters)	(liters)				and the				
1057						+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
100	10-7			10 1	2	7	100		20	27.0	Λ Λ
100	JUS F			17,69	, 65	1,10	19.56	303	20.06	- 5t. F	Cloudy
100	1100			19 99	.15	6.68	16 47	193	7 15	-21.1	decar
106					4						
109	1100			20:15		6,41	15 65	164	2.87	- 44.2	
109	1106			10.80		638	15 50	156	1.74	-5M1	
PURGING DATA Sample ID: MW - 8 Sampling Flow Rate: Final Depth to Water: Vo. of Containers/Type Preservative Analysis/Method Field Filtered Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS				1							
PURGING DATA Sample ID: Sample Time: IN: Final Depth to Water: Preservative Analysis/Method Field Filtered Filter Size MS/MSD Duplicate ID The purpose of	1109		Alba	21.09		6.35	15,43	147	1,52	-52.4	2
PURGING DATA Sample ID: Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filtered Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS	1112-			2124		6 35	15 41	148	1.39	-536	
Sample ID: Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID SX 40 BTEX/Ga + HCL TX 12 NOTES/ADDITIONAL COMMENTS	1111		~	01.01	4	P, 03	10.71	10	1001	30.4	71
Sample ID: Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS											
Sample ID: Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS											
Sample ID: Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID SX 40 BTEX/Ga + HCL TX 12 NOTES/ADDITIONAL COMMENTS											
Sample ID: Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS			-							-	
Sample ID: Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS								1915			
Sample ID: NW-8 Sampling Flow Rate: Final Depth to Water: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS									and the second		
Sample ID: NW-8 Sampling Flow Rate: Final Depth to Water: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS											
Sample ID: Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS											
Sample ID: Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS											
Sample ID: NW-8 Sampling Flow Rate: Final Depth to Water: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS				-							A Section
Sample ID: Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS											
Sample ID: NW-8 Sampling Flow Rate: Final Depth to Water: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID NOTES/ADDITIONAL COMMENTS						DUIDOU	C DATA				
Sample Time: No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID Taking a sign of the size of			1	0	1.		The second secon		T		
No. of Containers/Type Preservative Analysis/Method Field Filter Size MS/MSD Duplicate ID The State of Containers State					-		, 15				HORX
3×40 BTEX/Ga+ HCl					Final Depth to	o Water:	23.	2	Did Well Dewa	ater:	Mo
3x40 BTEX/Ga + HCl . 2x/L Da + HCl . NOTES/ADDITIONAL COMMENTS	No. of Contair	ners/Type			Analysis/Met	hod	Field Filtered	Filter Size	MS/MSD	Duplicate ID	FALLET - LINE
NOTES/ADDITIONAL COMMENTS	7.	UM	T T		× 110	. 0					
NOTES/ADDITIONAL COMMENTS		10	DIE	1/ Ga	H	1					
NOTES/ADDITIONAL COMMENTS	25	×11_	Do	x1 =	- 14 C	e					
NOTES/ADDITIONAL COMMENTS NOTES/ADDITIONAL COMMENTS					V.J.						
NOTES/ADDITIONAL COMMENTS NOTES/ADDITIONAL COMMENTS											
NOTES/ADDITIONAL COMMENTS NOTES/ADDITIONAL COMMENTS											
NOTES/ADDITIONAL COMMENTS NOTES/ADDITIONAL COMMENTS											
NOTES/ADDITIONAL COMMENTS NOTES/ADDITIONAL COMMENTS				and the same							15,748,75,17
NOTES/ADDITIONAL COMMENTS NOTES/ADDITIONAL COMMENTS											
VOA no headque @ 1/25					N/O	TES/ADDITIO	NAI COMMEN	rs			
VIII no headglace @ 1/25	1100		1	^ 1	INU	ווווווווווווווווווווווווווווווווווווווו	TAL COMMEN	13			
	NA	no h	La Amore	١ (ه) يو	125						
	100	- 0	201							8.7	

4	Kale III			Well ID:	Mw	-80		Job Number:	1	
43	Caso	nihn		Client:	Nu ?	How Voen	nea	Date:	8/10	
4	Associate	e IIC		Project:	9125	M 300	2-1	Sampler:	10	
	Associati	es, LLC	N. Contraction of the Contractio	Weather:	5.	n 800		Time In/Out:		
	5				WELL	DATA				
Monument T	vne:	Flush-mount	/stick-up		Well Diamete	er:	2	Depth to Free	Product:	
Monament	ype.	Other:			Well Depth:			Free Product 1	Γhickness:	_
Monument C	ondition:	Sups c	()		Depth to Wa	ter:	19.85	Water Column	Length:	~
Well Cap Loc	k Present	Yes No	<i></i>		Screened int		11:03	Purge Volume		
Comments:			4		Joercencame	CI VUI.		I arge voianne		
	e = (Water He	eight) X (Multip	olier\ Y /# Casir	a Volumes)						
	: multipliers (g		1-inch well =		2-inch = 0.16	2	4-inch = 0.65	.2	1 gal = 3.785 l	iters
Water neight	. maraphers (g	5017.	1-inch wen -	0.041	PURGIN		4-111011 - 0.03	.5	I gai - 3.763 i	iters
Purge Metho	d:	On	uri.		Pump Intake	The second secon	M	Scre	11	0
Sampling Me		5	5WK(5	, ,	Tubing Mate		15	DE	NEW	DEDICATED
		Cumulative	9200		Tabing Mate	14.4.7,50.		A C	- Citati	7) 525161125
Time	Volume Purged (liters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	На	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1133			19.85	.25	6.40	16.91	209	23.45	35.8	claer
11360			19.92		6.75	15.20	111	8.98	47.0	
1104			11.70							
1/39					6.94	15.64	93	3.77	54.9	
1142					7.02	14.91	90	2.29	55.6	
1148					7.05	14.95	89	2.15	57.5	100
			1		1					
115			Á	*	7.05	14.90	89	2.02	60.1	<u> </u>
										25.
17				v						
(
										<u> </u>
					PURGIN	G DATA				
Sample ID:	- Y	Ma	J-8D	Sampling Flo		.25		Analytical Lab		Apex
Sample Time			5	Final Depth t			92	Did Well Dewa		11/5
No. of Contai	ners/Type	Prese	rvative	Analysis/Met	hod	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
37	40	710		BTE	× Gx					
2	11	. 11	00	N	17					
2×	16	H	u	D		,				

				9						
-10	^	+ +	0			NAL COMMEN	rs			
10	A no	Nead	2 cue	00 17	105		38		**	
			, 0							
1 0						pr 1 1				

						10 5/1/1/10/11				
4				Well ID:		1-3		Job Number:	- /	TO THE STATE OF TH
14.5	Casc	adia		Client:	Nu	Stow Vo	nner	Date:	8/10	
100	Associate	clic		Project:	Ger	M 30	21	Sampler:	10	
	Associate	3, LLC		Weather:	Su	n 850		Time In/Out:		
		5	1		WELL	DATA				
	(Flush-mount	/Stick-up		Well Diamete	er:	2	Depth to Free	Product:	
Monument T	ype:	Other.			Well Depth:		_	Free Product 1	Thickness:	_
Monument C	andition:		\wedge		Depth to Wa		210-	Water Column		~
		900	50		<u> </u>		31.25			
Well Cap Lock	Present:	Yes No			Screened Into	erval:		Purge Volume	:	
Comments:		-								
Purge Volume	e = (Water He	ight) X (Multip	olier) X (# Casir	ng Volumes)						
Water height	multipliers (g	al):	1-inch well =	0.041	2-inch = 0.16		4-inch = 0.65	3	1 gal = 3.785 l	iters
			A A ()	PURGIN	G DATA		1		
Purge Metho		131	1 sellow	,	Pump Intake	Depth:	Mile	Doree	~ 3.	
Sampling Met	thod:	9	ow Hou	1	Tubing Mate	rial & Type:	5	B	NEW	// DEDICATED
	Volume	Cumulative	0							
Time	Purged	Volume	DTW	Purge Rate	рН	Temp	Cond	DO	ORP	Clarity/Color
	(liters)	Purged	(btc)	(L/min)	"	(°C)	(μS/cm)	(mg/L)	(mV)	Other Remarks
		(liters)								- 10.00
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1219			31.25	.3	6.93	17.90	107	20.11	44.8	clear
1218			31.48	-2	6.53	15.49				
							The state of the s	13.75	36.3	
1221			32.03	.15	6.40	15.18	502	8.03	31.9	
1224			32.51		6.36	15.10	550	5.19	30.5	
1227			32.60		6.35		541	3.67		V
						15.13			8.35	
1250		15 6 8 8 1 8	32.71		6.34	15.11	539	1.96	28.5	
1233			32.78		6.36	15.15	545	1.70	27.9	
										•
1236			32.85		6.38	15.19	540	1,58	27.3	
2 1 2										30
			-							
										311
13										
						0.0471				15000
C1 12		An A ·	17	la :: =:	PURGIN	pane		Ta		A
Sample ID:		Mr	シーク	Sampling Flor		.15		Analytical Lab		ppp
Sample Time:		12	70	Final Depth to		32	.80	Did Well Dewa		INO
No. of Contair	ners/Type	Prese	rvative	Analysis/Met	hod	Field Filtered	Filter Size	MS/MSD	Duplicate ID	The Life Control
3X	40	H	U	BITES	4/64	-				
2 1	17_	1	a	D.	2					
CA	1	D		10		•				15.00
										13/20
				NO	TES/ADDITIO	NAL COMMENT	rs			
NOA	ma la	odspa		1300						
401.4	VC	and all	a Co	1000						

				WELL	MONTORI	NG DATA SHI	CEI			
4				Well ID:	mu			Job Number:	1	
445	Casc	adia		Client:	Nu:	Star Va	mer	Date:	8/12	
400	Associate	s IIC		Project:	Gu	JM 30	21	Sampler:	10	
		-,		Weather:	5	in 85	D	Time In/Out:	L	
		5	1		WELL	DATA				
Monument Type	a.	Flush-mount/	Stick-up		Well Diamet	er:	2"	Depth to Free	Product:	
violidine i ype	(Other:	Λ		Well Depth:		-	Free Product	Thickness:	
Monument Cond	dition:	Run	el		Depth to Wa	ater:	32.32	Water Column	Length:	_
Well Cap Lock Pi	resent: /	Yes No	Att.		Screened Int	terval:	_	Purge Volume		_
Comments:							TE			
Purge Volume =	(Water He	ight) X (Multip	lier) X (# Casii	ng Volumes)						
Water height mu			1-inch well =		2-inch = 0.16	52	4-inch = 0.65	3	1 gal = 3.785	liters
			0			NG DATA				
urge Method:		3	Pan		Pump Intake	Depth:	Mic	Surce	n 3	
ampling Metho	od:	Q.	2 SKL W	w	Tubing Mate	erial & Type:	3	3	NEW	/ DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1310			32.32	. 25	6.25	20012	233	22.01	42.4	elecer
1313			1		6.19	16.25	263	9.23	51.0	
1316										
					6,15	15.48	1	3.66	57.2	
1319					6-12	15,20	288	2.40	59.8	
1322					6,12	15,11	290	2-16	60.6)
1325			1		6.11	15.06	295	2.07	61.1	4
					-					
10.										
					Participation and the second	NG DATA				1
ample ID:		MW		Sampling Flor		100	The same and the s	Analytical Lab		Apex
ample Time:	<i>t</i> =		25	Final Depth to		56	.32	Did Well Dewa		100
o. of Container	rs/Type	Preser		Analysis/Met	hod	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3x4	O	H(e	GTZ	4/Ga					
2x	IL	L	(2)	Do	L					
0 0										(100 1 3
					***************************************	1				
										4
				NO	TES/ADDITIO	NAI COMMENT	TS.			
1 11-11		0.	4.0			TATE COMMENT				
JUK	No V	reals	ace (&	1543						
alle.		<u> </u>								
VOK	ino V	roedsp	ace a			NAL COMMENT	I FS			

					The state of the	TO BATTA OTT				
4-				Well ID:	M	W-2		Job Number:	1	
142	Casc	adia		Client:	Nu	Star V		Date:	8/10	2
4	Associate	adia		Project:	62	M 3Q.	21	Sampler:	AWI	
	Associate	es, LLC		Weather:	Sur	n 85		Time In/Out:		XION TO BUILDING
					WELL	DATA				
	The state of the s	Flush-mount,	stick-up		Well Diamete	er:	20	Depth to Free	Product:	_
Monument Ty	pe:	Other:			Well Depth:			Free Product		
		UMBI	Λ							,
Monument Co	ondition:	a\$5000	.У		Depth to Wat	ter:	30.31	Water Columi	n Length:	~
Well Cap Lock	Present:	Yes No			Screened Inte	erval:	_	Purge Volume	::	\sim
Comments:										
Purge Volume	= (Water He	ight) X (Multip	olier) X (# Casir	ng Volumes)						
Water height			1-inch well =		2-inch = 0.16	2	4-inch = 0.65	3	1 gal = 3.785 l	iters
rater rieigner	marcipiici 3 (8	aij.	I men wen -	0.041	PURGIN	-	+ IIICII - 0.03	,5	1 gai - 3.765 i	iters
urge Method	1.	B	0		Pump Intake	The Real Property lies and the last lies and the	41	1	n 33	
Sampling Met		U					51	docree	N 33	/ DEDICATED
ampling wet	nou.		woller	<u> </u>	Tubing Mater	riai & Type:)	P	NEW	/ DEDICATED
	Volume	Cumulative Volume	DTW	Durge Pete		Taman	Cand	DO	OPP	Clarity/Color
Time	Purged	Purged	(btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Other Remarks
	(liters)	(liters)	(DEC)	(L/ITIIII)		(()	(μ3/611)	(mg/L)	(1117)	Other Remarks
		(ncers)		.3	+/-0.1	./0506	. / =0/	1/05	+/-20 mV	
				- 4		+/-0.5 °C	+/-5%	+/-0.5 ppm		
1400			30.31	303+	6.57	23.26	261	16.35	39.2	clear
1403			30.40	30.40		16.70	233	9.19	55.1	
				6						
1406			30.44	.2	6,30	15,42	226	4.27	60.5	
1409			30.46		6.23	15.30	210	2.58	63.7	
4 11/1							,			
1711			30.46	V	6.23	15.21	204	2.60	67.5	
1415			1		6.23	15.40	199	2.07	71.9	V
1418					The state of the s				72 2	
1910					6.23	15.45		2.01	72.5	
1421			1	V	6.25	15.53	190	1.81	76.7	
' '										
								 		
						1 17				
					1					
		-			, in					
					D. I D. C. C.	CDATA				
		- A :	7		PURGIN	The second second		Te de la constant		11 2
ample ID:		am	1	Sampling Flow		. 7		Analytical Lab		Apex
ample Time:		14	2	Final Depth to		30.		Did Well Dew		No
o. of Contain	ers/Type	Prese	rvative	Analysis/Met	hod	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3x	UD	14	Ce	BIF	X/GX	1				
2~	11	1	100	WIT	742	and the second				
X	16	1	tle	Do	2					
			-							
								1		1
					we are noticed					
					TES/ADDITION	VAL COMMEN	rs	-/		
	1 100 1	a cales	0 0 10	450						
IA		WILL CON ME	/	100						
VOL	U rue y									
VOF	, ,,,	T								

				Well ID:	MW	-10		Job Number:		,
N Z	C			Client:		ter Vous	VA 0 64	Date:	8/11	111
	Casc	adia		Project:	Bush		(Sampler:	W V	
7/	Associate	es, LLC		Weather:	CAN PI	700		Time In/Out:	400	
				weather.	WELL	DATA		Time my out.		
		Flush-mount	Stick up		Well Diamete		2	Depth to Free	Product:	
Monument Ty	pe:		Stick-up/			=1.	C			
		Other:	A		Well Depth:			Free Product		
Monument Co	ondition:	9000	<i>y</i>		Depth to Wa	ter:	19.39	Water Columi	n Length:	
Well Cap Lock	Present:	Yes No			Screened Int	erval:		Purge Volume	2:	
omments:										
urge Volume	= (Water He	ight) X (Multip	olier) X (# Casir	ng Volumes)						
	multipliers (g		1-inch well =		2-inch = 0.16	2	4-inch = 0.65	53	1 gal = 3.785 li	ters
	(8)	,=-,-				G DATA		4	\	
urge Method	d:	Dev	1		Pump Intake	THE RESERVE AND ADDRESS OF THE PARTY OF THE	Mi	lswer	- 22	
ampling Met	hod:	17		70)	Tubing Mate		40	PE	NEW	/ DEDICATED
		Cumulative	To Use							
Ti	Volume	Volume	DTW	Purge Rate		Temp	Cond	DO	ORP	Clarity/Cole
Time	Purged (liters)	Purged	(btc)	(L/min)	рН	(°C)	(µS/cm)	(mg/L)	(mV)	Other Rema
1 1 1 - 1 1	(IIICIS)	(liters)								
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
721			19:39	.3	6.94	16.91	562	19.41	- 22.6	cher
221			19.90	2	6.51	15,47	757	9.20	- 53.6	1
TLI									1	
727			20.35		6.36	15.30	896	4.19	-67.9	
730			20.57	4	6.28	1572	913	2.07	-81.3	4
	***************************************		20.92		6.26	15,19	96 (1.83	-90.4	1
733			-							
736			4,15		6.28	15,14	969	1.70	-95.1	
739			21.26	7	6.29	15-16	965	1.63	-97.0	1
						10-10				
								<u> </u>		
							-			
								1		
		ļ								
			v., P							
						,				
				1 0						
					DI IDCIT	C DATA	L			
		n /1: \	7	ls 1: =:		G DATA		Amaliata 11 1	a sata = ::	1
ample ID:		IVIN	~ (Sampling Flo		11.9		Analytical Lab		1200
ample Time:		72	1	Final Depth t		-				100
lo. of Contain	ners/Type	Prese	rvative	Analysis/Met	thog	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3+1	10	H	l	NOC	162					
7~	14	H	(0	X						
		1		12	7					
A A SA		-								
3x	40	H.	l	Voc	1/62				mw-6	Dup
2	1)		(0	N	al					1
- ~	1		7	1/3	_					
F A		1	^ ^	THE RESERVE AND ADDRESS OF THE PARTY OF THE	DTES/ADDITIO	NAL COMMEN	TS			
MAIL	no he	not so	0,80	5						
NOA.		- 11								
VUH		1								

				*****	I A	TO DATA OTT				
11.4-				Well ID:	MW			Job Number:		1
412	Caso	nihn		Client:	Nu	Har Var	inco	Date:	18/11	121
4	Associate	auru		Project:	GIAT	m 3Q2		Sampler:	Au	
	Associati	es, LLC		Weather:		Village Control		Time In/Out:		
		1	7		WELL	DATA				
		Flush-mount	Stick-up		Well Diamete		2	Depth to Free	Product:	_
Monument Ty	/pe:		∧	,			-			
		Other:			Well Depth:		_	Free Product	Thickness:	
Monument Co	ondition:	2000			Depth to Wa	ter:	18.74	Water Colum	n Length:	~
Well Cap Lock	Present:	Yes No			Screened Int	erval:		Purge Volume	a:	
Comments:		N								
	- (\A/ator He	eight) X (Multip	lias\ V /# Casis	\/ala\						
					0.11 0.16				1 0 705 1	
Water height	multipliers (g	gal):	1-inch well =	0.041	2-inch = 0.16		4-inch = 0.65	3	1 gal = 3.785 l	iters
		1 0	+		PURGIN			1	0.51	
urge Method		Dex			Pump Intake	Depth:	Mi	d scree		
ampling Met	hod:	100	nu Klo	N	Tubing Mate	rial & Type:	. 5	DPE	NEW	DEDICATED
	Volume	Cumulative	U							
Time	Purged	Volume	DTW	Purge Rate	рН	Temp	Cond	DO	ORP	Clarity/Color
	(liters)	Purged	(btc)	(L/min)	Pii	(°C)	(µS/cm)	(mg/L)	(mV)	Other Remarks
	(.10013)	(liters)		-/						
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
816			18.74	.25	6.48	19.62	317	18.65	41.1	cher
0000			10.11	, ,	4		011		16.	Caror
019					6.11	16.13	501	8.72	86.5	1
832					5.90	15.43	643	3.19	95.9	
005			4	+			'	10.11		
022			A		5.85	15.30	702	2.06	101.0	
338					5.81	15.24	707	191	103.3	
841			V							V
091			Y	-	5.79	15.22	710	1.88	104.6	
		2								
						-	-	-		
	,				-			<u> </u>		
									1 1	
						,		 		
					PURGIN	G DATA				
ample ID:	-	MW	71	Sampling Flo	The second secon	.2	5	Analytical Lab	oratory:	Doese
mple Time:		BU	1	Final Depth t			74	Did Well Dew	WALLES AND THE RESERVE AND THE	
o. of Contain		Preser	vativo	Analysis/Met			Filter Size	MS/MSD	Duplicate ID	146
O. Of Contain	1) In	Flesei	valive	1		rieid riitered	Filler Size	1013/10130	Dupilcate ID	
20	40	H	U	VOC	19x	-				
1~	11	11	10	1						
	1		~	-	. ~					
				N/C	TES/ADDITIO	NAL COMMEN	TS			
200 d		A	1			AVE COMMENT		V		
VOA	no	really	0 (0)	900)					
								*		

				Well ID:	Mi	NG DATA SHI		Job Number:		
MI		1.			10/4	Jan D) s	e 1 NG.		0/11	
2	Casc	adia		Client:	TIM	M Nu	oter van	Date:	8/11	
71	Associate	es, LLC		Project:	900	n 302	1	Sampler:	400	
			1	Weather:	3w	n os		Time In/Out:		
			1		A STATE OF THE OWNER,	DATA	1 - W			
Monument T	ype:	Flush-mount	/Stick-up	,	Well Diamete	er:	7"	Depth to Free Product:		
		Other:			Well Depth:			Free Product 7	Thickness:	
Monument C	ondition:	9000			Depth to Water:		19.70	Water Column	Length:	_
Well Cap Loc	Present:	Yes No			Screened Int	erval:	_	Purge Volume	: 1	~
Comments:										
	e = (Water He	ight) X (Multir	olier) X (# Casir	g Volumes)						
Committee of the Commit	multipliers (g		1-inch well =		2-inch = 0.16	2	4-inch = 0.65	3	1 gal = 3.785 lit	ore
Water Height	martipliers (8	aij.	1-inch wen =	0.041	PURGIN		4-111011 - 0.03	3	1 gai - 3.765 iii	.013
Purge Metho	4.	00	W) a		Pump Intake		1 m/1:	dscree	10 74	
Sampling Me		1n	M	. 1	Tubing Mater		I U	DPE	NEW	/ DEDICATED
od mpiling tvic		Cumulative	anda		Tabing Water	тагостуре.			INEVV	DEDICATED
Time	Volume Purged (liters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
		H H			+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
902			19.70	.3	6.61	19.02	488	15.49	22.1	eleer
100			1			1.		1001		- Color
905		W. 7	20,05	-2	6.02	16.46	301	6.57	39.5	
908			20.23		5.80	15.46	248	2.19	51.7	
911			20.31			15 30	24/0	101		
					5.60	1		1.81	56.7	
914			20.36		5.49	15.24	243	1.69	59.5	
917			20-39		5.45	15.24	240	1.55	62.0	
920			20.40	7	5.44	15.22	237	1.51	62.7	4
(00			201-10		0,11	13.00	617	1201	6 C. T	•
					B1120:::	CDATA		<u> </u>		
amala ID:		Ι.Λ.		C1: 5'	PURGIN			Applied 15 1		1
ample ID:		Ma	2^11	Sampling Flor		,2	.1,1	Analytical Labo		Agea
ample Time:		92		Final Depth to			.44	Did Well Dewa		WO
lo. of Contain	ners/Type	Prese	rvative	Analysis/Met		Field Filtered	Filter Size	MS/MSD	Duplicate ID	
. OK	40	H	CL	NO	1/9a					
2x	11-	H	(0)	Do	x.					
					-					
			, ,							
								 		
X f A		A	O A =		TES/ADDITIO	NAL COMMENT	5			
VOA	no b	ready	@ 93	5						
		-								

. 1		T THE ST		Well ID:	Mh	1-10		Job Number:	+	
43	Caso	adia		Client:			ned	Date:	81	11/21
400	Associate	a IIC		Project:	GWS	M 300	2	Sampler:	400	
	Associate	ss, LLC		Weather:	30	n 90°		Time In/Out:	1	
					WELL	DATA'				
		Flush-mount/	Stick-up		Well Diamete	er:	7	Depth to Free	Product:	-
Monument Ty	/pe:	Other:			Well Depth:		-	Free Product 7	Thickness:	
Monument Co	ondition:	AND X	ノ		Depth to Wa	ter:	20065	Water Columr	Length:	
Well Cap Lock	Present: (Yes No			Screened Inte	erval:	~	Purge Volume	:	_
Comments:	e mari		4-1-12		The Laure					
Purge Volume	e = (Water He	ight) X (Multip	lier) X (# Casii	ng Volumes)						
Nater height	multipliers (g	al):	1-inch well =	0.041	2-inch = 0.16	2	4-inch = 0.65	3	1 gal = 3.785 l	iters
					PURGIN	G DATA)		
Purge Method	d:	Q.	eri,		Pump Intake	Depth:	Mic	grun	25	
Sampling Met	:hod:	\ <u>\</u>	Hurs	(22)	Tubing Mate	rial & Type:	25	PE	NEW	/ DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
950			20,65	.25	1. 14	1971	261	24.03	71.0	Ceer
052			00,00	. 63	1 2	11.00				
750		7.0 5 15		 1 	6.36	16,05	193	5.61	122.3	1
956					6.20	15.21	167	2.10	130.7	
959					6.2/2	15.15	163	1.94	133.2	
1002	,		N		6.45	15.17	140	1.85	135.9	
100			- 43	Y	10,93	10,14	140	1.03	133.1	
			,							
		e e e e e e e e e e e e e e e e e e e					,			
								Barrier - 1		
Street 1				The Steel	PURGIN	IG DATA		11/5/27 7/4/1		
ample ID:		Ma	-10	Sampling Flo		7.0		Analytical Lab	oratory:	ARIX
ample Time:			12	Final Depth t		70	.65	Did Well Dewa		No
No. of Contair			rvative	Analysis/Met		Field Filtered		MS/MSD	Duplicate ID	
3-	20	11	(2	Voc			177			
_ 07	90	1	U	VUC	1Gx					
27	16	H	a		12	-				
										Chethage Cart all su
		Λ	^	NC	TES/ADDITIO	NAL COMMEN	rs			
MAI	no W	and I	N 11	30					1379-00	
IVA	WO . O	1000	10		cordendition.				W / 10 9 L B	

				Well ID:	Mu	2-9		Job Number:		1
孙金	Casc	adia		Client: Nu Star Va						121
100	Associate	e IIC		Project:	Gu	SM 3Q		Sampler:	400	
	Associate	s, LLC		Weather:	3	m 90°		Time In/Out:		
					WELL	DATA				
√onument Ty	no:	Flush-mount	Stick-up		Well Diamete	er:	2~	Depth to Free	Product:	
vionument ry	pe.	Other:	\cap		Well Depth:			Free Product T	hickness:	
Monument Co	ndition:	900			Depth to Wat	er:	21.37	Water Column	Length:	
Well Cap Lock		Yes No			Screened Interval:			Purge Volume		
	Present.	res No			Screened inte	ervai:		Purge volume		
Comments:		1.	1: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\							
		ight) X (Multip			0 1 1 0 10		4 1 0 55		4 1 0 705 1	
Nater height	multipliers (ga	al):	1-inch well =	0.041	2-inch = 0.16		4-inch = 0.65	3	1 gal = 3.785 li	ters
Numa Adathas		0.	10	1	PURGIN		ΔΑ.	0	7	
Purge Method		1'0	x1Stal	41 C	Pump Intake		10/1	dscree	N	3.5
Sampling Met	noa:		lenoft		Tubing Mater	ral & Type:		PPE	NEW	/ DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Clarity/Color Other Remarks
	7 (48 Table)	(inters)	200		+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
01/1			1100	1 =						212
1042			21.37	. 25	6.01	22.19	193	22.48	90,3	clear
1045			1		6.11	17,84	152	11.97	130.8	t
1043					6.24	15.90	171	7.36	131.7	
1				J.		1		f .		
105			V	,	6.36	15.58	144	4.60	133.Le	
1054					6.40	15.25	139	494	136.0	
1057				4	6.41	15.11	136	5.20	136,9	
1100			1	1						-
			- A		6.40	15.09	133	5,3	137,9	<u> </u>
1103			*	V	6.41	15.05	135	5.38	1385	¥
				,						
									.0	
					PURGIN	G DATA				
ample ID:		Mu	1-01	Sampling Flo		17	5	Analytical Lab		Aped
ample Time:		110	3'	Final Depth t	o Water:	21.	32	Did Well Dewa	ater:	No
lo. of Contair	ers/Type	Presei	vative	Analysis/Met	hod/	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
31	40	1	10	VOC	16x					
2	11	11	10	×	1					
LX	16		1		200					
									5	
			<i>3</i>							<i>y</i> =
							-			
					TES/ADDITIO	NAL COMMEN	ΓS			
Non	no h	- den	(D)	130						
40.4	WO IN	mon	6	100						

Project: Vounex GWM 4Q21 Chant Sampler

Date: 11/19
Permit

Daylight 5 Thr.

Weblo	Time:	DTP	DIW	Product Thickness		Notes	
MW-4	930		30.11	1102500233			
MW-2			28.13	N. T.			
MW-3			29.06				
MW-10			18.48				
mw-6	958		17.09			2	
mw-1			14.74				
MW-11	1012		17.75				
MW-5	1017		16.80				
MW-50	1		14.50				
MW-8	1024		17.67				
MW-30	1026		17-42				
MW-9	1029		19.27				
MW-7	1035		11.41				
-							
•							
	45.						
44					<u> </u>		
	le ·						

				Well ID: NW-+			Job Number:			
GEO	ENCIR	NEERS		Client:	Nu	Stary	mar	Date:	11/11	ø
GEO	LNGII	AEEKS		Project:	GW	M 4Q2	4	Sampler:	400	
				Weather:	Pt.	Sun 55	50	Time In/Out:	945	-1030
					WELL					P. September 1
Marrie	(T	Flush-mount,	/Stick-up		Well Diamete	er:	2"	Depth to Free	Product:	
Monument T	ype:	Other:			Well Depth:		_	Free Product 1	Γhickness:	
Monument C			מסט		Depth to Wa	ter:	11.41	Water Column	n Length:	~
Well Cap Loc	k Present:	Yes No.			Screened Inte	erval:		Purge Volume	:	
Comments:										
		ight) X (Multip								
Water height	: multipliers (g	al):	1-inch well =	0.041	2-inch = 0.16		4-inch = 0.653		1 gal = 3.785 l	iters
			-		PURGIN			A		
Purge Metho		pe	YI		Pump Intake			dreven	19:5	
Sampling Me	thod:	, ,	CONK	ow	Tubing Mater	rial & Type:	L	DPE	NEW	DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
955			11.41	. 25	6.51	14.	110	1.77	1027	clear
958			11.77	1	6.54	14.2	710	64	84.7	
1001			1129		6.59	147	710	41	80.0	
-			11.1	1	1 100	14.2		1 (2	
1004					Ce-60	1 11	700	.30	74.5	¥
1007			+	1	le.6	14.2	700	.27	71.4	4
							-			
				L	PURGIN	G DATA				
Sample ID:		MW	- 7	Sampling Flow		, 2		Analytical Labo	oratory:	Apex
Sample Time:		100		Final Depth to			<u>.</u> 9	Did Well Dewa		No
No. of Contai		Presei	rvative	Analysis/Met		Field Filtered		MS/MSD	Duplicate ID	
34	40	1+1	ع	Vo						
JT	(11		70						
VY	-16	H	Ce	170	-					
				NO.	TES/ADDITIO	NAL COMMENT	I rs			
				NC	יובאאטטוווט	WAL COMMEN				
						1				

				Well ID:		1-50		Job Number:	1	
GEA	ENICH	NEERS	. [.]	Client:	Nu	Ster Va	inner	Date:	11	16
JEO!	LNGII	NEEKS		Project:	1 GW	W 4Q7	4	Sampler:	42	
			and the second second	Weather:	PF	Sun 60	0	Time In/Out:		
					WELL	DATA	7			
	(Flush-mount	/Stick-up		Well Diamete	er:	2"	Depth to Free	Product:	-
Monument T	ype:	Other:			Well Depth:		-	Free Product		_
Monument C	Condition:	-cros			Depth to Wa	ter:	14.58	Water Column	Length:	
Well Cap Loc	k Present:	Yes No			Screened Int			Purge Volume:		_
Comments:										
	e = (Water Ho	ight) X (Multip	nlier) X (# Casi	ng Volumes)	T	T				
Water height			1-inch well =		2-inch = 0.16	2	4-inch = 0.65	2	1 gal = 3.785	litors
water neight	marcipilers (g	ai).	1-men wen -	0.041	PURGIN		4-inch = 0.03	3	1 gal = 3.783	illers
Purge Metho	d·		00 101		Pump Intake		T .	11-1-6-20	0	10
Sampling Met			low fl	/				Midsers LDPE		
Sampling Me	triou.	Cumulative	wwy	<u>on</u>	Tubing Mate	riai & Type:		LOFE	NEW	DEDICATED
Time	Volume Purged (liters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1054			14.58	. 25	6.75	15.1	561	7.56	85.9	lecr
1057			14.62		6.77	14.0	395	5.57	94.5	
1100			14-63	7	6.77	14.1	370	4.19	99.3	V
1103	103				Ce.75	14.2	366	1.63	104.1	1
1106				1	6.76	14.2	365	.94	105-0	
1109					4.79	14.2	368	.79	105.2	
1112			4		6.80	14.2	364	.70	105.1	1
1111					4.00	11.0	361	. 10	107.1	
100										
		A V		L :	PURGIN			1		
Sample ID:			50	Sampling Flor		.7		Analytical Labo		Apra
Sample Time:				Final Depth t		(6.0		Did Well Dewa		CN,
No. of Contair	ners/Type	Preser		Analysis/Met		Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3xc	10		Cl	VO	C					
2x	1	H	il _	800						
	,			NO	TES/ADDITION	NAL COMMENT	rs			
		D: 1							, ,	
										7.

				Well ID:	Me			Job Number:		
GEO	ENGL	NEERS	- 1	Client:	Nu Star Venn			Date: 11/19		Y
GEO	LNGII	NECKS		Project:	GL	SM 4Q	21	Sampler:	4w)	JP
				Weather:	1	+ Sun	600	Time In/Out:	1115	- 1200
			1			DATA	1 4-	I		
Monument 1	ype:	Flush-mount	/stick-up		Well Diamete	er:	2"	Depth to Free		
		Other:	A		Well Depth:		,-	Free Product		
Monument (900			Depth to Wa	ter:	16.95	Water Columi	n Length:	-
Well Cap Loc	k Present: (Yes No			Screened Int	erval:		Purge Volume	_	
Comments:										
		eight) X (Multip						MARTIN .		
Water height	: multipliers (g	gal):	1-inch well =	0.041	2-inch = 0.16		4-inch = 0.65	3	1 gal = 3.785 l	iters
Purge Metho	d.				PURGIN			1	- 11	
Sampling Me		P	eri		Pump Intake		MI	dscree	NEW NEW	* DEDICATED
Darribing Me	thou.	Cumulative	RON DI	TW	Tubing Mater	riai & Type:		LDPE	INEVV	DEDICATED
Time	Volume Purged (liters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+ °C	+	+/-0.5 ppm	+/-20 mV	
1122			No.95	25	6.69	15.7	690	2.15	-21.4	clear
1175			17,30	.15	4-73	14-4	706	1.00	441	
1128			.1	,17	1	-			11.7	
1120			17-46	1	6.74	14.5	712	.72	-56.8	
11:31			17.60	4	6.76	14.6	715	.51	-68.0	
1134					6-73	14.5	716	42	-73.1	4
	•									
										A-7
							<u> </u>			
					PURGIN	G DATA	I	1	I	<u> </u>
Sample ID:		mw.	-5	Sampling Flow	v Rate:	.15		Analytical Lab	oratory:	Doex
Sample Time:		1(3)	4	Final Depth to		19.0	2	Did Well Dewa	ater:	No
No. of Contain		Preser		Analysis/Metl	hod	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
34	c(D	H	U	VO	L	1				L ₀
2 x	à .	П	ie							
LX			~	D ,						
	11.									
5.	140	H	ie	VE) C				MW-5	Dup
2	x (L	1+	ce	4	TX.				MW-5	Dulp
				•						
	la la			NO	TES/ADDITION	NAL COMMENT	TS .			
										
		4								
									4.4	

1				Well ID:	MW	10		Job Number:	1	
GEOENGINEERS /				Client:	Nu		annex	Date:	11/14	0
GEO	ENGI	NEERS	1/1	Project:		M 40	21	Sampler:	16	
				Weather:		Sun 60°		Time In/Out:	1205	
1				weather.		DATA		Timle my Out.	[WS	
		3	160				- M			
Monument T	ype:	Flush-mount	/Strick-up		Well Diamete	er:	2"	Depth to Free	Product:	
		Other:	Λ		Well Depth:		-	Free Product	Thickness:	
Monument C	Condition:	Gus			Depth to Wa	ter:	17.76	Water Column	n Length:	_
Well Cap Loc	Procent:	Yes No			Screened Int	orvali		Purge Volume		~
	Kiresein.	162 440			ocreened into	ervar.		ruige voidine		
Comments:					Т	1				
		eight) X (Multip			ļ					
Water height	: multipliers (g	gal):	1-inch well =	0.041	2-inch = 0.16		4-inch = 0.65	3	1 gal = 3.785	liters
					PURGIN			1		
Purge Metho		C	er!		Pump Intake Depth:			Locuren	- 725	
Sampling Me	thod:		lowfl	SW .	Tubing Mate	rial & Type:	U	DRE /	NEW	DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (μS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1210			17.76	.2	6.73	13.7	650	4.26	-59.5	clear
1213			18.36	.15	4.52	13.4	311.6	4.79	-23.2	
1216			18.55	1	6.23	13.4	227,5	5.47	1(.)	1
1219			18.74	A	le.14	13.4	194.0	5.69	20.1	
1222					6.05	13.4	181.3	6.40	54.9	
1225	.25 18.81			V	5.99	13.4	173.5	6.25	61.5	
1228			18.90	1	5.98	13.2	149.7	6.19	70.1	γ
					PURGIN	G DATA				
Sample ID:		mw	~ 8	Sampling Flow	w Rate:	. 15		Analytical Lab	oratory:	Apek
Sample Time:		1228		Final Depth to	o Water:	70		Did Well Dewa	ater:	No
No. of Contain	ners/Type		vative	Analysis/Met	hod		Filter Size	MS/MSD	Duplicate ID	
30x	40	H	ce	VO						
24		H	ce	Dr						
\$										Mark Control
					750/100			7		`
				NO	IES/ADDITION	NAL COMMENT	IS			
			-							

			Well ID:	MI	W-87		Job Number:	1	
GENERAL	GEOENGINEERS /				Client: No Stav Vax			11/16.	
GEOLINGII	MEEKS		Project:	GW	m yar	1	Sampler:	101	16
			Weather:	Pt	Sun So	نو	Time In/Out:	, ,	
	,			WELL	. DATA				
Monument Type:	Flush-mount	/Stick-up		Well Diamet	er:	2"	Depth to Free	Product:	
- Change	Other:			Well Depth:		_	Free Product		
Monument Condition:	Croso	(Depth to Wa	ater:	17.80	Water Column Length:		
Well Cap Lock Present:	Yes No			Screened Int	erval:		Purge Volume		
Comments:						_	1		
Purge Volume = (Water He	eight) X (Multip	olier) X (# Cas	ing Volumes)						
Water height multipliers (g	gal):	1-inch well =	0.041	2-inch = 0.16		4-inch = 0.65	3	1 gal = 3.785	liters
				the second second second	IG DATA				
Purge Method:		Levi		Pump Intake		1 2 0	4		
Sampling Method:		flow	T	Tubing Mate	rial & Type:	LDP	<u> </u>	(VEVA)	/ DEDICATED
Volume Time Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	d μS/cm)	(mg/L)	ORP (mV)	Clarity/Color Other Remarks
				+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1245		17.80	0.25	7.04	13.0	0.209	1.10	123.4	Clear
12.49		17,80	0.2	7.22	13.0	0.237	0.50	116.2	1
1253		1	1	7.26	12.9	0.243	0.39	110.6	
		1	1	7.23					
1257	25+				12.9	0.243	0.41	W7.3	V
					-	-			
				DUDGIN	IC DATA	<u> </u>			
Sample ID:	AAL	CID.	Sampling Flow	PURGIN	,		Analytical Lab	oratoru	Nagy.
Sample Time:	1754	יומ	Final Depth to		17.8	0	Did Will Dewi		MAID
No. of Containers/Type	Preser	vative	Analysis/Met			Filter Size	MS/MSD	Duplicate ID	140
D. L. onler	Hei		Dx			-			
			1 1				(
3) YOUL VOA	HCI	\	VOUS		-	_			
			NO	TES/ADDITIO	I NAL COMMEN	TS .			

							Job Number:	/		
GEO	ENCH	NEERS		Client:	Nu	Stow Vu	uner		116	0
GEOI	LNGI	NEEKS		Project:	GIN	VVI UIST	4	Sampler:	145/3	Y
				Weather:	177	Sun 55	0	Time In/Out:	111	
					WELI	DATA		1	1	
		Flush-mount	/Stick-up		Well Diamet		21	Depth to Free	Product.	
Monument T	ype:	Other:	,		Well Depth:		251	3 3 2 1 1 1 1 1 1 1 1 1 1	Thickness	
Monument C	ondition:	Croc	TD		Depth to Wa		19.20	Water Colum	n Length:	100000000000000000000000000000000000000
Well Cap Lock		(es) No	<i>)</i>		Screened In			Purge Volume		
Comments:										1
Purge Volume	e = (Water He	eight) X (Multis	olier) X (# Cas	ing Volumes)						
Water height			1-inch well =		2-inch = 0.16	-1			1 gal = 3.785	liters
		,				NG DATA			1-0-	
Purge Method	d:		Peri		Pump Intake		23	5' has	***************************************	
Sampling Met		but	28.		Tubing Mate		23.	7	MEW	/ DEDICATED
		Cumulative		1		T	UBIL			, 525.5.1.25
Time	Volume Purged (liters)	Volume Purged (liters)	OTW (btc)	Purge Rate (L/min)	pH *	Tamp (°C)	_Cond (µS/cm)	DO (mg/L)	ORP,	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
14226	1322		19.20	02	6.23	13,4	0.205	6.3	92.3	Clear
11126 6	1924		14.32	0.2			0.195		1 / 25 / /	1
112	172				6.17	134	+	7.12	V	
141704	1530		19.34	0.15	6.18	13.4	0.192	7.33		
111346	113941334 1934			0.15	6.19	13.5	0.191	7.43	124.4	V
000			1 1							
- /										
/ '										
										75
				<u> </u>						
					DIJDGIA	I IG DATA	L	l	L	
Sample ID:		MW-	, 0	Sampling Flov		0.1	C	Analytical Lab	oratory:	
Sample Time:		133		Final Depth to		143		Did Well Dew		Rex
No. of Contain	ers/Tyne		rvative	Analysis/Met			Filter Size	MS/MSD	Duplicate ID	105
(a) 1			TACIFC	, many sis/iviet		r icid i litered	, med Size	113/14/30	Dapitate ID	
L) L CIV	NPON	ful		UX				-		
(3) 4WW	nt WA	MU		VOA	5			No. of the last of		
				NO	TES/ADDITIO	NAL COMMENT	rs			
					-					
<u> </u>										

				Well ID: MW-U			Job Number:	1		
GEO	ENGL	NEERS	1	Client:	1914 5100 000			Date:	11/17	
GEO	LNGII	MEEUS		Project:	Gwn	1 492	<u>L</u>	Sampler:	april	
				Weather:	Pt Su	n 40°		Time In/Out:	'	
			\		7	DATA		Ţ		
Monument T	vne.	Flush-mount,	stick-up		Well Diamet	er:	2"	Depth to Free	Product:	
I VIOITATII CITE I	4 P.C.	Other:	\		Well Depth:		L generali-	Free Product	Thickness:	was confirmed on the co
Monument C	Condition:	good			Depth to Wa	ter:	30.24	Water Column	n Length:	-
Well Cap Loc	k Present	Yes No		Screened Interval			1	Purge Volume:		
Comments:					Ser cerred inte	CIVAI.		ruige voidine		
	e = (Water He	ight) X (Multip	nlier) X (# Casi	ng Volumes)		Γ				
	multipliers (g		1-inch well =		2-inch = 0.16	2	4-inch = 0.65	3	1 gal = 3.785	itors
Trace Trace	marcipiici 3 (B	ui).	I men wen	0.011	2 111011 - 0.10		14 Inch = 0.03	5	1 gai - 3.763	iters
Purge Metho	d:	BP			Pump Intake	Depth:	M.	dSer	3	
Sampling Me		0.	rillin	3	Tubing Mate			B	NEW	DEDICATED
		Cumulative	myor	Ĭ		1	1			
Time	Volume Purged (liters)	Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Tomp (C)	Cond (μS/cm)	00 (mg/L)	OMP	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
734			30,24	.25	7.19	8.6	200.3	12.36	13.5	Chee
737			1	1	6.14	11.0	77,00		85.3	
740					+		2100	7 5.1		
790	140				6.35	12.6	268.5	2.54	160.4	V
+45			4	•	6.34	12.9	264.5	1.33	169.5	
746				1	6.34	12.3	264,0	1.24	164.5	
749			1		4.33					
791				4	4.77	127	263.0	1.28	168.3	•
						2				
			1							
Sample ID:	T	MA. \	<u>- u</u>	143				Analytical Labo	oratory.	1000
Sample Time:		7,1	9	-11-2	o Water:	30.	4	Did Well Dewa		Mil
No. of Contair	ners/Type	Preser	vative		kdd	-JO.	Filter Size	MS/MSD	Duplicate ID	1/10
3×		7 1	(0	1427	(7.12				
	70									
LX	11	11	Q	DX						
				NO	TES/ADDITIO	NAL COMMEN	rs			
		У.								

			Well ID: MW-3			Job Number:				
GEOENGI	NECD	- 1	Client:	Nu	Ster Va	mer	Date:	11/1	7	
GEULNGI	NEEK:		Project:	(hh)	VI UG	1	Sampler:	4W/	P	
			Weather:	14	Sur &	W dy	Time In/Out:			
		.		WEL	L DATA					
Manusant	Flush-mount	t/Stick-up		Well Diame	ter:	24	Depth to Free	e Product:		
Monument Type:	Other:			W Depth	28	24.23	Free Product	Thickness:		
Monument Condition:	6.)		Depth to W	- 64	24.23	Water Colum		_	
Well Cap Lock Present:	Ves No			Screened In			Purge Volume			
Comments:	110			oci eeried iii	cervar.	64.3 71.3	I dige voidine	-		
Purge Volume			ing Value ak							
Water height	all	1-inch well =	= 0.041	2-inch = 0.1	<u> </u>	T		1 gal = 3.785	liters	
vater reight	· 00	T-IIICH WCII-	- 0.041	2-111011 - 0.1	02			1 gai - 5.765	III.C.I.S	
Purge Method	PE	R		Pump Intake	mp Intake Depth:		293			
Sampling Metro	1.8)W[+	erial & Type:	LUPE	393	NEW	DEDICATED	
	Cumulative	_				0010				
	Volume	DTW	Purge Rate		Temp	Cond	DO	ORP	Clarity/Color	
(liters)	Purged	(btc)	(L/min)		(°C)	(µ\$/cm)	(mg/L)	(mV)	Other Remarks	
	(liters)			-	-			-		
			1	+/-0.1	4.0	+/-5%	+/-0.5 ppm	+/-20 mV		
0830		29.23	0.15	618	4.9	0.73		0	Clear	
0834		2965	15	6.25	2	0.325	9	200-	1	
7842		29.65	0.15	624	1	0.36		9.6		
0110	200		0.01	1	0.216	50				
7042		2963	0.15	6	Mark 1	1, 2, 8		2040	V	
846		29.63	0.15	6.23	29	0.193	0.35	264.9		
-										
			<u> </u>							
						-				
				25				,		
	-					-				
	Ι ΔΔΙ.	- 7	Т		1 8716	1				
ample ID: ample Time:	1001	- 3	Final Depth t	- \\/\-t==	0.15)	Did Well Dew	vator:	No	
ample time: lo. of Containers/Type		rvative	Analysis/Met		Field Filtered	Filter Size	MS/MSD	Duplicate ID	100	
3 Work VOA	1 0 6	i vative	†	.nou	Field Filtered	I litter Size	רואו ארואר	Duplicate ID		
9 WML V 04	1-101		Vocs		1		-			
2) IL amber	1-10		1)4							
7.2										
				1-35						
			NC	TES/ADDITIC	NAL COMMEN	ITS			1	

				Well ID:	INW-			Job Number:		
GEO	ENGU	NEERS		Client:	Nu Sta		t	Date:	1/17	
GEO	LNGII	NEEKS		Project:	CaW/	4 4021		Sampler:	20/2	W
				Weather:	Claur,	Celd		Time In/Out:	0.0	
		3				. DATA	7711			
Monument T	ype:	5tu mount	Stick u		Well Diamet	er:	2"	Depth to Free	Product:	
		Other:			Well Depth:		_	Free Product		
Monument C	Condition:	GOOD			Depth to Wa	iter:	6 96	Water Colum	n Length:	
Well Cap Loc	k Present.	Yes No			Screened Int	erval:		Purge Volume	2:	
Comments:										
Purge Volum	e = (Water He	ight) X (Multip	olier) X (# Cas	ing Volumes)						
Water height	: multipliers (g	;al):	1-inch well =	0.041	2-inch = 0.16		4-inch = 0.65	53	1 gal = 3.785	liters
						IG DATA				
Purge Metho			RI		Pump Intake		721	bys		
Sampling Me	thod:		Flow	Т	Tubing Mate	rial & Type:	L1)176		NEW	/ DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (b(c)	Purge Rate (L/min)	pH	Termo (°C)	Cond (μS/cm)	DO . (mg/L)	ORP (mV)	Chamy/Color Citra Ramarko
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
10350	1935		16.86	0.15	6.13	89	0,296	20	222.4	Clar
0939				ì	6.31	13.0	0.35	052	2	f
					6.32	3.4	0.366	0.37		
0943						17. 1	0.700	-		
0947			V	V	531	13.5	0369	0.31	211.2	V
Sample ID:		Mw-		Sampling Flov	PURGIN w Rate:	G DATA				Aprex
Sample Time:		0947		Final Depth to		16.9		Did Well Dew	ater:	N
No. of Contair	ners/Type	Prese	vative	Analysis/Met	hod	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
(3)40 w	y VOAs	Hei		VUCs						
		HC1		D.,						
916	Cluber	1101		T Y						
				NO	TES/ADDITIO	NAL COMMEN	rs			
								,		

				Well ID:	MW	-11		Job Number:		
GEO	FNC	NEER!		Client:	Nask	as Van	ney	Date:	11/17	
JEU	LIVUII	NEEK		Project:	GWM	4021		Sampler:	18110	
				Weather:	Clear			Time In/Out:		
		(3)			7	DATA	-			
Monument T	vpe:	Flish-mount	Stick-u		Well Diamet	er:	ン『	Depth to Free	Product:	
	, , -	Other:			Well Depth:			Free House	Trichness:	
Monument C	ondition:	Goof-)		Depth to Wa	ater:	1948	Water Colum	n Length:	
Well Cap Lock	Present:	Yes No			Screened Int	terval:		Purge Volume	2:	-
Comments:					1					1
urge Volume	e = (Water He	ight) X (Multi	plier) X (# Cas	ing Volumes) .						
Vater height	multipliers (g	;al):	1-inch well	= 0.041	2-inch = 0.16	52	4-inch = 0.65	53	1 gal = 3.785	liters
					PURGIN	IG DATA				
urge Metho			RI		Pump Intake		Mids	ven 1	2	
Sampling Met	hod:	Lowf	ew.	T	Tubing Mate	rial & Type:	LOPE		NEW	/ DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH 7	Temp (fC)	Cond (µS/cm)	00 (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1010			1848	0.2	6.81	14.1	A14.10.	186 0.45	-8.0	Cl
1014			18,06	0.15	699	14.4	0.501	().34	-66.6	1
019			14.04	0.15	6.43			10		
-						14.4	0.460	0.30	-86.2	
1022			1909	0.15	6.98	14.4	0.457	0.78	-94.7	
026			14.10	0.15	6.47	14.4	0.456	0.26	-98.6	V
								137		
								1.		
							7	7		
					PURGIN	IG DATA			1	4
ample ID:		MW	-11	Sampling Flow	w Rate:	0.15		Analytical Lab	oratory:	Apex
ample Time:		1026		Final Depth to		- ' '	0	Did Well Dewa	ater:	No
o of Contain			rvative	Analysis/Met		Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3) 40	mLVOA	plei		VOCs		_		,		
	owher	LICI		D			-			
)) - 3- 19 1-1			1						
										\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
										1.
									一步	es A s
									45%	
				NO.	TES/ADDITIO	NAL COMMEN ⁻	TS .			
				,,,,	,					

				Well ID:	MW-			Job Number:		
GEO	ENGL	NEERS	11	Client:	Nusi		1ex	Date:	11/17/	71
GEO	LNGI	MEEKS		Project:	GWA			Sampler:	SPIOW	
				Weather:	Clear	-, cold		Time In/Out:		
		1 /)			7	DATA	1 21			
Monument '	Гуре:	Flysh-mount,	/Stick-up		Well Diamet	ter:	211	Depth to Free	Product:	
	′′	Other:		,	Well Depth:		-	Free Product	Thickness:	
Monument	Condition:	(1001)			Depth to Wa	ater:	26.3 Water Column Length:			
Well Cap Loc	k Present:	(P) No			Screened In	terval:	_	Purge Volume);	
Comments:		V			-1					
Purge Volum	e = (Water He	eight) X (Multip	olier) X (# Cas	ing Volumes						
Water heigh	t multipliers (gal):	1-inch well =	0.041	2-inch = 0.16	52	4-inch = 0.65	i3	1 gal = 3.785 l	iters
					PURGIN	NG DATA				
Purge Metho		Pe	wisheltic	Dump	Pump Intake	Depth:	Mid	ocen	33	
Sampling Me	thod:	Low	riflow	· ·	Tubing Mate	erial & Type:	LDPC		NEW	/ DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	рН	Temp (°C)	Cond (μS/cm)	(6.24)	ORR	Clarity/Color Other Remarks
						+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1052			28.35	.2	6.93	13.0	345.)	3.02	-662	cleur
1055			1	1	6.38	14-1	2763		-8.2	1
1058						1				
			*	4	6.34	14.2	267.1	.44	4.2	V
1101			- 12		6.31	14.3	251.4	15	23.2	<u> </u>
1104					6.30	14.3	260.5	10	26.5	Į.
1107			Ŋ	4	6.29	14.3	2633	14	30.2	l.
							1045		30,0	
					PURGIN	G DATA				
Sample ID:		MW	1.2	Sampling Flov		. 2		Amelynoper	bratory:	Apex
Sample Time:		110		Final Depth to		28.3		Did Well Dewa		N/O
No. of Contai		Preser	vative	Analysis/Met		Field Filtered	Filter Size	MS/MSD	Duplicate ID	
(3) 401	ul VOA	J-LC1		VOCS						
2) IL 1	mbor	Hell		D						
				1						
				NO	TES/ADDITIO	NAL COMMENT	rs			
						7				

				well iD:	MW-			Job Number:		
GEA	ENG	NEERS	. 1	Client:	Must	ur Va i	104	Date:	11/17	121
GEO	LNGI	NEEK:		Project:	GWM	4921	,	Sampler:	1///	γ ρ
1			Marit San	Weather:	4 1	caid		Time In/Out:	V	
					WELL	DATA				
		Flush-mount	/Stick up		Well Diamet	manufacture of the second	12,11	Depth to Free	Draduat	
Monument T	ype:		./ Stick-up			er.	1	<u> </u>		
		Other:			Well Depth:		-	Free Product	Thickness:	
Monument C	Condition:	(2001)		Depth to We	6811	18.89	Water Colum	n Length:	-
Well Cap Loc	k Prasant	No No			Screened Int	arval:		Purge Volume		
	r resent.	110			oci eened int	ervar.		ruige volume	:.	
Comments:					Т					
		eight) X (Multi			-				,	
Water height	multipliers (gal):	1-inch well =	= 0.041	2-inch = 0.16		4-inch = 0.65	3	1 gal = 3.785 l	liters
					PURGIN	G DATA				
Purge Metho	d:	Peri	shilte p	ama	Pump Intake	Depth:	M	2		
Sampling Me	thod:	lo	rtbin	9.	Tubing Mate	rial & Type:	LDP		NEW	/ DEDICATED
		Cumulative								
Time	Volume Purged (liters)	Volume Purged (liters)	Öfw (btc)	Purge Rate (L/min)	pH [®]	Temp (°C)	Cond (µS/cm)	DO (m½/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1142			18.89	v	6.31	13.2	183.7	6.02	63 F	cleur
1145			4		6.30	13.3	159.6	4.59	71.2	
11.10								T		
1195				1	628	13.3	147.1	6.73	79.2	
1151			4	1	6.30	133	146.0	6.77	83.9	
21 - 1			4				T			d
1154					6.27	13.2	147.4	6.80	85.0	
								ļ		
					PURGIN			T		
Sample ID:			· W	Sampling Flow				Analytical Lab		A pex
Sample Time:		115	4	Final Depth to	o Water:	18 .		Did Well Dewa	ater:	NS
No. of Contair	ners/Type	Preser	vative	Analysis/Met	hod	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
2	UD	11	(0	NI	56					
J *	10	111		1						
2x	11	H(X),					
								, , , , , , , , , , , , , , , , , , ,		
				NO	TES/ADDITION	NAL COMMENT	S			

				Well ID:	mw			Job Number:	9	
GEO	ENGL	NEEDO		Client:	Nu	SturVa	MINKE	Date:	11/17	
GEO	CNGI	NEERS		Project:	6127	V1 4QZ	1	Sampler:	1	- W-42
		-		Weather:	Pt 5	un 50°		Time In/Out:	70	
					WELL	DATA		1	1	
		Flush-mount	/Stick-up		Well Diamete		2"	Depth to Free	Product:	
Monument T	ype.		/ Scick dp		+	-1 -	-			
		Other:			Well Depth:			Free Product Thickness:		
Monument C	ondition:	9000			Depth to Wa	ter:	17-76 Water Colum		n Length:	
Well Cap Lock	Present:	Yes No			Screened Int	erval:	/	Purge Volume	:	_
Comments:					1					
	e = (Water He	eight) X (Multip	olier) X (# Casi	ng Volumes)		-		1713		
Water height			1-inch well =				4-inch = 0.65	2	1 gal = 3.785 li	tors
Water Height	manipilers (8	jarj.	1-IIICII WEII -	0.041	PURGIN	G DATA	14-111011 - 0.03	3	I gai - 3.763 II	ters
Purge Metho	4.	0.			Pump Intake		- A			
Sampling Met		1/9	VI		+		100	dr us		V DEDICATED
sampling we	.riou;	, X	eri Kle	3~	Tubing Mate	rial & Type	L	PE	NEW	Y DEDICATED
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rat (L/min)	рН	Jemp (*C)	Cond (µS/cm)	, DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1220			17.74	v	6.34	13.7	640	2.42	29.9	7 (8 J
100										
1113			18,10	.15	6,46	13-9	714	,92	-18.1	1
1229			18.20	1	6.62	14.0	731	,50	- 39.3	1
206					1 1 =					
166			18.14		6.65	14.1	739	.40	-51.3	
1232			18.34	1	6.64	14.2	742	,30	-58.5	4
7						7.1.0				<u> </u>
	-									
							-			
					PURGIN	G DATA				
Sample ID:		Mu		Sampling Flow	w Rate:	.15		Analytical Lab	oratory:	Aprex
Sample Time:		123	32	Final Depth t	o Water:	18.3	38	Did Well Dewa	ater:	IND
No. of Contair	ners/Type		vative	Analysis/Met	hod		Filter Size	MS/MSD	Duplicate ID	
37		1-1 (
		\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		Vo						
ZX	16	1+1	U	D	Ĺ					
	· ·									
				NO	TES/ADDITION	NAL COMMENT	S			
									20 AND CO.	

APPENDIX D Historical Groundwater Analytical Data

Summary of Analytical Results - Monitoring Wells NuStar Terminals Operations Partnership, L.P. - Annex Terminal Vancouver, Washington

MW-1	05/14/02 05/19/03 05/25/07 08/24/07 11/26/07 02/27/08 03/31/10 09/01/10 12/16/14 03/25/15 06/24/15 09/15/15 02/19/19 05/20/19 08/29/19 11/19/19 2/25/2020 8/19/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021 11/17/2021	<0.080 - <0.080 - <0.080 <0.1 <0.080 <0.080 <0.250 <0.250 <0.250 <0.250 <0.250 <0.050 <0.0100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	0.455 s <0.238 <0.238 <0.236 <0.294 <0.250 <0.250 <0.250 <0.046 <0.100 <0.130 <0.0762 <0.0374 <0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11 0.250 F-11	<0.500 - <0.476 <0.476 <0.477 <0.588 <0.500 <0.500 <0.500 <0.093 <0.250 <0.340 <0.152 <0.0748 <0.151 <0.154 <0.151 <0.377 <0.150 <0.152 <0.150 <0.152 <0.151	<0.0005 <0.001 <0.0002 <0.001 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0002 <0.0001 <0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.0005 <0.001 <0.0005 <0.002 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001	<0.0005 <0.001 <0.0005 <0.002 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.001 <0.002 <0.001 <0.006 <0.006 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.00075 <0.00075 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015		
MW-1	05/25/07 08/24/07 11/26/07 02/27/08 03/31/10 09/01/10 12/16/14 03/25/15 06/24/15 09/15/15 02/19/19 05/20/19 08/29/19 11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.1 <0.080 <0.080 <0.250 <0.250 <0.250 <0.250 <0.250 <0.250 <0.250 <0.050 <0.050 <0.100 <0.005 <0.0100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	<0.238 <0.236 <0.294 <0.250 <0.250 <0.250 <0.046 <0.100 <0.130 <0.0762 <0.0374 <0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.476 <0.472 <0.588 <0.500 <0.500 <0.500 <0.093 <0.250 <0.340 <0.152 <0.0748 <0.051 <0.151 <0.151 <0.377 <0.150 <0.152	<0.0002 <0.001 <0.001 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0001 <0.0001 <0.0001 <0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.0005 <0.002 <0.002 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001	<0.0005 <0.002 <0.002 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.00025 <0.00025 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<pre><0.001 <0.006 <0.006 <0.001 <0.0015 <0.0015 <0.001 <0.001 0.0022 <0.00015 <0.00075 <0.00075 <0.0015 <0.0015</pre>		- - - - - - - - - - - - - - 0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002
MW-1	08/24/07 11/26/07 02/27/08 03/31/10 09/01/10 12/16/14 03/25/15 06/24/15 09/15/15 02/19/19 05/20/19 08/29/19 11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.1 <0.080 <0.080 <0.250 <0.250 <0.250 <0.250 <0.250 <0.250 <0.250 <0.050 <0.050 <0.100 <0.005 <0.0100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	<0.238 <0.236 <0.294 <0.250 <0.250 <0.250 <0.046 <0.100 <0.130 <0.0762 <0.0374 <0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.476 <0.472 <0.588 <0.500 <0.500 <0.500 <0.093 <0.250 <0.340 <0.152 <0.0748 <0.051 <0.151 <0.151 <0.377 <0.150 <0.152	<0.001 <0.001 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0001 <0.0001 <0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.002 <0.002 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001	<0.002 <0.002 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.00025 <0.00025 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.006 <0.001 <0.0015 <0.0015 <0.0005 <0.001 0.0022 <0.00015 <0.00075 <0.00075 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015	- - - - - <0.001 <0.0005 <0.0005 <0.001 <0.001 <0.001	- - - - - - - - - - - - - - 0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002
MW-1	11/26/07 02/27/08 03/31/10 09/01/10 12/16/14 03/25/15 06/24/15 09/15/15 02/19/19 05/20/19 08/29/19 11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.1 <0.080 <0.080 <0.250 <0.250 <0.250 <0.250 <0.250 <0.250 <0.250 <0.050 <0.050 <0.100 <0.005 <0.0100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	<0.236 <0.294 <0.250 <0.250 <0.250 <0.046 <0.100 <0.130 <0.0762 <0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.472 <0.588 <0.500 <0.500 <0.500 <0.093 <0.250 <0.340 <0.152 <0.0748 <0.051 <0.151 <0.151 <0.377 <0.150 <0.152	<0.001 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0002 <0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.002 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0001 <0.0005 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 <0.0001	<0.002 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.00025 <0.00025 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.006 <0.001 <0.0015 <0.0015 <0.0005 <0.001 <0.001 0.0022 <0.00015 <0.00075 <0.00075 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015	- - - - - <0.001 <0.0005 <0.0005 <0.001 <0.001 <0.001	
MW-1	02/27/08 03/31/10 09/01/10 12/16/14 03/25/15 06/24/15 09/15/15 02/19/19 05/20/19 08/29/19 11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.080 <0.250 <0.250 <0.250 <0.250 <0.250 <0.250 <0.250 <0.05 <0.100 <0.05 <0.0100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	<0.294 <0.250 <0.250 <0.250 <0.046 <0.100 <0.130 <0.0762 <0.0374 <0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.588 <0.500 <0.500 <0.500 <0.093 <0.250 <0.340 <0.152 <0.0748 <0.051 <0.151 <0.151 <0.377 <0.150 <0.152	<0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0002 <0.0001 <0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0001 <0.0005 <0.0001 <0.0001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.00025 <0.00025 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.001 <0.0015 <0.0015 <0.0005 <0.001 <0.001 0.0022 <0.00015 <0.00075 <0.00075 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015	- - - - <0.001 <0.0005 <0.0005 <0.001 <0.001 <0.001	
MW-1	03/31/10 09/01/10 12/16/14 03/25/15 06/24/15 09/15/15 02/19/19 05/20/19 08/29/19 11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.250 <0.250 <0.250 <0.250 <0.250 <0.250 <0.250 <0.050 <0.005 <0.005 <0.0100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	<0.250 <0.250 <0.250 <0.250 <0.046 <0.100 <0.130 <0.0762 <0.0374 <0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.500 <0.500 <0.500 <0.093 <0.250 <0.340 <0.152 <0.0748 <0.0151 <0.151 <0.151 <0.377 <0.150 <0.152	<0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0002 <0.0001 <0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0001 <0.0005 <0.0001 <0.0001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.00025 <0.00025 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.0015 <0.0015 <0.0005 <0.001 <0.001 0.0022 <0.00015 <0.00075 <0.00075 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015	- - - - <0.001 <0.0005 <0.0005 <0.001 <0.001 <0.001	
MW-1	09/01/10 12/16/14 03/25/15 06/24/15 09/15/15 02/19/19 05/20/19 08/29/19 11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.250 <0.250 <0.250 <0.250 <0.250 <0.250 <0.050 <0.005 <0.005 <0.0100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	<0.250 <0.250 <0.046 <0.100 <0.130 <0.0762 <0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.500 <0.500 <0.093 <0.250 <0.340 <0.152 <0.0748 <0.051 <0.151 <0.154 <0.151 <0.377 <0.150 <0.152	<0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0002 <0.0001 <0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0001 <0.0005 <0.0001 <0.0001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.00025 <0.00025 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.0015 <0.0005 <0.001 <0.001 0.0022 <0.00015 <0.00075 <0.00075 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015	- - - <0.001 <0.0005 <0.0005 <0.001 <0.001 <0.001	- - - - - - <0.002 <0.002 <0.002 <0.002 <0.002 <0.002
MW-1	12/16/14 03/25/15 06/24/15 09/15/15 02/19/19 05/20/19 08/29/19 11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.250 <0.250 <0.250 <0.250 <0.250 <0.100 <0.05 <0.05 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	<0.250 <0.046 <0.100 <0.130 <0.0762 <0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.500 <0.093 <0.250 <0.340 <0.152 <0.0748 <0.051 <0.151 <0.154 <0.151 <0.377 <0.150 <0.152	<0.0005 <0.0005 <0.0005 <0.0005 <0.0002 <0.0001 <0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.0005 <0.0005 <0.0005 <0.0005 <0.0001 <0.0005 <0.0001 <0.0001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.00025 <0.00025 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.0005 <0.001 <0.001 0.0022 <0.00015 <0.00075 <0.00075 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015	- - - <0.001 <0.0005 <0.0005 <0.001 <0.001 <0.001	- - - - <0.002 <0.002 <0.002 <0.002 <0.002 <0.004
MW-1	03/25/15 06/24/15 09/15/15 02/19/19 05/20/19 08/29/19 11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.250 <0.250 <0.250 <0.250 <0.100 <0.05 <0.05 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	<0.046 <0.100 <0.130 <0.0762 <0.0374 <0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.093 <0.250 <0.340 <0.152 <0.0748 <0.051 <0.151 <0.154 <0.151 <0.377 <0.150 <0.152	<0.0005 <0.0005 <0.0005 <0.0002 <0.0001 <0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.0005 <0.0005 <0.0005 <0.0001 <0.0005 <0.0001 <0.0001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.0005 <0.0005 0.0015 <0.0005 <0.00025 <0.00025 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.001 <0.001 0.0022 <0.00015 <0.00075 <0.00075 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015	- <0.001 <0.0005 <0.0005 <0.001 <0.001 <0.001 <0.001	- - - - <0.002 <0.002 <0.002 <0.002 <0.002 <0.004
MW-1	06/24/15 09/15/15 02/19/19 05/20/19 08/29/19 11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.250 <0.250 <0.100 <0.05 <0.05 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	<0.100 <0.130 <0.0762 <0.0374 <0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.250 <0.340 <0.152 <0.0748 <0.051 <0.151 <0.154 <0.151 <0.377 <0.150 <0.152	<0.0005 <0.0005 <0.0005 <0.0002 <0.0001 <0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.0005 <0.0005 <0.001 <0.0005 <0.0005 <0.0001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.0005 0.0015 <0.0005 <0.00025 <0.00025 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.001 0.0022 <0.00015 <0.00075 <0.00075 <0.0015 <0.0015 <0.0015 <0.0015	- <0.001 <0.0005 <0.0005 <0.001 <0.001 <0.001 <0.001	- - - <0.002 <0.002 <0.002 <0.002 <0.002 <0.004
MW-1	09/15/15 02/19/19 05/20/19 08/29/19 11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.250 <0.100 <0.05 <0.05 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	<0.130 <0.0762 <0.0374 <0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.340 <0.152 <0.0748 <0.0748 <0.151 <0.154 <0.151 <0.377 <0.150 <0.152	<0.0005 <0.0002 <0.0001 <0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.0005 <0.001 <0.0005 <0.0005 <0.0001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	0.0015 <0.0005 <0.00025 <0.00025 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	0.0022 <0.00015 <0.00075 <0.00075 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015	- <0.001 <0.0005 <0.0005 <0.001 <0.001 <0.001 <0.001	- <0.002 <0.002 <0.002 <0.002 <0.002 <0.004
MW-1	02/19/19 05/20/19 08/29/19 11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.100 <0.05 <0.05 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	<0.0762 <0.0374 <0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.152 <0.0748 <0.0748 <0.151 <0.154 <0.151 <0.377 <0.150 <0.152	<0.0002 <0.0001 <0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.001 <0.0005 <0.0005 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.0005 <0.00025 <0.00025 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.00015 <0.00075 <0.00075 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015	<0.0005 <0.0005 <0.001 <0.001 <0.001 <0.001 <0.001	- <0.002 <0.002 <0.002 <0.002 <0.002 <0.004
MW-1	02/19/19 05/20/19 08/29/19 11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.100 <0.05 <0.05 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	<0.0762 <0.0374 <0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.152 <0.0748 <0.0748 <0.151 <0.154 <0.151 <0.377 <0.150 <0.152	<0.0002 <0.0001 <0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.001 <0.0005 <0.0005 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.0005 <0.00025 <0.00025 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.00015 <0.00075 <0.00075 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015	<0.0005 <0.0005 <0.001 <0.001 <0.001 <0.001 <0.001	<0.002 <0.002 <0.002 <0.002 <0.004
1 1	05/20/19 08/29/19 11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.05 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	<0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.0748 <0.151 <0.154 <0.151 <0.377 <0.150 <0.152	<0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.0005 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.00025 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.00075 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015	<0.0005 <0.001 <0.001 <0.001 <0.001 <0.001	<0.002 <0.002 <0.002 <0.002 <0.004
; 1 ; 3 1	08/29/19 11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.05 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	<0.0374 <0.0755 0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.0748 <0.151 <0.154 <0.151 <0.377 <0.150 <0.152	<0.0001 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.0005 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.00025 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.00075 <0.0015 <0.0015 <0.0015 <0.0015 <0.0015	<0.0005 <0.001 <0.001 <0.001 <0.001 <0.001	<0.002 <0.002 <0.002 <0.002 <0.004
; 1 ; 1	11/19/19 2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.151 <0.154 <0.151 <0.377 <0.150 <0.152	<0.0002 <0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.001 <0.001 <0.001 <0.001 <0.001	<0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.0015 <0.0015 <0.0015 <0.0015 <0.0015	<0.001 <0.001 <0.001 <0.001 <0.001	<0.002 <0.002 <0.002 <0.004
3 1 3 1	2/25/2020 6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.100 <0.100 <0.100 <0.100 <0.100 <0.100 <0.100	0.201 0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.154 <0.151 <0.377 <0.150 <0.152	<0.0002 <0.0002 <0.0002 <0.0002 <0.0002	<0.001 <0.001 <0.001 <0.001 <0.001	<0.0005 <0.0005 <0.0005 <0.0005 <0.0005	<0.0015 <0.0015 <0.0015 <0.0015	<0.001 <0.001 <0.001 <0.001	<0.002 <0.002 <0.002 <0.004
1 1 1	6/2/2020 8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.100 <0.100 <0.100 <0.100 <0.100 <0.100	0.212 <0.189 0.0998 0.313 F-11 0.152 F-11	<0.151 <0.377 <0.150 <0.152	<0.0002 <0.0002 <0.0002 <0.0002	<0.001 <0.001 <0.001 <0.001	<0.0005 <0.0005 <0.0005 <0.0005	<0.0015 <0.0015 <0.0015	<0.001 <0.001 <0.001	<0.002 <0.002 <0.004
1 1 2 1	8/19/2020 11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.100 <0.100 <0.100 <0.100 <0.100	<0.189 0.0998 0.313 F-11 0.152 F-11	<0.377 <0.150 <0.152	<0.0002 <0.0002 <0.0002	<0.001 <0.001 <0.001	<0.0005 <0.0005	<0.0015 <0.0015	<0.001 <0.001	<0.002 <0.004
1 3 3 1	11/17/2020 2/26/2021 5/5/2021 8/11/2021	<0.100 <0.100 <0.100 <0.100	0.0998 0.313 F-11 0.152 F-11	<0.150 <0.152	<0.0002 <0.0002	<0.001 <0.001	<0.0005 <0.0005	<0.0015	<0.001	<0.004
1	2/26/2021 5/5/2021 8/11/2021	<0.100 <0.100 <0.100	0.313 F-11 0.152 F-11	<0.152	<0.0002	<0.001	<0.0005			
1	5/5/2021 8/11/2021	<0.100 <0.100	0.152 F-11					0.0020		
1	8/11/2021	<0.100		0.202	0.0002		< 0.0005	< 0.0015	<0.001	<0.004
1				< 0.381	< 0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	/ - · / < U < -	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	05/14/02	41.4	<0.250	<0.500	4.35	2.68	1.84	8.72	_	_
	05/19/03	-	_	-	0.534	0.00975	0.194	0.876	-	
	05/25/07	0.439	<0.238	<0.476	0.071	0.00114	0.0361	0.0453		
	08/24/07	0.102	<0.238	<0.476	<0.001	<0.002	<0.002	<0.006	_	_
	11/26/07	<0.080	<0.236	< 0.472	<0.001	<0.002	<0.002	<0.006	_	_
	02/27/08	0.0817	<0.294	<0.588	0.005	<0.0005	<0.0005	<0.001	_	_
	03/31/10	<0.250	<0.250	<0.500	<0.0005	<0.0005	<0.0005	<0.0015	_	_
	09/01/10	<0.250	<0.250	<0.500	0.0016	<0.0005	<0.0005	<0.0015	_	_
	12/16/14	<0.250	<0.250	<0.500	<0.0005	<0.0005	<0.0005	<0.0005	_	_
	03/25/15	<0.250	<0.046	<0.091	<0.0005	<0.0005	<0.0005	<0.001	_	_
	06/24/15	<0.250	<0.100	<0.250	<0.0005	<0.0005	<0.0005	<0.001	_	_
	09/15/15	<0.250	0.17 D	0.37	<0.0005	<0.0005	<0.0005	<0.001	_	_
NAMA 2	02/19/19	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.00015	0.00121	_
	05/20/19	<0.05	<0.0377	<0.0755	<0.0001	<0.0005	<0.00025	<0.00075	0.0031	_
	08/29/19	<0.05	<0.0377	<0.0755	<0.0001	<0.0005	0.00069	<0.00075	0.00125	<0.002
	11/19/19	<0.100	<0.0762	<0.152	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/25/2020	<0.100	<0.0769	<0.154	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	6/2/2020	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	0.00774	<0.002
	8/18/2020	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	0.00521	<0.002
		<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	0.00243	<0.004
	11/17/2020	<0.100	<0.0792	<0.158	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
		<0.100	<0.0748	<0.15	<0.0002	<0.001	<0.0005	<0.0015	0.0053	<0.004
	2/25/2021		<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	0.0113	<0.004
1		<0.100		<0.377	<0.0002	<0.001	<0.0005	<0.0015	.00278	<0.002



Summary of Analytical Results - Monitoring Wells NuStar Terminals Operations Partnership, L.P. - Annex Terminal Vancouver, Washington

Well Number	Sample Date	TPHg Gasoline (mg/L)	TPHd Diesel (mg/L)	TPHo Heavy Oil (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	Naphthalene (mg/L)
	05/14/02	4.5	<0.250	<0.500	0.0419	0.0096	0.293	0.521	-	-
	05/19/03	-	-		0.0908	0.0097	0.338	0.5382		
	05/25/07	0.361	<0.238	<0.476	<0.0005	<0.0005	0.0132	0.0145	-	-
	08/24/07	<0.1	<0.238	<0.476	<0.001	<0.002	<0.002	<0.006	-	-
	11/26/07	<0.080	<0.236	<0.472	0.0011	<0.002	0.0066	<0.006	-	
	02/27/08	2.14	0.387 ^{6.}	<0.500	<0.0005	<0.0005	0.17	0.17	-	
	2/27/2008 DUP	1.85	0.342	<0.485	0.0011	<0.0005	0.19	0.2	-	-
	03/31/10	2.10	<0.250	<0.500	<0.0005	<0.0005	0.018	0.021	-	
	3/31/2010 DUP	1.90	<0.250	<0.500	<0.0015	<0.0015	0.018	0.020	-	
	09/01/10	<0.250	<0.250	<0.500	<0.0005	<0.0005	<0.0005	<0.0015	-	-
	9/1/2010 DUP	<0.250	<0.250	<0.500	<0.0005	<0.0005	<0.0005	<0.0015	-	-
	12/16/14	<0.250	<0.250	<0.500	<0.0005	<0.0005	<0.0005	<0.0005	-	_
	03/25/15	<0.418	<0.046	<0.092	<0.0005	<0.0005	<0.0005	<0.001	-	_
MW-3	06/24/15	<0.250 <0.250	0.120 0.140	<0.026 <0.250	<0.0005 <0.0008	<0.0005 <0.0008	<0.0005 <0.0008	<0.001 <0.001	_	_
	09/15/15	<0.250	<0.0755	<0.250	<0.0008	<0.001	<0.0008	<0.001	<0.001	_
	02/18/19 05/20/19	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.00015	<0.001	_
	08/29/19	<0.05 	<0.0377	<0.0755	<0.0001	<0.0005	<0.00025	<0.00075	<0.0005	_
	11/19/19	0.114	<0.0769	<0.154	<0.0002	<0.001	0.00661	0.0113	<0.001	<0.002
	2/25/2020	<0.100	0.0955	<0.154	<0.0002	<0.001	<0.0005	<0.0113	<0.001	<0.002
	6/2/2020	<0.100	<0.0762	<0.154	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	8/18/2020	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	11/17/2020	<0.100	<0.0748	<0.15	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/25/2021	<0.100	<0.0792	<0.158	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	5/5/2021	<0.100	< 0.0762	<0.152	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	8/10/2021	<0.100	<0.187	<0.374	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	11/17/2021	<0.100	<0.190	<0.381	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	05/14/02	<0.080	0.358 ^{5.}	<0.500	<0.0005	<0.0005	<0.0005	<0.001		
	05/19/03	\0.000	0.356	₹0.500	<0.001	<0.001	<0.0003	<0.001		
	05/25/07	<0.080	<0.238	<0.476	<0.001	<0.001	<0.001	<0.002		
	08/24/07	<0.1	<0.238	<0.476	<0.001	<0.002	<0.002	<0.006		
	11/26/07	<0.080	<0.236	<0.472	<0.001	<0.002	<0.002	<0.006		
	02/27/08	<0.080	<0.248	<0.495	<0.0005	<0.0005	<0.0005	<0.001	_	_
	03/31/10	<0.250	<0.250	<0.500	<0.0005	<0.0005	<0.0005	<0.0015	_	
	09/01/10	<0.250	<0.250	<0.500	<0.0005	<0.0005	<0.0005	<0.0015		_
	12/16/14	<0.250	<0.250	<0.500	<0.0005	<0.0005	<0.0005	<0.0005		_
	03/25/15	<0.250	0.074	<0.091	<0.0005	<0.0005	<0.0005	<0.001		_
	06/24/15	<0.250	<0.099	<0.250	<0.0005	<0.0005	<0.0005	<0.001		_
	09/15/15	<0.250	<0.130	<0.340	<0.0005	<0.0005	<0.0005	<0.001	_	_
MW-4	02/18/19	<0.100	<0.0755	<0.151	< 0.0002	<0.001	<0.0005	<0.00150	<0.001	_
	05/20/19	<0.05	<0.0377	<0.0755	<0.0001	<0.0005	<0.00025	<0.00075	<0.0005	_
	08/29/19	_	-	-		_				-
	11/19/19	<0.100	<0.0784	<0.157	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/25/2020	<0.100	<0.0769	<0.154	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	6/2/2020	<0.100	0.0914	<0.152	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	8/18/2020	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	11/17/2020	<0.100	0.0783	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	2/26/2021	<0.100	<0.08	<0.16	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	5/5/2021	<0.100	<0.0748	<0.15	<0.0002	<0.001	0.00073	0.00181	<0.001	<0.004
	8/10/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	11/17/2021	<0.100	<0.189	<0.377	< 0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002



Summary of Analytical Results - Monitoring Wells NuStar Terminals Operations Partnership, L.P. - Annex Terminal Vancouver, Washington

Well Number	Sample Date	TPHg Gasoline (mg/L)	TPHd Diesel (mg/L)	TPHo Heavy Oil (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	Naphthalene (mg/L)
	12/16/14	15	0.350	<0.500	0.00070	0.00066	0.12	1.2	=	-
	12/16/2014 DUP	15	<0.250	<0.500	0.00088	0.00081	0.18	1.3		-
	03/25/15	18.1	<0.045	<0.091	<0.00050	0.00061	0.218	1.45	-	-
	3/25/2015 DUP	17.2	<0.046	<0.092	0.0005	0.00065	0.236	1.22		-
	06/24/15	15	0.33 D	<0.250	<0.0012	< 0.0012	0.228	1.51	-	-
	6/24/2015 DUP	16.8	0.560 D	<0.250	<0.0012	< 0.0012	0.232	1.49	-	-
	09/15/15	17.3	0.82 D	<0.34	<0.00050	0.00060	0.289	1.92	-	-
	07/11/16	19.4	0.310	<0.29	<0.00084	0.00100	0.215	1.17	-	-
	10/23/17	7.93 J-	1.26	<0.25	<0.0010	0.00117	0.174	0.99		
	11/30/17	11.3	1.63	<0.25	<0.0250	< 0.0250	0.187	1.21	-	-
	11/30/17 DUP	10.9	1.75	<0.25	<0.0010	0.00112	0.187	1.48		-
	02/28/18	9.86	1.77	<0.25	<0.0010	0.00115	0.145	0.877		
	05/29/18	13.2	2.20	<0.25	<0.0010	0.00130	0.271	1.15		-
	08/30/18	18.6	0.819 F-18	<0.151	<0.00200	<0.0100	0.190	0.936		
	8/30/2018 DUP	20.8	0.631 F-18	<0.151	<0.00200	<0.0100	0.212	1.06		-
	02/18/19	29.2	1.06 F-18	<0.151	<0.00200	< 0.0100	0.187	1.06	<0.010	-
MW-5	05/21/19	22	0.722	<0.0784	< 0.002	< 0.01	0.252	1.04	<0.010	-
	08/28/19	24.8	0.963	<0.0769	<0.002	< 0.01	0.239	1.1	< 0.01	2.07
	8/28/2019 DUP	21.7	0.879	<0.0769	<0.002	< 0.01	0.179	0.836	<0.01	1.44
	11/18/19	23.5	0.771	<0.152	<0.004	< 0.02	0.257	1.19	< 0.02	1.62
	11/18/2019 DUP	20.0	0.696	<0.152	<0.01	< 0.05	0.284	1.46	< 0.05	1.51
	2/24/2020	23.4	2.40	<0.154	<0.004	< 0.02	0.176	0.809	< 0.02	1.52
	6/1/2020	12.7	2.04	0.193	<0.004	< 0.02	0.244	0.844	< 0.02	1.29
	8/17/2020	18.8	2.17 F-18	<0.377	<0.002	< 0.01	0.154	0.704	< 0.01	1.4
	8/17/2020 DUP	22.6	2.1 F-18	< 0.377	<0.002	<0.01	0.21	0.94	<0.01	1.74
	11/16/2020	18.5	1.92 F-18	<0.151	< 0.004	< 0.02	0.206	1.05	< 0.02	1.42
	2/25/2021	27.5	1.82 F-18	<0.15	0.0026 Q-42	<0.01	0.13	0.626	<0.01	1.55
	2/25/2021 DUP	27.2	2.14 F-18	<0.163	<0.002	< 0.01	0.127	0.616	< 0.01	1.55
	5/4/2021	15.8	2.09 F-20	<0.151	<0.01	< 0.05	0.108	0.458	< 0.05	1.31
	8/10/2021	15.2	2.59 F-13, F-20	<0.381	<0.00024 R-06	<0.0012 R-06	0.135	0.628	<0.001	1.36
	11/16/2021	13.9	2.15 F-18	<0.381	<0.000220 R-06	0.00116	.197	0.610	<0.001	1.43
	11/16/2021 DUP	11.5	1.84	<0.381	<0.000220	0.00117	0.164	0.468	<0.001	1.19
	10/24/17	0.42	0.147 J	<0.25	<0.0010	<0.0010	0.00138	0.00296 J	-	-
	11/30/17	0.41	0.49	<0.25	<0.0010	<0.0010	<0.0010	<0.0030	-	
	02/28/18	0.589	0.249	<0.25	<0.0010	<0.0010	0.00508	0.00204	-	
	05/29/18	0.68	<0.38	<0.38	<0.0010	<0.0010	0.00220	<0.0030	-	-
	08/30/18	0.673	<0.0755	<0.151	<0.000200	<0.00100	<0.00050	<0.00150	-	-
	02/18/19	0.165	<0.0748	<0.150	<0.000200	<0.00100	<0.00050	<0.00150	<0.001	
	05/21/19	<0.05	<0.0377	<0.0755	<0.0001	<0.0005	<0.00025	<0.00075	<0.0005	-
	08/28/19	0.309	<0.0374	<0.0748	<0.0001	<0.0005	0.00078	<0.00075	<0.0005	<0.002
MW-5D	11/18/19	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	< 0.001	<0.002
	2/24/2020	<0.100	0.109	<0.154	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	6/1/2020	<0.100	0.0974	<0.152	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	8/17/2020	<0.100	<0.187	<0.374	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	11/16/2020	0.200	<0.0748	<0.150	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	2/25/2021	0.126	0.24 F-11 F-20	<0.154	<0.0002	<0.001	0.00093	<0.0015	<0.001	<0.002
	5/4/2021	0.208	0.158 F-11F-20	<0.152	<0.0002	<0.001	0.00359	<0.0015	<0.001	<0.002
	8/10/2021	<0.100	0.470	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	11/16/2021	<0.100	1.84	<0.381	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002



Summary of Analytical Results - Monitoring Wells NuStar Terminals Operations Partnership, L.P. - Annex Terminal Vancouver, Washington

Well Number	Sample Date	TPHg Gasoline (mg/L)	TPHd Diesel (mg/L)	TPHo Heavy Oll (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	Naphthalene (mg/L)
	12/16/14	15	<0.250	<0.500	0.47	0.065	1.3	2.6	-	-
	03/25/15	13.7	0.047	<0.092	0.516	0.0756	1.40	2.26	-	-
	06/24/15	17.7	1.2 D	<0.250	0.423	0.0582	1.58	1.92	-	-
	09/15/15	15.1	0.54 D	<0.34	0.306	0.0672	1.23	1.92	-	-
	9/15/2015 DUP	14	0.44 D	<0.35	0.328	0.0684	1.32	2.07	-	
	07/11/16	15.5	0.23	<0.28	0.358	0.0616	1.63	1.82	-	_
	10/24/17	7.73	5.07	0.111 J	0.194	0.051	1.51	1.29	-	-
	10/24/17 DUP	4.19 J	8.96 QJ	1.19 QJ	0.153	0.046	1.18	1.04	-	_
	11/30/17	9.42	7.44	0.69	2.223	0.053	1.71	1.12	-	-
	02/28/18	7.72	3.57	0.152	0.256	0.0423	1.44	0.735	-	-
	05/29/18	1.5	9.30	0.570	0.23	0.0444	1.38	0.891	-	-
	08/30/18	20.1	1.24 F-18	<0.151	0.212	0.0452	1.59	1.15	-	-
	02/18/19	18.2	2.15 F-20	<0.151	0.249	0.0408	1.74	0.577	<0.010	-
MW-6	05/20/19	20	1.23	<0.0755	0.218	0.0426	1.86	0.937	<0.010	-
	08/29/19	16.8	1.64	<0.0755	0.177	0.0394	1.69	0.585	<0.01	0.561
	11/19/19	6.30	1.95	<0.150	0.0712	<0.02	0.709	0.127	<0.02	0.163
	2/25/2020	15.6	4.02	<0.769	0.19	0.0308	1.74	0.420	<0.02	0.340
	2/25/2020 DUP	14.8	4.35	<0.769	0.186	0.0288	1.68	0.405	<0.02	0.329
	6/1/2020	11.3	6.92	<0.15	0.163	0.0286	1.74	0.363	<0.01	0.433
	8/17/2020	14.9	2.66 F-20	<0.377	0.166	0.0345	1.79	0.370	<0.01	0.316
	11/17/2020	12.5	4.62 F-20	<0.154	0.149	0.0248	1.85	0.207	<0.02	0.279
	11/17/2020 DUP	13.7	6.93 F-20	<0.157	0.163	0.032	2.08	0.398	<0.02	0.315
	2/25/2021	15.2	5.66 F-11 F-20	<0.154	0.23	0.0325	1.86	0.263	<0.01	0.371
	5/5/2021	11.2	5.83 F-20	<0.152	0.152	<0.05	1.75	0.186	<0.05	0.248
	8/11/2021	14.0	6.07 F-20	<0.377	0.175	0.0287	1.88	0.327	<0.001	0.384
	8/11/2021 DUP 11/17/2021	13.8 11.1	6.36 F-20 8.27	<0.377 <0.388	0.174 0.181	0.0289 0.0223	1.89 1.50	0.312 0.208	<0.001 <0.001	0.386 0.281
	07/11/16	<0.250	<0.19	<0.29	<0.00050	<0.00050	<0.00050	<0.00015		_
	02/19/19	<0.100	<0.0748	<0.150	<0.0002	<0.001	<0.0005	<0.00015	<0.001	
	05/20/19	<0.05	<0.0377	<0.0755	<0.0001	<0.0005	<0.00025	< 0.00075	<0.0005	_
	08/28/19	<0.05	<0.0388	<0.0777	<0.0001	<0.0005	<0.00025	<0.00075	<0.0005	<0.002
	11/18/19	<0.100	<0.0748	<0.150	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/24/2020	<0.100	<0.0769	<0.154	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
MW-7	6/1/2020	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
10100-7	8/17/2020	<0.100	<0.187	<0.374	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	11/16/2020	<0.100	<0.0748	<0.150	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	2/25/2021	<0.100	< 0.0769	<0.154	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	5/4/2021	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	8/10/2021	<0.100	<0.190	<0.381	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	11/16/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	07/11/16	<0.250	<0.19	<0.29	<0.00050	<0.00050	<0.00050	<0.00015	-	-
	7/11/16 DUP	<0.250	<0.19	<0.29	<0.00050	<0.00050	<0.00050	<0.00015	-	-
	02/18/19	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.00015	<0.001	-
	05/21/19	<0.05	<0.0374	<0.0748	<0.0001	<0.0005	<0.00025	<0.00075	<0.0005	-
	08/28/19	<0.05	<0.0412	<0.0825	<0.0001	<0.0005	<0.00025	<0.00075	<0.0005	<0.002
	11/18/19	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
MW-8	2/24/2020	<0.100	<0.0769	<0.154	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	6/1/2020	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	8/17/2020	<0.100	<0.187	<0.374	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	11/16/2020	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	2/25/2021	<0.100	<0.0833	<0.167	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	5/4/2021	<0.100	<0.0762	<0.152	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	8/10/2021	< 0.100	<0.190	<0.381	< 0.0002	< 0.001	< 0.0005	< 0.0015	< 0.001	< 0.004
	0/10/2021	0.200	0.200	10.001	-0.0002	10.001	0.0000	10.0010	-0.001	-0.00-



Summary of Analytical Results - Monitoring Wells NuStar Terminals Operations Partnership, L.P. - Annex Terminal Vancouver, Washington

Well Number	Sample Date	TPHg Gasoline (mg/L)	TPHd Diesel (mg/L)	TPHo Heavy Oll (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	Naphthalene (mg/L)
	02/18/19	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.00015	<0.001	-
	05/21/19	<0.05	<0.0374	<0.0748	<0.0001	<0.0005	<0.00025	<0.00075	<0.0005	-
	08/28/19	<0.05	<0.0377	<0.0755	<0.0001	<0.0005	<0.00025	<0.00075	<0.0005	<0.002
	11/18/19	<0.100	<0.0762	<0.152	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/24/2020	<0.100	< 0.0769	<0.154	< 0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
MW 65	6/1/2020	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
MW-8D	8/17/2020	<0.100	<0.189	<0.374	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	11/16/2020	<0.100	<0.0748	<0.150	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	2/25/2021	<0.100	<0.0833	<0.167	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	5/4/2021	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	8/10/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	11/16/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	07/11/16	<0.250	<0.19	<0.29	<0.00050	<0.00050	<0.00050	<0.00015	_	-
	02/18/19	<0.100	<0.0748	<0.150	<0.0002	<0.001	<0.0005	<0.0015	<0.001	
	05/21/19	<0.05	<0.0374	<0.0748	<0.0001	<0.0005	<0.00025	<0.00075	<0.0005	-
	08/28/19	<0.05	<0.0374	<0.0748	<0.0001	<0.0005	<0.00025	<0.00075	<0.0005	<0.002
	11/18/19	<0.100	<0.0762	<0.152	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/24/2020	<0.100	<0.0769	<0.154	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
MW-9	6/2/2020	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	8/17/2020	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	11/16/2020	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	2/25/2021	<0.100	<0.0777 <0.0755	<0.155	<0.0002	<0.001	<0.0005 <0.0005	<0.0015 <0.0015	<0.001 <0.001	<0.002 <0.004
	5/4/2021 8/11/2021	<0.100 <0.100	<0.0755	<0.151 <0.377	<0.0002 <0.0002	<0.001 <0.001	<0.0005	<0.0015	<0.001	<0.004
	11/16/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	07/11/16	<0.250	<0.19	<0.29	<0.00050	<0.00050	<0.00050	<0.00015		
	02/19/19	<0.100	<0.19	<0.150	<0.00030	<0.001	<0.0005	<0.00015	<0.001	_
	05/21/19	<0.05	<0.0377	<0.0755	<0.0001	<0.0005	<0.00025	< 0.00075	<0.0005	_
	08/29/19	<0.05	<0.0374	<0.0748	<0.0001	<0.0005	<0.00025	<0.00075	<0.0005	<0.002
	11/19/19	<0.100	<0.0762	<0.152	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	2/24/2020	<0.100	< 0.0769	<0.154	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
MW-10	6/1/2020	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	8/19/2020	<0.100	<0.187	<0.374	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	11/16/2020	<0.100	<0.0748	<0.150	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	2/26/2021	<0.100	<0.0792	<0.158	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	5/5/2021	<0.100	<0.0755	<0.151	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	8/11/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.004
	11/17/2021	<0.100	<0.189	<0.377	<0.0002	<0.001	<0.0005	<0.0015	<0.001	<0.002
	02/19/19	0.727	<0.0748	<0.150	0.00162	0.00176	0.083	0.0652	<0.001	-
	05/21/19	3.05	<0.0374	<0.0748	0.0643	0.00843	0.359	0.0355	<0.0005	0.101
	08/29/19 11/19/19	17.4 45.0	0.094 0.239	<0.0748	0.0038	0.24 0.159	1.18 4.33	2.52 7.73	<0.005 <0.02	0.121 0.414
	2/25/2020	2.65	0.239	<0.151 <0.154	0.0526 0.00397	<0.01	0.292	0.257	<0.02	0.0257
	6/2/2020	1.59	0.129	<0.15	0.00397	<0.0025	0.352	0.0812	<0.0025	0.0237
	6/2/2020 DUP	1.62	< 0.0755	<0.151	0.022	<0.0025	0.353	0.083	<0.0025	0.022
MW-11	8/19/2020	13.9 R	<0.187	<0.374	0.00337	0.175 R	0.817 R	2.93 R	<0.001	0.0906 R
	8/19/2020 DUP	22.9 R	0.23 F-18	<0.377	0.00541	0.268 R	1.36 R	4.81 R	<0.001	0.145 R
	11/17/2020	23.3	0.298 F-20	<0.151	0.0359	0.0705	2.18	3.31	<0.001	0.207
	2/26/2021	3.42	0.152 F-11 F-20	<0.151	0.0044	0.00563	0.37	0.594	<0.001	0.0575
	5/5/2021	49.4	0.598 F-11F-20	<0.151	0.025	0.62	4.54	10.8	<0.05	0.287
	5/5/2021 DUP	49.6	0.644 F-11F-20	<0.151	0.0245	0.62	4.53	10.6	<0.05	0.284
	8/11/2021	41.4	0.673 F-11, F-20	<0.381	0.00902	0.196	2.58	8.6	<0.001	<0.2
	11/17/2021	2.26	<0.189	<0.377	0.0218	0.00502	0.544	0.0218	<0.001	<0.2
Vashington DO	DE MTCA Method A	0.8	0.5	0.5	0.005	1	0.7	1	0.02	0.16



Summary of Analytical Results - Monitoring Wells NuStar Terminals Operations Partnership, L.P. – Annex Terminal

Vancouver, Washington

Notes:

- 1. TPHg = Total petroleum hydrocarbons in gasoline carbon range by NW-TPHgx method.
- 2. TPHd = Total petroleum hydrocarbons in diesel carbon range by NW-TPHdx method with silica gel cleanup.
- 3. TPHho = Total petroleum hydrocarbons ion heavy oil carbon range NW-TPHdx method with silica gel cleanup.
- 4. Bold values represent concentration that exceeds MTCA Method A cleanup level.
- 5. Analysis completed without silica gel cleanup. Lab detected hydrocarbons with non-petroleum peaks or elution pattern that suggests the presence of biogenic interference.
- 6. Hydrocarbon pattern most closely resembles a blend of heavy gas-/light diesel-range components.
- 7. mg/L (ppm) = Milligrams per liter (parts per million).
- 8. TPHg cleanup level dependent on presence of benzene in groundwater. Cleanup level = 0.800 mg/L if benzene is present and 1.00 mg/L if benzene is not present.
- 9. Washington DOE MTCA Method A cleanup level = Washington Department of Ecology Model Toxics Control Act Method A cleanup level.
- 10. < = Not detected at or above the specified laboratory method reporting limit (MRL).
- 11. bgs = below ground surface
- 12. = Sample not analyzed for constituent.

Quality Assurance/Quality Control Data Qualifiers

- J = Reported result is an estimated value.
- J- = Reported result is estimated and biased low.
- Q = Sample prepared and/or analyzed outside of recommended holding time. Result is considered biased low.
- F-11 = The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.
- F-18 = Result for Diesel (Diesel Range Organics, C12-C24) is due to overlap from Gasoline or a Gasoline Range product.
- F-20 = Result for Diesel is estimated due to overlap from Gasoline Range Organics or other VOCs.
- D = Laboratory report noted discreet peaks that are not indicative of diesel. The laboratory chemist confirmed the peaks were from non-petroleum organic material.
- R= The relative percent difference between the sample and duplicate sample is above 30%.



APPENDIX E Laboratory Results and Data Quality Review

1.0 INTRODUCTION

This attachment documents the results of a quality assurance/quality control (QA/QC) review of the analytical data for the groundwater samples collected as part of the 2021 quarterly groundwater monitoring events at the NuStar Terminals Operations Partnership (NuStar) Annex Terminal in Vancouver, Washington (the Facility). Soil and groundwater sample analyses were performed by accredited environmental laboratories; laboratories used during the investigation are listed in the table below. Copies of the laboratory reports are included in this attachment.

Report	Sampling Date	Event	Laboratory
A1000A 2/25/21 2/20/21		Groundwater monitoring	Apex Labs -
A1C004	2/25/21-2/26/21	event	Tigard, OR.
A1E0226	E /4 /21 E /E /21	Groundwater monitoring	Apex Labs -
A1E0226	5/4/21-5/5/21	event	Tigard, OR.
A1H0365	8/10/21-8/11/21	Groundwater monitoring	Apex Labs -
ATHUSUS	0/10/21-0/11/21	event	Tigard, OR.
A1K0890	11/16/21-11/17/21	Groundwater monitoring	Apex Labs -
AIROOJO	11/10/21-11/1//21	event	Tigard, OR.

2.0 DATA VALIDATION

The QA review included examination and validation of the laboratory data packages for the following:

- Analytical preparation and quantitation methods;
- Analytical method holding times;
- Sample handling;
- Chain-of-custody protocols;
- Detection and reporting limits;
- Method blank detections;
- Laboratory control samples, matrix spikes and surrogates to assess laboratory accuracy;
- Laboratory control sample duplicates and matrix spike duplicates to assess laboratory precision; and
- Field duplicates to assess sampling and laboratory precision

The QA/QC review did not include a review of raw data.

2.1 DATA QUALIFIERS

Any data that are found to have possible bias or error were qualified and flagged. The flags used in the data table are below.

F-11	The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.
F-13, F-18 - F-20	Various laboratory notes regarding the hydrocarbon pattern on the NWTPH-Gx and NWTPH-Dx analysis; in general, the chromatograph patterns don't exactly match the standard and/or there is an overlap in hydrocarbon ranges in the samples. Note: while the hydrocarbon overlap was noted on the report tables, the data flags were not carried through to the tables as they don't indicate a quality issue for sample results.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-17	Relative percent difference (RPD) between original and duplicate is outside control limits.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-42	Matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample and percent recovery or RPD was outside control limits.
Q-55	Daily CCV/LCS recovery for the analyte was below the +/-20% criteria listed in EPA 8620, however there is adequate sensitivity for analysis.
R	The relative percent difference between the sample and duplicate sample is above 30%.
R-06	Reporting level raised due to possible carryover from a previous sample.

3.0 ANALYTICAL METHODS

Groundwater analyses included the following:

- Gasoline-range petroleum hydrocarbons (TPHg) by Method NWTPH-Gx;
- Diesel-range petroleum hydrocarbons (TPHd) and oil-range petroleum hydrocarbons (TPHo) by Method NWTPH-Dx; and
- Benzene, toluene, ethylbenzene, and xylenes (collectively BTEX) and Naphthalene by U.S. Environmental Protection Agency (EPA) Method 8260C.

4.0 QUALITY ASSURANCE OBJECTIVES AND REVIEW

The general QA objectives for this project were to develop and implement procedures for obtaining, evaluating, and confirming the usability of data of a specified quality for soil and groundwater concentration monitoring at the Facility. To collect such information, analytical data must have an appropriate degree of accuracy and reproducibility, samples collected must be representative of actual field conditions, and samples must be collected and analyzed using unbroken chain-of-custody procedures.

Reporting limits and analytical results for the samples were compared to Washington Department of Ecology MTCA Method A Cleanup Levels for each parameter. Precision, accuracy, representativeness, completeness, and comparability parameters used to indicate data quality are defined below.

4.1 HOLDING TIMES AND SAMPLE RECEIPT

The holding time is the minimum amount of time the sample can be stored before analytes start to degrade and are not representative of initial sampling concentrations. Holding times are defined by analytical methods. The groundwater samples included in this QA/QC review were analyzed within the method recommended holding time.

Method	Matrix	Analyte	Preservative	Hold Time
EPA 8260C	60C Water BTEX, MTBE and Hydrochlor		Hydrochloric Acid (HCl) to pH<2;	14 days
EI A 0200C	water	naphthalene	No headspace; Glass VOA	14 days
NIA/TDII C IA/		Gasoline Range	Hydrochloric Acid (HCl) to pH<2;	14 days
NWTPH-Gx	Water	Organics	No headspace; Glass	14 days
NWTPH-Dx	Water	Hydrochloric Acid (HCl) to pH<2;		14 days
NWIPH-DX	water	Diesel Range Organics	Amber glass container	14 days

Samples were received on ice below 4°C by the analytical laboratory. Sampling containers arrived intact and unbroken to the laboratories. Groundwater samples to be analyzed for volatile organic compounds (VOCs) were received without headspace in volatile organic analysis (VOA) sampling containers. All chain-of-custody procedures were appropriately relinquished by the GeoEngineers sampler and received by the analytical laboratory. There were no major discrepancies found between the bottles and the chain-of-custody procedures received.

4.2 REPORTING LIMITS

Reporting limits are the lowest concentration an instrument is capable of accurately detecting an analyte. They are determined by the laboratory and are based on instrumentation capabilities, the matrix of field samples, sample preparation procedures and suggested reporting limits by the EPA or the Washington Department of Ecology. In some cases, the reporting limits may be raised due to high concentrations of analytes or matrix interferences. Detection limits were generally consistent

with industry standards and regulatory standards. Reporting limits for individual samples varied based on the magnitude of the chemical impact.

4.3 METHOD BLANKS

A method—or laboratory—blank is a QC sample prepared by the laboratory from an analyte-free matrix that is analyzed in an analytical batch along with environmental and other QC samples. It is used to assess laboratory contamination or background interferences. Analytes were not detected in the method blanks during the above-referenced analyses.

4.4 ACCURACY

Accuracy compares the accepted reference concentration of an analyte to the concentration determined analytically. Accuracy is measured as a percent recovery. This recovery must be within a certain range or control limit for the data in an analytical batch to be considered acceptable. The analytical laboratory provides QC samples and surrogates to help determine the accuracy and acceptability of the data reported. These QC samples and surrogates are discussed below.

4.4.1 Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control duplicate samples (LCSD) were analyzed by the laboratory to assess the accuracy of the analytical methods. A minimum of one set of LCS and LCSD was analyzed per analytical batch. The LCS and LCSD are prepared from an analyte-free matrix that is spiked with known levels of compounds of concern. The concentrations are measured and compared to the known spiked levels. This comparison is expressed as percent recovery. The percent recoveries for LCS and LCSD quality control samples were within method control limits with the following exceptions:

From report A1E0226, an LCS analysis was performed on a blank (batch 1050234) and percent recovery for xylenes was outside of control limits. Because a duplicate LCS analysis had percent recovery within method control limits for the same batch, no data were flagged.

4.4.2 Matrix Spikes

A matrix spike QC sample is used to assess the performance of the analytical method by determining potential matrix interferences. MS and MSD analyses are performed on one environmental sample per analytical batch. An MS sample uses an environmental sample that is spiked with known concentrations of analytes of interest. The MS is then prepared and analyzed with the same analytical procedures as environmental samples in the analytical batch. The resulting concentration of the MS is then compared to the known or true values plus the non-spiked environmental sample concentration. This comparison is expressed as a percent recovery. The percent recoveries for MS and MSD QC samples were within method control limits with the following exceptions:

From report A1E0226, a matrix spike analysis was performed on a blank (batch 1050334) and percent recovery for naphthalene was outside of EPA criteria for method 8260D. Because there was adequate sensitivity for analysis, no data were flagged.

From report A1K0890, a matrix spike analysis was performed on a blank (batch 21K0914) and percent recovery was outside of control limits. Because a duplicate matrix spike analysis had percent recovery within method control limits for the same batch, no data were flagged.

4.4.3 Surrogates

Surrogates are organic compounds that are similar in chemical composition to the analytes of interest but are not likely to be found in the environment. They are spiked at a known concentration into environmental and batch QC samples prior to sample preparation and analysis. Surrogate recoveries for environmental samples are used to evaluate matrix interference, sample preparation efficiency and analysis performance on a sample-specific basis. In some cases, the surrogate recovery was either estimated or not available due to sample dilution required for high analyte concentration and/or matrix interference. Surrogate recoveries were within control limits.

4.5 PRECISION

Precision is measured by how close values of duplicate analyses are to each other. These duplicate analyses are prepared from separate aliquots of the same sample and are analyzed at the same (or similar) time. Precision in the field ensures that samples taken are representative of field concentrations; this is demonstrated by field duplicates. Analytical precision is the ability of the laboratory to reproduce results that are similar to each other; this is measured through duplicate analysis of environmental and batch QC samples. Precision is estimated by the RPD between the original analysis and the duplicate analysis.

4.5.1 Laboratory Control Sample Duplicates

The analytical batch LCS concentration of an analyte is compared to the LCSD concentration of the same analyte. The RPD is calculated from these two concentrations, which must be below a certain percentage to be considered acceptable. The RPD values for the laboratory control samples of the same batch were within the method control limits.

4.5.2 Matrix Spikes

Like the LCS/LCSD, the MS/MSD analyte concentrations are also compared to each other and expressed as an RPD. The RPD values for analytical batch MS/MSD were within the control limits.

4.5.3 Field Duplicate

A field duplicate is a second field sample collected from a selected sample location. Field duplicate samples serve as a check on laboratory precision, sampling quality, as well as potential variability

Appendix E – Data Quality Review
2021 Groundwater Monitoring Report
NuStar Vancouver Annex Facility - Vancouver, Washington

of the sample matrix. The field duplicate is analyzed and compared to the original sample to assess precision. This comparison can be expressed by the RPD between the original and duplicate samples. Application of RPD values is appropriate when the analyte result is five times greater than the reporting limit. Laboratory precision decreases as the analytical result approaches the reporting limit. One field duplicate was analyzed during each quarterly monitoring event. RPD values for the field duplicates were within control limits with the following exception:

From report A1C0004, the RPD between the sample and the duplicate from well MW-5 was greater than 30% for benzene. The associated data were flagged Q-42.

5.0 CONCLUSION

The overall QA objectives have been met and the data are of adequate quality for use in this project.



Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Tuesday, March 9, 2021 Stephanie Salisbury Cascadia Associates 5820 SW Kelly Ave Unit B Portland, OR 97239

RE: A1C0004 - Nustar Vannex - 1Q21

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1C0004, which was received by the laboratory on 2/26/2021 at 1:32:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample reciept, unless prior arrangements have been made.

	Cooler Receip	ot Information		
	(See Cooler Recei	pt Form for details)		
Cooler #1 Cooler #3	5.9 degC 4.1 degC	Cooler #2	4.4 degC	

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.





Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Awa & Jamenyhini



Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

ANALYTICAL REPORT FOR SAMPLES

	SAMPLE INFORM	ATION		
Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-8D	A1C0004-01	Water	02/25/21 10:00	02/26/21 13:32
MW-8	A1C0004-02	Water	02/25/21 10:40	02/26/21 13:32
MW-5	A1C0004-03	Water	02/25/21 11:10	02/26/21 13:32
MW-5 Dup	A1C0004-04	Water	02/25/21 11:10	02/26/21 13:32
MW-5D	A1C0004-05	Water	02/25/21 11:50	02/26/21 13:32
MW-9	A1C0004-06	Water	02/25/21 12:20	02/26/21 13:32
MW-7	A1C0004-07	Water	02/25/21 13:20	02/26/21 13:32
MW-3	A1C0004-08	Water	02/25/21 14:00	02/26/21 13:32
MW-6	A1C0004-09	Water	02/25/21 14:30	02/26/21 13:32
MW-1	A1C0004-10	Water	02/26/21 07:50	02/26/21 13:32
MW-11	A1C0004-11	Water	02/26/21 08:20	02/26/21 13:32
MW-4	A1C0004-12	Water	02/26/21 09:10	02/26/21 13:32
MW-2	A1C0004-13	Water	02/26/21 09:40	02/26/21 13:32
MW-10	A1C0004-14	Water	02/26/21 10:40	02/26/21 13:32

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

ANALYTICAL SAMPLE RESULTS

	Die	sel and/or Oil	Hydrocar	bons by NWTP	H-Dx			
	Sample	Detection Limit	Reporting Limit	TT '4	D.1 4.	Date	M.d. ID.C	NI.
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-8D (A1C0004-01)				Matrix: Wat	er	Batch	: 1030077	
Diesel	ND		0.0833	mg/L	1	03/02/21 22:55	NWTPH-Dx LL	
Oil	ND		0.167	mg/L	1	03/02/21 22:55	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Recove	rry: 91 %	Limits: 50-150 %	6 1	03/02/21 22:55	NWTPH-Dx LL	
MW-8 (A1C0004-02)				Matrix: Wat	er	Batch	: 1030077	
Diesel	ND		0.0833	mg/L	1	03/02/21 23:15	NWTPH-Dx LL	
Oil	ND		0.167	mg/L	1	03/02/21 23:15	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 85 %	Limits: 50-150 %	% I	03/02/21 23:15	NWTPH-Dx LL	
MW-5 (A1C0004-03)				Matrix: Wat	er	Batch	: 1030077	
Diesel	1.82		0.0748	mg/L	1	03/02/21 23:36	NWTPH-Dx LL	F-18
Oil	ND		0.150	mg/L	1	03/02/21 23:36	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 81 %	Limits: 50-150 9	% I	03/02/21 23:36	NWTPH-Dx LL	
MW-5 Dup (A1C0004-04)		Ma		Matrix: Wat	er Batch: 1030077			
Diesel	2.14		0.0816	mg/L	1	03/02/21 23:56	NWTPH-Dx LL	F-18
Oil	ND		0.163	mg/L	1	03/02/21 23:56	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 87%	Limits: 50-150 %	% 1	03/02/21 23:56	NWTPH-Dx LL	
MW-5D (A1C0004-05)				Matrix: Wat	er	Batch: 1030077		
Diesel	0.240		0.0769	mg/L	1	03/03/21 00:17	NWTPH-Dx LL	F-11, F-20
Oil	ND		0.154	mg/L	1	03/03/21 00:17	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 94%	Limits: 50-150 9	% 1	03/03/21 00:17	NWTPH-Dx LL	
MW-9 (A1C0004-06)				Matrix: Wat	er	Batch	: 1030077	
Diesel	ND		0.0777	mg/L	1	03/03/21 00:37	NWTPH-Dx LL	
Oil	ND		0.155	mg/L	1	03/03/21 00:37	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 92 %	Limits: 50-150 9	% 1	03/03/21 00:37	NWTPH-Dx LL	
MW-7 (A1C0004-07)		Matrix: Water		Batch	: 1030077			
Diesel	ND		0.0769	mg/L	1	03/03/21 00:58	NWTPH-Dx LL	
Oil	ND		0.154	mg/L	1	03/03/21 00:58	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 91%	Limits: 50-150 %	% 1	03/03/21 00:58	NWTPH-Dx LL	
MW-3 (A1C0004-08)				Matrix: Wat	er	Batch	: 1030077	
Diesel	ND		0.0792	mg/L	1	03/03/21 01:18	NWTPH-Dx LL	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

<u>Cascadia Associates</u>
Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number:1Q21Report ID:Portland, OR 97239Project Manager:Stephanie SalisburyA1C0004 - 03 09 21 1122

ANALYTICAL SAMPLE RESULTS

	Die	sel and/or Oil	nd/or Oil Hydrocarbons by NWTPH-Dx						
	Sample	Detection	Reporting			Date			
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes	
MW-3 (A1C0004-08)				Matrix: Wat	er	Batch	: 1030077		
Oil	ND		0.158	mg/L	1	03/03/21 01:18	NWTPH-Dx LL		
Surrogate: o-Terphenyl (Surr)		Recover	y: 81 %	Limits: 50-150 %	6 I	03/03/21 01:18	NWTPH-Dx LL		
MW-6 (A1C0004-09)				Matrix: Wat	er	Batch	: 1030077		
Diesel	5.66		0.0769	mg/L	1	03/03/21 01:39	NWTPH-Dx LL	F-11, F-20	
Oil	ND		0.154	mg/L	1	03/03/21 01:39	NWTPH-Dx LL		
Surrogate: o-Terphenyl (Surr)		Recover	y: 76 %	Limits: 50-150 %	6 I	03/03/21 01:39	NWTPH-Dx LL		
MW-1 (A1C0004-10)			Ma		er	Batch	: 1030077		
Diesel	0.313		0.0762	mg/L	1	03/03/21 01:59	NWTPH-Dx LL	F-11	
Oil	ND		0.152	mg/L	1	03/03/21 01:59	NWTPH-Dx LL		
Surrogate: o-Terphenyl (Surr)		Recover	y: 95 %	Limits: 50-150 %	6 1	03/03/21 01:59	NWTPH-Dx LL		
MW-11 (A1C0004-11)				Matrix: Wat	er	Batch	: 1030150		
Diesel	0.152		0.0755	mg/L	1	03/05/21 02:57	NWTPH-Dx LL	F-11, F-20	
Oil	ND		0.151	mg/L	1	03/05/21 02:57	NWTPH-Dx LL		
Surrogate: o-Terphenyl (Surr)		Recover	y: 68 %	Limits: 50-150 %	6 1	03/05/21 02:57	NWTPH-Dx LL		
MW-4 (A1C0004-12)				Matrix: Wat	er	Batch			
Diesel	ND		0.0800	mg/L	1	03/05/21 03:17	NWTPH-Dx LL		
Oil	ND		0.160	mg/L	1	03/05/21 03:17	NWTPH-Dx LL		
Surrogate: o-Terphenyl (Surr)		Recover	y: 91 %	Limits: 50-150 %	6 1	03/05/21 03:17	NWTPH-Dx LL		
MW-2 (A1C0004-13)				Matrix: Wat	er	Batch	: 1030150		
Diesel	ND		0.0792	mg/L	1	03/05/21 03:38	NWTPH-Dx LL		
Oil	ND		0.158	mg/L	1	03/05/21 03:38	NWTPH-Dx LL		
Surrogate: o-Terphenyl (Surr)		Recover	y: 84 %	Limits: 50-150 %	6 I	03/05/21 03:38	NWTPH-Dx LL		
MW-10 (A1C0004-14)				Matrix: Wate	er	Batch			
Diesel	ND		0.0792	mg/L	1	03/05/21 03:59	NWTPH-Dx LL		
Oil	ND		0.158	mg/L	1	03/05/21 03:59	NWTPH-Dx LL		
Surrogate: o-Terphenyl (Surr)		Recover	y: 88 %	Limits: 50-150 %	6 1	03/05/21 03:59	NWTPH-Dx LL		

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

ANALYTICAL SAMPLE RESULTS

Gasol	ine Range Hy	drocarbons (E	Benzene th	hrough Naphtha	alene) by	NWTPH-Gx		
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-8D (A1C0004-01)				Matrix: Wate	er	Batch	: 1030095	
Gasoline Range Organics	ND		0.100	mg/L	1	03/03/21 08:52	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	v: 101 %	Limits: 50-150 %	<i>i</i> 1	03/03/21 08:52	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			103 %	50-150 %	1	03/03/21 08:52	NWTPH-Gx (MS)	
MW-8 (A1C0004-02)			Matrix: Water		Batch	: 1030095		
Gasoline Range Organics	ND		0.100	mg/L	1	03/03/21 09:19	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	v: 101 %	Limits: 50-150 %	5 1	03/03/21 09:19	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			103 %	50-150 %	<i>I</i>	03/03/21 09:19	NWTPH-Gx (MS)	
MW-5 (A1C0004-03)			Matrix: Water Batch: 1030095		: 1030095			
Gasoline Range Organics	27.5		1.00	mg/L	10	03/03/21 11:35	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery	v: 107 %	Limits: 50-150 %	1	03/03/21 11:35	NWTPH-Gx (MS)	
I,4-Difluorobenzene (Sur)			104 %	50-150 %	1	03/03/21 11:35	NWTPH-Gx (MS)	
MW-5 Dup (A1C0004-04)		Matrix: Water			Batch: 1030095			
Gasoline Range Organics	27.2		1.00	mg/L	10	03/03/21 12:29	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	v: 105 %	Limits: 50-150 %	1	03/03/21 12:29	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			102 %	50-150 %	5 1	03/03/21 12:29	NWTPH-Gx (MS)	
MW-5D (A1C0004-05)				Matrix: Wate	er	Batch	: 1030095	
Gasoline Range Organics	0.126		0.100	mg/L	1	03/03/21 09:46	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery	v: 104 %	Limits: 50-150 %	1	03/03/21 09:46	NWTPH-Gx (MS)	
I,4-Difluorobenzene (Sur)			104 %	50-150 %	1	03/03/21 09:46	NWTPH-Gx (MS)	
MW-9 (A1C0004-06)				Matrix: Wate	er	Batch	: 1030095	
Gasoline Range Organics	ND		0.100	mg/L	1	03/03/21 10:13	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery	v: 101 %	Limits: 50-150 %	1	03/03/21 10:13	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			103 %	50-150 %	1	03/03/21 10:13	NWTPH-Gx (MS)	
MW-7 (A1C0004-07)				Matrix: Water		Batch	: 1030095	
Gasoline Range Organics	ND		0.100	mg/L	1	03/03/21 10:41	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	v: 104 %	Limits: 50-150 %	1	03/03/21 10:41	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			103 %	50-150 %	1	03/03/21 10:41	NWTPH-Gx (MS)	
MW-3 (A1C0004-08)				Matrix: Wate	er	Batch	: 1030095	
Gasoline Range Organics	ND		0.100	mg/L	1	03/03/21 11:08	NWTPH-Gx (MS)	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number:1Q21Report ID:Portland, OR 97239Project Manager:Stephanie SalisburyA1C0004 - 03 09 21 1122

ANALYTICAL SAMPLE RESULTS

Gaso	ine Kangé Hy	urocarbons (B	enzene ti	hrough Naphtha	аіепе) бу	NWIPH-GX		
	Sample		Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-3 (A1C0004-08)				Matrix: Wate	er	Batch	: 1030095	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery.	: 102 %	Limits: 50-150 %	5 1	03/03/21 11:08	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			103 %	50-150 %	5 1	03/03/21 11:08	NWTPH-Gx (MS)	
MW-6 (A1C0004-09)			Matrix: Water		Batch	: 1030133		
Gasoline Range Organics	15.2		1.00	mg/L	10	03/04/21 05:32	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery.	: 107 %	Limits: 50-150 %	5 1	03/04/21 05:32	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			104 %	50-150 %	5 1	03/04/21 05:32	NWTPH-Gx (MS)	
MW-1 (A1C0004-10)		Matrix: Water		Batch	: 1030133			
Gasoline Range Organics	ND		0.100	mg/L	1	03/04/21 00:35	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery.	: 100 %	Limits: 50-150 %	5 1	03/04/21 00:35	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			103 %	50-150 %	5 1	03/04/21 00:35	NWTPH-Gx (MS)	
MW-11 (A1C0004-11)		M		Matrix: Wate	er	Batch	: 1030133	
Gasoline Range Organics	3.42		0.100	mg/L	1	03/04/21 01:29	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery.	: 108 %	Limits: 50-150 %	5 1	03/04/21 01:29	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			102 %	50-150 %	5 1	03/04/21 01:29	NWTPH-Gx (MS)	
MW-4 (A1C0004-12)				Matrix: Wate	er	Batch		
Gasoline Range Organics	ND		0.100	mg/L	1	03/04/21 02:23	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery.	: 101 %	Limits: 50-150 %	5 1	03/04/21 02:23	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			103 %	50-150 %	5 1	03/04/21 02:23	NWTPH-Gx (MS)	
MW-2 (A1C0004-13)				Matrix: Wate	er	Batch	: 1030133	
Gasoline Range Organics	ND		0.100	mg/L	1	03/04/21 03:17	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery.	: 101 %	Limits: 50-150 %	5 1	03/04/21 03:17	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			104 %	50-150 %	5 1	03/04/21 03:17	NWTPH-Gx (MS)	
MW-10 (A1C0004-14)				Matrix: Wate	er	Batch		
Gasoline Range Organics	ND		0.100	mg/L	1	03/04/21 03:44	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery.	: 100 %	Limits: 50-150 %	5 1	03/04/21 03:44	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			104 %	50-150 %	5 1	03/04/21 03:44	NWTPH-Gx (MS)	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

ANALYTICAL SAMPLE RESULTS

	Select	ted Volatile O	rganic Con	pounds by EPA	4 8260D			
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-8D (A1C0004-01)				Matrix: Wate	er	Batch:	1030095	
Benzene	ND		0.200	ug/L	1	03/03/21 08:52	EPA 8260D	
Toluene	ND		1.00	ug/L	1	03/03/21 08:52	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	03/03/21 08:52	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	03/03/21 08:52	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/03/21 08:52	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	03/03/21 08:52	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ry: 103 %	Limits: 80-120 %	1	03/03/21 08:52	EPA 8260D	
Toluene-d8 (Surr)			100 %	80-120 %	1	03/03/21 08:52	EPA 8260D	
4-Bromofluorobenzene (Surr)			102 %	80-120 %	1	03/03/21 08:52	EPA 8260D	
MW-8 (A1C0004-02)		Matrix: Water Batch: 1030095		1030095				
Benzene	ND		0.200	ug/L	1	03/03/21 09:19	EPA 8260D	
Toluene	ND		1.00	ug/L	1	03/03/21 09:19	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	03/03/21 09:19	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	03/03/21 09:19	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/03/21 09:19	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	03/03/21 09:19	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ry: 104 %	Limits: 80-120 %	1	03/03/21 09:19	EPA 8260D	
Toluene-d8 (Surr)			99 %	80-120 %	1	03/03/21 09:19	EPA 8260D	
4-Bromofluorobenzene (Surr)			101 %	80-120 %	1	03/03/21 09:19	EPA 8260D	
MW-5 (A1C0004-03)				Matrix: Wate	er	Batch:	1030095	
Benzene	2.60		2.00	ug/L	10	03/03/21 11:35	EPA 8260D	Q-42
Toluene	ND		10.0	ug/L	10	03/03/21 11:35	EPA 8260D	
Ethylbenzene	130		5.00	ug/L	10	03/03/21 11:35	EPA 8260D	
Xylenes, total	626		15.0	ug/L	10	03/03/21 11:35	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		10.0	ug/L	10	03/03/21 11:35	EPA 8260D	
Naphthalene	1550		20.0	ug/L	10	03/03/21 11:35	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ry: 102 %	Limits: 80-120 %	1	03/03/21 11:35	EPA 8260D	
Toluene-d8 (Surr)			99 %	80-120 %	1	03/03/21 11:35	EPA 8260D	
4-Bromofluorobenzene (Surr)			94 %	80-120 %	1	03/03/21 11:35	EPA 8260D	
MW-5 Dup (A1C0004-04)				Matrix: Wate	er	Batch:	1030095	
Benzene	ND		2.00	ug/L	10	03/03/21 12:29	EPA 8260D	
Toluene	ND		10.0	ug/L	10	03/03/21 12:29	EPA 8260D	
Ethylbenzene	127		5.00	ug/L	10	03/03/21 12:29	EPA 8260D	
Xylenes, total	616		15.0	ug/L	10	03/03/21 12:29	EPA 8260D	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Report ID:

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit B Project Number: 1Q21
Portland, OR 97239 Project Manager: Stephanie Salisbury

Project Manager: Stephanie Salisbury A1C0004 - 03 09 21 1122

ANALYTICAL SAMPLE RESULTS

	Sample	Detection	Panortina			Date		
Analyte	Result	Limit	Reporting Limit	Units	Dilution	Analyzed	Method Ref.	Notes
//W-5 Dup (A1C0004-04)				Matrix: Wate	r	Batch:	1030095	
Methyl tert-butyl ether (MTBE)	ND		10.0	ug/L	10	03/03/21 12:29	EPA 8260D	
Naphthalene	1550		20.0	ug/L	10	03/03/21 12:29	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ry: 104 %	Limits: 80-120 %	1	03/03/21 12:29	EPA 8260D	
Toluene-d8 (Surr)			98 %	80-120 %	1	03/03/21 12:29	EPA 8260D	
4-Bromofluorobenzene (Surr)			95 %	80-120 %	1	03/03/21 12:29	EPA 8260D	
MW-5D (A1C0004-05)				Matrix: Wate	r	Batch:	1030095	
Benzene	ND		0.200	ug/L	1	03/03/21 09:46	EPA 8260D	
Toluene	ND		1.00	ug/L	1	03/03/21 09:46	EPA 8260D	
Ethylbenzene	0.930		0.500	ug/L	1	03/03/21 09:46	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	03/03/21 09:46	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/03/21 09:46	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	03/03/21 09:46	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ry: 103 %	Limits: 80-120 %	1	03/03/21 09:46	EPA 8260D	
Toluene-d8 (Surr)			99 %	80-120 %	1	03/03/21 09:46	EPA 8260D	
4-Bromofluorobenzene (Surr)			98 %	80-120 %	1	03/03/21 09:46	EPA 8260D	
MW-9 (A1C0004-06)		Matrix: Water		r	Batch: 1030095			
Benzene	ND		0.200	ug/L	1	03/03/21 10:13	EPA 8260D	
Toluene	ND		1.00	ug/L	1	03/03/21 10:13	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	03/03/21 10:13	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	03/03/21 10:13	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/03/21 10:13	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	03/03/21 10:13	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ry: 103 %	Limits: 80-120 %	1	03/03/21 10:13	EPA 8260D	
Toluene-d8 (Surr)			99 %	80-120 %	1	03/03/21 10:13	EPA 8260D	
4-Bromofluorobenzene (Surr)			102 %	80-120 %	1	03/03/21 10:13	EPA 8260D	
MW-7 (A1C0004-07)				Matrix: Wate	r	Batch:	1030095	
Benzene	ND		0.200	ug/L	1	03/03/21 10:41	EPA 8260D	
Toluene	ND		1.00	ug/L	1	03/03/21 10:41	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	03/03/21 10:41	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	03/03/21 10:41	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/03/21 10:41	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	03/03/21 10:41	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ry: 103 %	Limits: 80-120 %	1	03/03/21 10:41	EPA 8260D	
Toluene-d8 (Surr)			99 %	80-120 %	1	03/03/21 10:41	EPA 8260D	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Cascadia Associates Project: Nustar Vannex

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

ANALYTICAL SAMPLE RESULTS

	Select	Selected Volatile Organic Compounds by EPA 8260D							
	Sample	Detection	Reporting			Date			
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes	
MW-7 (A1C0004-07)					•	Batch: 1030095			
Surrogate: 4-Bromofluorobenzene (Surr)		Recovery	: 101 %	Limits: 80-120 %	1	03/03/21 10:41	EPA 8260D		
MW-3 (A1C0004-08)				Matrix: Water	•	Batch:	1030095		
Benzene	ND		0.200	ug/L	1	03/03/21 11:08	EPA 8260D		
Toluene	ND		1.00	ug/L	1	03/03/21 11:08	EPA 8260D		
Ethylbenzene	ND		0.500	ug/L	1	03/03/21 11:08	EPA 8260D		
Xylenes, total	ND		1.50	ug/L	1	03/03/21 11:08	EPA 8260D		
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/03/21 11:08	EPA 8260D		
Naphthalene	ND		2.00	ug/L	1	03/03/21 11:08	EPA 8260D		
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	v: 103 %	Limits: 80-120 %	1	03/03/21 11:08	EPA 8260D		
Toluene-d8 (Surr)			99 %	80-120 %	1	03/03/21 11:08	EPA 8260D		
4-Bromofluorobenzene (Surr)			99 %	80-120 %	1	03/03/21 11:08	EPA 8260D		
MW-6 (A1C0004-09)				Matrix: Water	•	Batch: 1030133			
Benzene	230		2.00	ug/L	10	03/04/21 05:32	EPA 8260D		
Toluene	32.5		10.0	ug/L	10	03/04/21 05:32	EPA 8260D		
Ethylbenzene	1860		5.00	ug/L	10	03/04/21 05:32	EPA 8260D		
Xylenes, total	263		15.0	ug/L	10	03/04/21 05:32	EPA 8260D		
Methyl tert-butyl ether (MTBE)	ND		10.0	ug/L	10	03/04/21 05:32	EPA 8260D		
Naphthalene	371		20.0	ug/L	10	03/04/21 05:32	EPA 8260D		
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	v: 101 %	Limits: 80-120 %	1	03/04/21 05:32	EPA 8260D		
Toluene-d8 (Surr)			98 %	80-120 %	1	03/04/21 05:32	EPA 8260D		
4-Bromofluorobenzene (Surr)			94 %	80-120 %	1	03/04/21 05:32	EPA 8260D		
MW-1 (A1C0004-10)				Matrix: Water		Batch:	1030133		
Benzene	ND		0.200	ug/L	1	03/04/21 00:35	EPA 8260D		
Toluene	ND		1.00	ug/L	1	03/04/21 00:35	EPA 8260D		
Ethylbenzene	ND		0.500	ug/L	1	03/04/21 00:35	EPA 8260D		
Xylenes, total	ND		1.50	ug/L	1	03/04/21 00:35	EPA 8260D		
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/04/21 00:35	EPA 8260D		
Naphthalene	ND		2.00	ug/L	1	03/04/21 00:35	EPA 8260D		
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	v: 103 %	Limits: 80-120 %	1	03/04/21 00:35	EPA 8260D		
Toluene-d8 (Surr)		-	99 %	80-120 %	1	03/04/21 00:35	EPA 8260D		
4-Bromofluorobenzene (Surr)			102 %	80-120 %	1	03/04/21 00:35	EPA 8260D		
MW-11 (A1C0004-11)				Matrix: Water		Batch:	1030133	_	
Benzene	4.40		0.200	ug/L	1	03/04/21 01:29	EPA 8260D		

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

ANALYTICAL SAMPLE RESULTS

	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Note
MW-11 (A1C0004-11)				Matrix: Wate	er	Batch:	1030133	
Toluene	5.63		1.00	ug/L	1	03/04/21 01:29	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/04/21 01:29	EPA 8260D	
Naphthalene	57.5		2.00	ug/L	1	03/04/21 01:29	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery.	102 %	Limits: 80-120 %	1	03/04/21 01:29	EPA 8260D	
Toluene-d8 (Surr)			98 %	80-120 %	1	03/04/21 01:29	EPA 8260D	
4-Bromofluorobenzene (Surr)			95 %	80-120 %	1	03/04/21 01:29	EPA 8260D	
MW-11 (A1C0004-11RE1)				Matrix: Wate	er	Batch:	1030157	
Ethylbenzene	370		5.00	ug/L	10	03/04/21 17:24	EPA 8260D	
Xylenes, total	594		15.0	ug/L	10	03/04/21 17:24	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery.	102 %	Limits: 80-120 %	1	03/04/21 17:24	EPA 8260D	
Toluene-d8 (Surr)			99 %	80-120 %	1	03/04/21 17:24	EPA 8260D	
4-Bromofluorobenzene (Surr)			99 %	80-120 %	1	03/04/21 17:24	EPA 8260D	
MW-4 (A1C0004-12)				Matrix: Wate	er	Batch:	1030133	
Benzene	ND		0.200	ug/L	1	03/04/21 02:23	EPA 8260D	
Toluene	ND		1.00	ug/L	1	03/04/21 02:23	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	03/04/21 02:23	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	03/04/21 02:23	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/04/21 02:23	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	03/04/21 02:23	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery.	103 %	Limits: 80-120 %	1	03/04/21 02:23	EPA 8260D	
Toluene-d8 (Surr)			99 %	80-120 %	1	03/04/21 02:23	EPA 8260D	
4-Bromofluorobenzene (Surr)			100 %	80-120 %	1	03/04/21 02:23	EPA 8260D	
MW-2 (A1C0004-13)				Matrix: Wate	er	Batch:	1030133	
Benzene	ND		0.200	ug/L	1	03/04/21 03:17	EPA 8260D	
Toluene	ND		1.00	ug/L	1	03/04/21 03:17	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	03/04/21 03:17	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	03/04/21 03:17	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/04/21 03:17	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	03/04/21 03:17	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery.		Limits: 80-120 %		03/04/21 03:17	EPA 8260D	
Toluene-d8 (Surr)			100 %	80-120 %	1	03/04/21 03:17	EPA 8260D	
4-Bromofluorobenzene (Surr)			103 %	80-120 %	1	03/04/21 03:17	EPA 8260D	
				Matrix: Wate	r	Ratch:	1030133	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Report ID:

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit B Project Number: 1Q21
Portland, OR 97239 Project Manager: Steph

Project Manager: Stephanie Salisbury A1C0004 - 03 09 21 1122

ANALYTICAL SAMPLE RESULTS

	Select	ted Volatile O	rganic Con	pounds by EP/	A 8260D		<u> </u>	
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-10 (A1C0004-14)				Matrix: Wate	er	Batch:	1030133	
Benzene	ND		0.200	ug/L	1	03/04/21 03:44	EPA 8260D	
Toluene	ND		1.00	ug/L	1	03/04/21 03:44	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	03/04/21 03:44	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	03/04/21 03:44	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/04/21 03:44	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	03/04/21 03:44	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recov	ery: 102 %	Limits: 80-120 %	5 1	03/04/21 03:44	EPA 8260D	
Toluene-d8 (Surr)			100 %	80-120 %	5 1	03/04/21 03:44	EPA 8260D	
4-Bromofluorobenzene (Surr)			100 %	80-120 %	5 1	03/04/21 03:44	EPA 8260D	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number:1Q21Report ID:Portland, OR 97239Project Manager:Stephanie SalisburyA1C0004 - 03 09 21 1122

QUALITY CONTROL (QC) SAMPLE RESULTS

		D	iesel and/o	r Oil Hyd	rocarbon	s by NW7	ГРН-Dx					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1030077 - EPA 3510C	(Fuels/Acid	Ext.)					Wat	er				
Blank (1030077-BLK1)		Prepared	03/02/21 10:	35 Analyz	ed: 03/02/2	1 22:34						
NWTPH-Dx LL												
Diesel	ND		0.0727	mg/L	1							
Oil	ND		0.145	mg/L	1							
Surr: o-Terphenyl (Surr)		Reco	overy: 88 %	Limits: 50	-150 %	Dilt	ution: 1x					
LCS (1030077-BS1)		Prepared	: 03/02/21 10::	35 Analyz	ed: 03/02/2	1 22:55						
NWTPH-Dx LL												
Diesel	0.398		0.0800	mg/L	1	0.500		80	59 - 115%			
Surr: o-Terphenyl (Surr)		Rece	overy: 87 %	Limits: 50	-150 %	Dilı	ution: 1x					
LCS Dup (1030077-BSD1)		Prepared	: 03/02/21 10::	35 Analyz	ed: 03/02/2	1 23:15						Q-1
NWTPH-Dx LL												
Diesel	0.415		0.0800	mg/L	1	0.500		83	59 - 115%	4	30%	
Surr: o-Terphenyl (Surr)		Rece	overy: 89 %	Limits: 50	-150 %	Dilt	ution: 1x					
Batch 1030150 - EPA 3510C	(Fuels/Acid	Ext.)					Wat	er				
Blank (1030150-BLK1)		Prepared	: 03/04/21 07:	11 Analyza	ed: 03/05/21	00:33						
NWTPH-Dx LL												
Diesel	ND		0.0727	mg/L	1							
Oil	ND		0.145	mg/L	1							
Surr: o-Terphenyl (Surr)		Rece	overy: 82 %	Limits: 50	-150 %	Dilı	ution: 1x					
LCS (1030150-BS1)		Prepared	: 03/04/21 07:	11 Analyza	ed: 03/05/21	00:54						
NWTPH-Dx LL												
THE DALLE			0.0800	mg/L	1	0.500		82	59 - 115%			
Diesel	0.412		0.0000									
·	0.412		overy: 88 %	Limits: 50	-150 %	Dilı	ution: 1x					
Diesel Surr: o-Terphenyl (Surr)	0.412	Reco					ution: 1x					Q-1
Diesel Surr: o-Terphenyl (Surr)	0.412	Reco	overy: 88 %				ution: Ix					Q-1
Diesel Surr: o-Terphenyl (Surr) LCS Dup (1030150-BSD1)	0.412	Reco	overy: 88 %				ution: 1x	83	59 - 115%	0.7	30%	Q-1

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Lisa Domenighini, Client Services Manager



Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

QUALITY CONTROL (QC) SAMPLE RESULTS

	Gasolii	ne Range H	lydrocarbo	ns (Ben	zene thro	ugh Naph	thalene)	by NWTP	H-Gx			
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1030095 - EPA 5030B							Wat	er				
Blank (1030095-BLK1)		Prepared	: 03/02/21 17:	06 Analyz	zed: 03/03/2	1 03:01						
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1							
Surr: 4-Bromofluorobenzene (Sur)		Recon	very: 100 %	Limits: 5	0-150 %	Dill	ution: 1x					
1,4-Difluorobenzene (Sur)			102 %	50	0-150 %		"					
LCS (1030095-BS2)		Prepared	: 03/02/21 17:	06 Analyz	zed: 03/03/2	1 02:34						
NWTPH-Gx (MS)												
Gasoline Range Organics	0.443		0.100	mg/L	1	0.500		89	80 - 120%			
Surr: 4-Bromofluorobenzene (Sur)		Recon	very: 102 %	Limits: 5	0-150 %	Dil	ution: 1x					
1,4-Difluorobenzene (Sur)			100 %	50	0-150 %		"					
Duplicate (1030095-DUP2)		Prepared	: 03/02/21 17:	06 Analyz	zed: 03/03/2	1 12:02						
QC Source Sample: MW-5 (A1C0	004-03)											
NWTPH-Gx (MS)												
Gasoline Range Organics	27.2		1.00	mg/L	10		27.5			1	30%	
Surr: 4-Bromofluorobenzene (Sur)		Recon	very: 106 %	Limits: 5	0-150 %	Dili	ution: 1x				<u> </u>	
1,4-Difluorobenzene (Sur)			103 %	50	0-150 %		"					

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

QUALITY CONTROL (QC) SAMPLE RESULTS

	Gasolii	ne Range F	lydrocarbo	ns (Benz	zene thro	ugh Naph	thalene) l	by NWTF	PH-Gx			
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1030133 - EPA 5030B							Wat	er				
Blank (1030133-BLK1)		Prepared	: 03/03/21 13:	55 Analyz	zed: 03/03/2	1 20:21						
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1							
Surr: 4-Bromofluorobenzene (Sur)		Recov	very: 100 %	Limits: 5	0-150 %	Dili	ution: 1x					
1,4-Difluorobenzene (Sur)			103 %	5(0-150 %		"					
LCS (1030133-BS2)		Prepared	: 03/03/21 13:	55 Analyz	zed: 03/03/2	1 19:54						
NWTPH-Gx (MS)												
Gasoline Range Organics	0.501		0.100	mg/L	1	0.500		100	80 - 120%			
Surr: 4-Bromofluorobenzene (Sur)		Recov	very: 102 %	Limits: 5	0-150 %	Dilt	ution: 1x					
1,4-Difluorobenzene (Sur)			102 %	5(0-150 %		"					
Duplicate (1030133-DUP1)		Prepared	: 03/03/21 13:	56 Analyz	zed: 03/04/2	1 05:59						
QC Source Sample: MW-6 (A1C0	004-09)											
NWTPH-Gx (MS)												
Gasoline Range Organics	15.2		1.00	mg/L	10		15.2			0.03	30%	
Surr: 4-Bromofluorobenzene (Sur)	·	Recor	very: 105 %	Limits: 5	0-150 %	Dili	ution: 1x	·	·			
1,4-Difluorobenzene (Sur)			102 %	50	0-150 %		"					

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ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

QUALITY CONTROL (QC) SAMPLE RESULTS

		Sele	cted Volati	ie Organi	c Compo	unas by E	PA 82601	ט				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Note
Batch 1030095 - EPA 5030B							Wat	er				
Blank (1030095-BLK1)		Prepared	: 03/02/21 17:	06 Analyz	zed: 03/03/2	1 03:01						
EPA 8260D												
Benzene	ND		0.200	ug/L	1							
Toluene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Xylenes, total	ND		1.50	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		2.00	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 103 %	Limits: 80	0-120 %	Dili	ution: 1x					
Toluene-d8 (Surr)			99 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			102 %	80	0-120 %		"					
LCS (1030095-BS1)		Prepared	: 03/02/21 17:	06 Analyz	zed: 03/03/2	1 02:07						
EPA 8260D												
Benzene	20.8		0.200	ug/L	1	20.0		104	80 - 120%			
Toluene	19.1		1.00	ug/L	1	20.0		96	80 - 120%			
Ethylbenzene	20.7		0.500	ug/L	1	20.0		103	80 - 120%			
Xylenes, total	62.5		1.50	ug/L	1	60.0		104	80 - 120%			
Methyl tert-butyl ether (MTBE)	19.2		1.00	ug/L	1	20.0		96	80 - 120%			
Naphthalene	21.0		2.00	ug/L	1	20.0		105	80 - 120%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 102 %	Limits: 80	0-120 %	Dilt	ution: 1x					
Toluene-d8 (Surr)			98 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			95 %	80	0-120 %		"					
Duplicate (1030095-DUP2)		Prepared	: 03/02/21 17:	06 Analyz	zed: 03/03/2	1 12:02						
QC Source Sample: MW-5 (A1C0	0004-03)											
EPA 8260D												
Benzene	ND		2.00	ug/L	10		2.60			***	30%	Q-17
Toluene	ND		10.0	ug/L	10		ND				30%	
Ethylbenzene	125		5.00	ug/L	10		130			4	30%	
Xylenes, total	602		15.0	ug/L	10		626			4	30%	
Methyl tert-butyl ether (MTBE)	ND		10.0	ug/L	10		ND				30%	
Naphthalene	1510		20.0	ug/L	10		1550			3	30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 101 %	Limits: 80	0-120 %	Dili	ution: 1x					
Toluene-d8 (Surr)			99 %	80	0-120 %		"					

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D % REC Spike RPD Detection Reporting Source Analyte Result Units Dilution Amount Result % REC Limits RPD Limit Notes Limit Batch 1030095 - EPA 5030B Water **Duplicate (1030095-DUP2)** Prepared: 03/02/21 17:06 Analyzed: 03/03/21 12:02 QC Source Sample: MW-5 (A1C0004-03)

Surr: 4-Bromofluorobenzene (Surr) Recovery: 93 % Limits: 80-120 % Dilution: Ix

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

QUALITY CONTROL (QC) SAMPLE RESULTS

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1030133 - EPA 5030B							Wate	ər				
Blank (1030133-BLK1)		Prepared	: 03/03/21 13:	55 Analyz	ed: 03/03/21	20:21						
EPA 8260D												
Benzene	ND		0.200	ug/L	1							
Toluene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Xylenes, total	ND		1.50	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		2.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1							
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1							
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 102 %	Limits: 80	0-120 %	Dilı	tion: 1x					
Toluene-d8 (Surr)			100 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			102 %	80	-120 %		"					
LCS (1030133-BS1)		Prepared	: 03/03/21 13::	55 Analyz	ed: 03/03/21	19:27						
EPA 8260D												
Benzene	20.8		0.200	ug/L	1	20.0		104	80 - 120%			
Гoluene	18.9		1.00	ug/L	1	20.0		94	80 - 120%			
Ethylbenzene	20.4		0.500	ug/L	1	20.0		102	80 - 120%			
Xylenes, total	60.9		1.50	ug/L	1	60.0		102	80 - 120%			
Methyl tert-butyl ether (MTBE)	18.4		1.00	ug/L	1	20.0		92	80 - 120%			
Naphthalene	20.1		2.00	ug/L	1	20.0			80 - 120%			
1,2-Dibromoethane (EDB)	21.5		0.500	ug/L	1	20.0			80 - 120%			
1,2-Dichloroethane (EDC)	22.6		0.500	ug/L	1	20.0			80 - 120%			
sopropylbenzene	21.0		1.00	ug/L	1	20.0			80 - 120%			
1,2,4-Trimethylbenzene	20.2		1.00	ug/L	1	20.0			80 - 120%			
1,3,5-Trimethylbenzene	20.2		1.00	ug/L	1	20.0			80 - 120%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 103 %	Limits: 80			ıtion: 1x	-				
Toluene-d8 (Surr)		neco	98 %		-120 %	Dill						
4-Bromofluorobenzene (Surr)			95 %		-120 %		"					

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

QUALITY CONTROL (QC) SAMPLE RESULTS

		Selec	cted Volatil	e Organi	c Compo	unds by E	PA 8260I)				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1030133 - EPA 5030B							Wate	er				
Duplicate (1030133-DUP1)		Prepared:	: 03/03/21 13::	56 Analyz	ed: 03/04/2	1 05:59						
QC Source Sample: MW-6 (A1C0	004-09)											
EPA 8260D												
Benzene	235		2.00	ug/L	10		230			2	30%	
Toluene	33.2		10.0	ug/L	10		32.5			2	30%	
Ethylbenzene	1890		5.00	ug/L	10		1860			1	30%	
Xylenes, total	266		15.0	ug/L	10		263			1	30%	
Methyl tert-butyl ether (MTBE)	ND		10.0	ug/L	10		ND				30%	
Naphthalene	382		20.0	ug/L	10		371			3	30%	
1,2-Dibromoethane (EDB)	ND		5.00	ug/L	10		ND				30%	
1,2-Dichloroethane (EDC)	ND		5.00	ug/L	10		ND				30%	
Isopropylbenzene	73.4		10.0	ug/L	10		71.3			3	30%	
1,2,4-Trimethylbenzene	85.4		10.0	ug/L	10		81.8			4	30%	
1,3,5-Trimethylbenzene	25.2		10.0	ug/L	10		23.6			7	30%	
Surr: 1,4-Difluorobenzene (Surr)		Recor	very: 102 %	Limits: 80)-120 %	Dilu	tion: 1x					
Toluene-d8 (Surr)			99 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			96 %	80	-120 %		"					

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QUALITY CONTROL (QC) SAMPLE RESULTS

		Sele	cted Volatil	e Organi	Compo	unds by E	PA 8260I	<u> </u>				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1030157 - EPA 5030B							Wat	er				
Blank (1030157-BLK1)		Prepared	: 03/04/21 08:	00 Analyz	ed: 03/04/2	1 10:34						
EPA 8260D												
Benzene	ND		0.200	ug/L	1							
Toluene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Xylenes, total	ND		1.50	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		2.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1							
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1							
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 103 %	Limits: 80	-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			99 %	80-	-120 %		"					
4-Bromofluorobenzene (Surr)			102 %	80-	-120 %		"					
LCS (1030157-BS1)		Prepared	: 03/04/21 08:	00 Analyz	ed: 03/04/2	1 09:35						
EPA 8260D												
Benzene	21.6		0.200	ug/L	1	20.0		108	80 - 120%			
Toluene	19.7		1.00	ug/L	1	20.0		98	80 - 120%			
Ethylbenzene	21.2		0.500	ug/L	1	20.0		106	80 - 120%			
Xylenes, total	63.2		1.50	ug/L	1	60.0		105	80 - 120%			
Methyl tert-butyl ether (MTBE)	18.4		1.00	ug/L	1	20.0		92	80 - 120%			
Naphthalene	20.9		2.00	ug/L	1	20.0		105	80 - 120%			
1,2-Dibromoethane (EDB)	22.0		0.500	ug/L	1	20.0		110	80 - 120%			
1,2-Dichloroethane (EDC)	22.8		0.500	ug/L	1	20.0		114	80 - 120%			
Isopropylbenzene	21.9		1.00	ug/L	1	20.0		109	80 - 120%			
1,2,4-Trimethylbenzene	21.4		1.00	ug/L	1	20.0		107	80 - 120%			
1,3,5-Trimethylbenzene	21.1		1.00	ug/L	1	20.0		106	80 - 120%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 102 %	Limits: 80	-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			98 %	80-	-120 %		"					
4-Bromofluorobenzene (Surr)			95 %	80-	-120 %		"					

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ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx													
uels/Acid Ext.)				Sample	Default	RL Prep							
Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor							
Water	NWTPH-Dx LL	02/25/21 10:00	03/02/21 15:29	960mL/2mL	1000mL/2mL	1.04							
Water	NWTPH-Dx LL	02/25/21 10:40	03/02/21 15:29	960mL/2mL	1000mL/2mL	1.04							
Water	NWTPH-Dx LL	02/25/21 11:10	03/02/21 15:29	1070 mL/2 mL	1000 mL/2 mL	0.94							
Water	NWTPH-Dx LL	02/25/21 11:10	03/02/21 15:29	980mL/2mL	1000 mL/2 mL	1.02							
Water	NWTPH-Dx LL	02/25/21 11:50	03/02/21 15:29	1040 mL/2 mL	1000mL/2mL	0.96							
Water	NWTPH-Dx LL	02/25/21 12:20	03/02/21 15:29	1030 mL/2 mL	1000mL/2mL	0.97							
Water	NWTPH-Dx LL	02/25/21 13:20	03/02/21 15:29	1040 mL/2 mL	1000mL/2mL	0.96							
Water	NWTPH-Dx LL	02/25/21 14:00	03/02/21 15:29	1010 mL/2 mL	1000mL/2mL	0.99							
Water	NWTPH-Dx LL	02/25/21 14:30	03/02/21 15:29	1040 mL/2 mL	1000mL/2mL	0.96							
Water	NWTPH-Dx LL	02/26/21 07:50	03/02/21 15:29	1050 mL/2 mL	1000 mL/2 mL	0.95							
Water	NWTPH-Dx LL	02/26/21 08:20	03/04/21 07:11	1060mL/2mL	1000mL/2mL	0.94							
Water	NWTPH-Dx LL	02/26/21 09:10	03/04/21 10:21	1000mL/2mL	1000mL/2mL	1.00							
Water	NWTPH-Dx LL	02/26/21 09:40	03/04/21 10:21	1010mL/2mL	1000mL/2mL	0.99							
Water	NWTPH-Dx LL	02/26/21 10:40	03/04/21 10:21	1010mL/2mL	1000mL/2mL	0.99							
	Water	Matrix Method Water NWTPH-Dx LL	Juels/Acid Ext.) Matrix Method Sampled Water NWTPH-Dx LL 02/25/21 10:00 Water NWTPH-Dx LL 02/25/21 10:40 Water NWTPH-Dx LL 02/25/21 11:10 Water NWTPH-Dx LL 02/25/21 11:50 Water NWTPH-Dx LL 02/25/21 12:20 Water NWTPH-Dx LL 02/25/21 13:20 Water NWTPH-Dx LL 02/25/21 14:00 Water NWTPH-Dx LL 02/25/21 14:30 Water NWTPH-Dx LL 02/26/21 07:50 Water NWTPH-Dx LL 02/26/21 08:20 Water NWTPH-Dx LL 02/26/21 09:10 Water NWTPH-Dx LL 02/26/21 09:10 Water NWTPH-Dx LL 02/26/21 09:40	Juels/Acid Ext.) Matrix Method Sampled Prepared Water NWTPH-Dx LL 02/25/21 10:00 03/02/21 15:29 Water NWTPH-Dx LL 02/25/21 10:40 03/02/21 15:29 Water NWTPH-Dx LL 02/25/21 11:10 03/02/21 15:29 Water NWTPH-Dx LL 02/25/21 11:50 03/02/21 15:29 Water NWTPH-Dx LL 02/25/21 12:20 03/02/21 15:29 Water NWTPH-Dx LL 02/25/21 13:20 03/02/21 15:29 Water NWTPH-Dx LL 02/25/21 14:00 03/02/21 15:29 Water NWTPH-Dx LL 02/25/21 14:30 03/02/21 15:29 Water NWTPH-Dx LL 02/25/21 14:30 03/02/21 15:29 Water NWTPH-Dx LL 02/26/21 07:50 03/02/21 15:29 Water NWTPH-Dx LL 02/26/21 08:20 03/04/21 07:11 Water NWTPH-Dx LL 02/26/21 09:10 03/04/21 10:21 Water NWTPH-Dx LL 02/26/21 09:10 03/04/21 10:21	Matrix Method Sampled Prepared Initial/Final	Nample Default							

	Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx													
Prep: EPA 5030B					Sample	Default	RL Prep							
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor							
Batch: 1030095														
A1C0004-01	Water	NWTPH-Gx (MS)	02/25/21 10:00	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00							
A1C0004-02	Water	NWTPH-Gx (MS)	02/25/21 10:40	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00							
A1C0004-03	Water	NWTPH-Gx (MS)	02/25/21 11:10	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00							
A1C0004-04	Water	NWTPH-Gx (MS)	02/25/21 11:10	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00							
A1C0004-05	Water	NWTPH-Gx (MS)	02/25/21 11:50	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00							
A1C0004-06	Water	NWTPH-Gx (MS)	02/25/21 12:20	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00							
A1C0004-07	Water	NWTPH-Gx (MS)	02/25/21 13:20	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00							
A1C0004-08	Water	NWTPH-Gx (MS)	02/25/21 14:00	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00							
Batch: 1030133														
A1C0004-09	Water	NWTPH-Gx (MS)	02/25/21 14:30	03/03/21 13:56	5mL/5mL	5mL/5mL	1.00							
A1C0004-10	Water	NWTPH-Gx (MS)	02/26/21 07:50	03/03/21 13:56	5mL/5mL	5mL/5mL	1.00							
A1C0004-11	Water	NWTPH-Gx (MS)	02/26/21 08:20	03/03/21 13:56	5mL/5mL	5mL/5mL	1.00							
A1C0004-12	Water	NWTPH-Gx (MS)	02/26/21 09:10	03/03/21 13:56	5mL/5mL	5mL/5mL	1.00							
A1C0004-13	Water	NWTPH-Gx (MS)	02/26/21 09:40	03/03/21 13:56	5mL/5mL	5mL/5mL	1.00							

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<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

SAMPLE PREPARATION INFORMATION

	Gas	soline Range Hydrocart	oons (Benzene thro	ugh Naphthalene) b	y NWTPH-Gx		
Prep: EPA 5030B					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
A1C0004-14	Water	NWTPH-Gx (MS)	02/26/21 10:40	03/03/21 13:56	5mL/5mL	5mL/5mL	1.00

		Selected Vol	atile Organic Compo	unds by EPA 8260D			
Prep: EPA 5030B					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 1030095							
A1C0004-01	Water	EPA 8260D	02/25/21 10:00	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00
A1C0004-02	Water	EPA 8260D	02/25/21 10:40	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00
A1C0004-03	Water	EPA 8260D	02/25/21 11:10	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00
A1C0004-04	Water	EPA 8260D	02/25/21 11:10	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00
A1C0004-05	Water	EPA 8260D	02/25/21 11:50	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00
A1C0004-06	Water	EPA 8260D	02/25/21 12:20	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00
A1C0004-07	Water	EPA 8260D	02/25/21 13:20	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00
A1C0004-08	Water	EPA 8260D	02/25/21 14:00	03/02/21 17:06	5mL/5mL	5mL/5mL	1.00
Batch: 1030133							
A1C0004-09	Water	EPA 8260D	02/25/21 14:30	03/03/21 13:56	5mL/5mL	5mL/5mL	1.00
A1C0004-10	Water	EPA 8260D	02/26/21 07:50	03/03/21 13:56	5mL/5mL	5mL/5mL	1.00
A1C0004-11	Water	EPA 8260D	02/26/21 08:20	03/03/21 13:56	5mL/5mL	5mL/5mL	1.00
A1C0004-12	Water	EPA 8260D	02/26/21 09:10	03/03/21 13:56	5mL/5mL	5mL/5mL	1.00
A1C0004-13	Water	EPA 8260D	02/26/21 09:40	03/03/21 13:56	5mL/5mL	5mL/5mL	1.00
A1C0004-14	Water	EPA 8260D	02/26/21 10:40	03/03/21 13:56	5mL/5mL	5mL/5mL	1.00
Batch: 1030157							
A1C0004-11RE1	Water	EPA 8260D	02/26/21 08:20	03/04/21 09:40	5mL/5mL	5mL/5mL	1.00

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5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

F-11	The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.
F-18	Result for Diesel (Diesel Range Organics, C12-C24) is due to overlap from Gasoline or a Gasoline Range product.

- **F-20** Result for Diesel is Estimated due to overlap from Gasoline Range Organics or other VOCs.
- Q-17 RPD between original and duplicate sample is outside of established control limits.
- Q-19 Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- Q-42 Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported.

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).

If no value is listed ('----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.

The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")

See Percent Solids section for details of dry weight analysis.

"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

"___" Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

"---" QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

"***" Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).

- -For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
- -For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the <u>exception</u> of any analyte(s) listed below:

Apex Laboratories

Matrix Analysis TNI_ID Analyte TNI_ID Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.

Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

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<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: 1Q21Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1C0004 - 03 09 21 1122

Company: Casalia	Project Mgr. Sephinie	(a/1.5 bur	7 20	1	Proje	Project Name: N. 1/24 (Con1/X	je: 1	F	12	3	×	`	101		Project #:	# #5			
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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Cascadia Associates Project: Nustar Vannex

5820 SW Kelly Ave Unit B Project Number: 1Q21 Portland, OR 97239

Project Manager: Stephanie Salisbury

Report ID: A1C0004 - 03 09 21 1122

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

<u>Cascadia Associates</u> 5820 SW Kelly Ave Unit B Portland, OR 97239 Project: <u>Nustar Vannex</u>

Project Number: 1Q21

Project Manager: Stephanie Salisbury

Report ID: A1C0004 - 03 09 21 1122

Project/Project #: NV Act Delivery Info: Date/time received: 2/16/16 @ Delivered by: Apex Client Cooler Inspection Date/time in Chain of Custody included? Yes	Element WO#: A1 COOCU
Date/time received: 2/16/21 @ Delivered by: Apex Client Cooler Inspection Date/time in Chain of Custody included? Yes	ESSFedExUPSSwift_SenvoySDSOther
Signed/dated by Apex? Yes	No Custody seals? Yes No
Cooler out of temp? (Y/N) possible Green dots applied to out of tempera Out of temperature samples form in Sample Inspection: Date/time ins All samples intact? Yes No Bottle labels/COCs agree? Yes WWWW WALL WALL WALL COC/container discrepancies form in	ature samples? Yes/No itiated? Yes/No spected: 2 1 0 8.55 By: Comments:
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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Thursday, May 13, 2021 Stephanie Salisbury Cascadia Associates 5820 SW Kelly Ave Unit B Portland, OR 97239

> Cooler#1 Cooler#3

RE: A1E0226 - Nustar Vannex - 0060-001-001

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1E0226, which was received by the laboratory on 5/5/2021 at 3:50:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample reciept, unless prior arrangements have been made.

Cooler Receipt	Information		
(See Cooler Receipt	Form for details)		
4.8 degC	Cooler#2	4.4 degC	
0.4 degC			

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.





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Portland, OR 97239

ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001

Project Number: 0060-001-001 Report ID:
Project Manager: Stephanie Salisbury A1E0226 - 05 13 21 1531

ANALYTICAL REPORT FOR SAMPLES

	SAMPLE INFORM	ATION		
Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-7	A1E0226-01	Water	05/04/21 09:45	05/05/21 15:50
MW-9	A1E0226-02	Water	05/04/21 10:36	05/05/21 15:50
MW-5D	A1E0226-03	Water	05/04/21 11:32	05/05/21 15:50
MW-5	A1E0226-04	Water	05/04/21 12:00	05/05/21 15:50
MW-8	A1E0226-05	Water	05/04/21 12:43	05/05/21 15:50
MW-8D	A1E0226-06	Water	05/04/21 13:28	05/05/21 15:50
MW-1	A1E0226-07	Water	05/05/21 08:04	05/05/21 15:50
MW-11	A1E0226-08	Water	05/05/21 08:56	05/05/21 15:50
MW-11 DUP	A1E0226-09	Water	05/05/21 08:56	05/05/21 15:50
MW-4	A1E0226-10	Water	05/05/21 10:05	05/05/21 15:50
MW-2	A1E0226-11	Water	05/05/21 10:42	05/05/21 15:50
MW-3	A1E0226-12	Water	05/05/21 11:24	05/05/21 15:50
MW-10	A1E0226-13	Water	05/05/21 12:05	05/05/21 15:50
MW-6	A1E0226-14	Water	05/05/21 13:06	05/05/21 15:50

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Report ID:

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Portland, OR 97239Project Manager:Stephanie Salis

Project Manager: Stephanie Salisbury A1E0226 - 05 13 21 1531

ANALYTICAL SAMPLE RESULTS

	Die	sel and/or Oi	l Hydrocar	bons by NWTP	H-Dx			
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-7 (A1E0226-01RE1)				Matrix: Wat	er	Batch	: 1050410	
Diesel	ND		0.0755	mg/L	1	05/13/21 01:07	NWTPH-Dx LL	
Oil	ND		0.151	mg/L	1	05/13/21 01:07	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Recov	ery: 78 %	Limits: 50-150 %	6 1	05/13/21 01:07	NWTPH-Dx LL	
MW-9 (A1E0226-02RE1)				Matrix: Wat	er	Batch	: 1050410	
Diesel	ND		0.0755	mg/L	1	05/13/21 01:30	NWTPH-Dx LL	
Oil	ND		0.151	mg/L	1	05/13/21 01:30	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Recov	ery: 77%	Limits: 50-150 9	% I	05/13/21 01:30	NWTPH-Dx LL	
MW-5D (A1E0226-03RE1)				Matrix: Wat	er	Batch	: 1050410	
Diesel	0.158		0.0762	mg/L	1	05/13/21 01:52	NWTPH-Dx LL	F-11, F-20
Oil	ND		0.152	mg/L	1	05/13/21 01:52	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Recov	ery: 83 %	Limits: 50-150 9	6 1	05/13/21 01:52	NWTPH-Dx LL	
MW-5 (A1E0226-04RE1)		Matrix: Water				Batch	: 1050410	
Diesel	2.09		0.0755	mg/L	1	05/13/21 02:15	NWTPH-Dx LL	F-20
Oil	ND		0.151	mg/L	1	05/13/21 02:15	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Recov	ery: 80 %	Limits: 50-150 %	% I	05/13/21 02:15	NWTPH-Dx LL	
MW-8 (A1E0226-05RE1)				Matrix: Wat	er	Batch	: 1050410	
Diesel	ND		0.0762	mg/L	1	05/13/21 02:37	NWTPH-Dx LL	
Oil	ND		0.152	mg/L	1	05/13/21 02:37	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Recov	ery: 86 %	Limits: 50-150 %	% I	05/13/21 02:37	NWTPH-Dx LL	
MW-8D (A1E0226-06RE1)				Matrix: Wat	er	Batch	: 1050410	
Diesel	ND		0.0755	mg/L	1	05/13/21 02:59	NWTPH-Dx LL	
Oil	ND		0.151	mg/L	1	05/13/21 02:59	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Recov	ery: 74%	Limits: 50-150 %	6 1	05/13/21 02:59	NWTPH-Dx LL	
MW-1 (A1E0226-07RE1)				Matrix: Wat	er	Batch	: 1050410	
Diesel	0.152		0.0755	mg/L	1	05/13/21 03:22	NWTPH-Dx LL	F-11
Oil	ND		0.151	mg/L	1	05/13/21 03:22	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Recov	ery: 80 %	Limits: 50-150 %	% I	05/13/21 03:22	NWTPH-Dx LL	
MW-11 (A1E0226-08RE1)		Matrix: Water			Batch			
Diesel	0.598		0.0755	mg/L	1	05/13/21 03:44	NWTPH-Dx LL	F-11, F-20

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Report ID:

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Portland, OR 97239Project Manager:Stephanie Salis

Project Manager: Stephanie Salisbury A1E0226 - 05 13 21 1531

ANALYTICAL SAMPLE RESULTS

	Die	esel and/or O	il Hydrocar	bons by NWTP	H-Dx			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-11 (A1E0226-08RE1)				Matrix: Wat	er	Batch:		
Oil	ND		0.151	mg/L	1	05/13/21 03:44	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Reco	very: 89 %	Limits: 50-150 %	6 1	05/13/21 03:44	NWTPH-Dx LL	
MW-11 DUP (A1E0226-09RE1)				Matrix: Wat	er	Batch:	: 1050410	
Diesel	0.644		0.0755	mg/L	1	05/13/21 04:07	NWTPH-Dx LL	F-11, F-20
Oil	ND		0.151	mg/L	1	05/13/21 04:07	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Reco	very: 86 %	Limits: 50-150 %	6 I	05/13/21 04:07	NWTPH-Dx LL	
MW-4 (A1E0226-10RE1)				Matrix: Wat	er	Batch:	: 1050410	
Diesel	ND		0.0748	mg/L	1	05/13/21 06:00	NWTPH-Dx LL	
Oil	ND		0.150	mg/L	1	05/13/21 06:00	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Reco	very: 89 %	Limits: 50-150 %	6 1	05/13/21 06:00	NWTPH-Dx LL	
MW-2 (A1E0226-11RE1)				Matrix: Wat	er	Batch:		
Diesel	ND		0.0748	mg/L	1	05/13/21 06:22	NWTPH-Dx LL	
Oil	ND		0.150	mg/L	1	05/13/21 06:22	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Reco	very: 89 %	Limits: 50-150 %	6 1	05/13/21 06:22	NWTPH-Dx LL	
MW-3 (A1E0226-12RE1)				Matrix: Wat	er	Batch:	: 1050410	
Diesel	ND		0.0762	mg/L	1	05/13/21 06:45	NWTPH-Dx LL	
Oil	ND		0.152	mg/L	1	05/13/21 06:45	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Reco	very: 91 %	Limits: 50-150 %	6 I	05/13/21 06:45	NWTPH-Dx LL	
MW-10 (A1E0226-13RE1)				Matrix: Wat	er	Batch:	: 1050410	
Diesel	ND		0.0755	mg/L	1	05/13/21 07:08	NWTPH-Dx LL	
Oil	ND		0.151	mg/L	1	05/13/21 07:08	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Reco	very: 83 %	Limits: 50-150 %	6 I	05/13/21 07:08	NWTPH-Dx LL	
MW-6 (A1E0226-14RE1)				Matrix: Wat	er	Batch:	: 1050410	
Diesel	5.83		0.0762	mg/L	1	05/13/21 07:30	NWTPH-Dx LL	F-20
Oil	ND		0.152	mg/L	1	05/13/21 07:30	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		Reco	very: 69 %	Limits: 50-150 %	6 1	05/13/21 07:30	NWTPH-Dx LL	

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Report ID:Portland, OR 97239Project Manager:Stephanie SalisburyA1E0226 - 05 13 21 1531

ANALYTICAL SAMPLE RESULTS

Gasol	ine Range Hy	/drocarbons (Benzene tl	hrough Naphth	alene) by	NWTPH-Gx		
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-7 (A1E0226-01)				Matrix: Wate	er	Batch	: 1050234	
Gasoline Range Organics	ND		0.100	mg/L	1	05/07/21 14:41	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recove	ry: 104 %	Limits: 50-150 %	5 I	05/07/21 14:41	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			100 %	50-150 %	6 I	05/07/21 14:41	NWTPH-Gx (MS)	
MW-9 (A1E0226-02)				Matrix: Wate	er	Batch	: 1050234	
Gasoline Range Organics	ND		0.100	mg/L	1	05/07/21 15:39	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recov	ery: 96%	Limits: 50-150 %	6 I	05/07/21 15:39	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			100 %	50-150 %	6 I	05/07/21 15:39	NWTPH-Gx (MS)	
MW-5D (A1E0226-03RE1)				Matrix: Wate	er	Batch	: 1050334	
Gasoline Range Organics	0.208		0.100	mg/L	1	05/11/21 12:48	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recov	ery: 96%	Limits: 50-150 %	5 1	05/11/21 12:48	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			101 %	50-150 %	6 1	05/11/21 12:48	NWTPH-Gx (MS)	
MW-5 (A1E0226-04)				Matrix: Wate	er	Batch	: 1050234	
Gasoline Range Organics	15.8		5.00	mg/L	50	05/07/21 21:29	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recov	ery: 96 %	Limits: 50-150 %	6 I	05/07/21 21:29	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			96 %	50-150 %	6 I	05/07/21 21:29	NWTPH-Gx (MS)	
MW-8 (A1E0226-05)				Matrix: Wate	er	Batch	: 1050234	
Gasoline Range Organics	ND		0.100	mg/L	1	05/07/21 16:08	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recove	ry: 102 %	Limits: 50-150 %	6 I	05/07/21 16:08	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			101 %	50-150 %	6 1	05/07/21 16:08	NWTPH-Gx (MS)	
MW-8D (A1E0226-06)				Matrix: Wate	er	Batch	: 1050234	
Gasoline Range Organics	ND		0.100	mg/L	1	05/07/21 16:37	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recove	ry: 103 %	Limits: 50-150 %	6 1	05/07/21 16:37	NWTPH-Gx (MS)	
I,4-Difluorobenzene (Sur)			101 %	50-150 %	6 I	05/07/21 16:37	NWTPH-Gx (MS)	
MW-1 (A1E0226-07)				Matrix: Wate	er	Batch	: 1050234	
Gasoline Range Organics	ND		0.100	mg/L	1	05/07/21 17:07	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recove	ry: 100 %	Limits: 50-150 %	5 1	05/07/21 17:07	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			99 %	50-150 %	6 1	05/07/21 17:07	NWTPH-Gx (MS)	
MW-11 (A1E0226-08)				Matrix: Wate	er	Batch	: 1050234	
Gasoline Range Organics	49.4		5.00	mg/L	50	05/07/21 21:59	NWTPH-Gx (MS)	

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Portland, OR 97239Project Manager:Stephanie Salisbury

Report ID: A1E0226 - 05 13 21 1531

ANALYTICAL SAMPLE RESULTS

Gasol	ine Range Hy	ydrocarbons (B	enzene tl	hrough Naphtha	alene) by	NWTPH-Gx		
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-11 (A1E0226-08)				Matrix: Water		Batch	: 1050234	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery	: 112 %	Limits: 50-150 %	1	05/07/21 21:59	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			95 %	50-150 %	I	05/07/21 21:59	NWTPH-Gx (MS)	
MW-11 DUP (A1E0226-09)				Matrix: Wate	er	Batch	: 1050234	
Gasoline Range Organics	49.6		5.00	mg/L	50	05/07/21 22:28	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery	: 113 %	Limits: 50-150 %	1	05/07/21 22:28	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			95 %	50-150 %	I	05/07/21 22:28	NWTPH-Gx (MS)	
MW-4 (A1E0226-10)				Matrix: Wate	er	Batch	: 1050234	
Gasoline Range Organics	ND		0.100	mg/L	1	05/07/21 17:36	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery.	: 107 %	Limits: 50-150 %	1	05/07/21 17:36	NWTPH-Gx (MS)	
I,4-Difluorobenzene (Sur)			103 %	50-150 %	1	05/07/21 17:36	NWTPH-Gx (MS)	
MW-2 (A1E0226-11)		Matrix: Water Batch: 1050234		: 1050234				
Gasoline Range Organics	ND		0.100	mg/L	1	05/07/21 18:05	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 99 %	Limits: 50-150 %	1	05/07/21 18:05	NWTPH-Gx (MS)	
I,4-Difluorobenzene (Sur)			100 %	50-150 %	1	05/07/21 18:05	NWTPH-Gx (MS)	
MW-3 (A1E0226-12)				Matrix: Wate	er	Batch	: 1050234	
Gasoline Range Organics	ND		0.100	mg/L	1	05/07/21 18:34	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 98 %	Limits: 50-150 %	1	05/07/21 18:34	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			102 %	50-150 %	1	05/07/21 18:34	NWTPH-Gx (MS)	
MW-10 (A1E0226-13)				Matrix: Wate	er	Batch	: 1050234	
Gasoline Range Organics	ND		0.100	mg/L	1	05/07/21 19:33	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery.	: 103 %	Limits: 50-150 %	1	05/07/21 19:33	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			102 %	50-150 %	1	05/07/21 19:33	NWTPH-Gx (MS)	
MW-6 (A1E0226-14)			<u> </u>	Matrix: Wate	er	Batch	: 1050234	
Gasoline Range Organics	11.2		5.00	mg/L	50	05/07/21 22:57	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery.	: 103 %	Limits: 50-150 %	1	05/07/21 22:57	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			95 %	50-150 %	1	05/07/21 22:57	NWTPH-Gx (MS)	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Report ID:Portland, OR 97239Project Manager:Stephanie SalisburyA1E0226 - 05 13 21 1531

ANALYTICAL SAMPLE RESULTS

	Selec	ted volatile O	rganic Con	pounds by EPA	4 8260D			
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-7 (A1E0226-01)				Matrix: Wate	er	Batch:	1050234	
Benzene	ND		0.200	ug/L	1	05/07/21 14:41	EPA 8260D	
Toluene	ND		1.00	ug/L	1	05/07/21 14:41	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	05/07/21 14:41	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	05/07/21 14:41	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	05/07/21 14:41	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	05/07/21 14:41	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ery: 107 %	Limits: 80-120 %	1	05/07/21 14:41	EPA 8260D	
Toluene-d8 (Surr)			97 %	80-120 %	1	05/07/21 14:41	EPA 8260D	
4-Bromofluorobenzene (Surr)			101 %	80-120 %	1	05/07/21 14:41	EPA 8260D	
MW-9 (A1E0226-02)				Matrix: Wate	er	Batch:	1050234	
Benzene	ND		0.200	ug/L	1	05/07/21 15:39	EPA 8260D	
Toluene	ND		1.00	ug/L	1	05/07/21 15:39	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	05/07/21 15:39	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	05/07/21 15:39	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	05/07/21 15:39	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	05/07/21 15:39	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ery: 106 %	Limits: 80-120 %	1	05/07/21 15:39	EPA 8260D	
Toluene-d8 (Surr)			99 %	80-120 %	1	05/07/21 15:39	EPA 8260D	
4-Bromofluorobenzene (Surr)			105 %	80-120 %	1	05/07/21 15:39	EPA 8260D	
MW-5D (A1E0226-03RE1)				Matrix: Wate	er	Batch:	1050334	
Benzene	ND		0.200	ug/L	1	05/11/21 12:48	EPA 8260D	
Toluene	ND		1.00	ug/L	1	05/11/21 12:48	EPA 8260D	
Ethylbenzene	3.59		0.500	ug/L	1	05/11/21 12:48	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	05/11/21 12:48	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	05/11/21 12:48	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	05/11/21 12:48	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recov	ery: 110 %	Limits: 80-120 %	1	05/11/21 12:48	EPA 8260D	
Toluene-d8 (Surr)			103 %	80-120 %	1	05/11/21 12:48	EPA 8260D	
4-Bromofluorobenzene (Surr)			98 %	80-120 %	1	05/11/21 12:48	EPA 8260D	
MW-5 (A1E0226-04)				Matrix: Wate	er	Batch:	1050234	
Benzene	ND		10.0	ug/L	50	05/07/21 21:29	EPA 8260D	
Toluene	ND		50.0	ug/L	50	05/07/21 21:29	EPA 8260D	
Ethylbenzene	108		25.0	ug/L	50	05/07/21 21:29	EPA 8260D	
Xylenes, total	458		75.0	ug/L	50	05/07/21 21:29	EPA 8260D	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Report ID:Portland, OR 97239Project Manager:Stephanie SalisburyA1E0226 - 05 13 21 1531

ANALYTICAL SAMPLE RESULTS

	Selec	ted volatile Or	ganic Con	pounds by EPA	8260D			
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-5 (A1E0226-04)				Matrix: Wate	r	Batch:	1050234	
Methyl tert-butyl ether (MTBE)	ND		50.0	ug/L	50	05/07/21 21:29	EPA 8260D	
Naphthalene	1310		200	ug/L	50	05/07/21 21:29	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recover	y: 103 %	Limits: 80-120 %	1	05/07/21 21:29	EPA 8260D	
Toluene-d8 (Surr)			98 %	80-120 %	1	05/07/21 21:29	EPA 8260D	
4-Bromofluorobenzene (Surr)			91 %	80-120 %	1	05/07/21 21:29	EPA 8260D	
MW-8 (A1E0226-05)				Matrix: Wate	r	Batch:	1050234	
Benzene	ND		0.200	ug/L	1	05/07/21 16:08	EPA 8260D	
Toluene	ND		1.00	ug/L	1	05/07/21 16:08	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	05/07/21 16:08	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	05/07/21 16:08	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	05/07/21 16:08	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	05/07/21 16:08	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recover	y: 108 %	Limits: 80-120 %	1	05/07/21 16:08	EPA 8260D	
Toluene-d8 (Surr)			97 %	80-120 %	1	05/07/21 16:08	EPA 8260D	
4-Bromofluorobenzene (Surr)			102 %	80-120 %	1	05/07/21 16:08	EPA 8260D	
MW-8D (A1E0226-06)				Matrix: Wate	r	Batch:	1050234	
Benzene	ND		0.200	ug/L	1	05/07/21 16:37	EPA 8260D	
Toluene	ND		1.00	ug/L	1	05/07/21 16:37	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	05/07/21 16:37	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	05/07/21 16:37	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	05/07/21 16:37	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	05/07/21 16:37	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recover	y: 108 %	Limits: 80-120 %	1	05/07/21 16:37	EPA 8260D	
Toluene-d8 (Surr)			96 %	80-120 %	1	05/07/21 16:37	EPA 8260D	
4-Bromofluorobenzene (Surr)			102 %	80-120 %	1	05/07/21 16:37	EPA 8260D	
MW-1 (A1E0226-07)				Matrix: Wate	r	Batch:	1050234	
Benzene	ND		0.200	ug/L	1	05/07/21 17:07	EPA 8260D	
Toluene	ND		1.00	ug/L	1	05/07/21 17:07	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	05/07/21 17:07	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	05/07/21 17:07	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	05/07/21 17:07	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	05/07/21 17:07	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recover	y: 105 %	Limits: 80-120 %	1	05/07/21 17:07	EPA 8260D	
Toluene-d8 (Surr)			96 %	80-120 %	1	05/07/21 17:07	EPA 8260D	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Report ID:Portland, OR 97239Project Manager:Stephanie SalisburyA1E0226 - 05 13 21 1531

ANALYTICAL SAMPLE RESULTS

	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Note
MW-1 (A1E0226-07)				Matrix: Water	r	Batch:	1050234	
Surrogate: 4-Bromofluorobenzene (Surr)		Recovery	: 104%	Limits: 80-120 %	1	05/07/21 17:07	EPA 8260D	
MW-11 (A1E0226-08)				Matrix: Wate	r	Batch:	1050234	
Benzene	25.0		10.0	ug/L	50	05/07/21 21:59	EPA 8260D	
Toluene	620		50.0	ug/L	50	05/07/21 21:59	EPA 8260D	
Ethylbenzene	4540		25.0	ug/L	50	05/07/21 21:59	EPA 8260D	
Xylenes, total	10800		75.0	ug/L	50	05/07/21 21:59	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		50.0	ug/L	50	05/07/21 21:59	EPA 8260D	
Naphthalene	287		200	ug/L	50	05/07/21 21:59	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery): 102 %	Limits: 80-120 %	1	05/07/21 21:59	EPA 8260D	
Toluene-d8 (Surr)		,	97 %	80-120 %	1	05/07/21 21:59	EPA 8260D	
4-Bromofluorobenzene (Surr)			101 %	80-120 %	1	05/07/21 21:59	EPA 8260D	
MW-11 DUP (A1E0226-09)				Matrix: Wate	r	Batch:		
Benzene	24.5		10.0	ug/L	50	05/07/21 22:28	EPA 8260D	
Toluene	620		50.0	ug/L	50	05/07/21 22:28	EPA 8260D	
Ethylbenzene	4530		25.0	ug/L	50	05/07/21 22:28	EPA 8260D	
Xylenes, total	10600		75.0	ug/L	50	05/07/21 22:28	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		50.0	ug/L	50	05/07/21 22:28	EPA 8260D	
Naphthalene	284		200	ug/L	50	05/07/21 22:28	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery): 101 %	Limits: 80-120 %	1	05/07/21 22:28	EPA 8260D	
Toluene-d8 (Surr)			97 %	80-120 %	1	05/07/21 22:28	EPA 8260D	
4-Bromofluorobenzene (Surr)			103 %	80-120 %	1	05/07/21 22:28	EPA 8260D	
MW-4 (A1E0226-10)				Matrix: Wate	r	Batch:	1050234	
Benzene	ND		0.200	ug/L	1	05/07/21 17:36	EPA 8260D	
Toluene	ND		1.00	ug/L	1	05/07/21 17:36	EPA 8260D	
Ethylbenzene	0.730		0.500	ug/L	1	05/07/21 17:36	EPA 8260D	
Xylenes, total	1.81		1.50	ug/L	1	05/07/21 17:36	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	05/07/21 17:36	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	05/07/21 17:36	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	: 108 %	Limits: 80-120 %	1	05/07/21 17:36	EPA 8260D	
Toluene-d8 (Surr)			96 %	80-120 %	1	05/07/21 17:36	EPA 8260D	
4-Bromofluorobenzene (Surr)			106 %	80-120 %	1	05/07/21 17:36	EPA 8260D	
MW-2 (A1E0226-11)				Matrix: Water	r	Batch:	1050234	
Benzene	ND		0.200	ug/L	1	05/07/21 18:05	EPA 8260D	
				-				

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001

Portland, OR 97239 Project Manager: Stephanie Salisbury

Report ID: A1E0226 - 05 13 21 1531

ANALYTICAL SAMPLE RESULTS

	Selec	eu voiatile Org	ariic Coll	pounds by EPA	02000			
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-2 (A1E0226-11)				Matrix: Wate	r	Batch:	1050234	
Toluene	ND		1.00	ug/L	1	05/07/21 18:05	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	05/07/21 18:05	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	05/07/21 18:05	EPA 8260D	
Methyl tert-butyl ether (MTBE)	5.30		1.00	ug/L	1	05/07/21 18:05	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	05/07/21 18:05	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery:	107 %	Limits: 80-120 %	1	05/07/21 18:05	EPA 8260D	
Toluene-d8 (Surr)			96 %	80-120 %	1	05/07/21 18:05	EPA 8260D	
4-Bromofluorobenzene (Surr)			102 %	80-120 %	1	05/07/21 18:05	EPA 8260D	
MW-3 (A1E0226-12)				Matrix: Wate	r	Batch:	1050234	
Benzene	ND		0.200	ug/L	1	05/07/21 18:34	EPA 8260D	
Toluene	ND		1.00	ug/L	1	05/07/21 18:34	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	05/07/21 18:34	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	05/07/21 18:34	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	05/07/21 18:34	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	05/07/21 18:34	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery:	108 %	Limits: 80-120 %	1	05/07/21 18:34	EPA 8260D	
Toluene-d8 (Surr)			96 %	80-120 %	1	05/07/21 18:34	EPA 8260D	
4-Bromofluorobenzene (Surr)			103 %	80-120 %	1	05/07/21 18:34	EPA 8260D	
MW-10 (A1E0226-13)				Matrix: Wate	r	Batch:	1050234	
Benzene	ND		0.200	ug/L	1	05/07/21 19:33	EPA 8260D	
Toluene	ND		1.00	ug/L	1	05/07/21 19:33	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	05/07/21 19:33	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	05/07/21 19:33	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	05/07/21 19:33	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	05/07/21 19:33	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery.	110 %	Limits: 80-120 %	1	05/07/21 19:33	EPA 8260D	
Toluene-d8 (Surr)			96 %	80-120 %	1	05/07/21 19:33	EPA 8260D	
4-Bromofluorobenzene (Surr)			103 %	80-120 %	1	05/07/21 19:33	EPA 8260D	
MW-6 (A1E0226-14)				Matrix: Wate	r	Batch:	1050234	
Benzene	152		10.0	ug/L	50	05/07/21 22:57	EPA 8260D	
Toluene	ND		50.0	ug/L	50	05/07/21 22:57	EPA 8260D	
Ethylbenzene	1750		25.0	ug/L	50	05/07/21 22:57	EPA 8260D	
Xylenes, total	186		75.0	ug/L	50	05/07/21 22:57	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		50.0	ug/L	50	05/07/21 22:57	EPA 8260D	

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Portland, OR 97239

ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Report ID:

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001

Project Manager: Stephanie Salisbury A1E0226 - 05 13 21 1531

ANALYTICAL SAMPLE RESULTS

	Selected Volatile Organic Compounds by EPA 8260D											
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes				
MW-6 (A1E0226-14)				Matrix: Wate	er	Batch: 1050234						
Naphthalene	248		200	ug/L	50	05/07/21 22:57	EPA 8260D					
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ry: 103 %	Limits: 80-120 %	6 I	05/07/21 22:57	EPA 8260D					
Toluene-d8 (Surr)			96 %	80-120 %	6 1	05/07/21 22:57	EPA 8260D					
4-Bromofluorobenzene (Surr)			107 %	80-120 %	6 I	05/07/21 22:57	EPA 8260D					

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001

Portland, OR 97239 Project Manager: Stephanie Salisbury

Report ID: A1E0226 - 05 13 21 1531

QUALITY CONTROL (QC) SAMPLE RESULTS

		D	iesel and/o	r Oil Hyd	rocarbor	s by NW7	PH-Dx					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1050410 - EPA 3510C	(Fuels/Acid	Ext.)					Wat	er				
Blank (1050410-BLK1)		Prepared	: 05/12/21 13:	17 Analyz	ed: 05/12/2	1 22:52						
NWTPH-Dx LL												
Diesel	ND		0.0727	mg/L	1							
Oil	ND		0.145	mg/L	1							
Surr: o-Terphenyl (Surr)		Rece	overy: 87 %	Limits: 50)-150 %	Dilı	ution: 1x					
LCS (1050410-BS1)		Prepared	: 05/12/21 13:	17 Analyz	ed: 05/12/2	1 23:15						
NWTPH-Dx LL												
Diesel	0.430		0.0800	mg/L	1	0.500		86	59 - 115%			
Surr: o-Terphenyl (Surr)		Rece	overy: 98 %	Limits: 50	0-150 %	Dilı	ıtion: 1x					
LCS Dup (1050410-BSD1)		Prepared	: 05/12/21 13:	17 Analyz	ed: 05/12/2	1 23:37						Q-19
NWTPH-Dx LL												
Diesel	0.404		0.0800	mg/L	1	0.500		81	59 - 115%	6	30%	
Surr: o-Terphenyl (Surr)		Reco	overy: 94 %	Limits: 50	0-150 %	Dilı	ıtion: 1x					

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> 5820 SW Kelly Ave Unit B Portland, OR 97239 Project Number: Nustar Vannex

Project Number: 0060-001-001

Project Manager: Stephanie Salisbury

Report ID: A1E0226 - 05 13 21 1531

QUALITY CONTROL (QC) SAMPLE RESULTS

	Gasolir	ne Range H	lydrocarbo	ns (Benz	ene thro	ugh Naphi	thalene) l	by NWTP	H-Gx			
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1050234 - EPA 5030B							Wat	er				
Blank (1050234-BLK1)		Prepared	: 05/07/21 08:	00 Analyz	zed: 05/07/2	1 14:11						
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1							
Surr: 4-Bromofluorobenzene (Sur)		Reco	very: 102 %	Limits: 50	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			99 %	50	0-150 %		"					
LCS (1050234-BS2)		Prepared	: 05/07/21 08:	00 Analyz	red: 05/07/2	1 13:20						
NWTPH-Gx (MS)												
Gasoline Range Organics	0.467		0.100	mg/L	1	0.500		93 8	30 - 120%			
Surr: 4-Bromofluorobenzene (Sur)		Reco	overy: 99 %	Limits: 50	0-150 %	Dilu	ıtion: 1x					
1,4-Difluorobenzene (Sur)			92 %	50	0-150 %		"					
Duplicate (1050234-DUP1)		Prepared	: 05/07/21 14:	00 Analyz	red: 05/07/2	1 15:10						
QC Source Sample: MW-7 (A1E)	0226-01)											
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1		ND				30%	
Surr: 4-Bromofluorobenzene (Sur)		Reco	overy: 97 %	Limits: 50	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			99 %	50	0-150 %		"					
Duplicate (1050234-DUP2)		Prepared	: 05/07/21 14:	00 Analyz	zed: 05/07/2	1 19:03						
QC Source Sample: MW-3 (A1E)	0226-12)											
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1		ND				30%	
Surr: 4-Bromofluorobenzene (Sur)		Reco	very: 102 %	Limits: 50	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			103 %	50	0-150 %		"					

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> 5820 SW Kelly Ave Unit B Portland, OR 97239 Project Number: Nustar Vannex

Project Number: 0060-001-001

Project Manager: Stephanie Salisbury

Report ID: A1E0226 - 05 13 21 1531

QUALITY CONTROL (QC) SAMPLE RESULTS

	Gasoli	ne Range H	lydrocarbo	ns (Benz	ene thro	ugh Naph	thalene)	by NWTF	H-Gx			
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1050334 - EPA 5030B							Wat	er				
Blank (1050334-BLK1)		Prepared	: 05/11/21 08:	30 Analyz	red: 05/11/2	1 11:27						
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1							
Surr: 4-Bromofluorobenzene (Sur)		Rece	overy: 98 %	Limits: 50	0-150 %	Dilı	ıtion: 1x					
1,4-Difluorobenzene (Sur)			110 %	50)-150 %		"					
LCS (1050334-BS2)		Prepared	: 05/11/21 08:	30 Analyz	red: 05/11/2	1 11:00						
NWTPH-Gx (MS)												
Gasoline Range Organics	0.466		0.100	mg/L	1	0.500		93	80 - 120%			
Surr: 4-Bromofluorobenzene (Sur)		Reco	very: 100 %	Limits: 50	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			101 %	50	-150 %		"					

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Portland, OR 97239Project Manager:Stephanie Salisbury

Report ID: A1E0226 - 05 13 21 1531

QUALITY CONTROL (QC) SAMPLE RESULTS

		Sele	cted Volati	e Organi	c Compo	unds by E	EPA 8260	D				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1050234 - EPA 5030B							Wat	er				
Blank (1050234-BLK1)		Prepared	: 05/07/21 08:	00 Analyz	ed: 05/07/2	1 14:11						
EPA 8260D												
Benzene	ND		0.200	ug/L	1							
Toluene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Xylenes, total	ND		1.50	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		4.00	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 106 %	Limits: 80	0-120 %	Dili	ution: 1x					
Toluene-d8 (Surr)			97 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			104 %	80	-120 %		"					
LCS (1050234-BS1)		Prepared	: 05/07/21 08:	00 Analyz	red: 05/07/2	1 12:51						
EPA 8260D		1										
Benzene	17.2		0.200	ug/L	1	20.0		86	80 - 120%			
Toluene	16.7		1.00	ug/L	1	20.0		84	80 - 120%			
Ethylbenzene	19.9		0.500	ug/L	1	20.0		100	80 - 120%			
Xylenes, total	53.9		1.50	ug/L	1	60.0		90	80 - 120%			
Methyl tert-butyl ether (MTBE)	16.5		1.00	ug/L	1	20.0		82	80 - 120%			
Naphthalene	16.7		4.00	ug/L	1	20.0		84	80 - 120%			
Surr: 1,4-Difluorobenzene (Surr)		Rec	overy: 98 %	Limits: 80)-120 %	Dili	ution: 1x					
Toluene-d8 (Surr)			94 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			100 %	80	-120 %		"					
Duplicate (1050234-DUP1)		Prepared	: 05/07/21 14:	00 Analyz	ed: 05/07/2	1 15:10						
QC Source Sample: MW-7 (A1E0	226-01)											
EPA 8260D				_								
Benzene	ND		0.200	ug/L	1		ND				30%	
Toluene	ND		1.00	ug/L	1		ND				30%	
Ethylbenzene	ND		0.500	ug/L	1		ND				30%	
Xylenes, total	ND		1.50	ug/L	1		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1		ND				30%	
Naphthalene	ND		4.00	ug/L	1		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 104 %	Limits: 80)-120 %	Dill	ution: 1x					
Toluene-d8 (Surr)			97 %	80	-120 %		"					

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

<u>Cascadia Associates</u> 5820 SW Kelly Ave Unit B Portland, OR 97239

F

Project: Number: 0060-001-001
Project Manager: Stephanie Salisbury

Report ID: A1E0226 - 05 13 21 1531

QUALITY CONTROL (QC) SAMPLE RESULTS

		Sele	cted Volati	e Organi	c Compo	unds by E	PA 8260	<u> </u>				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1050234 - EPA 5030B							Wat	er				
Duplicate (1050234-DUP1)		Prepared	05/07/21 14:	00 Analyz	ed: 05/07/2	1 15:10						
QC Source Sample: MW-7 (A1E0	226-01)											
Surr: 4-Bromofluorobenzene (Surr)		Recon	very: 105 %	Limits: 80	0-120 %	Dilt	ution: 1x					
Duplicate (1050234-DUP2)		Prepared	05/07/21 14:	00 Analyz	ed: 05/07/2	1 19:03						
OC Source Sample: MW-3 (A1E0 EPA 8260D	226-12)											
Benzene	ND		0.200	ug/L	1		ND				30%	
Γoluene	ND		1.00	ug/L	1		ND				30%	
Ethylbenzene	ND		0.500	ug/L	1		ND				30%	
Xylenes, total	ND		1.50	ug/L	1		0.820			***	30%	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1		ND				30%	
Naphthalene	ND		4.00	ug/L	1		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Recon	very: 109 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			98 %		-120 %		"					
4-Bromofluorobenzene (Surr)			102 %	80	1-120 %		"					
Matrix Spike (1050234-MS1)		Prepared	05/07/21 14:	00 Analyz	ed: 05/07/2	1 20:02						
QC Source Sample: MW-10 (A1E EPA 8260D	0226-13)											
Benzene	19.9		0.200	ug/L	1	20.0	ND	99	79 - 120%			
Toluene	18.8		1.00	ug/L	1	20.0	ND	94	80 - 121%			
Ethylbenzene	22.4		0.500	ug/L	1	20.0	ND	112	79 - 121%			
Xylenes, total	60.6		1.50	ug/L	1	60.0	ND	101	79 - 121%			
Methyl tert-butyl ether (MTBE)	18.0		1.00	ug/L	1	20.0	ND	90	71 - 124%			
Naphthalene	16.8		4.00	ug/L	1	20.0	ND	84	61 - 128%			
Surr: 1,4-Difluorobenzene (Surr)		Rece	overy: 98 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			90 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			99 %	80	-120 %		"					

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Portland, OR 97239Project Manager:Stephanie Salisbury

Report ID: A1E0226 - 05 13 21 1531

QUALITY CONTROL (QC) SAMPLE RESULTS

		Sele	cted Volatil	e Organi	c Compo	unds by E	PA 8260I	D				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1050334 - EPA 5030B							Wat	er				
Blank (1050334-BLK1)		Prepared	: 05/11/21 08:	30 Analyz	red: 05/11/2	1 11:27						
EPA 8260D												
Benzene	ND		0.200	ug/L	1							
Гoluene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Xylenes, total	ND		1.50	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		2.00	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 118 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			103 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			103 %	80	1-120 %		"					
LCS (1050334-BS1)		Prepared	: 05/11/21 08:	30 Analyz	red: 05/11/2	1 10:25						
EPA 8260D												
Benzene	20.6		0.200	ug/L	1	20.0		103	80 - 120%			
Toluene	18.6		1.00	ug/L	1	20.0		93	80 - 120%			
Ethylbenzene	19.6		0.500	ug/L	1	20.0		98	80 - 120%			
Xylenes, total	59.2		1.50	ug/L	1	60.0		99	80 - 120%			
Methyl tert-butyl ether (MTBE)	22.6		1.00	ug/L	1	20.0		113	80 - 120%			
Naphthalene	14.0		2.00	ug/L	1	20.0		70	30 - 120%			Q-55
Surr: 1,4-Difluorobenzene (Surr)		Recon	very: 108 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			96 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			87 %	80	-120 %		"					

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Report ID:Portland, OR 97239Project Manager:Stephanie SalisburyA1E0226 - 05 13 21 1531

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx												
Prep: EPA 3510C (F	uels/Acid Ext.)	<u> </u>		_	Sample	Default	RL Prep					
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor					
Batch: 1050410												
A1E0226-01RE1	Water	NWTPH-Dx LL	05/04/21 09:45	05/12/21 13:17	1060mL/2mL	1000mL/2mL	0.94					
A1E0226-02RE1	Water	NWTPH-Dx LL	05/04/21 10:36	05/12/21 13:17	1060mL/2mL	1000mL/2mL	0.94					
A1E0226-03RE1	Water	NWTPH-Dx LL	05/04/21 11:32	05/12/21 13:17	1050mL/2mL	1000mL/2mL	0.95					
A1E0226-04RE1	Water	NWTPH-Dx LL	05/04/21 12:00	05/12/21 13:17	1060mL/2mL	1000mL/2mL	0.94					
A1E0226-05RE1	Water	NWTPH-Dx LL	05/04/21 12:43	05/12/21 13:17	1050mL/2mL	1000mL/2mL	0.95					
A1E0226-06RE1	Water	NWTPH-Dx LL	05/04/21 13:28	05/12/21 13:17	1060mL/2mL	1000mL/2mL	0.94					
A1E0226-07RE1	Water	NWTPH-Dx LL	05/05/21 08:04	05/12/21 13:17	1060mL/2mL	1000mL/2mL	0.94					
A1E0226-08RE1	Water	NWTPH-Dx LL	05/05/21 08:56	05/12/21 13:17	1060mL/2mL	1000mL/2mL	0.94					
A1E0226-09RE1	Water	NWTPH-Dx LL	05/05/21 08:56	05/12/21 13:17	1060mL/2mL	1000mL/2mL	0.94					
A1E0226-10RE1	Water	NWTPH-Dx LL	05/05/21 10:05	05/12/21 13:49	1070mL/2mL	1000mL/2mL	0.94					
A1E0226-11RE1	Water	NWTPH-Dx LL	05/05/21 10:42	05/12/21 13:49	1070mL/2mL	1000mL/2mL	0.94					
A1E0226-12RE1	Water	NWTPH-Dx LL	05/05/21 11:24	05/12/21 13:49	1050mL/2mL	1000mL/2mL	0.95					
A1E0226-13RE1	Water	NWTPH-Dx LL	05/05/21 12:05	05/12/21 13:49	1060mL/2mL	1000mL/2mL	0.94					
A1E0226-14RE1	Water	NWTPH-Dx LL	05/05/21 13:06	05/12/21 13:49	1050mL/2mL	1000mL/2mL	0.95					

	Gas	soline Range Hydrocart	oons (Benzene thro	ugh Naphthalene) by	y NWTPH-Gx		
Prep: EPA 5030B					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 1050234							
A1E0226-01	Water	NWTPH-Gx (MS)	05/04/21 09:45	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-02	Water	NWTPH-Gx (MS)	05/04/21 10:36	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-04	Water	NWTPH-Gx (MS)	05/04/21 12:00	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-05	Water	NWTPH-Gx (MS)	05/04/21 12:43	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-06	Water	NWTPH-Gx (MS)	05/04/21 13:28	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-07	Water	NWTPH-Gx (MS)	05/05/21 08:04	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-08	Water	NWTPH-Gx (MS)	05/05/21 08:56	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-09	Water	NWTPH-Gx (MS)	05/05/21 08:56	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-10	Water	NWTPH-Gx (MS)	05/05/21 10:05	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-11	Water	NWTPH-Gx (MS)	05/05/21 10:42	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-12	Water	NWTPH-Gx (MS)	05/05/21 11:24	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-13	Water	NWTPH-Gx (MS)	05/05/21 12:05	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-14	Water	NWTPH-Gx (MS)	05/05/21 13:06	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
Batch: 1050334							
A1E0226-03RE1	Water	NWTPH-Gx (MS)	05/04/21 11:32	05/11/21 11:21	5mL/5mL	5mL/5mL	1.00

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Report ID:Portland, OR 97239Project Manager:Stephanie SalisburyA1E0226 - 05 13 21 1531

SAMPLE PREPARATION INFORMATION

		Selected Vo	latile Organic Compo	unds by EPA 8260D)		
Prep: EPA 5030B					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 1050234							
A1E0226-01	Water	EPA 8260D	05/04/21 09:45	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-02	Water	EPA 8260D	05/04/21 10:36	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-04	Water	EPA 8260D	05/04/21 12:00	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-05	Water	EPA 8260D	05/04/21 12:43	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-06	Water	EPA 8260D	05/04/21 13:28	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-07	Water	EPA 8260D	05/05/21 08:04	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-08	Water	EPA 8260D	05/05/21 08:56	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-09	Water	EPA 8260D	05/05/21 08:56	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-10	Water	EPA 8260D	05/05/21 10:05	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-11	Water	EPA 8260D	05/05/21 10:42	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-12	Water	EPA 8260D	05/05/21 11:24	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-13	Water	EPA 8260D	05/05/21 12:05	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
A1E0226-14	Water	EPA 8260D	05/05/21 13:06	05/07/21 14:00	5mL/5mL	5mL/5mL	1.00
Batch: 1050334							
A1E0226-03RE1	Water	EPA 8260D	05/04/21 11:32	05/11/21 11:21	5mL/5mL	5mL/5mL	1.00

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Report ID:Portland, OR 97239Project Manager:Stephanie SalisburyA1E0226 - 05 13 21 1531

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

F-11	The hydrocarbon	pattern indicates	possible weather	ed diesel,	mineral oil	, or a contribution from a related component.	
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- **F-20** Result for Diesel is Estimated due to overlap from Gasoline Range Organics or other VOCs.
- Q-19 Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- Q-55 Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260, however there is adequate sensitivity to ensure detection at the reporting level.

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Report ID:Portland, OR 97239Project Manager:Stephanie SalisburyA1E0226 - 05 13 21 1531

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported.

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).

If no value is listed ('----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.

The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")

See Percent Solids section for details of dry weight analysis.

"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

"___" Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

"---" QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

"***" Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).

- -For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
- -For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

Apex Laboratories

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Report ID:Portland, OR 97239Project Manager:Stephanie SalisburyA1E0226 - 05 13 21 1531

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Cascadia AssociatesProject:Nustar Vannex5820 SW Kelly Ave Unit BProject Number:0060-001-001Report ID:Portland, OR 97239Project Manager:Stephanie SalisburyA1E0226 - 05 13 21 1531

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the <u>exception</u> of any analyte(s) listed below:

Apex Laboratories

Matrix Analysis TNI_ID Analyte TNI_ID Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.

Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

<u>Cascadia Associates</u>
Project: <u>Nustar Vannex</u>

 5820 SW Kelly Ave Unit B
 Project Number: 0060-001-001
 Report ID:

 Portland, OR 97239
 Project Manager: Stephanie Salisbury
 A1E0226 - 05 13 21 1531

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6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323	ompar	ddress	amplec	Site L												F	-		RELINQU Signature:	Printed Name:	Company:
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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

 5820 SW Kelly Ave Unit B
 Project Number: 0060-001-001
 Report ID:

 Portland, OR 97239
 Project Manager: Stephanie Salisbury
 A1E0226 - 05 13 21 1531

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6700 SW Sandburg St., Tigard, OR 97223 Ph. 503-718-2323 Company: Cos Cad Ca Associatoper Mgr. Stephogyie	Address: 5820 S	Site Location: { OR (WA) CA AK ID	MW-2	MW-3	MW-10	MW-6	7,40%			E/	TAT Requested (circle)		Signature:	Printed Name:	Cus collis

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

<u>Cascadia Associates</u> 5820 SW Kelly Ave Unit B Portland, OR 97239 Project: Number: 0060-001-001
Project Manager: Stephanie Salisbury

Report ID: A1E0226 - 05 13 21 1531

		Element WO#: A	1180276
Project/Project #:	star Vannex GWM 20	21	
Delivery Info: Date/time received: 156 Delivered by: ApexCl Cooler Inspection Date Chain of Custody included Signed/dated by client? Signed/dated by Apex?	### Mo	Swift_Senvoy	SDSOther VMJ No
Temperature (°C) Received on ice? (Y/N) Temp. blanks? (Y/N)	$\frac{48}{4}$ $\frac{4.4}{4}$ $\frac{0.4}{4}$		
Ice type: (Gel/Real/Other) Condition:	Real Real Real		
All samples intact? Yes _> Bottle labels/COCs agree?	es form initiated? Yes No comments: Yes No Comments: Yes No	7000	
100 to	ed appropriate for analysis? Yes	No Comments:	
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Water samples: pH checked	. 1 es <u>/</u>		

Apex Laboratories

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Wednesday, June 23, 2021 Stephanie Salisbury Cascadia Associates 5820 SW Kelly Ave Unit B Portland, OR 97239

RE: A1F0697 - Nustar Vannex - [none]

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1F0697, which was received by the laboratory on 6/15/2021 at 5:05:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1

2.5 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.





Apex Laboratories



Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: [none]Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1F0697 - 06 23 21 1449

ANALYTICAL REPORT FOR SAMPLES

	SAMPLE INFO	ORMATION		
Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-5	A1F0697-01	Water	06/15/21 09:00	06/15/21 17:05

Apex Laboratories



Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: [none]Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1F0697 - 06 23 21 1449

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260D								
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-5 (A1F0697-01RE1)				Matrix: Wate	er	Batch: 1060848		
Benzene	ND	0.500	1.00	ug/L	5	06/21/21 19:37	EPA 8260D	
Toluene	ND	2.50	5.00	ug/L	5	06/21/21 19:37	EPA 8260D	
Ethylbenzene	142	1.25	2.50	ug/L	5	06/21/21 19:37	EPA 8260D	
Xylenes, total	655	3.75	7.50	ug/L	5	06/21/21 19:37	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Reco	very: 99 %	Limits: 80-120 %	5 1	06/21/21 19:37	EPA 8260D	
Toluene-d8 (Surr)			103 %	80-120 %	5 1	06/21/21 19:37	EPA 8260D	
4-Bromofluorobenzene (Surr)			95 %	80-120 %	5 1	06/21/21 19:37	EPA 8260D	

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: [none]Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1F0697 - 06 23 21 1449

QUALITY CONTROL (QC) SAMPLE RESULTS

			BTEX	Compou	unds by E	PA 8260D)					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1060658 - EPA 5030B							Wat	er				
Blank (1060658-BLK1)			Prepared	1: 06/18/21	08:00 Ana	lyzed: 06/18	/21 09:57					
EPA 8260D												
Benzene	ND	0.100	0.200	ug/L	1							
Toluene	ND	0.500	1.00	ug/L	1							
Ethylbenzene	ND	0.250	0.500	ug/L	1							
Xylenes, total	ND	0.750	1.50	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 103 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			102 %		0-120 %		"					
4-Bromofluorobenzene (Surr)			107 %		0-120 %		"					
LCS (1060658-BS1)			Prepared	1: 06/18/21	08:00 Ana	lyzed: 06/18	/21 08:58					
EPA 8260D			*			<u>-</u>						
Benzene	19.4	0.100	0.200	ug/L	1	20.0		97	80-120%			
Toluene	19.0	0.500	1.00	ug/L	1	20.0		95	80-120%			
Ethylbenzene	20.5	0.250	0.500	ug/L	1	20.0		103	80-120%			
Xylenes, total	59.6	0.750	1.50	ug/L	1	60.0		99	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 97 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			100 %		0-120 %		"					
4-Bromofluorobenzene (Surr)			98 %		0-120 %		"					
Duplicate (1060658-DUP1)			Prepared	1: 06/16/21	08:00 Ana	lyzed: 06/18	/21 14:01					
QC Source Sample: Non-SDG (A1	F0628-01)											
Benzene	106	0.100	0.200	ug/L	1		101			4	30%	
Toluene	5.05	0.500	1.00	ug/L	1		4.91			3	30%	
Ethylbenzene	11.9	0.250	0.500	ug/L	1		11.1			7	30%	
Xylenes, total	15.2	0.750	1.50	ug/L	1		14.1			7	30%	
Surr: 1,4-Difluorobenzene (Surr)	13.2		very: 95 %	Limits: 80			ution: 1x			,	5070	_
Toluene-d8 (Surr)		Reco	102 %		0-120 % 0-120 %	Diii	ulion: 1x					
			102 %				,,					
4-Bromofluorobenzene (Surr)			100 %	80	0-120 %							
Duplicate (1060658-DUP2)			Prepared	1: 06/16/21	08:00 Ana	lyzed: 06/18	/21 18:59					
QC Source Sample: Non-SDG (A1	F0692-01)											
Benzene	0.300	0.100	0.200	ug/L	1		ND				30%	F
Toluene	ND	0.500	1.00	ug/L	1		ND				30%	

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: [none]Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1F0697 - 06 23 21 1449

QUALITY CONTROL (QC) SAMPLE RESULTS

			BTEX	Compo	ınds by E	PA 8260D						
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1060658 - EPA 5030B							Wat	er				
Duplicate (1060658-DUP2)			Prepared	1: 06/16/21	08:00 Ana	lyzed: 06/18/	/21 18:59					
QC Source Sample: Non-SDG (A1	F0692-01)											
Ethylbenzene	ND	0.250	0.500	ug/L	1		ND				30%	
Xylenes, total	ND	0.750	1.50	ug/L	1		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 104 %	Limits: 8	0-120 %	Dilı	ıtion: 1x					
Toluene-d8 (Surr)			101 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			105 %	80	0-120 %		"					
Matrix Spike (1060658-MS1)			Prepared	1: 06/16/21	08:00 Ana	lyzed: 06/18/	/21 11:19					
QC Source Sample: Non-SDG (A1	F0690-01)											
EPA 8260D												
Benzene	21.0	0.100	0.200	ug/L	1	20.0	ND	105	79-120%			
Toluene	20.1	0.500	1.00	ug/L	1	20.0	ND	100	80-121%			
Ethylbenzene	21.9	0.250	0.500	ug/L	1	20.0	ND	109	79-121%			
Xylenes, total	63.8	0.750	1.50	ug/L	1	60.0	ND	106	79-121%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 97%	Limits: 8	0-120 %	Dilı	ıtion: 1x					
Toluene-d8 (Surr)			98 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			98 %	80	0-120 %		"					

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u>

Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number:[none]Report ID:Portland, OR 97239Project Manager:Stephanie SalisburyA1F0697 - 06 23 21 1449

QUALITY CONTROL (QC) SAMPLE RESULTS

			BTEX	Compou	ınds by E	PA 8260D)					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1060848 - EPA 5030B							Wat	er				
Blank (1060848-BLK1)			Prepared	1: 06/21/21	09:00 Ana	yzed: 06/21	/21 12:24					
EPA 8260D												
Benzene	ND	0.100	0.200	ug/L	1							
Toluene	ND	0.500	1.00	ug/L	1							
Ethylbenzene	ND	0.250	0.500	ug/L	1							
Xylenes, total	ND	0.750	1.50	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Recov	very: 105 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			101 %		0-120 %		"					
4-Bromofluorobenzene (Surr)			108 %		0-120 %		"					
LCS (1060848-BS1)			Prepared	d: 06/21/21	09:00 Ana	yzed: 06/21	/21 11:21					
EPA 8260D						-						
Benzene	19.8	0.100	0.200	ug/L	1	20.0		99	80-120%			
Toluene	18.8	0.500	1.00	ug/L	1	20.0			80-120%			
Ethylbenzene	20.6	0.250	0.500	ug/L	1	20.0		103	80-120%			
Xylenes, total	60.6	0.750	1.50	ug/L	1	60.0		101	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 98 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			98 %		0-120 %		"					
4-Bromofluorobenzene (Surr)			95 %	80)-120 %		"					
Duplicate (1060848-DUP1)			Prepared	1: 06/21/21	11:41 Anal	yzed: 06/21	/21 15:33					
QC Source Sample: Non-SDG (A1	F0804-06)											
Benzene	ND	0.500	1.00	ug/L	5		ND				30%	
Toluene	ND	2.50	5.00	ug/L	5		ND				30%	
Ethylbenzene	ND	1.25	2.50	ug/L	5		ND				30%	
Xylenes, total	ND	3.75	7.50	ug/L	5		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)	1110	Recov		Limits: 80			ution: Ix				3070	
Toluene-d8 (Surr)		Recor	101 %)-120 %)-120 %	Diii	uion: 1x					
			101 %				"					
4-Bromofluorobenzene (Surr)			102 %	80	0-120 %							
Duplicate (1060848-DUP2)			Prepared	d: 06/21/21	11:41 Anal	yzed: 06/21/	/21 21:26					
QC Source Sample: Non-SDG (A1	F0780-03)											
Benzene	ND	2.50	5.00	ug/L	25		ND				30%	
Toluene	ND	12.5	25.0	ug/L	25		ND				30%	

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: [none]Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1F0697 - 06 23 21 1449

QUALITY CONTROL (QC) SAMPLE RESULTS

			BTEX	Compou	ınds by E	PA 8260D)					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1060848 - EPA 5030B							Wat	er				
Duplicate (1060848-DUP2)			Prepared	1: 06/21/21	11:41 Anal	lyzed: 06/21	/21 21:26					
QC Source Sample: Non-SDG (A1	F0780-03)											
Ethylbenzene	ND	6.25	12.5	ug/L	25		ND				30%	
Xylenes, total	ND	18.8	37.5	ug/L	25		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Recov	very: 106 %	Limits: 80	0-120 %	Dila	ution: 1x					
Toluene-d8 (Surr)			101 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			105 %	80)-120 %		"					
Matrix Spike (1060848-MS1)			Prepared	1: 06/21/21	11:41 Anal	lyzed: 06/21	/21 22:47					
QC Source Sample: Non-SDG (A1	F0780-11)											
EPA 8260D												
Benzene	21.1	0.100	0.200	ug/L	1	20.0	ND	105	79-120%			
Toluene	20.1	0.500	1.00	ug/L	1	20.0	0.680	97	80-121%			
Ethylbenzene	22.3	0.250	0.500	ug/L	1	20.0	ND	112	79-121%			
Xylenes, total	65.5	0.750	1.50	ug/L	1	60.0	0.880	108	79-121%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	overy: 97 %	Limits: 80	0-120 %	Dila	ution: 1x					
Toluene-d8 (Surr)			97 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			92 %	80	-120 %		"					

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5820 SW Kelly Ave Unit BProject Number: [none]Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1F0697 - 06 23 21 1449

SAMPLE PREPARATION INFORMATION

BTEX Compounds by EPA 8260D							
Prep: EPA 5030B					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 1060848							
A1F0697-01RE1	Water	EPA 8260D	06/15/21 09:00	06/21/21 11:41	5mL/5mL	5mL/5mL	1.00

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<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: [none]Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1F0697 - 06 23 21 1449

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

R-06 Reporting level raised due to possible carryover from a previous sample.

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ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: [none]Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1F0697 - 06 23 21 1449

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).

If no value is listed ('----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.

The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")

See Percent Solids section for details of dry weight analysis.

"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

"___" Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

"---" QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).

- -For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
- -For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

Anex	Labora	atories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

 Cascadia Associates
 Project:
 Nustar Vannex

 5820 SW Kelly Ave Unit B
 Project Number:
 [none]

Portland, OR 97239 Project Manager: Stephanie Salisbury

Report ID: A1F0697 - 06 23 21 1449

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit BProject Number: [none]Report ID:Portland, OR 97239Project Manager: Stephanie SalisburyA1F0697 - 06 23 21 1449

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) -EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the <u>exception</u> of any analyte(s) listed below:

Apex Laboratories

Matrix Analysis TNI_ID Analyte TNI_ID Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.

Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories



Portland, OR 97239

ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Report ID:

<u>Cascadia Associates</u> Project: <u>Nustar Vannex</u>

5820 SW Kelly Ave Unit B Project Number: [none]

Project Manager: Stephanie Salisbury A1F0697 - 06 23 21 1449

		Archive								Date:	Time:	
Droige #.	Fort.	TCLP Metals (8)								RECEIVED BY: Signature:	Printed Name:	Company:
×	-806 4 Email: Shelither of Older Stee	Priority Metals (13) Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, V, Zn TOTAL DISS, TCLP								Date:	Time:	
X	ille Makakalia						JCTIONS:			Y:		
Project Name Net 1	nail: 5.65.	8270 Semi-Vols Full List 8270 Semi-Vols Full List					SPECIAL INSTRUCTIONS			RELINQUISHED BY: Signature:	Printed Name:	Company:
Droiget Nam	1-8ag4 Br	8760 AOCs Full List 8760 RBDM AOCs 8760 BLEX	×				S			R Sig	18 J	Ö
	→ (人)	NATPH-HCID							<u>.</u>	Date:	Time:	
323	id and and and and and and and and and an	# OF CONTAINERS	の 多				10 Business Da	3 Day	Other:	ED BY:	ed Name:	4
Ph.: 503-718-2	Friday age.	DATE	6/15/900				nd Time (TAT) =	2-Day	5 DAY	SAMPLES ARE HELD FOR 30 DAYS RECEIVED BY Signature C C	温り	Company
rd. OR 97223 Ph.: 503-718-2323	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	# (11 0)					Normal Turn Around Time (TAT) = 10 Business Days	1 Day	4 DAY	SAMPLES ARI	True (170)	
6700 SW Sandburg St., Tigard, OR 97223 Ph. 503-718-2333 Commons. 18-78-78-78-78-78-78-78-78-78-78-78-78-78	5820 S Kel	Site Location: OR (WA) CA AK ID SAMPLE ID	MW-S			-	No	TAT Beamested (circle)	Court parentage and the court of the court o	RELINQUISHED BY:	Drinted Name:	Company: (Cosco.)

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

<u>Cascadia Associates</u> 5820 SW Kelly Ave Unit B Portland, OR 97239 Project: <u>Nustar Vannex</u>

Project Number: [none]

Project Manager: Stephanie Salisbury

Report ID: A1F0697 - 06 23 21 1449

^	
Client: Las	adia Associates Element WO#: A1 FALGAT
APEX LABS COOLER RECEIPT FORM Client:	
Delivery Info:	
Date/time received:	6/15/21@ 17:05 By: TAM
Delivered by: Apex	Client ESS FedEx UPS Swift Senvoy SDS Other
Cooler Inspection	Date/time inspected: 6/5/2 @ 7.05 By: TAC
Chain of Custody in	cluded? Yes No Custody seals? Yes No
-	ent? Yes No No
Signed/dated by Apo	ex? Yes No No
	Cooler #1 Cooler #2 Cooler #3 Cooler #4 Cooler #5 Cooler #6 Cooler #7
Temperature (°C)	0.9
Received on ice? (Y/	(N) \(\frac{1}{2}\)
	o all total to
Ice type: (Gel/Real/C	Other) ROAT MINISTER
VI. (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	good
Sample Inspection:	Date/time inspected: 41/1/24 @ 4-1/234 By:
Sample Inspection:	Date/time inspected: 41/1/24 @ 4-1/234 By:
Sample Inspection: All samples intact? Y	Date/time inspected: 414 @ 41234 By: By: Comments:
Sample Inspection: All samples intact? Y Bottle labels/COCs ag	mples form initiated? Yes/No Date/time inspected: VIV @ WIV By: 8 Yes No Comments: parce? Yes No Comments: parcies form initiated? Yes No X
Sample Inspection: All samples intact? Y Bottle labels/COCs ag	mples form initiated? Yes/No Date/time inspected: VIV @ WIV By: 8 Yes No Comments: parce? Yes No Comments: parcies form initiated? Yes No X
Sample Inspection: All samples intact? Y Bottle labels/COCs ag COC/container discrep	Date/time inspected: \(\begin{align*} \text{Ves/No} \\ \text{Date/time inspected: } \(\begin{align*} \text{Ves/No} \\ \text{Date/time inspected: } \(\begin{align*} \text{Ves/No} \\ \text{Date/time inspected: } \\ \text{Ves/No} \\ \text{Comments: } \\ \text{Date-inspected: } \\ \text{Ves/No} \\ \text{Date-inspected: } \\ \text{Date-inspected: } \\ \text{Ves/No} \\ \text{Date-inspected: } \\ \text{Date-inspected: } \\ \text{Date-inspected: } \\ \text{Ves/No} \\ \text{Date-inspected: } \\ Date-in
Sample Inspection: All samples intact? Y Bottle labels/COCs ag COC/container discrep Containers/volumes re Do VOA vials have vis	Date/time inspected: VIVI @ WIVI By: Worker No Comments: Dancies form initiated? Yes No Comments: Dancies form initiated? Yes No Comments: Described appropriate for analysis? Yes No Comments: Sible headspace? Yes No NA
Sample Inspection: All samples intact? Y Bottle labels/COCs ag COC/container discrep Containers/volumes re Do VOA vials have vis Comments Water samples: pH chee	Date/time inspected: VIVI @ WIVI By: Worker No Comments: Dancies form initiated? Yes No Comments: Dancies form initiated? Yes No Comments: Described appropriate for analysis? Yes No Comments: Sible headspace? Yes No NA
Sample Inspection: All samples intact? Y Bottle labels/COCs ag COC/container discrep Containers/volumes re Do VOA vials have vis Comments Vater samples: pH che	Date/time inspected: VIVI By: Worker No Comments: pancies form initiated? Yes No Comments: pancies form initiated? Yes No Comments: precived appropriate for analysis? Yes No Comments: sible headspace? Yes No NA PH appropriate? Yes No Yes NO NA PH appropriate? Yes NO Yes Y
Sample Inspection: All samples intact? Y Bottle labels/COCs ag COC/container discrep Containers/volumes re Do VOA vials have vis Comments Water samples: pH che	Date/time inspected: VIVI By: Worker No Comments: pancies form initiated? Yes No Comments: pancies form initiated? Yes No Comments: precived appropriate for analysis? Yes No Comments: sible headspace? Yes No NA PH appropriate? Yes No Yes NO NA PH appropriate? Yes NO Yes Y
Sample Inspection: All samples intact? Y Bottle labels/COCs ag COC/container discrep Containers/volumes re Do VOA vials have via Comments Water samples: pH che Comments:	Date/time inspected: VIVI @ WIVI By: Worker No Comments: pree? Yes \(\) No Comments: pancies form initiated? Yes No Comments: precived appropriate for analysis? Yes \(\) No Comments: procived appropriate for analysis? Yes \(\) No Comments: procived appropriate for analysis? Yes No NA Comments: procived appropriate? Yes No NA Comments:

Apex Laboratories



Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Thursday, August 19, 2021 Stephanie Bosze-Salisbury GeoEngineers 4000 Kruse Way Place, Bldg 3 Suite 200 Lake Oswego, OR 97035

RE: A1H0365 - Nustar-Vancouver Annex - GWM 3Q21

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1H0365, which was received by the laboratory on 8/11/2021 at 1:45:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler#1 4.0 degC Cooler#3 2.3 degC Cooler#2

1.8 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.





Apex Laboratories



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

ANALYTICAL REPORT FOR SAMPLES

	SAMPLE INFO	ORMATION		
Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-7	A1H0365-01	Water	08/10/21 09:18	08/11/21 13:45
MW-5	A1H0365-02	Water	08/10/21 10:02	08/11/21 13:45
MW-5D	A1H0365-03	Water	08/10/21 10:38	08/11/21 13:45
MW-8	A1H0365-04	Water	08/10/21 11:12	08/11/21 13:45
MW-8D	A1H0365-05	Water	08/10/21 11:51	08/11/21 13:45
MW-3	A1H0365-06	Water	08/10/21 12:36	08/11/21 13:45
MW-4	A1H0365-07	Water	08/10/21 13:35	08/11/21 13:45
MW-2	A1H0365-08	Water	08/10/21 14:21	08/11/21 13:45
MW-6	A1H0365-09	Water	08/11/21 07:39	08/11/21 13:45
MW-6 Dup	A1H0365-10	Water	08/11/21 07:39	08/11/21 13:45
MW-1	A1H0365-11	Water	08/11/21 08:41	08/11/21 13:45
MW-11	A1H0365-12	Water	08/11/21 09:20	08/11/21 13:45
MW-10	A1H0365-13	Water	08/11/21 10:02	08/11/21 13:45
MW-9	А1Н0365-14	Water	08/11/21 11:03	08/11/21 13:45

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

ANALYTICAL SAMPLE RESULTS

	Die	sel and/or O	il Hydrocar	bons by NWTP	H-Dx			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
•	Kesuit	Lillit	Limit			•		notes
MW-7 (A1H0365-01)				Matrix: Wat	er	Batch:	1080376	
Diesel	ND		0.190	mg/L	1	08/12/21 22:56	NWTPH-Dx	
Oil	ND		0.381	mg/L	1	08/12/21 22:56	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 106 %	Limits: 50-150 %	6 1	08/12/21 22:56	NWTPH-Dx	
MW-5 (A1H0365-02)				Matrix: Wat	er	Batch:	1080376	
Diesel	2.59		0.190	mg/L	1	08/12/21 23:19	NWTPH-Dx	F-13, F-20
Oil	ND		0.381	mg/L	1	08/12/21 23:19	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recov	ery: 118 %	Limits: 50-150 %	6 I	08/12/21 23:19	NWTPH-Dx	
MW-5D (A1H0365-03)				Matrix: Wat	er	Batch:	1080376	
Diesel	0.470		0.189	mg/L	1	08/12/21 23:43	NWTPH-Dx	
Oil	ND		0.377	mg/L	1	08/12/21 23:43	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 121 %	Limits: 50-150 %	6 1	08/12/21 23:43	NWTPH-Dx	
MW-8 (A1H0365-04)				Matrix: Wat	er	Batch:	1080376	
Diesel	ND		0.190	mg/L	1	08/13/21 00:06	NWTPH-Dx	
Oil	ND		0.381	mg/L	1	08/13/21 00:06	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 106 %	Limits: 50-150 %	6 I	08/13/21 00:06	NWTPH-Dx	
MW-8D (A1H0365-05)				Matrix: Wat	er	Batch:	1080376	
Diesel	ND		0.189	mg/L	1	08/13/21 00:29	NWTPH-Dx	<u> </u>
Oil	ND		0.377	mg/L	1	08/13/21 00:29	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 125 %	Limits: 50-150 %	6 1	08/13/21 00:29	NWTPH-Dx	
MW-3 (A1H0365-06)				Matrix: Wat	er	Batch:	1080376	
Diesel	ND		0.187	mg/L	1	08/13/21 02:26	NWTPH-Dx	
Oil	ND		0.374	mg/L	1	08/13/21 02:26	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 101 %	Limits: 50-150 9	6 I	08/13/21 02:26	NWTPH-Dx	
MW-4 (A1H0365-07)		Matrix: Water Batch: 1080376						
Diesel	ND		0.189	mg/L	1	08/13/21 02:49	NWTPH-Dx	
Oil	ND		0.377	mg/L	1	08/13/21 02:49	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 107 %	Limits: 50-150 %	6 I	08/13/21 02:49	NWTPH-Dx	

Apex Laboratories



Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21 Lake Oswego, OR 97035 Project Manager: Stephanie Bo

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

ANALYTICAL SAMPLE RESULTS

	Die	esel and/or Oi	l Hydrocar	bons by NWTP	H-Dx			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-2 (A1H0365-08)				Matrix: Wat	er	Batch:	1080376	
Diesel	ND		0.189	mg/L	1	08/13/21 03:12	NWTPH-Dx	
Oil	ND		0.377	mg/L	1	08/13/21 03:12	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recover	ry: 116 %	Limits: 50-150 %	% 1	08/13/21 03:12	NWTPH-Dx	
MW-6 (A1H0365-09)				Matrix: Wat	er	Batch:	1080376	
Diesel	6.07		0.189	mg/L	1	08/13/21 03:35	NWTPH-Dx	F-20
Oil	ND		0.377	mg/L	1	08/13/21 03:35	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recover	ry: 102 %	Limits: 50-150 %	% 1	08/13/21 03:35	NWTPH-Dx	
MW-6 Dup (A1H0365-10)				Matrix: Wat	er	Batch:	1080376	
Diesel	6.36		0.189	mg/L	1	08/13/21 03:58	NWTPH-Dx	F-20
Oil	ND		0.377	mg/L	1	08/13/21 03:58	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recover	ry: 108%	Limits: 50-150 %	% 1	08/13/21 03:58	NWTPH-Dx	
MW-1 (A1H0365-11)				Matrix: Wat	er	Batch:	1080558	
Diesel	0.250		0.190	mg/L	1	08/17/21 19:47	NWTPH-Dx	F-11
Oil	ND		0.381	mg/L	1	08/17/21 19:47	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recover	ry: 121 %	Limits: 50-150 %	% 1	08/17/21 19:47	NWTPH-Dx	
MW-11 (A1H0365-12)				Matrix: Wat	er	Batch:	1080558	
Diesel	0.673		0.190	mg/L	1	08/17/21 20:08	NWTPH-Dx	F-11, F-20
Oil	ND		0.381	mg/L	1	08/17/21 20:08	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recover	ry: 123 %	Limits: 50-150 9	% 1	08/17/21 20:08	NWTPH-Dx	
MW-10 (A1H0365-13)				Matrix: Wat	er	Batch:	1080558	
Diesel	ND		0.189	mg/L	1	08/17/21 20:28	NWTPH-Dx	
Oil	ND		0.377	mg/L	1	08/17/21 20:28	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recover	ry: 115 %	Limits: 50-150 9	% 1	08/17/21 20:28	NWTPH-Dx	
MW-9 (A1H0365-14)				Matrix: Wat	er	Batch:	1080558	
Diesel	ND		0.189	mg/L	1	08/17/21 20:49	NWTPH-Dx	
Oil	ND		0.377	mg/L	1	08/17/21 20:49	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recover	ry: 108 %	Limits: 50-150 9	% 1	08/17/21 20:49	NWTPH-Dx	

Apex Laboratories



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Report ID:

A1H0365 - 08 19 21 0939

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Project Manager: Stephanie Bosze-Salisbury

ANALYTICAL SAMPLE RESULTS

	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-7 (A1H0365-01)				Matrix: Wate	er	Batch	1080374	
Gasoline Range Organics	ND		0.100	mg/L	1	08/12/21 17:12	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 104 %	Limits: 50-150 %		08/12/21 17:12	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			110 %	50-150 %	6 I	08/12/21 17:12	NWTPH-Gx (MS)	
MW-5 (A1H0365-02RE1)				Matrix: Wate	er	Batch	1080474	
Gasoline Range Organics	15.2		0.500	mg/L	5	08/16/21 11:58	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 108 %	Limits: 50-150 %		08/16/21 11:58	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			104 %	50-150 %	6 I	08/16/21 11:58	NWTPH-Gx (MS)	
MW-5D (A1H0365-03RE1)				Matrix: Wate	er	Batch	1080426	
Gasoline Range Organics	ND		0.100	mg/L	1	08/13/21 10:48	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 106 %	Limits: 50-150 %		08/13/21 10:48	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			107 %	50-150 %	6 I	08/13/21 10:48	NWTPH-Gx (MS)	
MW-8 (A1H0365-04)				Matrix: Wate	er	Batch:	1080374	
Gasoline Range Organics	ND		0.100	mg/L	1	08/12/21 18:06	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 105 %	Limits: 50-150 %		08/12/21 18:06	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			113 %	50-150 %	6 I	08/12/21 18:06	NWTPH-Gx (MS)	
MW-8D (A1H0365-05)				Matrix: Wate	er	Batch:	1080374	
Gasoline Range Organics	ND		0.100	mg/L	1	08/12/21 18:33	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 105 %	Limits: 50-150 %	6 I	08/12/21 18:33	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			112 %	50-150 %	6 I	08/12/21 18:33	NWTPH-Gx (MS)	
MW-3 (A1H0365-06RE1)				Matrix: Wate	er	Batch:	1080426	
Gasoline Range Organics	ND		0.100	mg/L	1	08/13/21 11:15	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 102 %	Limits: 50-150 %	6 I	08/13/21 11:15	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			108 %	50-150 %	6 I	08/13/21 11:15	NWTPH-Gx (MS)	
MW-4 (A1H0365-07)				Matrix: Wate	er	Batch:	1080374	
Gasoline Range Organics	ND		0.100	mg/L	1	08/12/21 19:00	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 107 %	Limits: 50-150 %	6 I	08/12/21 19:00	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			113 %	50-150 %	6 I	08/12/21 19:00	NWTPH-Gx (MS)	
MW-2 (A1H0365-08)				Matrix: Wate	er	Batch	1080374	

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Winnell Or Mining



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

ANALYTICAL SAMPLE RESULTS

		-		hrough Naphth				
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-2 (A1H0365-08)				Matrix: Wate	er	Batch	: 1080374	
Gasoline Range Organics	ND		0.100	mg/L	1	08/12/21 19:28	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 107 %	Limits: 50-150 %	6 I	08/12/21 19:28	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			113 %	50-150 %	6 I	08/12/21 19:28	NWTPH-Gx (MS)	
MW-6 (A1H0365-09RE1)				Matrix: Wate	er	Batch	: 1080426	
Gasoline Range Organics	14.0		1.00	mg/L	10	08/13/21 19:24	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	ry: 111 %	Limits: 50-150 %	6 I	08/13/21 19:24	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			105 %	50-150 %	6 I	08/13/21 19:24	NWTPH-Gx (MS)	
MW-6 Dup (A1H0365-10RE1)				Matrix: Wate	er	Batch	: 1080426	
Gasoline Range Organics	13.8		1.00	mg/L	10	08/13/21 19:51	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 109 %	Limits: 50-150 %	6 I	08/13/21 19:51	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			104 %	50-150 %	6 I	08/13/21 19:51	NWTPH-Gx (MS)	
MW-1 (A1H0365-11)				Matrix: Wate	er	Batch: 1080374		
Gasoline Range Organics	ND		0.100	mg/L	1	08/12/21 19:55	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 107 %	Limits: 50-150 %	6 I	08/12/21 19:55	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			113 %	50-150 %	6 I	08/12/21 19:55	NWTPH-Gx (MS)	
MW-11 (A1H0365-12RE1)				Matrix: Wate	er	Batch	: 1080474	
Gasoline Range Organics	41.4		5.00	mg/L	50	08/16/21 12:52	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 109 %	Limits: 50-150 %	б I	08/16/21 12:52	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			104 %	50-150 %	6 I	08/16/21 12:52	NWTPH-Gx (MS)	
MW-10 (A1H0365-13)				Matrix: Wate	er	Batch	: 1080374	
Gasoline Range Organics	ND		0.100	mg/L	1	08/12/21 20:22	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 107 %	Limits: 50-150 %	6 I	08/12/21 20:22	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			115 %	50-150 %	6 I	08/12/21 20:22	NWTPH-Gx (MS)	
MW-9 (A1H0365-14)				Matrix: Wate	er	Batch	: 1080374	
Gasoline Range Organics	ND		0.100	mg/L	1	08/12/21 20:49	NWTPH-Gx (MS)	_
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	y: 107 %	Limits: 50-150 %	6 I	08/12/21 20:49	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			114 %	50-150 %	6 I	08/12/21 20:49	NWTPH-Gx (MS)	

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21 Lake Oswego, OR 97035

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

ANALYTICAL SAMPLE RESULTS

	Select	ted Volatile Or	ganic Con	pounds by EPA	8260D			
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-7 (A1H0365-01)				Matrix: Wate	r	Batch:	1080374	
Benzene	ND		0.200	ug/L	1	08/12/21 17:12	EPA 8260D	
Toluene	ND		1.00	ug/L	1	08/12/21 17:12	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	08/12/21 17:12	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	08/12/21 17:12	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	08/12/21 17:12	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	08/12/21 17:12	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recover	ry: 114 %	Limits: 80-120 %	1	08/12/21 17:12	EPA 8260D	
Toluene-d8 (Surr)			101 %	80-120 %	1	08/12/21 17:12	EPA 8260D	
4-Bromofluorobenzene (Surr)			102 %	80-120 %	1	08/12/21 17:12	EPA 8260D	
MW-5 (A1H0365-02)				Matrix: Wate	r	Batch:	1080374	
Benzene	ND		0.240	ug/L	1	08/12/21 23:32	EPA 8260D	R-06
Toluene	ND		1.20	ug/L	1	08/12/21 23:32	EPA 8260D	R-06
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	08/12/21 23:32	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recover	y: 108 %	Limits: 80-120 %	I	08/12/21 23:32	EPA 8260D	
Toluene-d8 (Surr)			100 %	80-120 %	1	08/12/21 23:32	EPA 8260D	
4-Bromofluorobenzene (Surr)			97 %	80-120 %	I	08/12/21 23:32	EPA 8260D	
/IW-5 (A1H0365-02RE1)				Matrix: Wate	r	Batch:	1080474	
Ethylbenzene	135		2.50	ug/L	5	08/16/21 11:58	EPA 8260D	
Xylenes, total	628		7.50	ug/L	5	08/16/21 11:58	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recover	y: 108 %	Limits: 80-120 %	I	08/16/21 11:58	EPA 8260D	
Toluene-d8 (Surr)			100 %	80-120 %	1	08/16/21 11:58	EPA 8260D	
4-Bromofluorobenzene (Surr)			90 %	80-120 %	I	08/16/21 11:58	EPA 8260D	
/IW-5 (A1H0365-02RE2)				Matrix: Wate	r	Batch:	1080474	
Naphthalene	1360		200	ug/L	50	08/16/21 21:01	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recover	ry: 110 %	Limits: 80-120 %	1	08/16/21 21:01	EPA 8260D	
Toluene-d8 (Surr)			100 %	80-120 %	1	08/16/21 21:01	EPA 8260D	
4-Bromofluorobenzene (Surr)			94 %	80-120 %	1	08/16/21 21:01	EPA 8260D	
MW-5D (A1H0365-03RE1)				Matrix: Wate	r	Batch:	1080426	
Benzene	ND		0.200	ug/L	1	08/13/21 10:48	EPA 8260D	
Toluene	ND		1.00	ug/L	1	08/13/21 10:48	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	08/13/21 10:48	EPA 8260D	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Report ID:

A1H0365 - 08 19 21 0939

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Project Manager: Stephanie Bosze-Salisbury

ANALYTICAL SAMPLE RESULTS

	Select	ted volatile Org	janic Con	pounds by EPA	82600			
A 1.	Sample	Detection	Reporting	** **	D'1 - '	Date	W 4 4 1 2 2 2	N T :
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Note
MW-5D (A1H0365-03RE1)				Matrix: Wate	r	Batch:	1080426	
Xylenes, total	ND		1.50	ug/L	1	08/13/21 10:48	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	08/13/21 10:48	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	08/13/21 10:48	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	: 113 %	Limits: 80-120 %	1	08/13/21 10:48	EPA 8260D	
Toluene-d8 (Surr)			99 %	80-120 %	1	08/13/21 10:48	EPA 8260D	
4-Bromofluorobenzene (Surr)			99 %	80-120 %	1	08/13/21 10:48	EPA 8260D	
MW-8 (A1H0365-04)				Matrix: Wate	r	Batch:	1080374	
Benzene	ND		0.200	ug/L	1	08/12/21 18:06	EPA 8260D	
Toluene	ND		1.00	ug/L	1	08/12/21 18:06	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	08/12/21 18:06	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	08/12/21 18:06	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	08/12/21 18:06	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	08/12/21 18:06	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	: 116%	Limits: 80-120 %	1	08/12/21 18:06	EPA 8260D	
Toluene-d8 (Surr)			101 %	80-120 %	1	08/12/21 18:06	EPA 8260D	
4-Bromofluorobenzene (Surr)			102 %	80-120 %	1	08/12/21 18:06	EPA 8260D	
/IW-8D (A1H0365-05)				Matrix: Wate	r	Batch:	1080374	
Benzene	ND		0.200	ug/L	1	08/12/21 18:33	EPA 8260D	
Toluene	ND		1.00	ug/L	1	08/12/21 18:33	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	08/12/21 18:33	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	08/12/21 18:33	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	08/12/21 18:33	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	08/12/21 18:33	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	: 114 %	Limits: 80-120 %	1	08/12/21 18:33	EPA 8260D	
Toluene-d8 (Surr)			100 %	80-120 %	1	08/12/21 18:33	EPA 8260D	
4-Bromofluorobenzene (Surr)			102 %	80-120 %	1	08/12/21 18:33	EPA 8260D	
MW-3 (A1H0365-06RE1)				Matrix: Wate	r	Batch:	1080426	
Benzene	ND		0.200	ug/L	1	08/13/21 11:15	EPA 8260D	
Toluene	ND		1.00	ug/L	1	08/13/21 11:15	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	08/13/21 11:15	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	08/13/21 11:15	EPA 8260D	

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21 Lake Oswego, OR 97035

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

ANALYTICAL SAMPLE RESULTS

	Select	ted Volatile Org	ganic Con	npounds by EPA	4 8260D			
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-3 (A1H0365-06RE1)				Matrix: Wate	er	Batch:	1080426	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	08/13/21 11:15	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	08/13/21 11:15	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	v: 113 %	Limits: 80-120 %	5 1	08/13/21 11:15	EPA 8260D	
Toluene-d8 (Surr)			101 %	80-120 %	5 I	08/13/21 11:15	EPA 8260D	
4-Bromofluorobenzene (Surr)			103 %	80-120 %	1	08/13/21 11:15	EPA 8260D	
MW-4 (A1H0365-07)				Matrix: Wate	er	Batch:	1080374	
Benzene	ND		0.200	ug/L	1	08/12/21 19:00	EPA 8260D	
Toluene	ND		1.00	ug/L	1	08/12/21 19:00	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	08/12/21 19:00	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	08/12/21 19:00	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	08/12/21 19:00	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	08/12/21 19:00	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	v: 115 %	Limits: 80-120 %	5 1	08/12/21 19:00	EPA 8260D	
Toluene-d8 (Surr)			101 %	80-120 %	<i>I</i>	08/12/21 19:00	EPA 8260D	
4-Bromofluorobenzene (Surr)			102 %	80-120 %	5 1	08/12/21 19:00	EPA 8260D	
MW-2 (A1H0365-08)				Matrix: Wate	er	Batch:	1080374	
Benzene	ND		0.200	ug/L	1	08/12/21 19:28	EPA 8260D	
Toluene	ND		1.00	ug/L	1	08/12/21 19:28	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	08/12/21 19:28	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	08/12/21 19:28	EPA 8260D	
Methyl tert-butyl ether (MTBE)	11.3		1.00	ug/L	1	08/12/21 19:28	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	08/12/21 19:28	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	v: 116 %	Limits: 80-120 %	5 1	08/12/21 19:28	EPA 8260D	
Toluene-d8 (Surr)			100 %	80-120 %	<i>I</i>	08/12/21 19:28	EPA 8260D	
4-Bromofluorobenzene (Surr)			101 %	80-120 %	5 I	08/12/21 19:28	EPA 8260D	
MW-6 (A1H0365-09)				Matrix: Wate	er	Batch:	Batch: 1080374	
Benzene	175		0.200	ug/L	1	08/12/21 22:38	EPA 8260D	
Toluene	28.7		1.00	ug/L	1	08/12/21 22:38	EPA 8260D	
Xylenes, total	327		1.50	ug/L	1	08/12/21 22:38	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	08/12/21 22:38	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	v: 106 %	Limits: 80-120 %	5 1	08/12/21 22:38	EPA 8260D	
		-						

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

ANALYTICAL SAMPLE RESULTS

	Select	ted Volatile Orç	ganic Con	pounds by EPA	8260D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-6 (A1H0365-09)				Matrix: Water	•	Batch:	1080374	
Surrogate: Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr)		Recover	ry: 98 % 91 %	Limits: 80-120 % 80-120 %	I I	08/12/21 22:38 08/12/21 22:38	EPA 8260D EPA 8260D	
MW-6 (A1H0365-09RE1)				Matrix: Water		Batch:	1080426	
Ethylbenzene	1880		5.00	ug/L	10	08/13/21 19:24	EPA 8260D	
Naphthalene	384		40.0	ug/L	10	08/13/21 19:24	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	: 108 %	Limits: 80-120 %	1	08/13/21 19:24	EPA 8260D	
Toluene-d8 (Surr)			99 %	80-120 %	1	08/13/21 19:24	EPA 8260D	
4-Bromofluorobenzene (Surr)			92 %	80-120 %	1	08/13/21 19:24	EPA 8260D	
MW-6 Dup (A1H0365-10)				Matrix: Water	•	Batch:	1080374	
Benzene	174		0.200	ug/L	1	08/12/21 23:05	EPA 8260D	
Toluene	28.9		1.00	ug/L	1	08/12/21 23:05	EPA 8260D	
Xylenes, total	312		1.50	ug/L	1	08/12/21 23:05	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	08/12/21 23:05	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	: 105 %	Limits: 80-120 %	1	08/12/21 23:05	EPA 8260D	
Toluene-d8 (Surr)			98 %	80-120 %	1	08/12/21 23:05	EPA 8260D	
4-Bromofluorobenzene (Surr)			93 %	80-120 %	1	08/12/21 23:05	EPA 8260D	
MW-6 Dup (A1H0365-10RE1)				Matrix: Water	•	Batch:	1080426	
Ethylbenzene	1890		5.00	ug/L	10	08/13/21 19:51	EPA 8260D	
Naphthalene	386		40.0	ug/L	10	08/13/21 19:51	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	y: 106 %	Limits: 80-120 %	1	08/13/21 19:51	EPA 8260D	
Toluene-d8 (Surr)			99 %	80-120 %	1	08/13/21 19:51	EPA 8260D	
4-Bromofluorobenzene (Surr)			93 %	80-120 %	1	08/13/21 19:51	EPA 8260D	
MW-1 (A1H0365-11)				Matrix: Water	•	Batch:	1080374	
Benzene	ND		0.200	ug/L	1	08/12/21 19:55	EPA 8260D	
Toluene	ND		1.00	ug/L	1	08/12/21 19:55	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	08/12/21 19:55	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	08/12/21 19:55	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	08/12/21 19:55	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	08/12/21 19:55	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	v: 115 %	Limits: 80-120 %	1	08/12/21 19:55	EPA 8260D	
Toluene-d8 (Surr)			100 %	80-120 %	1	08/12/21 19:55	EPA 8260D	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

ANALYTICAL SAMPLE RESULTS

	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Note
MW-1 (A1H0365-11)				Matrix: Wate	er	Batch:	1080374	
Surrogate: 4-Bromofluorobenzene (Surr)		Recovery:	101 %	Limits: 80-120 %	5 1	08/12/21 19:55	EPA 8260D	
MW-11 (A1H0365-12)				Matrix: Wate	er	Batch:	1080374	
Benzene	9.02		0.200	ug/L	1	08/12/21 21:16	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	08/12/21 21:16	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery:	107 %	Limits: 80-120 %	5 1	08/12/21 21:16	EPA 8260D	
Toluene-d8 (Surr)			102 %	80-120 %	5 I	08/12/21 21:16	EPA 8260D	
4-Bromofluorobenzene (Surr)			89 %	80-120 %	1	08/12/21 21:16	EPA 8260D	
MW-11 (A1H0365-12RE1)				Matrix: Wate	er	Batch:	1080474	
Toluene	196		50.0	ug/L	50	08/16/21 12:52	EPA 8260D	
Ethylbenzene	2580		25.0	ug/L	50	08/16/21 12:52	EPA 8260D	
Xylenes, total	8600		75.0	ug/L	50	08/16/21 12:52	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery.	: 110 %	Limits: 80-120 %	5 1	08/16/21 12:52	EPA 8260D	
Toluene-d8 (Surr)			100 %	80-120 %	<i>I</i>	08/16/21 12:52	EPA 8260D	
4-Bromofluorobenzene (Surr)			99 %	80-120 %	<i>I</i>	08/16/21 12:52	EPA 8260D	
MW-11 (A1H0365-12RE2)				Matrix: Wate	er	Batch:	1080474	
Naphthalene	ND		200	ug/L	50	08/16/21 20:34	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery.	: 112 %	Limits: 80-120 %	5 I	08/16/21 20:34	EPA 8260D	
Toluene-d8 (Surr)			99 %	80-120 %		08/16/21 20:34	EPA 8260D	
4-Bromofluorobenzene (Surr)			98 %	80-120 %	<i>I</i>	08/16/21 20:34	EPA 8260D	
MW-10 (A1H0365-13)				Matrix: Wate	er	Batch:	1080374	
Benzene	ND		0.200	ug/L	1	08/12/21 20:22	EPA 8260D	
Toluene	ND		1.00	ug/L	1	08/12/21 20:22	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	08/12/21 20:22	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	08/12/21 20:22	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	08/12/21 20:22	EPA 8260D	
Naphthalene	ND		4.00	ug/L	1	08/12/21 20:22	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery.	: 119 %	Limits: 80-120 %	5 1	08/12/21 20:22	EPA 8260D	
Toluene-d8 (Surr)			101 %	80-120 %	<i>i I</i>	08/12/21 20:22	EPA 8260D	
4-Bromofluorobenzene (Surr)			102 %	80-120 %	5 1	08/12/21 20:22	EPA 8260D	
MW-9 (A1H0365-14)				Matrix: Wate	er	Batch:	1080374	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

ANALYTICAL SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D													
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes					
MW-9 (A1H0365-14)				Matrix: Wate	ər	Batch:	1080374						
Benzene	ND		0.200	ug/L	1	08/12/21 20:49	EPA 8260D						
Toluene	ND		1.00	ug/L	1	08/12/21 20:49	EPA 8260D						
Ethylbenzene	ND		0.500	ug/L	1	08/12/21 20:49	EPA 8260D						
Xylenes, total	ND		1.50	ug/L	1	08/12/21 20:49	EPA 8260D						
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	08/12/21 20:49	EPA 8260D						
Naphthalene	ND		4.00	ug/L	1	08/12/21 20:49	EPA 8260D						
Surrogate: 1,4-Difluorobenzene (Surr)		Recov	ery: 117 %	Limits: 80-120 %	6 I	08/12/21 20:49	EPA 8260D						
Toluene-d8 (Surr)			101 %	80-120 %	6 <i>1</i>	08/12/21 20:49	EPA 8260D						
4-Bromofluorobenzene (Surr)			101 %	80-120 %	6 1	08/12/21 20:49	EPA 8260D						

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

QUALITY CONTROL (QC) SAMPLE RESULTS

		D	iesel and/o	or Oil Hyd	rocarbor	s by NWT	TPH-Dx					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080376 - EPA 3510C (Fuels/Acid	Ext.)					Wat	er				
Blank (1080376-BLK2)			Prepared	1: 08/12/21	07:30 Anal	lyzed: 08/13/	/21 09:20					
NWTPH-Dx												
Diesel	ND		0.182	mg/L	1							
Oil	ND		0.364	mg/L	1							
Surr: o-Terphenyl (Surr)		Reco	very: 136 %	Limits: 50	0-150 %	Dilu	ution: 1x					
LCS (1080376-BS1)			Prepared	1: 08/12/21	07:30 Anal	lyzed: 08/12/	/21 20:58					
NWTPH-Dx												
Diesel	0.980		0.200	mg/L	1	1.25		78	36-132%			
Surr: o-Terphenyl (Surr)		Reco	very: 114 %	Limits: 50)-150 %	Dilu	ution: 1x					
LCS Dup (1080376-BSD1)			Prepared	1: 08/12/21	07:30 Anal	lyzed: 08/12/	/21 21:22					Q -1
NWTPH-Dx												
Diesel	1.13		0.200	mg/L	1	1.25		91	36-132%	14	30%	
Surr: o-Terphenyl (Surr)		Reco	very: 121 %	Limits: 50	0-150 %	Dilu	ution: 1x					
Batch 1080558 - EPA 3510C (Fuels/Acid	Ext.)					Wat	er				
Blank (1080558-BLK1)			Prepared	1: 08/17/21	12:22 Ana	lyzed: 08/17/	/21 18:44					
NWTPH-Dx												
Diesel	ND		0.182	mg/L	1							
Oil	ND		0.364	mg/L	1							
Surr: o-Terphenyl (Surr)		Reco	very: 112 %	Limits: 50	0-150 %	Dilu	ution: 1x					_
LCS (1080558-BS1)			Prepared	1: 08/17/21	12:22 Ana	lyzed: 08/17/	/21 19:05					
NWTPH-Dx												
Diesel	1.04		0.200	mg/L	1	1.25		83	36-132%			
Surr: o-Terphenyl (Surr)		Reco	very: 128 %	Limits: 50	0-150 %	Dilu	ution: 1x					
	Prepared: 08/17/21 12:22 Analyzed: 08/17/21 19:26											
LCS Dup (1080558-BSD1)			Prepared	1: 08/17/21	12:22 Ana	lyzed: 08/17/	/21 19:26					Q-1
LCS Dup (1080558-BSD1)			Prepared	1: 08/17/21	12:22 Ana	lyzed: 08/17/	/21 19:26					Q-1
	1.05		Preparec	1: 08/17/21 mg/L	12:22 Ana	1.25	/21 19:26	84	36-132%	0.9	30%	Q-1

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

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GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

QUALITY CONTROL (QC) SAMPLE RESULTS

	Gasolir	ne Range H	ydrocarbo	ns (Ben	zene throu	igh Naphi	tnalene) l	by NWTF	′H-Gx			
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080374 - EPA 5030B							Wat	er				
Blank (1080374-BLK1)			Prepared	1: 08/12/21	07:30 Anal	yzed: 08/12/	/21 12:40					
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1							
Surr: 4-Bromofluorobenzene (Sur)		Recov	ery: 100 %	Limits: 5	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			110 %	50	0-150 %		"					
LCS (1080374-BS2)			Prepared	l: 08/12/21	07:30 Anal	yzed: 08/12/	/21 12:13					
NWTPH-Gx (MS)												
Gasoline Range Organics	0.510		0.100	mg/L	1	0.500		102	80-120%			
Surr: 4-Bromofluorobenzene (Sur)		Recov	ery: 104 %	Limits: 5	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			104 %	50	0-150 %		"					
Duplicate (1080374-DUP1)			Prepared	1: 08/12/21	08:48 Anal	yzed: 08/12/	/21 13:34					
QC Source Sample: Non-SDG (A1	H0348-01)											
Gasoline Range Organics	ND		0.100	mg/L	1		ND				30%	
Surr: 4-Bromofluorobenzene (Sur)		Recove	ery: 105 %	Limits: 5	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			111 %	50	0-150 %		"					
Duplicate (1080374-DUP2)			Prepared	l: 08/12/21	08:48 Anal	yzed: 08/12/	/21 17:39					
QC Source Sample: MW-7 (A1H0	365-01)											
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1		ND				30%	
Surr: 4-Bromofluorobenzene (Sur)	<u> </u>	Recove	ery: 107 %	Limits: 5	0-150 %	Dilı	ition: 1x		<u> </u>		<u> </u>	
1,4-Difluorobenzene (Sur)			112 %	50	0-150 %		"					

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

QUALITY CONTROL (QC) SAMPLE RESULTS

	Gasolir	ne Range H	lydrocarbo	ons (Benz	zene thro	igh Naph	tnalene) l	by NWTP	H-Gx			
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080426 - EPA 5030B							Wat	er				
Blank (1080426-BLK1)			Prepared	1: 08/13/21	07:30 Anal	yzed: 08/13	/21 10:21					
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1							
Surr: 4-Bromofluorobenzene (Sur)		Reco	very: 97 %	Limits: 50	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			108 %	50	0-150 %		"					
LCS (1080426-BS2)			Prepared	d: 08/13/21	07:30 Ana	yzed: 08/13	/21 09:54					
NWTPH-Gx (MS)												
Gasoline Range Organics	0.525		0.100	mg/L	1	0.500		105	80-120%			
Surr: 4-Bromofluorobenzene (Sur)	<u> </u>	Recov	ery: 102 %	Limits: 50	0-150 %	Dilı	ition: 1x	<u> </u>	<u> </u>		<u> </u>	_
1,4-Difluorobenzene (Sur)			101 %	50	0-150 %		"					
Duplicate (1080426-DUP1)			Prepared	1: 08/13/21	07:30 Anal	yzed: 08/13	/21 12:09					
QC Source Sample: Non-SDG (A1	H0387-01)											
Gasoline Range Organics	ND		0.100	mg/L	1		0.0567			***	30%	
Surr: 4-Bromofluorobenzene (Sur)		Recov	very: 100 %	Limits: 50	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			105 %	50	0-150 %		"					
Duplicate (1080426-DUP2)			Prepared	d: 08/13/21	07:30 Anal	yzed: 08/13	/21 16:13					
QC Source Sample: Non-SDG (A1	H0392-01)											
Gasoline Range Organics	ND		0.100	mg/L	1		ND				30%	
Surr: 4-Bromofluorobenzene (Sur)		Recov	very: 107 %	Limits: 50	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			110 %	50	0-150 %		"					

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

QUALITY CONTROL (QC) SAMPLE RESULTS

	Gasolir	ne Range H	ydrocarbo	ons (Ben	zene thro	igh Naphi	thalene) l	by NWTP	H-Gx			
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080474 - EPA 5030B							Wat	er				
Blank (1080474-BLK1)			Prepared	d: 08/16/21	08:00 Ana	yzed: 08/16	/21 11:04					
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1							
Surr: 4-Bromofluorobenzene (Sur)		Recov	ery: 101 %	Limits: 5	0-150 %	Dilı	ıtion: 1x					
1,4-Difluorobenzene (Sur)			109 %	50	0-150 %		"					
LCS (1080474-BS2)			Prepared	d: 08/16/21	08:00 Ana	yzed: 08/16/	/21 10:36					
NWTPH-Gx (MS)												
Gasoline Range Organics	0.589		0.100	mg/L	1	0.500		118	80-120%			
Surr: 4-Bromofluorobenzene (Sur)		Recov	ery: 104 %	Limits: 5	0-150 %	Dilı	ıtion: 1x					
1,4-Difluorobenzene (Sur)			102 %	50	0-150 %		"					
Duplicate (1080474-DUP1)			Prepared	d: 08/16/21	10:23 Anal	yzed: 08/16/	/21 14:14					
QC Source Sample: Non-SDG (A1	H0448-11)											
Gasoline Range Organics	ND		0.100	mg/L	1		ND				30%	
Surr: 4-Bromofluorobenzene (Sur)		Recov	ery: 101 %	Limits: 5	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			110 %	50	0-150 %		"					
Duplicate (1080474-DUP2)			Prepared	d: 08/16/21	10:23 Anal	yzed: 08/16/	/21 19:13					
QC Source Sample: Non-SDG (A1	H0451-16)											
Gasoline Range Organics	ND		0.100	mg/L	1		ND				30%	
Surr: 4-Bromofluorobenzene (Sur)		Recov	ery: 108 %	Limits: 5	0-150 %	Dilı	tion: 1x					_
1,4-Difluorobenzene (Sur)			114 %	50	0-150 %		"					

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

QUALITY CONTROL (QC) SAMPLE RESULTS

		Sele	cted Volati	e Organi	c Compo	unds by E	PA 8260I	D				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080374 - EPA 5030B							Wat	er				
Blank (1080374-BLK1)			Prepared	l: 08/12/21 (07:30 Anal	yzed: 08/12/	/21 12:40					
EPA 8260D												
Benzene	ND		0.200	ug/L	1							
Toluene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Xylenes, total	ND		1.50	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		4.00	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 113 %	Limits: 80	120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			102 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			105 %	80	-120 %		"					
LCS (1080374-BS1) <u>EPA 8260D</u>			Prepared	1: 08/12/21 (07:30 Anal	yzed: 08/12	/21 11:41					
Benzene	22.5		0.200	ug/L	1	20.0		112	80-120%			
Toluene	19.2		1.00	ug/L	1	20.0		96	80-120%			
Ethylbenzene	20.4		0.500	ug/L	1	20.0		102	80-120%			
Xylenes, total	61.8		1.50	ug/L	1	60.0		103	80-120%			
Methyl tert-butyl ether (MTBE)	23.6		1.00	ug/L	1	20.0		118	80-120%			
Naphthalene	16.9		4.00	ug/L	1	20.0		84	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 108 %	Limits: 80	-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			98 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			91 %	80	-120 %		"					
Duplicate (1080374-DUP1)			Prepared	l: 08/12/21 (08:48 Anal	yzed: 08/12/	/21 13:34					
OC Source Sample: Non-SDG (A1	H0348-01)									-		-
Benzene	ND		0.200	ug/L	1		ND				30%	
Toluene	ND		1.00	ug/L	1		ND				30%	
Ethylbenzene	ND		0.500	ug/L	1		ND				30%	
Xylenes, total	ND		1.50	ug/L	1		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1		ND				30%	
Naphthalene	ND		4.00	ug/L	1		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 114 %	Limits: 80	-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			101 %	80	-120 %		"					

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

QUALITY CONTROL (QC) SAMPLE RESULTS

		Selec	ted Volati	le Organi	c Compo	unds by E	PA 8260	D				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080374 - EPA 5030B							Wat	er				
Duplicate (1080374-DUP1)			Prepared	1: 08/12/21	08:48 Ana	lyzed: 08/12	/21 13:34					
QC Source Sample: Non-SDG (A1	H0348-01)											
Surr: 4-Bromofluorobenzene (Surr)		Recov	ery: 102 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Duplicate (1080374-DUP2)			Prepared	1: 08/12/21	08:48 Ana	lyzed: 08/12	/21 17:39					
QC Source Sample: MW-7 (A1H0	<u> 365-01)</u>											
EPA 8260D												
Benzene	ND		0.200	ug/L	1		ND				30%	
Toluene	ND		1.00	ug/L	1		ND				30%	
Ethylbenzene	ND		0.500	ug/L	1		ND				30%	
Xylenes, total	ND		1.50	ug/L	1		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1		ND				30%	
Naphthalene	ND		4.00	ug/L	1		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 116 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			101 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			103 %	80	0-120 %		"					
Matrix Spike (1080374-MS1)			Prepared	1: 08/12/21	08:48 Ana	lyzed: 08/12	/21 14:56					
QC Source Sample: Non-SDG (A1	H0348-03)											
EPA 8260D												
Benzene	23.6		0.200	ug/L	1	20.0	ND	118	79-120%			
Гoluene	20.0		1.00	ug/L	1	20.0	ND	100	80-121%			
Ethylbenzene	21.2		0.500	ug/L	1	20.0	ND	106	79-121%			
Xylenes, total	63.1		1.50	ug/L	1	60.0	ND	105	79-121%			
Methyl tert-butyl ether (MTBE)	23.5		1.00	ug/L	1	20.0	ND	117	71-124%			
Naphthalene	15.9		4.00	ug/L	1	20.0	ND	79	61-128%			
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 108 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			96 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			89 %	80	0-120 %		"					

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ANALYTICAL REPORT

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

QUALITY CONTROL (QC) SAMPLE RESULTS

			_				_					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080426 - EPA 5030B							Wat	er				
Blank (1080426-BLK1)			Prepared	1: 08/13/21 (07:30 Anal	yzed: 08/13/	21 10:21					
EPA 8260D												
Benzene	ND		0.200	ug/L	1							
Toluene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Xylenes, total	ND		1.50	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		4.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1							
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1							
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 110 %	Limits: 80	-120 %	Dilu	tion: 1x					
Toluene-d8 (Surr)			102 %	80-	-120 %		"					
4-Bromofluorobenzene (Surr)			105 %	80-	-120 %		"					
LCS (1080426-BS1)			Prepared	l: 08/13/21 (07:30 Anal	yzed: 08/13/	21 09:22					
EPA 8260D												
Benzene	21.7		0.200	ug/L	1	20.0		108	80-120%			
Toluene	19.2		1.00	ug/L	1	20.0		96	80-120%			
Ethylbenzene	20.3		0.500	ug/L	1	20.0		102	80-120%			
Xylenes, total	61.3		1.50	ug/L	1	60.0		102	80-120%			
Methyl tert-butyl ether (MTBE)	23.8		1.00	ug/L	1	20.0		119	80-120%			
Naphthalene	16.6		4.00	ug/L	1	20.0		83	80-120%			
1,2-Dibromoethane (EDB)	20.8		0.500	ug/L	1	20.0		104	80-120%			
1,2-Dichloroethane (EDC)	20.3		0.500	ug/L	1	20.0		102	80-120%			
Isopropylbenzene	21.7		1.00	ug/L	1	20.0		108	80-120%			
1,2,4-Trimethylbenzene	22.0		1.00	ug/L	1	20.0		110	80-120%			
1,3,5-Trimethylbenzene	20.9		1.00	ug/L	1	20.0		104	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Recor	very: 106 %	Limits: 80	-120 %	Dilu	tion: 1x					
Toluene-d8 (Surr)			97 %		-120 %		"					
4-Bromofluorobenzene (Surr)			91 %		-120 %		,,					

Duplicate (1080426-DUP1)

Prepared: 08/13/21 07:30 Analyzed: 08/13/21 12:09

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

QUALITY CONTROL (QC) SAMPLE RESULTS

		Selec	cted Volatil	e Organio	c Compo	unds by E	PA 8260	D				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080426 - EPA 5030B							Wat	er				
Duplicate (1080426-DUP1)			Prepared	: 08/13/21 (07:30 Anal	lyzed: 08/13/	/21 12:09					
QC Source Sample: Non-SDG (A1	H0387-01)											
Benzene	ND		0.200	ug/L	1		ND				30%	
Toluene	ND		1.00	ug/L	1		ND				30%	
Ethylbenzene	ND		0.500	ug/L	1		ND				30%	
Xylenes, total	ND		1.50	ug/L	1		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1		ND				30%	
Naphthalene	ND		4.00	ug/L	1		ND				30%	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1		ND				30%	
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1		ND				30%	
Isopropylbenzene	ND		1.00	ug/L	1		ND				30%	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Recon	very: 108 %	Limits: 80	-120 %	Dilı	ition: 1x					
Toluene-d8 (Surr)			102 %	80-	-120 %		"					
4-Bromofluorobenzene (Surr)			100 %	80-	-120 %		"					
Duplicate (1080426-DUP2)			Prepared	: 08/13/21 (07:30 Anal	lyzed: 08/13/	/21 16:13					
QC Source Sample: Non-SDG (A1	H0392-01)											
Benzene	ND		0.200	ug/L	1		ND				30%	
Toluene	ND		1.00	ug/L	1		ND				30%	
Ethylbenzene	ND		0.500	ug/L	1		ND				30%	
Xylenes, total	ND		1.50	ug/L	1		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1		ND				30%	
Naphthalene	ND		4.00	ug/L	1		ND				30%	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1		ND				30%	
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1		ND				30%	
Isopropylbenzene	ND		1.00	ug/L	1		ND				30%	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 112 %	Limits: 80	-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			100 %		-120 %		"					
4-Bromofluorobenzene (Surr)			99 %		-120 %		,,					

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D Detection Reporting Spike % REC RPD Source Dilution Analyte Result Limit Units Amount Result % REC Limits RPD Limit Limit Notes Water Batch 1080426 - EPA 5030B Matrix Spike (1080426-MS1) Prepared: 08/13/21 07:30 Analyzed: 08/13/21 14:52 QC Source Sample: Non-SDG (A1H0387-06) EPA 8260D 0.200 23.1 ug/L 1 20.0 ND 116 79-120% Benzene Toluene 20.0 1.00 ug/L 1 20.0 ND 100 80-121% Ethylbenzene 0.500 20.0 ND 79-121% 21.3 ug/L 1 106 Xylenes, total 63.5 1.50 ug/L 1 60.0 ND 106 79-121% 20.0 Methyl tert-butyl ether (MTBE) 23.8 1.00 ND 119 71-124% ug/L 1 Naphthalene 17.9 4.00 20.0 ND 89 61-128% ug/L 1 20.0 1,2-Dibromoethane (EDB) 21.8 0.500 ND 109 77-121% ug/L 1 1,2-Dichloroethane (EDC) 21.6 0.500 1 20.0 ND 108 73-128% ug/L 22.1 20.0 ND 110 72-131% Isopropylbenzene 1.00 ug/L 1 ---1,2,4-Trimethylbenzene 22.0 1.00 ug/L 1 20.0 ND 110 76-124% 1,3,5-Trimethylbenzene 20.8 1.00 20.0 ND 104 75-124% ug/L ---Surr: 1,4-Difluorobenzene (Surr) 108 % Limits: 80-120 % Dilution: 1x Recovery: Toluene-d8 (Surr) 96% 80-120 % 4-Bromofluorobenzene (Surr) 90 % 80-120 %

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

QUALITY CONTROL (QC) SAMPLE RESULTS

		Detection	Reporting			Spike	Source		% REC		RPD	
Analyte	Result	Limit	Limit	Units	Dilution	Amount	Result	% REC	Limits	RPD	Limit	Notes
Batch 1080474 - EPA 5030B							Wat	er				
Blank (1080474-BLK1)			Prepared	1: 08/16/21 (08:00 Anal	yzed: 08/16/	/21 11:04					
EPA 8260D												
Benzene	ND		0.200	ug/L	1							
Toluene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Xylenes, total	ND		1.50	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		4.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1							
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1							
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 113 %	Limits: 80	-120 %	Dilu	ution: 1x					
Toluene-d8 (Surr)			102 %	80-	-120 %		"					
4-Bromofluorobenzene (Surr)			104 %	80-	-120 %		"					
LCS (1080474-BS1)			Prepared	l: 08/16/21 (08:00 Anal	yzed: 08/16/	/21 09:56					
EPA 8260D												
Benzene	21.6		0.200	ug/L	1	20.0		108	80-120%			
Toluene	19.1		1.00	ug/L	1	20.0		96	80-120%			
Ethylbenzene	20.2		0.500	ug/L	1	20.0		101	80-120%			
Xylenes, total	60.6		1.50	ug/L	1	60.0		101	80-120%			
Methyl tert-butyl ether (MTBE)	24.0		1.00	ug/L	1	20.0		120	80-120%			
Naphthalene	16.0		4.00	ug/L	1	20.0		80	80-120%			
1,2-Dibromoethane (EDB)	21.0		0.500	ug/L	1	20.0		105	80-120%			
1,2-Dichloroethane (EDC)	20.2		0.500	ug/L	1	20.0		101	80-120%			
Isopropylbenzene	21.2		1.00	ug/L	1	20.0		106	80-120%			
1,2,4-Trimethylbenzene	22.1		1.00	ug/L	1	20.0		111	80-120%			
1,3,5-Trimethylbenzene	20.8		1.00	ug/L	1	20.0		104	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Recon	very: 106 %	Limits: 80	-120 %	Dilu	tion: 1x					
Toluene-d8 (Surr)			97 %	80-	-120 %		"					
4-Bromofluorobenzene (Surr)			91%	90	-120 %		,,					

Duplicate (1080474-DUP1)

Prepared: 08/16/21 10:23 Analyzed: 08/16/21 14:14

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

QUALITY CONTROL (QC) SAMPLE RESULTS

					-							
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Note
Batch 1080474 - EPA 5030B							Wat	er				
Duplicate (1080474-DUP1)			Prepared	: 08/16/21	10:23 Ana	yzed: 08/16/	/21 14:14					
QC Source Sample: Non-SDG (A1	H0448-11)											
Benzene	ND		0.200	ug/L	1		ND				30%	
Toluene	ND		1.00	ug/L	1		ND				30%	
Ethylbenzene	ND		0.500	ug/L	1		ND				30%	
Xylenes, total	ND		1.50	ug/L	1		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1		ND				30%	
Naphthalene	ND		4.00	ug/L	1		ND				30%	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1		ND				30%	
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1		ND				30%	
Isopropylbenzene	ND		1.00	ug/L	1		ND				30%	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 116 %	Limits: 80)-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			101 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			102 %	80	1-120 %		"					
Duplicate (1080474-DUP2)			Prepared	: 08/16/21	10:23 Ana	yzed: 08/16/	/21 19:13					
QC Source Sample: Non-SDG (A1	H0451-16)											
Benzene	ND		0.200	ug/L	1		ND				30%	
Toluene	ND		1.00	ug/L	1		ND				30%	
Ethylbenzene	ND		0.500	ug/L	1		ND				30%	
Xylenes, total	ND		1.50	ug/L	1		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1		ND				30%	
Naphthalene	ND		4.00	ug/L	1		ND				30%	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1		ND				30%	
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1		ND				30%	
Isopropylbenzene	ND		1.00	ug/L	1		ND				30%	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 117 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			100 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			104 %	80	-120 %		"					

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D Detection Reporting Spike % REC RPD Source Dilution Analyte Result Limit Units Amount Result % REC Limits RPD Limit Limit Notes Water Batch 1080474 - EPA 5030B Matrix Spike (1080474-MS1) Prepared: 08/16/21 10:23 Analyzed: 08/16/21 16:30 QC Source Sample: Non-SDG (A1H0448-18) EPA 8260D 0.200 20.0 22.4 ug/L 1 ND 112 79-120% Benzene Toluene 19.2 1.00 ug/L 1 20.0 ND 96 80-121% Ethylbenzene 0.500 20.0 ND 102 79-121% 20.4 ug/L 1 Xylenes, total 60.0 1.50 ug/L 1 60.0 ND 100 79-121% 20.0 Methyl tert-butyl ether (MTBE) 22.8 1.00 ND 114 71-124% ug/L 1 Naphthalene 15.4 4.00 20.0 ND 77 61-128% ug/L 1 20.9 20.0 105 1,2-Dibromoethane (EDB) 0.500 ND 77-121% ug/L 1 1,2-Dichloroethane (EDC) 20.7 0.500 1 20.0 ND 103 73-128% ug/L 20.8 20.0 ND 104 72-131% Isopropylbenzene 1.00 ug/L 1 ---1,2,4-Trimethylbenzene 20.7 1.00 ug/L 1 20.0 ND 103 76-124% 1,3,5-Trimethylbenzene 19.7 1.00 20.0 ND 98 75-124% ug/L ---Surr: 1,4-Difluorobenzene (Surr) 109 % Limits: 80-120 % Dilution: 1x Recovery:

80-120 %

80-120 %

95 %

90 %

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Toluene-d8 (Surr)

4-Bromofluorobenzene (Surr)

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

SAMPLE PREPARATION INFORMATION

	Diesel and/or Oil Hydrocarbons by NWTPH-Dx													
Prep: EPA 3510C (F	uels/Acid Ext.)				Sample	Default	RL Prep							
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor							
Batch: 1080376														
A1H0365-01	Water	NWTPH-Dx	08/10/21 09:18	08/12/21 11:00	1050mL/5mL	1000mL/5mL	0.95							
A1H0365-02	Water	NWTPH-Dx	08/10/21 10:02	08/12/21 11:00	1050 mL/5 mL	1000mL/5mL	0.95							
A1H0365-03	Water	NWTPH-Dx	08/10/21 10:38	08/12/21 11:00	1060 mL/5 mL	1000mL/5mL	0.94							
A1H0365-04	Water	NWTPH-Dx	08/10/21 11:12	08/12/21 11:00	1050mL/5mL	1000mL/5mL	0.95							
A1H0365-05	Water	NWTPH-Dx	08/10/21 11:51	08/12/21 11:00	1060mL/5mL	1000mL/5mL	0.94							
A1H0365-06	Water	NWTPH-Dx	08/10/21 12:36	08/12/21 11:00	1070mL/5mL	1000mL/5mL	0.94							
A1H0365-07	Water	NWTPH-Dx	08/10/21 13:35	08/12/21 11:00	1060mL/5mL	1000mL/5mL	0.94							
A1H0365-08	Water	NWTPH-Dx	08/10/21 14:21	08/12/21 11:00	1060mL/5mL	1000mL/5mL	0.94							
A1H0365-09	Water	NWTPH-Dx	08/11/21 07:39	08/12/21 11:00	1060mL/5mL	1000mL/5mL	0.94							
A1H0365-10	Water	NWTPH-Dx	08/11/21 07:39	08/12/21 11:00	1060 mL/5 mL	1000 mL/5 mL	0.94							
Batch: 1080558														
A1H0365-11	Water	NWTPH-Dx	08/11/21 08:41	08/17/21 12:22	1050mL/5mL	1000mL/5mL	0.95							
A1H0365-12	Water	NWTPH-Dx	08/11/21 09:20	08/17/21 12:22	1050mL/5mL	1000mL/5mL	0.95							
A1H0365-13	Water	NWTPH-Dx	08/11/21 10:02	08/17/21 12:22	1060mL/5mL	1000mL/5mL	0.94							
A1H0365-14	Water	NWTPH-Dx	08/11/21 11:03	08/17/21 12:22	1060mL/5mL	1000mL/5mL	0.94							

Prep: EPA 5030B					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 1080374							
A1H0365-01	Water	NWTPH-Gx (MS)	08/10/21 09:18	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-04	Water	NWTPH-Gx (MS)	08/10/21 11:12	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-05	Water	NWTPH-Gx (MS)	08/10/21 11:51	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-07	Water	NWTPH-Gx (MS)	08/10/21 13:35	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-08	Water	NWTPH-Gx (MS)	08/10/21 14:21	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-11	Water	NWTPH-Gx (MS)	08/11/21 08:41	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-13	Water	NWTPH-Gx (MS)	08/11/21 10:02	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-14	Water	NWTPH-Gx (MS)	08/11/21 11:03	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
Batch: 1080426							
A1H0365-03RE1	Water	NWTPH-Gx (MS)	08/10/21 10:38	08/13/21 10:00	5mL/5mL	5mL/5mL	1.00
A1H0365-06RE1	Water	NWTPH-Gx (MS)	08/10/21 12:36	08/13/21 10:00	5mL/5mL	5mL/5mL	1.00
A1H0365-09RE1	Water	NWTPH-Gx (MS)	08/11/21 07:39	08/13/21 10:00	5mL/5mL	5mL/5mL	1.00
A1H0365-10RE1	Water	NWTPH-Gx (MS)	08/11/21 07:39	08/13/21 10:00	5mL/5mL	5mL/5mL	1.00

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

SAMPLE PREPARATION INFORMATION

	Gas	soline Range Hydrocart	oons (Benzene thro	ugh Naphthalene) b	y NWTPH-Gx		
Prep: EPA 5030B					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
A1H0365-02RE1	Water	NWTPH-Gx (MS)	08/10/21 10:02	08/16/21 10:23	5mL/5mL	5mL/5mL	1.00
A1H0365-12RE1	Water	NWTPH-Gx (MS)	08/11/21 09:20	08/16/21 10:23	5mL/5mL	5mL/5mL	1.00

		Selected Vo	latile Organic Compo	ounds by EPA 8260D)		
Prep: EPA 5030B					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 1080374							
A1H0365-01	Water	EPA 8260D	08/10/21 09:18	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-02	Water	EPA 8260D	08/10/21 10:02	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-04	Water	EPA 8260D	08/10/21 11:12	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-05	Water	EPA 8260D	08/10/21 11:51	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-07	Water	EPA 8260D	08/10/21 13:35	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-08	Water	EPA 8260D	08/10/21 14:21	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-09	Water	EPA 8260D	08/11/21 07:39	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-10	Water	EPA 8260D	08/11/21 07:39	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-11	Water	EPA 8260D	08/11/21 08:41	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-12	Water	EPA 8260D	08/11/21 09:20	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-13	Water	EPA 8260D	08/11/21 10:02	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
A1H0365-14	Water	EPA 8260D	08/11/21 11:03	08/12/21 08:48	5mL/5mL	5mL/5mL	1.00
Batch: 1080426							
A1H0365-03RE1	Water	EPA 8260D	08/10/21 10:38	08/13/21 10:00	5mL/5mL	5mL/5mL	1.00
A1H0365-06RE1	Water	EPA 8260D	08/10/21 12:36	08/13/21 10:00	5mL/5mL	5mL/5mL	1.00
A1H0365-09RE1	Water	EPA 8260D	08/11/21 07:39	08/13/21 10:00	5mL/5mL	5mL/5mL	1.00
A1H0365-10RE1	Water	EPA 8260D	08/11/21 07:39	08/13/21 10:00	5mL/5mL	5mL/5mL	1.00
Batch: 1080474							
A1H0365-02RE1	Water	EPA 8260D	08/10/21 10:02	08/16/21 10:23	5mL/5mL	5mL/5mL	1.00
A1H0365-02RE2	Water	EPA 8260D	08/10/21 10:02	08/16/21 17:00	5mL/5mL	5mL/5mL	1.00
A1H0365-12RE1	Water	EPA 8260D	08/11/21 09:20	08/16/21 10:23	5mL/5mL	5mL/5mL	1.00
A1H0365-12RE2	Water	EPA 8260D	08/11/21 09:20	08/16/21 17:00	5mL/5mL	5mL/5mL	1.00

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Darrell Auvil, Client Services Manager



Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200Project Number: GWM 3Q21Report ID:Lake Oswego, OR 97035Project Manager: Stephanie Bosze-SalisburyA1H0365 - 08 19 21 0939

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

F-11 The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.

F-13 The chromatographic pattern does not resemble the fuel standard used for quantitation

F-20 Result for Diesel is Estimated due to overlap from Gasoline Range Organics or other VOCs.

Q-19 Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.

R-06 Reporting level raised due to possible carryover from a previous sample.

Apex Laboratories

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GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).

If no value is listed ('----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.

The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")

See Percent Solids section for details of dry weight analysis.

"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

"___" Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

"---" QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).

- -For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
- -For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

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Apex Laboratories, LLC

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ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: GWM 3Q21 Report ID:

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury A1H0365 - 08 19 21 0939

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200Project Number: GWM 3Q21Report ID:Lake Oswego, OR 97035Project Manager: Stephanie Bosze-SalisburyA1H0365 - 08 19 21 0939

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) -EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the <u>exception</u> of any analyte(s) listed below:

Apex Laboratories

Matrix Analysis TNI_ID Analyte TNI_ID Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.

Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers

Project:

Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200

Project Number: GWM 3Q21

Report ID: A1H0365 - 08 19 21 0939

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

Frozen Archive Hold Sample Date: 250 GREETERNEWS. 18E + Nophthalene by MIBE Project Name: NuSter Vanner GDW 302 TCLP Metals (8) Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Be, Mg, Mn, Mo, Ni, K, Se, Ag, Ma, Tl, V, Zn TOTAL DISS, TCL gr mdeilæds Date: Priority Metals (13) RCRA Metals (8) 8081 Pesticides CHAIN OF CUSTODY 8087 PCBs rinted Name 8270 Semi-Vols Full List SHV4 WIS 0428 8700 AOCs Ent l'ist 8760 Halo VOC8 1745 8700 KBDW AOC 8700 BLEX NWTPH-Gx *G-H4LMN 3 Day Other: имлен-исп # OF CONTAINERS 10 Standard 700 SW Sandburg St., Tigard, OR 97223 Ph. 503-718-2323 SAMPLES ARE HELD FOR 30 DAYS MATRIX 136 8 325 139 ω 3 5 TIME $\bar{\sigma}$ 00 5 Day DATE TAT Requested (circle) MW-50 MW-81 25-2 MW-

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers

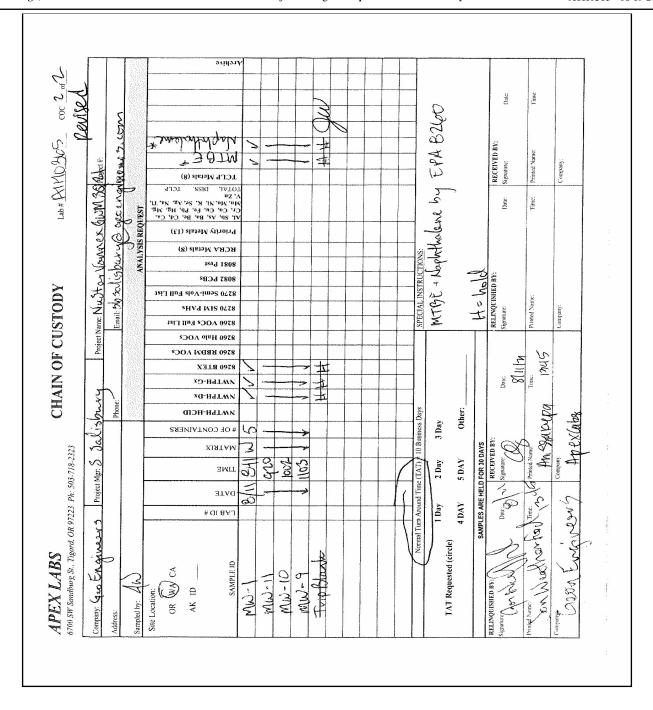
Project:

Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Lake Oswego, OR 97035 Project Number: GWM 3Q21

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939



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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200Project Number: GWM 3Q21Report ID:Lake Oswego, OR 97035Project Manager: Stephanie Bosze-SalisburyA1H0365 - 08 19 21 0939

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Wind or Manual



Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers

Project:

Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200

Project Number: GWM 3Q21

Lake Oswego, OR 97035

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1H0365 - 08 19 21 0939

		ER RECEIPT FORM
Client: Glotingino	urs	Element WO#: A1 410 365
Project/Project #: N~	star Vannex GWP	
Delivery Info: Date/time received: Structure Cl	By: Marcolor Marcolor	
Temperature (°C)	4.0 1.8 2	-3
Received on ice? (Y/N)	4 4	4
Temp. blanks? (Y/N)	Y Y	4
Ice type: (Gel/Real/Other)	Gelsken Real Ri	nl
Condition:	Good Melty M	elty
All samples intact? Yes ✓	No Comments:	@ 1850 By: HAS
COC/container discrepancie	es form initiated? Yes	No X
		Yes No Comments:
Comments MW-(0 DUD	headspace? Yes X No_ 7.3 3 NOAS WAVE WAD 1: Yes X No_NA_pH a	
Additional information:	Jo TB provided	
Labeled by:	Witness:	Cooler Inspected by:
Fig.	MAS	MA-C
~	4117	LVIZ

Apex Laboratories



Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

Wednesday, December 1, 2021 Stephanie Bosze-Salisbury GeoEngineers 4000 Kruse Way Place, Bldg 3 Suite 200 Lake Oswego, OR 97035

RE: A1K0890 - Nustar-Vancouver Annex - 19001-008-03

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1K0890, which was received by the laboratory on 11/17/2021 at 2:55:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1 4.0 degC Cooler #3 4.8 degC Cooler #2 1.1 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.





Apex Laboratories



Lake Oswego, OR 97035

ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: 19001-008-03

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1K0890 - 12 01 21 1726

ANALYTICAL REPORT FOR SAMPLES

	SAMPLE INFO	ORMATION		
Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-7	A1K0890-01	Water	11/16/21 10:07	11/17/21 14:55
MW-5D	A1K0890-02	Water	11/16/21 11:12	11/17/21 14:55
MW-5	A1K0890-03	Water	11/16/21 11:34	11/17/21 14:55
MW-5 Dup	A1K0890-04	Water	11/16/21 11:34	11/17/21 14:55
MW-8	A1K0890-05	Water	11/16/21 12:28	11/17/21 14:55
MW-8D	A1K0890-06	Water	11/16/21 12:57	11/17/21 14:55
MW-9	A1K0890-07	Water	11/16/21 13:34	11/17/21 14:55
MW-4	A1K0890-08	Water	11/17/21 07:49	11/17/21 14:55
MW-3	A1K0890-09	Water	11/17/21 08:46	11/17/21 14:55
MW-1	A1K0890-10	Water	11/17/21 09:47	11/17/21 14:55
MW-11	A1K0890-11	Water	11/17/21 10:26	11/17/21 14:55
MW-10	A1K0890-12	Water	11/17/21 11:54	11/17/21 14:55
MW-6	A1K0890-13	Water	11/17/21 12:32	11/17/21 14:55
MW-2	A1K0890-14	Water	11/17/21 11:07	11/17/21 14:55

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: 19001-008-03 Lake Oswego, OR 97035

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1K0890 - 12 01 21 1726

ANALYTICAL SAMPLE RESULTS

	Die	sel and/or O	il Hydrocar	bons by NWTP	H-Dx			
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-7 (A1K0890-01)				Matrix: Wat	er	Batch:	21K0946	
Diesel	ND		0.189	mg/L	1	11/23/21 00:33	NWTPH-Dx	
Oil	ND		0.377	mg/L	1	11/23/21 00:33	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recon	very: 64 %	Limits: 50-150 %	% 1	11/23/21 00:33	NWTPH-Dx	
MW-5D (A1K0890-02)				Matrix: Wat	er	Batch:	21K0946	
Diesel	ND		0.190	mg/L	1	11/23/21 00:54	NWTPH-Dx	
Oil	ND		0.381	mg/L	1	11/23/21 00:54	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Reco	very: 92 %	Limits: 50-150 %	% I	11/23/21 00:54	NWTPH-Dx	
MW-5 (A1K0890-03)				Matrix: Wat	er	Batch:	21K0946	
Diesel	2.15		0.190	mg/L	1	11/23/21 01:14	NWTPH-Dx	F-18
Oil	ND		0.381	mg/L	1	11/23/21 01:14	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Reco	very: 86 %	Limits: 50-150 9	% I	11/23/21 01:14	NWTPH-Dx	
MW-5 Dup (A1K0890-04)				Matrix: Wat	er	Batch:	21K0946	
Diesel	1.84		0.190	mg/L	1	11/23/21 01:34	NWTPH-Dx	F-18
Oil	ND		0.381	mg/L	1	11/23/21 01:34	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recon	very: 79 %	Limits: 50-150 %	% I	11/23/21 01:34	NWTPH-Dx	
MW-8 (A1K0890-05)				Matrix: Wat	er	Batch:	21K0946	
Diesel	ND		0.192	mg/L	1	11/23/21 01:55	NWTPH-Dx	
Oil	ND		0.385	mg/L	1	11/23/21 01:55	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Reco	very: 79 %	Limits: 50-150 9	% I	11/23/21 01:55	NWTPH-Dx	
MW-8D (A1K0890-06)				Matrix: Wat	er	Batch:	21K0946	
Diesel	ND		0.189	mg/L	1	11/23/21 02:15	NWTPH-Dx	
Oil	ND		0.377	mg/L	1	11/23/21 02:15	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Reco	very: 84 %	Limits: 50-150 9	% I	11/23/21 02:15	NWTPH-Dx	
MW-9 (A1K0890-07)				Matrix: Wat	er	Batch:	21K0946	
Diesel	ND		0.189	mg/L	1	11/23/21 02:36	NWTPH-Dx	
Oil	ND		0.377	mg/L	1	11/23/21 02:36	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recon	very: 80 %	Limits: 50-150 9	% I	11/23/21 02:36	NWTPH-Dx	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Report ID:

A1K0890 - 12 01 21 1726

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: 19001-008-03

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

ANALYTICAL SAMPLE RESULTS

	Die	esel and/or Oil	Hydrocar	bons by NWTP	H-Dx			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-4 (A1K0890-08)				Matrix: Wat	er	Batch: 2	21K1079	
Diesel	ND		0.189	mg/L	1	11/25/21 00:30	NWTPH-Dx	
Oil	ND		0.377	mg/L	1	11/25/21 00:30	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 96%	Limits: 50-150 %	6 I	11/25/21 00:30	NWTPH-Dx	
MW-3 (A1K0890-09)				Matrix: Wat	er	Batch: 2	21K1079	
Diesel	ND		0.190	mg/L	1	11/25/21 00:50	NWTPH-Dx	
Oil	ND		0.381	mg/L	1	11/25/21 00:50	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 94%	Limits: 50-150 %	6 I	11/25/21 00:50	NWTPH-Dx	
MW-1 (A1K0890-10)				Matrix: Wat	er	Batch: 2	21K1079	
Diesel	ND		0.189	mg/L	1	11/25/21 01:11	NWTPH-Dx	
Oil	ND		0.377	mg/L	1	11/25/21 01:11	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 86 %	Limits: 50-150 %	6 1	11/25/21 01:11	NWTPH-Dx	
MW-11 (A1K0890-11)				Matrix: Wat	er	Batch: 2	21K1079	
Diesel	ND		0.189	mg/L	1	11/25/21 01:31	NWTPH-Dx	
Oil	ND		0.377	mg/L	1	11/25/21 01:31	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 79 %	Limits: 50-150 %	6 I	11/25/21 01:31	NWTPH-Dx	
MW-10 (A1K0890-12)				Matrix: Wat	er	Batch: 2	21K1079	
Diesel	ND		0.189	mg/L	1	11/25/21 01:51	NWTPH-Dx	
Oil	ND		0.377	mg/L	1	11/25/21 01:51	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 85 %	Limits: 50-150 %	6 I	11/25/21 01:51	NWTPH-Dx	
MW-6 (A1K0890-13)				Matrix: Wat	er	Batch: 2	21K1079	
Diesel	8.27		0.194	mg/L	1	11/25/21 02:12	NWTPH-Dx	
Oil	ND		0.388	mg/L	1	11/25/21 02:12	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 91%	Limits: 50-150 %	6 1	11/25/21 02:12	NWTPH-Dx	
MW-2 (A1K0890-14)		_		Matrix: Wat	er	Batch: 2	21K1079	
Diesel	ND		0.189	mg/L	1	11/25/21 02:32	NWTPH-Dx	
Oil	ND		0.377	mg/L	1	11/25/21 02:32	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recove	ery: 86 %	Limits: 50-150 %	6 I	11/25/21 02:32	NWTPH-Dx	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200Project Number:19001-008-03Report ID:Lake Oswego, OR 97035Project Manager:Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

ANALYTICAL SAMPLE RESULTS

	Sample	Detection	Reporting			Date		
Analyte	Sample Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-7 (A1K0890-01)				Matrix: Wate	er	Batch:	21K0896	
Gasoline Range Organics	ND		0.100	mg/L	1	11/21/21 16:23	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur) 1,4-Difluorobenzene (Sur)		Recov	ery: 99 % 101 %	Limits: 50-150 % 50-150 %		11/21/21 16:23 11/21/21 16:23	NWTPH-Gx (MS) NWTPH-Gx (MS)	
MW-5D (A1K0890-02)				Matrix: Wate	er	Batch:	21K0896	
Gasoline Range Organics	ND		0.100	mg/L	1	11/21/21 17:16	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur) 1,4-Difluorobenzene (Sur)		Recover	ry: 100 % 102 %	Limits: 50-150 % 50-150 %		11/21/21 17:16 11/21/21 17:16	NWTPH-Gx (MS) NWTPH-Gx (MS)	
MW-5 (A1K0890-03RE1)				Matrix: Wate	er	Batch:	21K0914	
Gasoline Range Organics	13.9		2.00	mg/L	20	11/22/21 13:09	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur) 1,4-Difluorobenzene (Sur)		Recov	ery: 99 % 111 %	Limits: 50-150 % 50-150 %		11/22/21 13:09 11/22/21 13:09	NWTPH-Gx (MS) NWTPH-Gx (MS)	
MW-5 Dup (A1K0890-04RE1)				Matrix: Wate	er	Batch:	21K0914	
Gasoline Range Organics	11.5		2.00	mg/L	20	11/22/21 13:36	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur) 1,4-Difluorobenzene (Sur)		Recov	ery: 98 % 111 %	Limits: 50-150 % 50-150 %		11/22/21 13:36 11/22/21 13:36	NWTPH-Gx (MS) NWTPH-Gx (MS)	
MW-8 (A1K0890-05)				Matrix: Wate	er	Batch:	21K0848	
Gasoline Range Organics	ND		0.100	mg/L	1	11/19/21 14:25	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur) 1,4-Difluorobenzene (Sur)		Recov	ery: 94 % 114 %	Limits: 50-150 % 50-150 %		11/19/21 14:25 11/19/21 14:25	NWTPH-Gx (MS) NWTPH-Gx (MS)	
MW-8D (A1K0890-06)				Matrix: Wate	er	Batch:	21K0848	
Gasoline Range Organics	ND		0.100	mg/L	1	11/19/21 14:52	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur) 1,4-Difluorobenzene (Sur)		Recov	ery: 94 % 114 %	Limits: 50-150 % 50-150 %		11/19/21 14:52 11/19/21 14:52	NWTPH-Gx (MS) NWTPH-Gx (MS)	
MW-9 (A1K0890-07)				Matrix: Wate	er	Batch:	21K0848	
Gasoline Range Organics	ND		0.100	mg/L	1	11/19/21 15:20	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur) 1,4-Difluorobenzene (Sur)		Recov	ery: 96 % 114 %	Limits: 50-150 % 50-150 %		11/19/21 15:20 11/19/21 15:20	NWTPH-Gx (MS) NWTPH-Gx (MS)	
MW-4 (A1K0890-08)				Matrix: Wate	er	Batch:	21K0848	

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ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200Project Number:19001-008-03Report ID:Lake Oswego, OR 97035Project Manager:Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

ANALYTICAL SAMPLE RESULTS

	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Note
MW-4 (A1K0890-08)				Matrix: Wate	er	Batch:	21K0848	
Gasoline Range Organics	ND		0.100	mg/L	1	11/19/21 15:47	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	ry: 96%	Limits: 50-150 %	5 1	11/19/21 15:47	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			114 %	50-150 %	5 1	11/19/21 15:47	NWTPH-Gx (MS)	
MW-3 (A1K0890-09)				Matrix: Wate	er	Batch:	21K0848	
Gasoline Range Organics	ND		0.100	mg/L	1	11/19/21 16:14	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	ry: 95 %	Limits: 50-150 %	5 1	11/19/21 16:14	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			113 %	50-150 %	5 I	11/19/21 16:14	NWTPH-Gx (MS)	
MW-1 (A1K0890-10)				Matrix: Wate	er	Batch:	21K0848	
Gasoline Range Organics	ND		0.100	mg/L	1	11/19/21 16:41	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	ry: 95 %	Limits: 50-150 %	5 1	11/19/21 16:41	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			115 %	50-150 %	5 1	11/19/21 16:41	NWTPH-Gx (MS)	
MW-11 (A1K0890-11RE1)				Matrix: Wate	er	Batch:	21K0914	
Gasoline Range Organics	2.26		1.00	mg/L	10	11/22/21 14:03	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	ry: 94%	Limits: 50-150 %	5 1	11/22/21 14:03	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			110 %	50-150 %	5 1	11/22/21 14:03	NWTPH-Gx (MS)	
MW-10 (A1K0890-12)				Matrix: Wate	er	Batch:	21K0848	
Gasoline Range Organics	ND		0.100	mg/L	1	11/19/21 17:08	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	ry: 95 %	Limits: 50-150 %	5 1	11/19/21 17:08	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			115 %	50-150 %	5 1	11/19/21 17:08	NWTPH-Gx (MS)	
/IW-6 (A1K0890-13RE1)				Matrix: Wate	er	Batch:	21K0914	
Gasoline Range Organics	11.1		2.50	mg/L	25	11/22/21 14:30	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	ry: 97%	Limits: 50-150 %	5 I	11/22/21 14:30	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			110 %	50-150 %	5 1	11/22/21 14:30	NWTPH-Gx (MS)	
/IW-2 (A1K0890-14)				Matrix: Wate	er	Batch	21K0848	
Gasoline Range Organics	ND		0.100	mg/L	1	11/19/21 17:36	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recover	ry: 92 %	Limits: 50-150 %	5 <i>1</i>	11/19/21 17:36	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			110 %	50-150 %	5 1	11/19/21 17:36	NWTPH-Gx (MS)	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200Project Number:19001-008-03Report ID:Lake Oswego, OR 97035Project Manager:Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

ANALYTICAL SAMPLE RESULTS

	C1	Detection	D	-		Dete		
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-7 (A1K0890-01)	resuit	Dillit	Dillit	Matrix: Water		•	21K0896	110103
,								
Benzene	ND		0.200	ug/L	1	11/21/21 16:23	EPA 8260D	
Toluene	ND		1.00	ug/L	1	11/21/21 16:23	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	11/21/21 16:23	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	11/21/21 16:23	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	11/21/21 16:23	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	11/21/21 16:23	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ery: 100 %	Limits: 80-120 %	1	11/21/21 16:23	EPA 8260D	
Toluene-d8 (Surr)			97 %	80-120 %	1	11/21/21 16:23	EPA 8260D	
4-Bromofluorobenzene (Surr)			107 %	80-120 %	1	11/21/21 16:23	EPA 8260D	
MW-5D (A1K0890-02)				Matrix: Wate	r	Batch: 2	21K0896	
Benzene	ND		0.200	ug/L	1	11/21/21 17:16	EPA 8260D	
Toluene	ND		1.00	ug/L	1	11/21/21 17:16	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	11/21/21 17:16	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	11/21/21 17:16	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	11/21/21 17:16	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	11/21/21 17:16	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Reco	very: 99 %	Limits: 80-120 %	1	11/21/21 17:16	EPA 8260D	
Toluene-d8 (Surr)			97 %	80-120 %	1	11/21/21 17:16	EPA 8260D	
4-Bromofluorobenzene (Surr)			107 %	80-120 %	1	11/21/21 17:16	EPA 8260D	
MW-5 (A1K0890-03)				Matrix: Wate	r	Batch: 2	21K0848	
Benzene	ND		0.220	ug/L	1	11/19/21 18:57	EPA 8260D	R-06
Toluene	1.16		1.00	ug/L	1	11/19/21 18:57	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	11/19/21 18:57	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ery: 100 %	Limits: 80-120 %	1	11/19/21 18:57	EPA 8260D	
Toluene-d8 (Surr)			106 %	80-120 %	1	11/19/21 18:57	EPA 8260D	
4-Bromofluorobenzene (Surr)			94 %	80-120 %	1	11/19/21 18:57	EPA 8260D	
MW-5 (A1K0890-03RE1)				Matrix: Wate	r	Batch: 2	21K0914	
Ethylbenzene	197		10.0	ug/L	20	11/22/21 13:09	EPA 8260D	
Xylenes, total	610		30.0	ug/L	20	11/22/21 13:09	EPA 8260D	
Naphthalene	1430		40.0	ug/L	20	11/22/21 13:09	EPA 8260D	
Naphthaiche								

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Report ID:

A1K0890 - 12 01 21 1726

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: 19001-008-03 Lake Oswego, OR 97035

Project Manager: Stephanie Bosze-Salisbury

ANALYTICAL SAMPLE RESULTS

	G- 1	D-t- C	D			D-4-		
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Note
MW-5 (A1K0890-03RE1)	1100411	2	211111	Matrix: Wat		•	21K0914	11010
Surrogate: Toluene-d8 (Surr)		Racon	ery: 106%	Limits: 80-120 9		11/22/21 13:09	EPA 8260D	
Surrogaie: 10iuene-uo (Surr) 4-Bromofluorobenzene (Surr)		Recov	95 %	80-120 9		11/22/21 13:09	EPA 8260D EPA 8260D	
				Matrix: Wat	ter	Batch: 2	21K0848	
Benzene	ND		0.200	ug/L	1	11/19/21 19:24	EPA 8260D	
Toluene	1.17		1.00	ug/L	1	11/19/21 19:24	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	11/19/21 19:24	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Reco	very: 99 %	Limits: 80-120 9	% 1	11/19/21 19:24	EPA 8260D	
Toluene-d8 (Surr)			107 %	80-120		11/19/21 19:24	EPA 8260D	
4-Bromofluorobenzene (Surr)			94 %	80-120 9	% 1	11/19/21 19:24	EPA 8260D	
MW-5 Dup (A1K0890-04RE1)				Matrix: Wat	ter	Batch: 2	21K0914	
Ethylbenzene	164		10.0	ug/L	20	11/22/21 13:36	EPA 8260D	
Xylenes, total	468		30.0	ug/L	20	11/22/21 13:36	EPA 8260D	
Naphthalene	1190		40.0	ug/L	20	11/22/21 13:36	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Reco	very: 97 %	Limits: 80-120 9	% 1	11/22/21 13:36	EPA 8260D	
Toluene-d8 (Surr)			107 %	80-120		11/22/21 13:36	EPA 8260D	
4-Bromofluorobenzene (Surr)			95 %	80-120 9	% 1	11/22/21 13:36	EPA 8260D	
MW-8 (A1K0890-05)				Matrix: Wat	ter	Batch: 2	21K0848	
Benzene	ND		0.200	ug/L	1	11/19/21 14:25	EPA 8260D	
Toluene	ND		1.00	ug/L	1	11/19/21 14:25	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	11/19/21 14:25	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	11/19/21 14:25	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	11/19/21 14:25	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	11/19/21 14:25	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Reco	very: 99 %	Limits: 80-120 9	% 1	11/19/21 14:25	EPA 8260D	
Toluene-d8 (Surr)			109 %	80-120	% 1	11/19/21 14:25	EPA 8260D	
4-Bromofluorobenzene (Surr)			102 %	80-120 9	% 1	11/19/21 14:25	EPA 8260D	
MW-8D (A1K0890-06)				Matrix: Wat	ter	Batch: 2	21K0848	
Benzene	ND		0.200	ug/L	1	11/19/21 14:52	EPA 8260D	
Toluene	ND		1.00	ug/L	1	11/19/21 14:52	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	11/19/21 14:52	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	11/19/21 14:52	EPA 8260D	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200Project Number:19001-008-03Report ID:Lake Oswego, OR 97035Project Manager:Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

ANALYTICAL SAMPLE RESULTS

	Select	ed volatile Or	ganic Con	pounds by EPA	4 826UD			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-8D (A1K0890-06)				Matrix: Wate	r	Batch: 2	21K0848	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	11/19/21 14:52	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	11/19/21 14:52	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	v: 101 %	Limits: 80-120 %	I	11/19/21 14:52	EPA 8260D	
Toluene-d8 (Surr)			108 %	80-120 %		11/19/21 14:52	EPA 8260D	
4-Bromofluorobenzene (Surr)			99 %	80-120 %	1	11/19/21 14:52	EPA 8260D	
MW-9 (A1K0890-07)				Matrix: Wate	er	Batch: 2	21K0848	
Benzene	ND		0.200	ug/L	1	11/19/21 15:20	EPA 8260D	
Toluene	ND		1.00	ug/L	1	11/19/21 15:20	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	11/19/21 15:20	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	11/19/21 15:20	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	11/19/21 15:20	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	11/19/21 15:20	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	v: 100 %	Limits: 80-120 %	I	11/19/21 15:20	EPA 8260D	
Toluene-d8 (Surr)			108 %	80-120 %	1	11/19/21 15:20	EPA 8260D	
4-Bromofluorobenzene (Surr)			100 %	80-120 %	1	11/19/21 15:20	EPA 8260D	
MW-4 (A1K0890-08)				Matrix: Wate	er	Batch: 2	21K0848	
Benzene	ND		0.200	ug/L	1	11/19/21 15:47	EPA 8260D	
Toluene	ND		1.00	ug/L	1	11/19/21 15:47	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	11/19/21 15:47	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	11/19/21 15:47	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	11/19/21 15:47	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	11/19/21 15:47	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	v: 100 %	Limits: 80-120 %	I	11/19/21 15:47	EPA 8260D	
Toluene-d8 (Surr)			109 %	80-120 %		11/19/21 15:47	EPA 8260D	
4-Bromofluorobenzene (Surr)			101 %	80-120 %	1	11/19/21 15:47	EPA 8260D	
MW-3 (A1K0890-09)				Matrix: Water		Batch: 2		
Benzene	ND		0.200	ug/L	1	11/19/21 16:14	EPA 8260D	
Toluene	ND		1.00	ug/L	1	11/19/21 16:14	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	11/19/21 16:14	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	11/19/21 16:14	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	11/19/21 16:14	EPA 8260D	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200Project Number: 19001-008-03Report ID:Lake Oswego, OR 97035Project Manager: Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

ANALYTICAL SAMPLE RESULTS

	Select	ed Volatile Or	ganic Con	pounds by EP	A 8260D			
A 1.	Sample	Detection	Reporting	TT 1:	D'1 -:	Date	Malanc	3.7
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Note
/IW-3 (A1K0890-09)				Matrix: Wate	er	Batch: 2	21K0848	
Naphthalene	ND		2.00	ug/L	1	11/19/21 16:14	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recover	y: 100 %	Limits: 80-120 %	6 I	11/19/21 16:14	EPA 8260D	
Toluene-d8 (Surr)			109 %	80-120 %	6 1	11/19/21 16:14	EPA 8260D	
4-Bromofluorobenzene (Surr)			100 %	80-120 %	6 I	11/19/21 16:14	EPA 8260D	
/IW-1 (A1K0890-10)				Matrix: Wate	ər	Batch:	21K0848	
Benzene	ND		0.200	ug/L	1	11/19/21 16:41	EPA 8260D	
Toluene	ND		1.00	ug/L	1	11/19/21 16:41	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	11/19/21 16:41	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	11/19/21 16:41	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	11/19/21 16:41	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	11/19/21 16:41	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recover	y: 100 %	Limits: 80-120 %	6 I	11/19/21 16:41	EPA 8260D	
Toluene-d8 (Surr)			109 %	80-120 %	6 I	11/19/21 16:41	EPA 8260D	
4-Bromofluorobenzene (Surr)			100 %	80-120 %	6 I	11/19/21 16:41	EPA 8260D	
/IW-11 (A1K0890-11)				Matrix: Wate	er	Batch:	21K0848	
Benzene	21.8		0.200	ug/L	1	11/19/21 19:52	EPA 8260D	
Toluene	5.02		1.00	ug/L	1	11/19/21 19:52	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	11/19/21 19:52	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ery: 99%	Limits: 80-120 %	6 I	11/19/21 19:52	EPA 8260D	
Toluene-d8 (Surr)			105 %	80-120 %	6 I	11/19/21 19:52	EPA 8260D	
4-Bromofluorobenzene (Surr)			94 %	80-120 %	6 I	11/19/21 19:52	EPA 8260D	
/IW-11 (A1K0890-11RE1)				Matrix: Wate	er	Batch: 2	21K0914	
Ethylbenzene	544		5.00	ug/L	10	11/22/21 14:03	EPA 8260D	
Xylenes, total	21.8		15.0	ug/L	10	11/22/21 14:03	EPA 8260D	
Naphthalene	ND		20.0	ug/L	10	11/22/21 14:03	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ery: 98 %	Limits: 80-120 %	6 I	11/22/21 14:03	EPA 8260D	
Toluene-d8 (Surr)			107 %	80-120 %	6 1	11/22/21 14:03	EPA 8260D	
4-Bromofluorobenzene (Surr)			102 %	80-120 %	6 I	11/22/21 14:03	EPA 8260D	
/W-10 (A1K0890-12)				Matrix: Wate	er	Batch:	21K0848	
Benzene	ND		0.200	ug/L	1	11/19/21 17:08	EPA 8260D	

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200Project Number:19001-008-03Report ID:Lake Oswego, OR 97035Project Manager:Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

ANALYTICAL SAMPLE RESULTS

	Select	ted Volatile O	rganic Con	pounds by EPA	4 8260D			
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW-10 (A1K0890-12)				Matrix: Wate	r	Batch: 2	21K0848	
Ethylbenzene	ND		0.500	ug/L	1	11/19/21 17:08	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	11/19/21 17:08	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	11/19/21 17:08	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	11/19/21 17:08	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ery: 100 %	Limits: 80-120 %	1	11/19/21 17:08	EPA 8260D	
Toluene-d8 (Surr)			109 %	80-120 %	1	11/19/21 17:08	EPA 8260D	
4-Bromofluorobenzene (Surr)			101 %	80-120 %	1	11/19/21 17:08	EPA 8260D	
MW-6 (A1K0890-13)				Matrix: Wate	er	Batch:	21K0848	
Benzene	181		0.200	ug/L	1	11/19/21 18:30	EPA 8260D	
Toluene	22.3		1.00	ug/L	1	11/19/21 18:30	EPA 8260D	
Xylenes, total	208		1.50	ug/L	1	11/19/21 18:30	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	11/19/21 18:30	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Reco	very: 96 %	Limits: 80-120 %	1	11/19/21 18:30	EPA 8260D	
Toluene-d8 (Surr)			104 %	80-120 %	1	11/19/21 18:30	EPA 8260D	
4-Bromofluorobenzene (Surr)			87 %	80-120 %	1	11/19/21 18:30	EPA 8260D	
MW-6 (A1K0890-13RE1)				Matrix: Wate	er	Batch:	21K0914	
Ethylbenzene	1500		12.5	ug/L	25	11/22/21 14:30	EPA 8260D	
Naphthalene	281		50.0	ug/L	25	11/22/21 14:30	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Reco	very: 96 %	Limits: 80-120 %	1	11/22/21 14:30	EPA 8260D	
Toluene-d8 (Surr)			106 %	80-120 %	1	11/22/21 14:30	EPA 8260D	
4-Bromofluorobenzene (Surr)			95 %	80-120 %	I	11/22/21 14:30	EPA 8260D	
MW-2 (A1K0890-14)				Matrix: Wate	er	Batch:	21K0848	
Benzene	ND		0.200	ug/L	1	11/19/21 17:36	EPA 8260D	
Toluene	ND		1.00	ug/L	1	11/19/21 17:36	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	11/19/21 17:36	EPA 8260D	
Xylenes, total	ND		1.50	ug/L	1	11/19/21 17:36	EPA 8260D	
Methyl tert-butyl ether (MTBE)	2.78		1.00	ug/L	1	11/19/21 17:36	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	11/19/21 17:36	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Reco	very: 97 %	Limits: 80-120 %	1	11/19/21 17:36	EPA 8260D	
Toluene-d8 (Surr)			110 %	80-120 %	1	11/19/21 17:36	EPA 8260D	
4-Bromofluorobenzene (Surr)			100 %	80-120 %	1	11/19/21 17:36	EPA 8260D	

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ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: 19001-008-03

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

Report ID: A1K0890 - 12 01 21 1726

QUALITY CONTROL (QC) SAMPLE RESULTS

		D	iesel and/o	or Oil Hyd	rocarbor	is by NW	IPH-Dx					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 21K0946 - EPA 3510C (Fuels/Acid	Ext.)					Wa	iter				
Blank (21K0946-BLK1)			Prepared	1: 11/22/21	13:09 Ana	lyzed: 11/22	/21 22:51					
NWTPH-Dx												
Diesel	ND		0.182	mg/L	1							
Oil	ND		0.364	mg/L	1							
Surr: o-Terphenyl (Surr)		Rece	overy: 83 %	Limits: 50)-150 %	Dili	ution: 1x					
LCS (21K0946-BS1)			Prepared	d: 11/22/21	13:09 Ana	lyzed: 11/22	/21 23:12					
NWTPH-Dx												
Diesel	0.982		0.200	mg/L	1	1.25		79	36-132%			
Surr: o-Terphenyl (Surr)		Rece	overy: 97 %	Limits: 50)-150 %	Dili	ution: 1x					
LCS Dup (21K0946-BSD1)			Prepared	d: 11/22/21	13:09 Ana	lyzed: 11/22	/21 23:32					Q-1
NWTPH-Dx												
Diesel	1.10		0.200	mg/L	1	1.25		88	36-132%	11	30%	
Surr: o-Terphenyl (Surr)		Rece	overy: 95 %	Limits: 50)-150 %	Dili	ution: 1x					
Batch 21K1079 - EPA 3510C (Fuels/Acid	Ext.)					Wa	iter				
Blank (21K1079-BLK1)			Prepared	1: 11/24/21	12:29 Ana	lyzed: 11/24	/21 23:09					
NWTPH-Dx												
Diesel	ND		0.182	mg/L	1							
Oil	ND		0.364	mg/L	1							
Surr: o-Terphenyl (Surr)		Reco	overy: 94 %	Limits: 50	1-150 %	Dili	ution: 1x					
LCS (21K1079-BS1)			Prepared	d: 11/24/21	12:29 Ana	lyzed: 11/24	/21 23:29					
NWTPH-Dx												
Diesel	1.03		0.200	mg/L	1	1.25		82	36-132%			
Surr: o-Terphenyl (Surr)		Rece	overy: 93 %	Limits: 50	150 %	Dili	ution: 1x		· · · · · ·			
LCS Dup (21K1079-BSD1)			Prepared	d: 11/24/21	12:29 Ana	lyzed: 11/24	/21 23:49					Q-1
NWTPH-Dx												
Diesel	1.10		0.200	mg/L	1	1.25		88	36-132%	7	30%	
Diesei												

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Wind or Manual



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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200Project Number:19001-008-03Report ID:Lake Oswego, OR 97035Project Manager:Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

QUALITY CONTROL (QC) SAMPLE RESULTS

	Gasolir	ne Range H	lydrocarbo	ons (Ben	zene thro	ugh Naphi	thalene)	by NWTP	H-Gx			
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 21K0848 - EPA 5030B							Wa	ter				
Blank (21K0848-BLK1)			Prepared	d: 11/19/21	07:30 Anal	yzed: 11/19/	/21 09:53					
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1							
Surr: 4-Bromofluorobenzene (Sur)		Rece	overy: 93 %	Limits: 5	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			113 %	50	0-150 %		"					
LCS (21K0848-BS2)			Prepared	d: 11/19/21	07:30 Anal	yzed: 11/19/	/21 09:26					
NWTPH-Gx (MS)												
Gasoline Range Organics	0.518		0.100	mg/L	1	0.500		104	80-120%			
Surr: 4-Bromofluorobenzene (Sur)		Reco	overy: 94 %	Limits: 5	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			108 %	50	0-150 %		"					
Duplicate (21K0848-DUP1)			Prepared	d: 11/19/21	09:55 Anal	yzed: 11/19/	/21 10:48					
QC Source Sample: Non-SDG (A1	K0912-01)											
Gasoline Range Organics	ND		0.100	mg/L	1		ND				30%	
Surr: 4-Bromofluorobenzene (Sur)		Reco	overy: 93 %	Limits: 5	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			111 %	50	0-150 %		"					
Duplicate (21K0848-DUP2)			Prepared	d: 11/19/21	09:55 Anal	lyzed: 11/19/	/21 18:03					
QC Source Sample: MW-2 (A1K)	0890-14)											
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1		0.0722			***	30%	
Surr: 4-Bromofluorobenzene (Sur)		Reco	overy: 93 %	Limits: 5	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			110 %	50	0-150 %		"					

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GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200Project Number:19001-008-03Report ID:Lake Oswego, OR 97035Project Manager:Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

QUALITY CONTROL (QC) SAMPLE RESULTS

	Gasolir	ne Range F	lydrocarbo	ons (Ben	zene thro	ugh Naph	thalene)	by NWTP	H-Gx			
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 21K0896 - EPA 5030B							Wat	ter				
Blank (21K0896-BLK1)			Prepared	d: 11/21/21	12:30 Anal	lyzed: 11/21/	/21 15:03					
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1							
Surr: 4-Bromofluorobenzene (Sur)		Reco	overy: 99 %	Limits: 5	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			101 %	5	0-150 %		"					
LCS (21K0896-BS2)			Prepared	d: 11/21/21	12:30 Ana	yzed: 11/21/	/21 14:09					
NWTPH-Gx (MS)												
Gasoline Range Organics	0.427		0.100	mg/L	1	0.500		85	80-120%			
Surr: 4-Bromofluorobenzene (Sur)		Reco	overy: 98 %	Limits: 5	0-150 %	Dilı	ution: 1x					
1,4-Difluorobenzene (Sur)			96 %	5	0-150 %		"					
Duplicate (21K0896-DUP1)			Prepared	d: 11/21/21	14:00 Ana	yzed: 11/21/	/21 16:50					
QC Source Sample: MW-7 (A1K0	0890-01)											
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1		ND				30%	
Surr: 4-Bromofluorobenzene (Sur)		Reco	overy: 99 %	Limits: 5	0-150 %	Dilı	ution: 1x					_
1,4-Difluorobenzene (Sur)			102 %	5	0-150 %		"					

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4000 Kruse Way Place, Bldg 3 Suite 200Project Number: 19001-008-03Report ID:Lake Oswego, OR 97035Project Manager: Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

QUALITY CONTROL (QC) SAMPLE RESULTS

	Gasolir	ne Range H	lydrocarbo	ons (Benz	zene throu	igh Naphi	thalene)	by NWTP	H-Gx			
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 21K0914 - EPA 5030B							Wa	ter				
Blank (21K0914-BLK1)			Prepare	d: 11/22/21	08:00 Anal	yzed: 11/22/	21 12:42					
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.100	mg/L	1							
Surr: 4-Bromofluorobenzene (Sur)		Reco	overy: 94 %	Limits: 50	0-150 %	Dilu	ution: 1x					
1,4-Difluorobenzene (Sur)			112 %	50	0-150 %		"					
LCS (21K0914-BS2)			Prepare	d: 11/22/21	08:00 Anal	yzed: 11/22/	21 12:14					
NWTPH-Gx (MS)												
Gasoline Range Organics	0.531		0.100	mg/L	1	0.500		106	80-120%			
Surr: 4-Bromofluorobenzene (Sur)		Reco	overy: 97 %	Limits: 50	0-150 %	Dilu	ition: 1x				<u> </u>	
1,4-Difluorobenzene (Sur)			109 %	50	0-150 %		"					
Duplicate (21K0914-DUP1)			Prepare	d: 11/22/21	10:56 Anal	yzed: 11/22/	21 15:52					
QC Source Sample: Non-SDG (A1	K0959-02)											
Gasoline Range Organics	ND		0.100	mg/L	1		ND				30%	
Surr: 4-Bromofluorobenzene (Sur)		Reco	overy: 94 %	Limits: 50	0-150 %	Dilu	tion: 1x					
1,4-Difluorobenzene (Sur)			110 %	50	0-150 %		"					
Duplicate (21K0914-DUP2)			Prepare	d: 11/22/21	10:56 Anal	yzed: 11/22/	21 19:56					
QC Source Sample: Non-SDG (A1	K0993-01)											
Gasoline Range Organics	ND		0.100	mg/L	1		ND				30%	
Surr: 4-Bromofluorobenzene (Sur)		Reco	overy: 92 %	Limits: 50	0-150 %	Dilu	ition: 1x					
1,4-Difluorobenzene (Sur)			112 %	50	0-150 %		"					

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Darrell Auvil, Client Services Manager



Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200Project Number: 19001-008-03Report ID:Lake Oswego, OR 97035Project Manager: Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

QUALITY CONTROL (QC) SAMPLE RESULTS

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 21K0848 - EPA 5030B							Wat	ter				
Blank (21K0848-BLK1)			Prepared	: 11/19/21	07:30 Anal	yzed: 11/19/						
EPA 8260D			1			<u>, </u>						
Benzene	ND		0.200	ug/L	1							
Toluene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Xylenes, total	ND		1.50	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		2.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1							
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1							
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 101 %	Limits: 80	0-120 %	Dilı	ıtion: 1x					
Toluene-d8 (Surr)			109 %		0-120 %		"					
4-Bromofluorobenzene (Surr)			101 %	80)-120 %		"					
LCS (21K0848-BS1)			Prepared	: 11/19/21 (07:30 Anal	yzed: 11/19/	/21 08:53					
EPA 8260D			1			-						
Benzene	21.2		0.200	ug/L	1	20.0		106	80-120%			
Toluene	20.2		1.00	ug/L	1	20.0		101	80-120%			
Ethylbenzene	22.2		0.500	ug/L	1	20.0		111	80-120%			
Xylenes, total	63.2		1.50	ug/L	1	60.0		105	80-120%			
Methyl tert-butyl ether (MTBE)	19.2		1.00	ug/L	1	20.0		96	80-120%			
Naphthalene	17.7		2.00	ug/L	1	20.0		88	80-120%			
1,2-Dibromoethane (EDB)	21.8		0.500	ug/L	1	20.0		109	80-120%			
1,2-Dichloroethane (EDC)	23.0		0.500	ug/L	1	20.0		115	80-120%			
Isopropylbenzene	20.2		1.00	ug/L	1	20.0		101	80-120%			
1,2,4-Trimethylbenzene	21.9		1.00	ug/L	1	20.0		109	80-120%			
1,3,5-Trimethylbenzene	21.7		1.00	ug/L	1	20.0		109	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Rec	overy: 98 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			104 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			90 %	80	-120 %		"					

Duplicate (21K0848-DUP1)

Prepared: 11/19/21 09:55 Analyzed: 11/19/21 10:48

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Report ID:

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: 19001-008-03

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbu

Project Manager: Stephanie Bosze-Salisbury A1K0890 - 12 01 21 1726

QUALITY CONTROL (QC) SAMPLE RESULTS

		Sele	cted Volati	e Organi	c Compo	unas by E	=PA 8260	טו				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 21K0848 - EPA 5030B							Wa	ter				
Duplicate (21K0848-DUP1)			Prepared	1: 11/19/21	09:55 Anal	yzed: 11/19	/21 10:48					
QC Source Sample: Non-SDG (A1	K0912-01)											
Benzene	ND		0.200	ug/L	1		ND				30%	
Toluene	ND		1.00	ug/L	1		ND				30%	
Ethylbenzene	ND		0.500	ug/L	1		ND				30%	
Xylenes, total	ND		1.50	ug/L	1		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1		ND				30%	
Naphthalene	ND		2.00	ug/L	1		ND				30%	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1		ND				30%	
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1		ND				30%	
Isopropylbenzene	ND		1.00	ug/L	1		ND				30%	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 100 %	Limits: 80	0-120 %	Dila	ution: 1x					
Toluene-d8 (Surr)			108 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			102 %		-120 %		"					
Duplicate (21K0848-DUP2) QC Source Sample: MW-2 (A1K0	0890-14)		Prepared	1: 11/19/21	09:55 Anal	lyzed: 11/19	/21 18:03					
EPA 8260D												
Benzene	ND		0.200	ug/L	1		ND				30%	
Toluene	ND		1.00	ug/L	1		ND				30%	
Ethylbenzene	ND		0.500	ug/L	1		ND				30%	
Xylenes, total	ND		1.50	ug/L	1		ND				30%	
Methyl tert-butyl ether (MTBE)	2.65		1.00	ug/L	1		2.78			5	30%	
Naphthalene	ND		2.00	ug/L	1		ND				30%	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1		ND				30%	
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1		ND				30%	
Isopropylbenzene	ND		1.00	ug/L	1		ND				30%	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
•	ND		1.00	ug/L	1		ND				30%	
1,5,5-1rimeinyibenzene	ND											
· · · · · · · · · · · · · · · · · · ·	ND	Rec	overy: 99 %	Limits: 80	0-120 %	Dili	ution: 1x					
1,3,5-Trimethylbenzene Surr: 1,4-Difluorobenzene (Surr) Toluene-d8 (Surr)	ND	Rec	overy: 99 % 109 %	Limits: 80	0-120 % 0-120 %	Dili	ution: 1x					

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: 19001-008-03

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

88 %

Report ID: A1K0890 - 12 01 21 1726

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D Detection Reporting Spike % REC RPD Source Dilution Analyte Result Limit Units Result % REC Limits RPD Limit Amount Limit Notes Water Batch 21K0848 - EPA 5030B Matrix Spike (21K0848-MS1) Prepared: 11/19/21 09:55 Analyzed: 11/19/21 13:31 QC Source Sample: Non-SDG (A1K0936-12) EPA 8260D 0.200 22.9 ug/L 1 20.0 ND 114 79-120% Benzene Toluene 21.2 1.00 ug/L 1 20.0 ND 106 80-121% Ethylbenzene 0.500 20.0 79-121% 23.6 ug/L 1 ND 118 Xylenes, total 67.5 1.50 ug/L 1 60.0 ND 112 79-121% 20.0 Methyl tert-butyl ether (MTBE) 19.6 1.00 ND 98 71-124% ug/L 1 Naphthalene 19.6 2.00 20.0 ND 98 61-128% ug/L 1 20.0 1,2-Dibromoethane (EDB) 23.2 0.500 ND 116 77-121% ug/L 1 1,2-Dichloroethane (EDC) 23.7 0.500 20.0 ND 118 73-128% ug/L 1 22.0 20.0 ND Isopropylbenzene 1.00 ug/L 1 110 72-131% 1,2,4-Trimethylbenzene 22.5 1.00 ug/L 1 20.0 ND 113 76-124% 1,3,5-Trimethylbenzene 22.8 1.00 20.0 ND 75-124% ug/L 114 ---Surr: 1,4-Difluorobenzene (Surr) 99% Limits: 80-120 % Dilution: 1x Recovery: Toluene-d8 (Surr) 103 % 80-120 %

80-120 %

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4-Bromofluorobenzene (Surr)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200Project Number:19001-008-03Report ID:Lake Oswego, OR 97035Project Manager:Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

QUALITY CONTROL (QC) SAMPLE RESULTS

			cted Volati		•							
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 21K0896 - EPA 5030B							Wa	ter				
Blank (21K0896-BLK1)			Prepared	d: 11/21/21	12:30 Ana	lyzed: 11/21/	/21 15:03					
EPA 8260D												
Benzene	ND		0.200	ug/L	1							
Toluene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Xylenes, total	ND		1.50	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		2.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1							
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1							
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Recov	very: 101 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			98 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			107 %	80)-120 %		"					
LCS (21K0896-BS1)			Prepared	d: 11/21/21	12:30 Ana	yzed: 11/21/	/21 13:36					
EPA 8260D												
Benzene	18.4		0.200	ug/L	1	20.0		92	80-120%			
Toluene	19.4		1.00	ug/L	1	20.0		97	80-120%			
Ethylbenzene	20.3		0.500	ug/L	1	20.0		101	80-120%			
Xylenes, total	64.2		1.50	ug/L	1	60.0		107	80-120%			
Methyl tert-butyl ether (MTBE)	19.6		1.00	ug/L	1	20.0		98	80-120%			
Naphthalene	16.1		2.00	ug/L	1	20.0		81	80-120%			
1,2-Dibromoethane (EDB)	21.5		0.500	ug/L	1	20.0		107	80-120%			
1,2-Dichloroethane (EDC)	22.2		0.500	ug/L	1	20.0		111	80-120%			
Isopropylbenzene	21.7		1.00	ug/L	1	20.0		109	80-120%			
1,2,4-Trimethylbenzene	23.0		1.00	ug/L	1	20.0		115	80-120%			
1,3,5-Trimethylbenzene	22.6		1.00	ug/L	1	20.0		113	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	overy: 95 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			96 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			97%	80	0-120 %		"					

Duplicate (21K0896-DUP1)

Prepared: 11/21/21 14:00 Analyzed: 11/21/21 16:50

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Report ID:

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200Project Number: 19001-008-03Lake Oswego, OR 97035Project Manager: Stephanie Bosze-Salisbury

Project Manager: Stephanie Bosze-Salisbury A1K0890 - 12 01 21 1726

QUALITY CONTROL (QC) SAMPLE RESULTS

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 21K0896 - EPA 5030B							Wa	ter				
Duplicate (21K0896-DUP1)			Prepared	: 11/21/21	4:00 Anal	yzed: 11/21/	21 16:50					
QC Source Sample: MW-7 (A1K0	<u> 1890-01)</u>											
EPA 8260D												
Benzene	ND		0.200	ug/L	1		ND				30%	
Toluene	ND		1.00	ug/L	1		ND				30%	
Ethylbenzene	ND		0.500	ug/L	1		ND				30%	
Xylenes, total	ND		1.50	ug/L	1		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1		ND				30%	
Naphthalene	ND		2.00	ug/L	1		ND				30%	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1		ND				30%	
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1		ND				30%	
Isopropylbenzene	ND		1.00	ug/L	1		ND				30%	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 101 %	Limits: 80	-120 %	Dilu	ution: 1x					
Toluene-d8 (Surr)			98 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			106 %	80	-120 %		"					
Matrix Spike (21K0896-MS1)			Prepared	: 11/21/21	4:00 Anal	yzed: 11/21/	21 19:56					
QC Source Sample: Non-SDG (A1	K0961-01)											
EPA 8260D	10.5		0.200	7	1	20.0	NID	00	70.1200/			
Benzene	19.5		0.200	ug/L	1	20.0	ND	98	79-120%			
Toluene	20.4		1.00	ug/L	1	20.0	ND	102	80-121%			
Ethylbenzene Vylones, total	21.3 67.3		0.500 1.50	ug/L	1 1	20.0	ND ND	106 112	79-121% 79-121%			
Xylenes, total	19.7		1.00	ug/L		60.0 20.0	ND ND	99	79-121%			
				ug/L	1							
Methyl tert-butyl ether (MTBE)			2.00	ug/L	1	20.0	ND	74	61-128%			
Naphthalene	14.7			ug/L	1	20.0	ND	107	77-121%			
Naphthalene 1,2-Dibromoethane (EDB)	21.4		0.500		1							
Naphthalene 1,2-Dibromoethane (EDB) 1,2-Dichloroethane (EDC)	21.4 23.2		0.500	ug/L	1	20.0	ND	116	73-128%			
Naphthalene 1,2-Dibromoethane (EDB) 1,2-Dichloroethane (EDC) Isopropylbenzene	21.4 23.2 22.9		0.500 1.00	ug/L ug/L	1	20.0	ND	114	72-131%			
Naphthalene 1,2-Dibromoethane (EDB) 1,2-Dichloroethane (EDC) Isopropylbenzene 1,2,4-Trimethylbenzene	21.4 23.2 22.9 23.6	 	0.500 1.00 1.00	ug/L ug/L ug/L	1 1	20.0 20.0	ND ND	114 118	72-131% 76-124%			
Naphthalene 1,2-Dibromoethane (EDB) 1,2-Dichloroethane (EDC) Isopropylbenzene	21.4 23.2 22.9	 	0.500 1.00	ug/L ug/L	1 1 1	20.0 20.0 20.0	ND	114	72-131%			

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200Project Number:19001-008-03Report ID:Lake Oswego, OR 97035Project Manager:Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D Detection Reporting Spike Source % REC **RPD** % REC Analyte Result Ĺimit Units Dilution Amount Result Limits RPD Limit Notes Limit Batch 21K0896 - EPA 5030B Water Matrix Spike (21K0896-MS1) Prepared: 11/21/21 14:00 Analyzed: 11/21/21 19:56

QC Source Sample: Non-SDG (A1K0961-01)

Surr: 4-Bromofluorobenzene (Surr) Recovery: 96 % Limits: 80-120 % Dilution: Ix

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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: 19001-008-03

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

Report ID: A1K0890 - 12 01 21 1726

QUALITY CONTROL (QC) SAMPLE RESULTS

		Sele	cted Volatil	e Organi	c Compo	unds by E	PA 8260	טו				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 21K0914 - EPA 5030B							Wa	ter				
Blank (21K0914-BLK1)			Prepared	d: 11/22/21	08:00 Anal	yzed: 11/22/	21 12:42					
EPA 8260D												
Benzene	ND		0.200	ug/L	1							
Toluene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Xylenes, total	ND		1.50	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		2.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1							
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1							
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Rece	overy: 98 %	Limits: 80	0-120 %	Dilu	tion: 1x					
Toluene-d8 (Surr)			109 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			103 %	80	-120 %		"					
LCS (21K0914-BS1)			Prepared	d: 11/22/21	08:00 Anal	yzed: 11/22/	/21 11:38					
EPA 8260D												
Benzene	20.3		0.200	ug/L	1	20.0		102	80-120%			
Toluene	19.6		1.00	ug/L	1	20.0		98	80-120%			
Ethylbenzene	21.8		0.500	ug/L	1	20.0		109	80-120%			
Xylenes, total	62.5		1.50	ug/L	1	60.0		104	80-120%			
Methyl tert-butyl ether (MTBE)	18.4		1.00	ug/L	1	20.0		92	80-120%			
Naphthalene	18.8		2.00	ug/L	1	20.0		94	80-120%			
1,2-Dibromoethane (EDB)	22.2		0.500	ug/L	1	20.0		111	80-120%			
1,2-Dichloroethane (EDC)	21.7		0.500	ug/L	1	20.0		109	80-120%			
Isopropylbenzene	20.2		1.00	ug/L	1	20.0		101	80-120%			
1,2,4-Trimethylbenzene	21.8		1.00	ug/L	1	20.0		109	80-120%			
1,3,5-Trimethylbenzene	21.8		1.00	ug/L	1	20.0		109	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Rece	overy: 95 %	Limits: 80	0-120 %	Dilu	tion: 1x					
Toluene-d8 (Surr)			104 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			91 %		-120 %		"					

Duplicate (21K0914-DUP1)

Prepared: 11/22/21 10:56 Analyzed: 11/22/21 15:52

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200Project Number:19001-008-03Report ID:Lake Oswego, OR 97035Project Manager:Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

QUALITY CONTROL (QC) SAMPLE RESULTS

		Sele	cted Volati	e Organi	c Compo	unds by E	PA 8260	ט				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 21K0914 - EPA 5030B							Wa	ter				
Duplicate (21K0914-DUP1)			Prepared	1: 11/22/21	10:56 Ana	lyzed: 11/22	/21 15:52					
QC Source Sample: Non-SDG (A1	K0959-02)											
Benzene	ND		0.200	ug/L	1		ND				30%	
Toluene	ND		1.00	ug/L	1		ND				30%	
Ethylbenzene	ND		0.500	ug/L	1		ND				30%	
Xylenes, total	ND		1.50	ug/L	1		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1		ND				30%	
Naphthalene	ND		2.00	ug/L	1		ND				30%	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1		ND				30%	
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1		ND				30%	
Isopropylbenzene	ND		1.00	ug/L	1		ND				30%	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Rec	overy: 99 %	Limits: 80	0-120 %	Dilt	ution: 1x					
Toluene-d8 (Surr)			107 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			102 %	80)-120 %		"					
Duplicate (21K0914-DUP2)			Prepared	1: 11/22/21	10:56 Anal	lyzed: 11/22	/21 19:56					
QC Source Sample: Non-SDG (A1	K0993-01)											
Benzene	ND		0.200	ug/L	1		ND				30%	
Toluene	ND		1.00	ug/L	1		ND				30%	
Ethylbenzene	ND		0.500	ug/L	1		ND				30%	
Xylenes, total	ND		1.50	ug/L	1		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1		ND				30%	
Naphthalene	ND		2.00	ug/L	1		ND				30%	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1		ND				30%	
1,2-Dichloroethane (EDC)	ND		0.500	ug/L	1		ND				30%	
Isopropylbenzene	ND		1.00	ug/L	1		ND				30%	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 100 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			108 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			101 %	80	-120 %		"					

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Darrell Auvil, Client Services Manager



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6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

Report ID:

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200
Project Number: 19001-008-03
Lake Oswego, OR 97035
Project Manager: Stephanie Bosze-Salisbury

Project Manager: Stephanie Bosze-Salisbury A1K0890 - 12 01 21 1726

QUALITY CONTROL (QC) SAMPLE RESULTS Selected Volatile Organic Compounds by EPA 8260D

Detection Reporting Spike Source % REC **RPD** % REC Analyte Result Ĺimit Units Dilution Amount Result Limits RPD Limit Notes Limit

Batch 21K0914 - EPA 5030B							Wa	ater			
Matrix Spike (21K0914-MS1)			Prepared	d: 11/22/21 10	:56 Ana	alyzed: 11/22	/21 17:40				
QC Source Sample: Non-SDG (A1k	<u>(0959-05)</u>										
EPA 8260D											
Benzene	26.4		0.200	ug/L	1	20.0	ND	132	79-120%	 	Q-0
Toluene	25.2		1.00	ug/L	1	20.0	ND	126	80-121%	 	Q-0
Ethylbenzene	28.3		0.500	ug/L	1	20.0	ND	142	79-121%	 	Q-0
Xylenes, total	81.8		1.50	ug/L	1	60.0	ND	136	79-121%	 	Q-0
Methyl tert-butyl ether (MTBE)	23.4		1.00	ug/L	1	20.0	ND	117	71-124%	 	
Naphthalene	24.6		2.00	ug/L	1	20.0	ND	123	61-128%	 	
1,2-Dibromoethane (EDB)	27.8		0.500	ug/L	1	20.0	ND	139	77-121%	 	Q-0
1,2-Dichloroethane (EDC)	27.3		0.500	ug/L	1	20.0	ND	137	73-128%	 	Q-0
Isopropylbenzene	26.7		1.00	ug/L	1	20.0	ND	133	72-131%	 	Q-0
1,2,4-Trimethylbenzene	28.1		1.00	ug/L	1	20.0	ND	141	76-124%	 	Q-0
1,3,5-Trimethylbenzene	28.0		1.00	ug/L	1	20.0	ND	140	75-124%	 	Q-0
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 97%	Limits: 80-1	20 %	Dili	ution: 1x				_
Toluene-d8 (Surr)			104 %	80-1	20 %		"				
4-Bromofluorobenzene (Surr)			91 %	80-1	20 %		"				

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Report ID:

A1K0890 - 12 01 21 1726

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200 Project Number: 19001-008-03

Lake Oswego, OR 97035 Project Manager: Stephanie Bosze-Salisbury

SAMPLE PREPARATION INFORMATION

	Diesel and/or Oil Hydrocarbons by NWTPH-Dx													
Prep: EPA 3510C (F	uels/Acid Ext.)				Sample	Default	RL Prep							
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor							
Batch: 21K0946														
A1K0890-01	Water	NWTPH-Dx	11/16/21 10:07	11/22/21 13:09	1060mL/5mL	1000mL/5mL	0.94							
A1K0890-02	Water	NWTPH-Dx	11/16/21 11:12	11/22/21 13:09	1050mL/5mL	1000mL/5mL	0.95							
A1K0890-03	Water	NWTPH-Dx	11/16/21 11:34	11/22/21 13:09	1050 mL/5 mL	1000mL/5mL	0.95							
A1K0890-04	Water	NWTPH-Dx	11/16/21 11:34	11/22/21 13:09	1050mL/5mL	1000mL/5mL	0.95							
A1K0890-05	Water	NWTPH-Dx	11/16/21 12:28	11/22/21 13:09	1040mL/5mL	1000mL/5mL	0.96							
A1K0890-06	Water	NWTPH-Dx	11/16/21 12:57	11/22/21 13:09	1060mL/5mL	1000mL/5mL	0.94							
A1K0890-07	Water	NWTPH-Dx	11/16/21 13:34	11/22/21 13:09	1060 mL/5 mL	1000 mL/5 mL	0.94							
Batch: 21K1079														
A1K0890-08	Water	NWTPH-Dx	11/17/21 07:49	11/24/21 13:17	1060mL/5mL	1000mL/5mL	0.94							
A1K0890-09	Water	NWTPH-Dx	11/17/21 08:46	11/24/21 13:17	1050mL/5mL	1000mL/5mL	0.95							
A1K0890-10	Water	NWTPH-Dx	11/17/21 09:47	11/24/21 13:17	1060mL/5mL	1000mL/5mL	0.94							
A1K0890-11	Water	NWTPH-Dx	11/17/21 10:26	11/24/21 13:17	1060mL/5mL	1000mL/5mL	0.94							
A1K0890-12	Water	NWTPH-Dx	11/17/21 11:54	11/24/21 13:17	1060mL/5mL	1000mL/5mL	0.94							
A1K0890-13	Water	NWTPH-Dx	11/17/21 12:32	11/24/21 13:17	1030mL/5mL	1000mL/5mL	0.97							
A1K0890-14	Water	NWTPH-Dx	11/17/21 11:07	11/24/21 13:17	1060mL/5mL	1000mL/5mL	0.94							

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx													
Prep: EPA 5030B					Sample	Default	RL Prep						
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor						
Batch: 21K0848													
A1K0890-05	Water	NWTPH-Gx (MS)	11/16/21 12:28	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00						
A1K0890-06	Water	NWTPH-Gx (MS)	11/16/21 12:57	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00						
A1K0890-07	Water	NWTPH-Gx (MS)	11/16/21 13:34	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00						
A1K0890-08	Water	NWTPH-Gx (MS)	11/17/21 07:49	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00						
A1K0890-09	Water	NWTPH-Gx (MS)	11/17/21 08:46	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00						
A1K0890-10	Water	NWTPH-Gx (MS)	11/17/21 09:47	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00						
A1K0890-12	Water	NWTPH-Gx (MS)	11/17/21 11:54	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00						
A1K0890-14	Water	NWTPH-Gx (MS)	11/17/21 11:07	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00						
Batch: 21K0896													
A1K0890-01	Water	NWTPH-Gx (MS)	11/16/21 10:07	11/21/21 14:00	5mL/5mL	5mL/5mL	1.00						
A1K0890-02	Water	NWTPH-Gx (MS)	11/16/21 11:12	11/21/21 14:00	5mL/5mL	5mL/5mL	1.00						
Batch: 21K0914													
A1K0890-03RE1	Water	NWTPH-Gx (MS)	11/16/21 11:34	11/22/21 10:56	5mL/5mL	5mL/5mL	1.00						
A1K0890-04RE1	Water	NWTPH-Gx (MS)	11/16/21 11:34	11/22/21 10:56	5mL/5mL	5mL/5mL	1.00						

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ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200Project Number: 19001-008-03Report ID:Lake Oswego, OR 97035Project Manager: Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

SAMPLE PREPARATION INFORMATION

	Gas	soline Range Hydrocart	oons (Benzene thro	ugh Naphthalene) b	y NWTPH-Gx		
Prep: EPA 5030B					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
A1K0890-11RE1	Water	NWTPH-Gx (MS)	11/17/21 10:26	11/22/21 10:56	5mL/5mL	5mL/5mL	1.00
A1K0890-13RE1	Water	NWTPH-Gx (MS)	11/17/21 12:32	11/22/21 10:56	5mL/5mL	5mL/5mL	1.00

		Selected Vol	atile Organic Compo	unds by EPA 8260D)		
Prep: EPA 5030B			<u> </u>		Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 21K0848							
A1K0890-03	Water	EPA 8260D	11/16/21 11:34	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00
A1K0890-04	Water	EPA 8260D	11/16/21 11:34	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00
A1K0890-05	Water	EPA 8260D	11/16/21 12:28	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00
A1K0890-06	Water	EPA 8260D	11/16/21 12:57	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00
A1K0890-07	Water	EPA 8260D	11/16/21 13:34	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00
A1K0890-08	Water	EPA 8260D	11/17/21 07:49	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00
A1K0890-09	Water	EPA 8260D	11/17/21 08:46	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00
A1K0890-10	Water	EPA 8260D	11/17/21 09:47	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00
A1K0890-11	Water	EPA 8260D	11/17/21 10:26	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00
A1K0890-12	Water	EPA 8260D	11/17/21 11:54	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00
A1K0890-13	Water	EPA 8260D	11/17/21 12:32	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00
A1K0890-14	Water	EPA 8260D	11/17/21 11:07	11/19/21 09:55	5mL/5mL	5mL/5mL	1.00
Batch: 21K0896							
A1K0890-01	Water	EPA 8260D	11/16/21 10:07	11/21/21 14:00	5mL/5mL	5mL/5mL	1.00
A1K0890-02	Water	EPA 8260D	11/16/21 11:12	11/21/21 14:00	5mL/5mL	5mL/5mL	1.00
Batch: 21K0914							
A1K0890-03RE1	Water	EPA 8260D	11/16/21 11:34	11/22/21 10:56	5mL/5mL	5mL/5mL	1.00
A1K0890-04RE1	Water	EPA 8260D	11/16/21 11:34	11/22/21 10:56	5mL/5mL	5mL/5mL	1.00
A1K0890-11RE1	Water	EPA 8260D	11/17/21 10:26	11/22/21 10:56	5mL/5mL	5mL/5mL	1.00
A1K0890-13RE1	Water	EPA 8260D	11/17/21 12:32	11/22/21 10:56	5mL/5mL	5mL/5mL	1.00

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ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200Project Number:19001-008-03Report ID:Lake Oswego, OR 97035Project Manager:Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

F-18 Result for Diesel (Diesel Range Organics, C12-C24) is due to overlap from Gasoline or a Gasoline Range product.

Q-01 Spike recovery and/or RPD is outside acceptance limits.

Q-19 Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for

analysis.

R-06 Reporting level raised due to possible carryover from a previous sample.

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).

If no value is listed ('----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.

The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")

See Percent Solids section for details of dry weight analysis.

"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

"---" QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).

- -For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
- -For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) -EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the <u>exception</u> of any analyte(s) listed below:

Apex Laboratories

Matrix Analysis TNI_ID Analyte TNI_ID Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.

Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

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Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323 ORELAP ID: OR100062

GeoEngineers Project: Nustar-Vancouver Annex

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Apex Laboratories



Apex Laboratories, LLC

6700 S.W. Sandburg Street Tigard, OR 97223 503-718-2323

ORELAP ID: OR100062

GeoEngineers Project: <u>Nustar-Vancouver Annex</u>

4000 Kruse Way Place, Bldg 3 Suite 200Project Number:19001-008-03Report ID:Lake Oswego, OR 97035Project Manager:Stephanie Bosze-SalisburyA1K0890 - 12 01 21 1726

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GeoEngineers

Project:

Nustar-Vancouver Annex

4000 Kruse Way Place, Bldg 3 Suite 200

Project Number: 19001-008-03

Lake Oswego, OR 97035

Project Manager: Stephanie Bosze-Salisbury

Report ID: A1K0890 - 12 01 21 1726

	COOLER RECEIPT FORM
Client: GROENGINEURS	Element WO#: A1
Project/Project#: <u>NUSTUV Vanne</u>	× GWM 4021 19001-008-03
Delivery Info: Date/time received: 1177 @ 1455 Delivered by: Apex Client ESS Fector Inspection Chain of Custody included? Yes No Signed/dated by client? Yes No Signed/dated by Apex? Yes No	By:SDSOther dExUPSSwiftSenvoySDSOther #2 Cooler #3 Cooler #4 Cooler #5 Cooler #6 Cooler #7 U. &
Ice type: (Gel/Real/Other) Condition: Cooler out of temp? (Y/V) Possible reason why: Green dots applied to out of temperature sample Out of temperature samples form initiated? Yes Sample Inspection: All samples intact? Yes No Commen	18 YE (NO) (NO) (18 21 @ 1 27 By: LAM Ints:
Bottle labels/COCs agree? Yes No X C NOT 115HED ON CCC. TB #	comments: 3 Trip blanks provided but 2981.
COC/container discrepancies form initiated? Y	
Containers/volumes received appropriate for ana	alysis? Yes X No Comments:
Do VOA vials have visible headspace? Yes _ Comments_ Water samples: pH checked: Yes No_NA_ Comments:	pH appropriate? Yes No_NA_
Additional information:	
Labeled by: Witness:	Cooler Inspected by:

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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