

# REMEDIAL ACTION PERFORMANCE REPORT FOR 2023

OREGON TOOL - INTERNATIONAL WAY FACILITY 4909 SE INTERNATIONAL WAY, MILWAUKIE, OREGON WSP PROJECT NO. 461M114814

Prepared for:

**OREGON TOOL, INC.** 



## **REMEDIAL ACTION PROGRESS REPORT FOR 2023**

Oregon Tool - International Way Facility 4909 SE International Way, Milwaukie, Oregon

AUGUST 2024

The material and data prepared in the report were prepared under the supervision and direction of the undersigned.

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## 1 INTRODUCTION

This report, submitted by WSP USA Environment & Infrastructure Inc. (WSP) on behalf of Oregon Tool, Inc., presents a remedial action progress evaluation for Oregon Tool's International Way blade manufacturing facility located at 4909 SE International Way in Milwaukie, Oregon (Site). Oregon Tool's former name was Blount (name changed on June 2, 2021) and the Site has in the past been referred to as "Oregon Cutting Systems". Investigation and remediation of a chlorinated solvent plume have been ongoing since the 1990's. A Site location map is presented as Figure 1. The facility layout is shown in Figure 2.

#### 1.1 PURPOSE

This report evaluates the performance of the groundwater cleanup remedy and its effectiveness in meeting performance goals. The remedy addresses the chlorinated volatile organic compounds that are the constituents of concern (COCs) found in Site groundwater. Various remedial actions were implemented to address the COCs; these include groundwater extraction, soil vapor extraction (SVE), in situ chemical oxidation (ISCO), and enhanced reductive dechlorination (ERD). Monitoring and remediation well locations are shown in Figure 2.

This report is submitted consistent with the terms of the Stipulation and Consent Agreement for a Facility Investigation (DEQ, 1989) and a Voluntary Cleanup Agreement (DEQ, 1995).

#### 1.2 BACKGROUND

Site groundwater is impacted with trichloroethene (TCE) and the related chlorinated ethenes cis-1,2-dchloroethene (cis-1,2-DCE) and vinyl chloride (VC), both of which are derived from natural degradation of TCE. The COCs are present in shallow groundwater occurring within native silt and engineered fill that overlie the Troutdale Formation (course-grained alluvium). A deeper/regional aquifer is present within the Troutdale Formation. The groundwater contaminant plume is located beneath the east-central portion of the main facility building (Figure 2). The facility building is approximately 300,000 square feet in size and has a thick concrete floor which serves as a barrier to any vapor migration.

Since 1988, Oregon Tool (Blount) has operated recovery wells to hydraulically contain the TCE-impacted shallow groundwater. The TCE-impacted groundwater is removed by a pneumatic pump in RW 1. The recovered groundwater is treated on-site in a diffusion aeration tank, from which the treated water is discharged to the site's sanitary sewer system.

As described in the Remedial Investigation report (AMEC, 2006), in late 2006 Oregon Tool installed the SVE system to intercept potential VOC vapors from groundwater near recovery well RW-1, where concentrations of TCE in shallow groundwater exceeded Oregon Department of Environmental Quality (DEQ) Risk Based Concentrations (RBCs) for occupational vapor intrusion and excavation workers. Vapor from both the pumping aeration tank and the SVE system is ducted to a stack on the roof of the site's factory building. Construction details for the SVE system were provided in the "Semiannual Groundwater Monitoring - Second Half of 2007" report (AMEC, 2008).

Soil gas testing in 2013 indicated that a localized residual source of TCE was present in soil near the water table in the immediate vicinity of well MW-16 (AMEC 2014). Groundwater containing the highest TCE concentrations was treated with ISCO twice, first on July 8, 2016, and then again on July 16, 2017. COC concentration trends were monitored from 2017 to 2023. By early 2023 the only remaining area of significant TCE impact (up to 313 ug/L) was in the vicinity of recovery well RW-1 and monitoring wells MW-16, MW-17, MW-18, and MW-19 (an area of about 35 feet in diameter). TCE concentrations in the surrounding wells (RW-2, RW-3, C-1, P-8, and MW-1) ranged from non-detect (ND) to a few ug/L. ERD was implemented a final time at MW-16 in late-April 2023. The well locations are shown on Figure 2.

Semiannual sampling, including measuring groundwater levels, is performed to monitor the hydraulic containment, the declining TCE and COC concentrations within the area of higher impacts that have now been successfully treated, and the stability of low to nondetectable TCE concentrations outside of the residual plume area.

#### **WORK COMPLETED DURING 2023** 1.3

Operations work completed in 2023 included:

- Continued operation of extraction well RW-1 for COC mass removal and hydraulic control of the shallow plume, including routine treatment system maintenance.
  - The RW-1 groundwater extraction well operated and maintained approximately 8 feet of water table drawdown as shown on Table 1 and in Figures 3 and 4.
- Continued operation of the SVE system for COC mass removal, including routine system maintenance.

Monitoring work completed in 2023 included:

- Quarterly sampling and analysis of treatment system effluent.
  - Volatile organic compounds were not detected in the effluent samples.
- Groundwater monitoring at one or more wells in March, July, October, and December 2023.
  - Purge water from sampling activities was treated through the on-site recovered water treatment system.

The remedy work completed in 2023 consisted of:

- Injection of ERD amendment into well MW-16 on April 15, 22, and 28, 2023.
  - The amendment consisted of batches of 3 gallons of Wilclear\*, a readily soluble food grade 60% sodium or potassium lactate solution (from JRW Bioremediation L.L.C.) mixed with 24 gallons of potable water.
  - A total of 250 gallons of this mixture was injected.

# **GROUNDWATER REMEDY** PERFORMANCE RESULTS

Remedy performance for 2023 is discussed below.

#### 2.1 **GROUNDWATER ELEVATIONS, FLOW**

Groundwater elevations for 2023 are summarized in Table 1 and are shown in Figure 3 and Figure 4 for March 24, 2023, and October 17, 2023, respectively. The pattern of the groundwater elevations shown in Figure 3 and Figure 4 indicates a water table drawdown of approximately 8 feet at pumping well RW-1. The water table measurements were made at a limited number of wells in the vicinity of RW-1. Except for the drawdown at RW-1, the water table is roughly flat (Figure 3 and Figure 4).

#### 2.2 COC CONCENTRATIONS

Groundwater quality monitoring in the residual plume area (February 2018 through December 2023) is summarized in Table 2, and the TCE results from the 2023 sampling events are shown on Figure 5. As shown in Table 2, the 1,1,2,2-Tertachloroethene (PCE), TCE, cis-1,2-DCE, and VC concentration in groundwater dropped dramatically at most wells over the course of 2023. The drop in COC concentrations followed the implementation of ERD at well MW-16. As shown on Table 2, the TCE concentration in groundwater at recovery well RW-1 (25.5 ug/L) was the only COC concentration exceeding a DEQ RBC in the latter part of 2023.

A historical summary of COC concentrations in all wells is presented in Table 3.

# 3 CONCLUSIONS AND RECOMMENDATIONS

Groundwater contaminant concentrations at the Site have dropped to levels that are protective of human health and the environment. While there remains a very small area of groundwater impact (TCE levels slightly exceeding the most stringent RBC [chronic vapor intrusion pathway]), the presence of the concrete floor barrier coupled with the large size of the building make it extremely unlikely that any significant accumulation of vapors could occur in indoor air. The residual TCE concentrations in groundwater are also anticipated to continue to decline over time.

Based on the remedial success, and the minimal concentrations of TCE currently observed in groundwater, we make the following recommendations:

- Turn off the groundwater extraction and SVE systems to allow for monitoring and evaluation of potential contaminant rebound. The rebound-monitoring period would last for six months.
- Rebound monitoring would consist of sampling the wells in the vicinity of the residual plume (RW-1, MW-16, MW-17, MW-18, and MW-19) on a quarterly basis for six months (two events total) to confirm that there is no significant rebound in COC concentrations.
- At the end of the six-month period a memo would be submitted to DEQ presenting the analytical results and recommendations for next steps. The expectation is that if no significant rebound occurs, then the next steps would be:
  - initiation of four consecutive quarters of final compliance monitoring (compliance wells to be selected in consultation with DEQ)
  - initiate the Site closure process and request a No Further Action (NFA) finding (provided groundwater data remains consistent i.e., overall steady and/or declining trends in COCs).

We hereby request DEQ concurrence on the above recommendations and will implement them upon receipt of said concurrence.

## **4 REFERENCES**

- AMEC Earth & Environmental, Inc. (AMEC). 2006. Remedial Investigation, Oregon Cutting Systems, 4909 SE International Way, Milwaukie, Oregon. October.
- AMEC. 2008, Semiannual Groundwater Monitoring Second Half of 2007, Blount, Inc., 4909 SE International Way, Milwaukie, Oregon. March 31.
- AMEC. 2014. 2013 Groundwater Monitoring, Blount, Inc., 4909 SE International Way, Milwaukie, Oregon. January 24.
- Oregon Department of Environmental Quality (DEQ), 1989. Stipulation and Consent Agreement for a Facility Investigation, Clackamas County, No. HW-NWR-89-57. December 6.
- DEQ. 1995. Voluntary Cleanup Agreement. Request letter from DEQ to Blount, Inc., dated May 4, 1995, and executed by Noel Hingley of Blount, Inc. on May 12, 1995.

WSP

## **LIMITATIONS**

This report was prepared exclusively for Oregon Tool by WSP USA Environment & Infrastructure Inc. (WSP). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in WSP services and based on i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Remedial Action Performance Report is intended to be used by Oregon Tool, for only the Oregon Tool International Way Facility in Milwaukie, Oregon, subject to the terms and conditions of its contract with WSP. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

# **TABLES**

# Table 1 Groundwater Elevations Oregon Tool - International Way Facility, Milwaukie, Oregon

Location	Date	Reference Elevation	Depth to Water	Groundwater Elevation
		(feet MSL)	(feet)	(feet MSL)
Shallow Monitoring	Well			
MW-16	3/24/2023	85.62	4.65	80.97
10100-10	10/17/2023	85.62	5.38	80.24
MW-17	3/24/2023	85.62	4.79	80.83
10100-17	10/17/2023	85.62	4.86	80.76
MW-18	3/24/2023	85.56	4.72	80.84
10100-10	10/17/2023	85.56	5.01	80.55
MW-19	3/24/2023	85.62	4.8	80.82
10100-19	10/17/2023	85.62	4.9	80.72
Shallow Recovery V	Vells			
RW-1	3/24/2023	84.39	12.64	71.75
IXVV-1	10/17/2023	84.39	12.35	72.04
RW-4	3/24/2023	84.24	3.63	80.61
Z-1	3/24/2023	85.1	5.37	79.73

Table 2
TCE and Other VOC Concentration Data in Groundwater
Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug/L)				
Well	Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA	тос
		127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3	(mg/L)
Volatilization to Outdoor Air -	Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000	
Groundwater in a	n Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000	
Commercial Chronic Vapor Inti	usion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55	1
Commercial Acute Vapor Inti	usion RBCwi <sup>2</sup>	330	27		10,000	890	4,600		1
	2/15/2018	8 U	978	220	50.6	8 U	15.1	8 U	
	8/1/2018	4 U	835	392	53	4 U	31.6	4 U	-
	9/20/2018	2.25	792	40.7	46	2	34.3	2 U	
	10/31/2018	4 U	668	417	47.3	4 U	33.6	4 U	
	11/29/2018	4 U	359	351	31	4 U	28.3	4 U	-
MW-16	12/17/2018	4 U	538	288	26.2	4 U	4 U	4 U	
	2/1/2019	4 U	343	190	16.8	4 U	4 U	4 U	
	1/28/2020	5 U	148	127	8.82	2 U	2 U	2 U	-
	10/21/2020	2 U	451	380	30.3	2 U	2.5	2 U	
	10/25/2021	0.4 U	29.1	143	11	0.4 U	29.3	0.633	
	3/24/2023	0.4 U	107	158	12.6	0.65	12.2	0.5	2.2
	=//=/0000	05.011			d to late April 202			05.011	0500
	7/17/2023	25.0 U	25.0 U	501	32	25.0 U	77	25.0 U	8520
	10/17/2023	4.00 U 0.4 U	4.00 U 1.82	4.00 U 0.4 U	6.3 0.4 U	4.00 U 0.4 U	2.00 U 0.4 U	4.00 U 0.4 U	989
	2/15/2018	0.4 U	1.52	2.84	0.4 U	0.4 U	0.4 U	0.4 U	
	11/29/2018	0.4 U	2.49	11.6	1.2	0.4 U	0.4 U	0.4 U	-
	10/21/2020 10/25/2021	0.4 U	2.49	10.8	1.1	0.4 U	0.4 U	0.4 U	
MW-17	3/24/2023	0.400 U	2.43	2.78	0.400 U	0.400 U	0.400 U	0.400 U	1.51
	3/24/2023	0.400 0			id to late April 202			0.400 0	1.01
	7/17/2023	25.0 U	25.0 U	15.5	25.0 U	25.0 U	25.0 U	25.0 U	4790
	10/17/2023	0.400 U	14	146	7.03	0.45	1.81	0.400 U	1.28
	2/15/2018	0.4 U	102	101	5.41	0.4 U	4.17	0.4 U	
	11/29/2018	0.4 U	5.46	13.5	0.594	0.4 U	0.4 U	0.4 U	-
	10/21/2020	0.4 U	15.2	83.7	4.64	0.4 U	2.64	0.4 U	-
NAVA 4.0	10/25/2021	0.4 U	21.5	81.6	4.47	0.4 U	1.57	0.4 U	
MW-18	3/24/2023	0.400 U	313	575	42	1.19	72.8	0.75	1.93
				ERD injection m	d to late April 202	23 at well MW-16	3		
	8/9/2023	0.400 U	21.8	50.4	3.43	0.400 U	0.21	0.400 U	1.59
	10/17/2023	0.800 U	0.800 U	6.4	0.800 U	0.800 U	1.64	0.800 U	115
	2/15/2018	2.06	18.9	5.07	0.762	0.4 U	0.858	0.4 U	-
	11/29/2018	2.03	56.6	9.74	0.681	0.4 U	0.4 U	0.4 U	
	10/21/2020	2.1	84.7	22.5	0.85	0.4 U	0.4 U	0.4 U	
MW-19	10/25/2021	0.4 U	17.2	12.7	0.474	0.4 U	0.4 U	0.4 U	-
	3/24/2023	2.22	131	24.5	1.49	0.400 U	0.69	0.400 U	1.4
	1				d to late April 202				
	10/17/2023	0.400 U	0.400 U	3.20 U	0.400 U	0.400 U	0.200 U	0.400 U	
	12/7/2023	0.4 U	4.12	3.31	0.4 U	0.4 U	0.2 U	0.4 U	
	2/15/2018	0.62	10.7	62.9	1.46	0.4 U	0.858	0.4 U	-
	11/29/2018	2.11	26.8	22.6	0.673	0.4 U	0.4 U	0.4 U	
	10/21/2020	1.63	14.3	9.1	0.4 U	0. 4 U	0.4 U	0.4 U	
RW-1	10/25/2021	1.5	38.3	18.1	0.4 U	0. 4 U	0.4 U	0.4 U	
	3/24/2023	1.74	26	23.6	0.5	0.400 U	0.400 U	0.400 U	1.56
	7/47/2222	0.04			d to late April 202			0.500.11	4 ~ .
	7/17/2023	0.81	29.1	26.4	0.73	0.500 U	0.500 U	0.500 U	1.61
	10/17/2023	1.19	25.5	17.8	0.88	0.400 U	0.25	0.400 U	1.27

#### Table 2

## TCE and Other VOC Concentration Data in Groundwater Oregon Tool - International Way Facility, Milwaukie, Oregon

#### Notes:

**Shaded Bold** = detection limit or analyte concentration exceeds at least one RBC

- 1 = Oregon Department of Environmental Quality Risk-Based Concentrations for Individual Chemicals, August 2023.
- <sup>2</sup> = Oregon Department of Environmental Quality Chronic and Acute Vapor Intrusion Risk-Based Concentrations, March 2024. Injection of enhanced reductive dechlorination amendment occurred on April 15, 22, and 28, 2023

#### Abbreviations:

-- = not measured

μg/L = micrograms per liter

>S = RBC exceeds the solubility limit

DCA = dichloroethane

DCE = dichloroethene

ERD = enhanced reductive dechlorination

PCE = tetrachloroethene

RBC = Oregon Department of Environmental Quality Risk-Based Concentration

TCE = trichloroethene

TOC = total organic carbon

U = analyte not detected at or above the given detection limit

VC = vinyl chloride

Table 3
VOC Concentrations in Groundwater – Historical Summary for All Wells
Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	VC	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilizatio	on to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
Commercial	Chronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	al Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
Commons	10/20/1988		32.0					
	11/17/1988		105				<del></del>	
	1/31/1989	<del></del>	13.0					
	2/14/1989		8.20					
	2/18/1989		52.0					
	2/24/1989		35.0				ND	
	3/24/1989		20.0	18.0	ND	ND	ND	ND
	3/24/1989		14.0	17.0	ND	ND	ND	ND
	5/18/1989		18.0	14.0	ND	ND	ND	ND
	6/9/1989		9.90	10.7	ND	ND	ND	ND
	8/17/1989		11.0	17.0	2.00	ND	10.0	ND
	12/28/1990		3.60	3.40	ND	ND	1.90	ND
	3/12/1991		9.40	ND	ND	ND	ND	2.60
	6/17/1991		4.80	5.30	ND	ND	ND	ND
	9/13/1991		460	94.0	6.00	4.00	18.0	7.00
	12/6/1991		120	120	3.40	2.00	5.60	4.40
	3/9/1992		4.90	16.0	ND	ND	ND	1.50
	6/5/1992		4.80	19.2	3.40	2.00	5.60	4.60
	9/29/1992	<b></b>	ND	6.00	ND	ND	ND	ND
	6/17/1993	<b></b>	0.900	7.00	ND	ND	ND	4.20
C-1	12/1/1993		8.00	16.0	0.800	ND	0.900	ND
	3/2/1994		12.0	8.70	ND	ND NB	ND	3.80
	6/11/1994		1.90	6.40	ND 0.000	ND ND	0.800	3.90
	9/8/1994		4.60	12.0	0.600 ND	ND ND	1.30	5.20
	12/7/1994		13.0 9.40	7.70 5.20	ND ND	ND ND	ND ND	3.70 2.40
	2/27/1995 6/7/1995		2.40	5.50	ND ND	ND ND	ND ND	3.70
	9/8/1995	<del></del>	3.80	4.80	ND ND	ND ND	ND ND	1.70
	12/8/1995	<del></del>	7.20	3.40	ND ND	ND	ND ND	2.10
	3/6/1996		4.30	3.00	ND ND	ND ND	ND	1.60
	6/6/1996	<del></del>	3.80	3.10	ND	ND	ND	1.50
	9/4/1996		2.40	5.60	ND	ND	ND	1.30
	12/4/1996		6.90	3.40	ND	ND	ND	1.10
	3/5/1997		5.90	3.40	ND	ND	ND ND	1.60
	6/4/1997		2.30	2.30	ND	ND	ND	1.00
	9/3/1997		1.60	3.90	ND	ND	ND	0.900
	12/3/1997		2.90	2.10	ND	ND	ND	1.00
	3/10/1998		2.60	1.80	ND	ND	ND	0.800
	6/3/1998		1.00	1.70	ND	ND	ND	0.600
	1/15/1999		1.90	2.00	ND	ND	ND	0.900
	7/28/1999	ND	1.10	2.30	ND	ND	ND	ND
	8/25/1999	ND	1.10	5.40	ND	ND	ND	0.700

Table 3
VOC Concentrations in Groundwater – Historical Summary for All Wells
Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization	to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>\$	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	thronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
Commercial	i i		<del>i</del>					
	11/9/1999	ND	1.40	6.40	ND	ND	ND	0.600
	3/21/2000	ND	1.30	2.20	ND	ND	ND	0.600
	3/27/2001	ND	1.40	1.40	ND	ND	ND	0.600
	3/25/2002	ND	1.10	1.20	ND	ND NB	ND ND	0.510
	3/24/2003	ND	ND	4.40	ND	ND	ND	ND
	4/7/2004	ND	ND	8.60	ND	ND	ND ND	ND
	10/8/2004	ND	ND	7.40	ND	ND	ND	ND
	3/29/2005	ND	ND	7.10	ND	ND	ND	ND
	3/28/2006	ND	0.530	6.00	0.550	ND NB	ND ND	ND
	10/16/2006	ND	ND	1.80	ND	ND	ND	ND
C-1 (cont)	3/27/2007	ND	ND	5.90	ND	ND NB	ND ND	ND
C-1 (COIII)	10/30/2007	ND	ND	6.60	ND	ND NB	ND ND	ND
	7/31/2008	ND	ND 0.500 H	10.0	0.500	ND	ND a soott	ND 0.500 H
	3/24/2009	0.500 U	0.500 U	6.40	0.500 U	0.500 U	0.500 U	0.500 U
	11/23/2009	0.500 U	0.500 U	1.39	0.500 U	0.500 U	0.500 U	0.500 U
	3/22/2010	0.500 U	0.500 U	5.70	0.500 U	0.500 U	0.500 U	0.500 U
	10/12/2010	0.500 U	0.500 U	6.60	0.500 U	0.500 U	0.500 U	0.500 U
	4/26/2011	0.500 U	0.500 U	7.40	0.500 U	0.500 U	0.500 U	0.500 U
	10/20/2011 3/22/2012	0.500 U 0.500 U	0.500 U 0.500 U	0.740 4.70	0.500 U 0.500 U	0.500 U 0.500 U	0.500 U 0.500 U	0.500 U 0.500 U
	3/5/2013	0.500 U	0.500 U	6.90	0.500 U	0.500 U	0.500 U	0.500 U
	10/3/2013	0.500 U	0.500 U	6.89	0.500 U	0.500 U	0.500 U	0.500 U
	6/26/2014	0.500 U	0.500 U	7.89	0.500 U	0.500 U	0.500 U	0.500 U
	3/9/1989		ND	7.09	0.300 0			0.300 0
	4/18/1989	 	ND ND	ND	ND	ND	ND	ND
	5/18/1989	 	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
	6/21/1989	<del></del>	ND	ND ND	ND ND	ND	ND ND	ND ND
	12/27/1990		ND	ND	ND ND	ND ND	ND ND	ND ND
	3/14/1991		ND	ND ND	ND ND	ND ND	ND ND	ND ND
DW-101	6/20/1991		ND	ND	ND	ND	ND	ND
•.	9/13/1991		ND	5.00	ND	ND	ND	ND
	12/10/1991		ND	ND	ND	ND	ND	ND
	3/9/1992		ND	ND	ND	ND ND	ND	ND
	6/5/1992		ND	ND	ND	ND ND	ND	ND
	9/29/1992		ND	ND	ND	ND	ND	ND
	6/4/1997		ND	ND	ND	ND	ND	ND
	3/9/1989		ND			<u>-</u>		
	4/17/1989		ND	ND	ND	ND	ND	ND
DW 400	5/19/1989		ND	ND	ND	ND	ND	ND
DW-102	6/22/1989		ND	ND	ND	ND	ND	ND
	12/26/1990		ND	ND	ND	ND	ND	ND
	3/13/1991		ND	ND	ND	ND	ND	ND

Table 3
VOC Concentrations in Groundwater – Historical Summary for All Wells
Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	1/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization t	o Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Froundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	nronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
Commercial	6/20/1991		ND ND	ND	ND	ND	4,000 ND	ND
	9/13/1991		ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
	12/10/1991	<del></del>	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
DW-102 (cont)	3/6/1992	 	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
DVV-102 (COIII)	6/5/1992		ND	ND ND	ND	ND ND	ND ND	ND ND
	9/29/1992		ND	ND	ND ND	ND ND	ND	ND ND
	6/4/1997		ND	ND	ND	ND	ND ND	ND
	3/9/1989	<u></u>						
	4/19/1989		ND	ND	ND	ND	ND	ND
	5/19/1989		ND	ND	ND	ND	ND	ND
	6/22/1989		ND	ND	ND	ND	ND	ND
	12/26/1990		ND	ND	ND	ND	ND	ND
	3/13/1991		ND	ND	ND	ND	ND	ND
DW-103	6/20/1991		ND	ND	ND	ND	ND	ND
	9/12/1991		ND	ND	ND	ND	ND	ND
	12/9/1991		ND	ND	ND	ND	ND	ND
	3/6/1992		ND	ND	ND	ND	ND	ND
	6/5/1992		ND	ND	ND	ND	ND	ND
	9/29/1992		ND	ND	ND	ND	ND	ND
	6/4/1997	<b></b>	ND	ND	ND	ND	ND	ND
	5/17/2002	ND	ND	ND	ND	ND	ND	ND
	6/3/2002	ND	ND	ND	ND	ND	ND	ND
	7/2/2002	ND	ND	ND	ND	ND	ND	ND
	7/29/2002	ND	ND	ND	ND	ND	ND	ND
Effluent	12/16/2002	ND	ND	ND	ND	ND	ND	ND
	2/11/2003	ND	ND	ND	ND	ND	ND	ND
	12/16/2003	ND	ND	ND	ND	ND	ND	ND
	4/7/2004	ND	1.70	ND	ND	ND	ND	ND
	11/19/2013	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	3/27/2001	0.510	26.0	3.90	ND	ND	ND	ND
	3/25/2002	ND	2.50	1.20	ND ND	ND ND	ND ND	ND
	5/13/2002	3.10	140	0.580	ND ND	ND ND	ND ND	1.20
	5/13/2002	2.40	78.0	ND ND	ND ND	ND ND	ND ND	0.640
	5/13/2002 5/17/2002	2.10 0.630	58.0 14.0	ND ND	ND ND	ND ND	ND ND	ND ND
Influent	5/23/2002	ND	4.00	ND ND	ND ND	ND ND	ND ND	ND ND
mmuent	6/3/2002	ND ND	2.20	ND ND	ND ND	ND ND	ND ND	ND ND
	6/17/2002	ND ND	3.10	ND ND	ND ND	ND ND	ND ND	ND ND
	7/2/2002	ND ND	2.00	ND ND	ND ND	ND ND	ND ND	ND ND
	7/15/2002	ND ND	3.00	1.60	ND ND	ND ND	ND ND	ND ND
	7/29/2002	ND ND	2.80	4.40	ND ND	ND ND	ND ND	ND ND
	8/12/2002	ND ND	6.00	1.20	ND ND	ND ND	ND ND	ND

Table 3
VOC Concentrations in Groundwater – Historical Summary for All Wells
Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	ŋ/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization	to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
(	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	hronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
	9/16/2002	0.980	33.0	7.70	ND	ND	ND	ND
	9/23/2002	ND	4.50	ND	ND	ND	ND	ND
	10/14/2002	ND	2.20	ND	ND	ND	ND	ND
	11/4/2002	ND	1.10	ND	ND	ND	ND	ND
	11/25/2002	ND	0.640	ND	ND	ND	ND	ND
	12/16/2002	ND	1.20	ND	ND	ND	ND	ND
	2/11/2003	ND	14.0	14.0	0.790	ND	0.650	ND
	3/3/2003	ND	13.0	13.0	0.590	ND	ND	ND
	3/24/2003	ND	19.0	18.0	1.00	ND	0.580	ND
	4/14/2003	ND	12.0	14.0	0.570	ND	ND	ND
	5/5/2003	ND	3.40	2.90	ND	ND	ND	ND
Influent (cont)	5/28/2003	ND	9.00	5.30	ND	ND	ND	ND
	6/17/2003	ND	8.00	3.70	0.500	ND	ND	ND
	7/28/2003	ND	1.60	ND	ND	ND	ND	ND
	8/18/2003	ND	3.70	1.70	ND	ND	ND	ND
	10/7/2003	ND	2.20	ND	ND	ND	ND	ND
	10/31/2003	ND	1.50	ND	ND	ND ND	ND ND	ND
	11/24/2003	ND	2.00	ND	ND	ND ND	ND 0.500	ND
	12/16/2003 4/7/2004	ND ND	1.20 <b>16.0</b>	1.40 2.30	ND ND	ND ND	0.560 ND	ND ND
	5/14/2004	ND ND	0.770	ND	ND ND	ND ND	ND	ND ND
	6/21/2004	ND ND	0.770	ND ND	ND ND	ND ND	ND ND	ND
	9/10/2004	ND ND	1.40	ND ND	ND ND	ND ND	ND ND	ND ND
	10/8/2004	ND ND	0.790	ND	ND ND	ND	ND	ND
	6/2/1998		ND	ND	ND	ND	ND	ND
IW-1	1/14/1999		ND	ND	ND	ND	ND	ND
****	6/2/1998		ND	ND	ND	ND	ND	ND
IW-2	1/14/1999		ND	ND	ND	ND	ND	ND
	10/20/1988		1.20					
	11/17/1988		2.80					
	3/8/1989		ND					
	4/19/1989		ND	ND	ND	ND	ND	ND
	5/17/1989		ND	ND	ND	ND	ND	ND
	6/21/1989		ND	ND	ND	ND	ND	ND
MW-1	12/27/1990		ND	ND	ND	ND	ND	ND
141 A A — 1	3/14/1991		ND	ND	ND	ND	ND	ND
	6/20/1991		ND	ND	ND	ND	ND	ND
	9/13/1991		ND	ND	ND	ND	ND	ND
	12/10/1991		ND	ND	ND	ND	ND	ND
	3/6/1992		ND	ND	ND	ND	ND ND	ND
	6/5/1992		ND	ND	ND	ND	ND	ND
	9/29/1992		ND	ND	ND	ND	ND	ND

Table 3
VOC Concentrations in Groundwater – Historical Summary for All Wells
Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	I/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization	to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	Chronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	I Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
00	3/21/2000	ND						
	9/19/2000	ND ND	ND	ND	ND	ND	ND ND	ND ND
	9/19/2000 (Dup)	ND	ND	ND	ND	ND	ND ND	ND
	3/27/2001	ND	ND	ND	ND	ND	ND ND	ND
	9/20/2001	ND						
	9/20/2001 (Dup)	ND						
	3/25/2002	ND						
	3/25/2002 (Dup)	ND						
	9/23/2002	ND						
	3/24/2003	ND						
	9/16/2003	ND						
	4/7/2004	ND						
	10/8/2004	ND						
	3/29/2005	ND						
MW-1 (cont)	9/27/2005	ND						
WWV-1 (OOHt)	9/27/2005 (Dup)	ND						
	3/28/2006	ND						
	10/16/2006	ND						
	3/27/2007	ND						
	10/30/2007	ND						
	7/31/2008	ND						
	3/24/2009	0.500 U						
	11/23/2009	0.500 U						
	3/22/2010	0.500 U						
	10/12/2010	0.500 U						
	4/26/2011	0.500 U						
	10/20/2011	0.500 U						
	3/22/2012 3/5/2013	0.500 U 0.500 U						
	10/3/2013	0.500 U						
	3/8/1989	0.500 U 	0.500 U	0.500 0	0.500 0	0.500 0	 	0.500 0
	4/19/1989	<u></u>	ND ND	ND	ND	ND	ND	ND
	5/17/1989		ND	ND ND	ND ND	ND ND	ND ND	ND
	6/22/1989		ND	ND ND	ND ND	ND ND	ND ND	ND
	12/28/1990		ND	ND ND	ND ND	ND	ND ND	ND ND
	3/13/1991		ND	ND	ND	ND	ND ND	ND ND
MW-12	6/21/1991		ND	ND	ND	ND	ND ND	ND ND
	9/13/1991		ND	ND	ND	ND	ND ND	ND
	12/10/1991		1.40	ND	ND	ND	ND	ND
	3/6/1992		ND	ND	ND	ND	ND	ND
	6/5/1992		1.40	ND	ND	ND	ND	ND
	9/29/1992		ND	ND	ND	ND	ND	ND

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Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	g/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization	to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	Chronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
Commercial	6/17/1993		ND	ND	ND	ND	ND	ND
	12/1/1993		3.80	2.60	ND	ND ND	ND ND	ND
	3/2/1994		0.500	ND	ND	ND ND	ND ND	ND ND
	6/11/1994		ND	ND	ND	ND ND	ND	ND
	9/8/1994		0.800	ND	ND	ND	ND	ND
	12/7/1994		1.50	1.00	ND	ND	ND	ND
	2/27/1995		ND	ND	ND	ND	ND	ND
	6/7/1995		ND	ND	ND	ND	ND	ND
	9/8/1995		0.600	ND	ND	ND	ND	ND
	12/8/1995		ND	ND	ND	ND	ND	ND
MW-12 (cont)	3/6/1996		ND	ND	ND	ND	ND	ND
	6/6/1996		ND	ND	ND	ND	ND	ND
	9/4/1996		ND	ND	ND	ND	ND	ND
	12/4/1996		ND	ND	ND	ND	ND	ND
	3/5/1997		ND	ND	ND	ND	ND	ND
	6/4/1997		ND	ND	ND	ND	ND	ND
	9/3/1997		ND	ND	ND	ND	ND	ND
	12/3/1997		ND	0.500	ND	ND	ND	ND
	3/3/1998		ND	ND	ND	ND	ND	ND
	6/2/1998		ND	ND	ND	ND	ND	ND
	1/14/1999		ND	ND	ND	ND	ND	ND
	3/8/1989		ND					
	4/17/1989	<b></b>	ND	ND	ND	ND	ND	ND
100/44	5/17/1989		ND	ND	ND	ND	ND	ND
MW-14	6/20/1989		ND	ND	ND	ND ND	ND	ND
	12/26/1990		ND	ND	ND	ND	ND	ND
	3/13/1991		ND	ND	ND	ND ND	ND ND	ND
	12/4/1996 12/10/1991		ND <b>25.0</b>	ND 11.0	ND ND	ND ND	ND ND	ND ND
	3/10/1991		13.7	3.40	ND ND	ND ND	ND ND	ND ND
	6/5/1992	 	1.80	ND	ND ND	ND ND	ND ND	ND ND
	9/29/1992	<u></u>	2.00	ND ND	ND ND	ND ND	ND ND	ND ND
	6/17/1993		1.70	0.600	ND	ND ND	ND ND	ND ND
	12/1/1993		11.0	ND	ND	ND ND	ND ND	ND ND
	3/2/1994		1.70	0.800	ND	ND ND	ND ND	ND ND
MW-15	6/11/1994		1.20	0.600	ND	ND	ND	ND ND
	9/8/1994		2.20	ND	ND	ND	ND	ND ND
	12/7/1994		3.20	0.900	ND	0.600	ND	ND
	2/27/1995		ND	ND	ND	ND ND	ND	ND
	6/7/1995		1.30	ND	ND	ND	ND	ND
	9/8/1995		7.20	2.70	ND	ND	ND	0.600
	12/8/1995		7.60	1.70	ND	ND	ND	ND

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Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	VC	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization	to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	Chronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
Commercia	3/6/1996		1.80	0.800	ND	ND	ND	ND
	6/6/1996		13.0	2.00	ND	ND	ND ND	ND
	9/4/1996		49.0	4.80	ND	0.600	ND ND	0.500
	12/4/1996		3.80	0.800	ND	ND	ND ND	ND
	3/5/1997		1.70	ND	ND	ND	ND	ND
	6/4/1997		0.700	ND	ND	ND	ND	ND
	9/3/1997		92.0	4.40	ND	ND	ND	0.700
	12/3/1997		7.20	0.900	ND	ND	ND	ND
	3/3/1998		1.40	ND	ND	ND	ND	ND
	6/2/1998		7.50	0.900	ND	ND	ND	ND
	1/14/1999		22.0	2.00	ND	ND	ND	ND
	7/28/1999	0.800	27.0	2.50	ND	ND	ND	ND
	8/25/1999	1.20	41.0	3.80	ND	ND	ND	ND
	11/9/1999	1.20	52.0	7.60	ND	ND	ND	ND
	3/21/2000	ND	3.80	1.00	ND	ND	ND	ND
	9/19/2000	1.40	50.0	6.00	ND	ND	ND	ND
	3/27/2001	0.800	22.0	3.00	ND	ND	ND	ND
	9/20/2001	ND	3.80	0.900	ND	ND	ND	ND
	3/25/2002	ND	3.10	0.670	ND	ND	ND	ND
	9/23/2002	ND	3.10	0.810	ND	ND	ND	ND
MW-15 (cont)	9/23/2002 (Dup)	ND	3.00	0.760	ND	ND	ND	ND
, ,	3/24/2003	ND	0.770	ND ND	ND	ND	ND	ND
	9/16/2003	ND	1.50	ND	ND	ND	ND	ND
	4/7/2004	ND	3.70	1.50	ND	ND ND	ND ND	ND
	10/8/2004 3/29/2005	ND ND	12.0 1.40	1.90 0.570	ND ND	ND ND	ND	ND ND
	9/27/2005	ND ND	6.80	0.570	ND ND	ND ND	ND ND	ND ND
	3/28/2006	ND ND	0.680	ND	ND	ND ND	ND ND	ND
	10/16/2006	ND ND	8.70	2.50	ND ND	ND ND	ND ND	ND
	3/27/2007	ND	ND	ND	ND	ND	ND	ND
	10/30/2007	ND	1.60	1.40	ND	ND	ND	ND
	7/31/2008	ND	1.40	0.950	ND	ND	ND	ND
	3/24/2009	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	11/23/2009	0.500 U	1.92	2.36	0.500 U	0.500 U	0.500 U	0.500 U
	3/22/2010	0.500 U	3.00	2.30	0.500 U	0.500 U	0.500 U	0.500 U
	10/12/2010	0.500 U	0.780	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	4/26/2011	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	10/20/2011	0.500 U	1.10	1.30	0.500 U	0.500 U	0.500 U	0.500 U
	3/22/2012	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	3/5/2013	0.500 U	0.530	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	10/3/2013	0.500 U	0.740	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	6/26/2014	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U

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		VOCs (ug/L)									
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA			
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3			
Volatilization t	o Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000			
G	roundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000			
	ronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55			
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600				
MW-15 (cont)	11/19/2014	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U			
WW-13 (COIII)	1/18/2012	0.500 U	3.20	5.90	0.660	0.500 U	0.500 U	0.500 U			
	3/22/2012	4.60	600	350	32.0	2.00	11.0	1.00			
	7/23/2012	2.60	560	600	41.0	5.30	21.0	1.30			
	3/5/2013	1.40	450	620	29.0	4.60	17.0	1.80			
	10/3/2013	0.500 U	33.2	580	20.0	2.90	63.8	1.96			
	6/26/2014	2.50 U	806	770	41.4	4.00	14.6	2.50 U			
	11/19/2014	2.50 U	51.1	409	15.4	2.50 U	49.8	2.50 U			
	7/14/2015	2.50 U	184	47.4	8.25	5.95	111	2.50 U			
	3/11/2016	2.50 U	437	168	16.9	7.30	12.6	2.50 U			
	11/3/2016	2.50 U	2,340	153	49.6	2.50 U	20.2	2.50 U			
	2/15/2018	8.00 U	978	220	50.6	8.00 U	15.1	8.00 U			
	8/1/2018	4.00 U	835	392	53.0	4.00 U	31.6	4.00 U			
	9/20/2018	2.25	792	40.7	46.0	2.00	34.3	2.00 U			
	10/31/2018	4.00 U	668	417	47.3	4.00 U	33.6	4.00 U			
	11/29/2018	4.00 U	359	351	31.0	4.00 U	28.3	4.00 U			
MW-16	12/17/2018	4.00 U	538	288	26.2	4.00 U	4.00 U	4.00 U			
	2/1/2019	4.00 U	343	190	16.8	4.00 U	4.00 U	4.00 U			
	3/13/2019	4.00 U	167	136	10.7	4.00 U	4.00 U	4.00 U			
	4/19/2019	0.800 U	206	180	13.0	0.800 U	0.800 U	0.800 U			
	5/15/2019	0.960	263	221	15.0	0.840	1.98	0.800 U			
	6/21/2019	1.36	325	188	16.0	0.800 U	1.23	0.800 U			
	7/25/2019	1.49	335	280	25.5	1.19	13.6	0.906			
	9/9/2019	2.00 U	289	179	16.0	2.00 U	2.00 U	2.00 U			
	9/9/2019	2.00 U	289	179	16.0	2.00 U	2.00 U	2.00 U			
	12/19/2019	0.800 U	185	144	13.3	0.800 U	0.800 U	0.800 U			
	1/28/2020	5.00 U	148	127	8.82	2.00 U	2.00 U	2.00 U			
	10/21/2020	2.00 U	451	380	30.3	2.00 U	2.50	2.00 U			
	10/25/2021	0.400 U	29.1	143	11.0	0.400 U	29.3	0.633			
	3/24/2023	0.400 U	107	158	12.6	0.650	12.2	0.500			
	7/17/2023	25.0 U	25.0 U	501	32.0	25.0 U	77.0	25.0 U			
	10/17/2023	4.00 U	4.00 U	4.00 U	6.30	4.00 U	2.00 U	4.00 U			
	1/18/2012	0.500 U	59.0	580	22.0	3.30	54.0	2.00			
	3/22/2012	0.500 U	0.500 U	84.0	4.30	0.600	4.00	0.500 U			
	3/5/2013	0.500 U	0.500 U	0.630	1.10	0.500 U	2.80	0.500 U			
	10/3/2013	0.500 U	0.620	1.85	0.630	0.500 U	4.77	0.500 U			
MW-17	6/26/2014	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	1.13	0.500 U			
	11/19/2014	0.500 U	1.07	3.90	0.570	0.500 U	3.07	0.500 U			
	11/3/2016	0.500 U	2.31	2.85	0.500 U	0.500 U	0.500 U	0.500 U			
	2/15/2018 12/16/2018	0.400 U 0.400 U	1.82 1.52	0.400 U 2.84	0.400 U 0.400 U	0.400 U 0.400 U	0.400 U 0.400 U	0.400 U 0.400 U			
	17/16/2018	н дин н	1 152	/ 84	11 (11(1) 1 1	11 4011 11	1 40011	1 (1/4/10/11			

Table 3
VOC Concentrations in Groundwater – Historical Summary for All Wells
Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	VC	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization	to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
(	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	hronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
Commercial	10/25/2021	0.400 U	2.33	10.8	1.10	0.400 U	0.400 U	0.400 U
	3/24/2023	0.400 U	2.43	2.78	0.400 U	0.400 U	0.400 U	0.400 U
MW-17 (cont)	7/17/2023	25.0 U	25.0 U	15.5	25.0 U	25.0 U	25.0 U	25.0 U
	10/17/2023	0.400 U	14.0	146	7.03	0.450	1.81	0.400 U
	1/18/2012	0.500 U	9.00	9.00	1.10	0.500 U	0.500 U	0.500 U
	3/22/2012	0.500 U	11.0	20.0	1.90	0.500 U	0.500 U	0.500 U
	3/5/2013	0.500 U	3.60	75.0	8.30	0.540	20.0	0.500 U
	10/3/2013	0.500 U	4.57	33.2	2.31	0.500 U	1.41	0.500 U
	6/26/2014	0.500 U	2.37	5.77	0.590	0.500 U	0.500 U	0.500 U
	11/19/2014	0.500 U	2.38	7.15	0.680	0.500	0.500 U	0.500 U
	11/3/2016	0.500 U	3.94	10.8	1.14	0.500 U	1.39	0.500 U
MW-18	2/15/2018	0.400 U	102	101	5.41	0.400 U	4.17	0.400 U
	11/29/2018	0.400 U	5.46	13.5	0.594	0.400 U	0.400 U	0.400 U
	10/21/2020	0.400 U	15.2	83.7	4.64	0.400 U	2.64	0.400 U
	10/25/2021	0.400 U	21.5	81.6	4.47	0.400 U	1.57	0.400 U
	3/24/2023	0.400 U	313	575	42.0	1.19	72.8	0.750
	8/9/2023	0.400 U	21.8	50.4	3.43	0.400 U	0.210	0.400 U
	10/17/2023	0.800 U	0.800 U	6.40	0.800 U	0.800 U	1.64	0.800 U
	1/18/2012	13.0	230	19.0	1.60	0.500 U	0.610	0.500 U
	3/22/2012	13.0	190	39.0	1.70	0.500 U	5.20	0.500 U
	3/5/2013	11.0	180	14.0	1.20	0.500 U	0.500 U	0.500 U
	10/3/2013	8.46	292	29.9	1.49	0.500 U	0.500 U	0.500 U
	6/26/2014	10.3	124	10.0	1.00 U	1.00 U	1.00 U	1.00 U
	11/19/2014	12.4	110	9.80	1.00 U	1.00 U	1.00 U	1.00 U
NAVA 40	11/3/2016	7.82	51.6	6.66	0.700	0.500 U	0.500 U	0.500 U
MW-19	2/15/2018	2.06	18.9	5.07	0.762	0.400 U	0.858	0.400 U
	11/29/2018	2.03	56.6	9.74	0.681	0.400 U	0.400 U	0.400 U
	10/21/2020	2.10	84.7	22.5	0.850	0.400 U	0.400 U	0.400 U
	10/25/2021	0.400 U	17.2	12.7	0.474	0.400 U	0.400 U	0.400 U
	3/24/2023	2.22	131	24.5	1.49	0.400 U	0.690	0.400 U
	10/17/2023	0.400 U	0.400 U	3.20 U	0.400 U	0.400 U	0.200 U	0.400 U
	12/7/2023	0.400 U	4.12	3.31	0.400 U	0.400 U	0.200 U	0.400 U
	10/20/1988		1.00					
	11/17/1988		ND					
	3/8/1989		ND					
MW-2	4/17/1989		ND	ND	ND	ND	ND	ND
IVI V V ~~ 🗠	5/17/1989	<b></b>	ND	ND	ND	ND	ND	ND
	6/20/1989		ND	ND	ND	ND	ND	ND
	12/26/1990		ND	ND	ND	ND	ND	ND
	3/13/1991		ND	ND	ND	ND	ND	ND
MW-3	10/20/1988		ND					
141 A A _ O	3/8/1989		ND					

Table 3
VOC Concentrations in Groundwater – Historical Summary for All Wells
Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	g/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
	to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	hronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
Commercial	4/17/1989		ND	ND	ND	ND	ND	ND
	5/18/1989		ND	ND	ND ND	ND ND	ND ND	ND ND
	6/20/1989		ND	ND ND	ND ND	ND ND	ND	ND ND
	12/26/1990		ND	ND	ND	ND ND	ND ND	ND ND
	3/13/1991		ND	ND	ND	ND	ND	ND
MW-3 (cont)	6/20/1991		ND	ND	ND	ND	ND	ND
,	9/13/1991		ND	ND	ND	ND	ND	ND
	12/10/1991		ND	ND	ND	ND	ND	ND
	3/6/1992		ND	ND	ND	ND	ND	ND
	6/5/1992		ND	ND	ND	ND	ND	ND
	9/29/1992		ND	ND	ND	ND	ND	ND
	10/20/1988		ND					
	3/8/1989		ND				1	
	4/17/1989		ND	ND	ND	ND	ND	ND
MW-4	5/17/1989		ND	ND	ND	ND	ND	ND
	6/20/1989		ND	ND	ND	ND	ND	ND
	12/27/1990		ND	ND	ND	ND	ND	ND
	3/14/1991		ND	ND	ND	ND	ND	ND
	10/20/1988		ND					
	3/8/1989		ND					
	4/18/1989		ND	ND	ND	ND	ND	ND
	5/17/1989	<b></b>	ND	ND	ND	ND	ND ND	ND
	6/20/1989		ND	ND	ND	ND	ND	ND
NAVA / 5	12/27/1990		ND	ND	ND	ND	ND	ND
MW-5	3/14/1991		ND	ND ND	ND	ND ND	ND ND	ND
	6/21/1991		ND	ND	ND	ND	ND ND	ND
	9/12/1991		ND	ND ND	ND	ND ND	ND ND	ND
	12/10/1991 3/6/1992		ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
	6/5/1992		ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
	9/29/1992	 	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
	3/8/1989	 	ND					
	4/18/1989		ND	ND	ND	ND	ND	ND
	5/17/1989		ND	ND ND	ND ND	ND ND	ND ND	ND ND
	6/21/1989		ND	ND ND	ND ND	ND ND	ND ND	ND ND
	12/27/1990		ND	ND	ND ND	ND	ND ND	ND
MW-6	3/13/1991		ND	ND	ND ND	ND	ND ND	ND
-	6/21/1991		ND	ND	ND ND	ND ND	ND ND	ND
	9/13/1991		ND	ND	ND	ND	ND ND	ND
	12/9/1991		ND	ND	ND	ND	ND ND	ND
	3/6/1992		ND	ND	ND	ND	ND ND	ND
	6/5/1992		ND	ND	ND	ND	ND	ND

Table 3
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Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	1/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization	to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	hronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
<b>C</b> 0.11.11.01.01.01.01	9/29/1992		ND	ND	ND	ND	ND ND	ND
	6/17/1993		ND	ND	ND	ND	ND ND	ND
	12/1/1993		ND	ND	ND	ND	ND	ND
	3/2/1994		ND	ND	ND	ND	ND	ND
	6/11/1994		ND	ND	ND	ND	ND	ND
	9/8/1994		ND	ND	ND	ND	ND	ND
	12/7/1994		0.600	ND	ND	ND	ND	ND
	2/27/1995		ND	ND	ND	ND	ND	ND
	6/7/1995		ND	ND	ND	ND	ND	ND
	9/8/1995		ND	ND	ND	ND	ND	ND
MW-6 (cont)	12/8/1995		ND	ND	ND	ND	ND	ND
WWV-0 (cont)	3/6/1996		ND	ND	ND	ND	ND	ND
	6/6/1996		ND	ND	ND	ND	ND	ND
	9/4/1996		ND	ND	ND	ND	ND	ND
	12/4/1996		ND	ND	ND	ND	ND	ND
	3/5/1997		ND	ND	ND	ND	ND	ND
	6/4/1997		ND	ND	ND	ND	ND	ND
	9/3/1997		ND	ND	ND	ND	ND	ND
	12/3/1997		ND	ND	ND	ND	ND	ND
	3/3/1998		ND	ND	ND	ND	ND	ND
	6/2/1998		ND	ND	ND	ND	ND	ND
	1/15/1999		ND	ND	ND	ND	ND	ND
	3/8/1989		4.00					
	4/18/1989		4.30	6.00	ND	ND	ND NB	ND
	5/18/1989		6.70	13.0	ND	ND	ND ND	ND
	6/22/1989		6.40	13.1	ND	ND	ND ND	ND
	12/27/1990		1.80	2.20	ND ND	ND ND	ND ND	ND
	3/13/1991 6/21/1991		ND 1.30	0.800 ND	ND ND	ND ND	ND ND	ND ND
	9/12/1991		2.00	15.0	ND ND	ND ND	ND ND	ND ND
	12/10/1991		1.90	5.40	ND ND	ND ND	ND ND	ND ND
	3/10/1992	<del></del>	0.500	3.80	ND ND	ND ND	ND ND	ND ND
MW-7	6/5/1992	<del></del>	0.500	5.70	ND ND	ND ND	ND ND	ND
	9/29/1992		ND	ND	ND	ND	ND ND	ND
	6/17/1993		ND	3.90	ND ND	ND	ND ND	ND
	12/1/1993		1.20	3.10	ND	ND	ND ND	ND
	3/2/1994		1.10	1.90	ND	ND	ND ND	ND
	6/11/1994		1.20	3.40	ND	ND	ND ND	ND
	9/8/1994		1.40	3.40	ND	ND	ND ND	ND
	12/7/1994		0.800	1.80	ND	ND	ND ND	ND
	2/27/1995		1.00	2.00	ND	ND	ND	ND
	6/7/1995		1.20	3.20	ND	ND	ND	ND

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Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	ı/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	VC	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization	n to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	Chronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	I Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
	9/8/1995		1.70	3.50	ND	ND	ND	ND
	12/8/1995	<del></del>	1.10	2.00	ND	ND	ND ND	ND
	3/6/1996	<del></del>	0.700	1.80	ND	ND	ND ND	ND
	6/6/1996		1.10	2.30	ND	ND	ND	ND
	9/4/1996		1.20	3.40	ND	ND	ND	ND
	12/4/1996		ND	0.700	ND	ND	ND	ND
	3/5/1997		1.00	1.60	ND	ND	ND	ND
NAVA ( 7 ( 4 )	6/4/1997		0.900	2.00	ND	ND	ND	ND
MW-7 (cont)	9/3/1997		1.10	3.00	ND	ND	ND	ND
	12/3/1997		ND	0.800	ND	ND	ND	ND
	3/3/1998		ND	0.700	ND	ND	ND	ND
	3/3/1998 (Dup)		ND	0.800	ND	ND	ND	ND
	6/2/1998		ND	1.10	ND	ND	ND	ND
	6/2/1998 (Dup)		ND	1.10	ND	ND	ND	ND
	1/14/1999		ND	0.700	ND	ND	ND	ND
	1/14/1999 (Dup)		ND	0.900	ND	ND	ND	ND
	3/8/1989		ND					
	4/18/1989		ND	ND	ND	ND	ND	ND
	5/17/1989		ND	ND	ND	ND	ND	ND
MW-9	6/21/1989	<b></b>	ND	ND	ND	ND	ND	ND
	12/27/1990		ND	ND	ND	ND	ND	ND
	3/14/1991		ND	ND	ND	ND	ND ND	ND
D 40	12/4/1996		ND	ND 4.40	ND ND	ND ND	ND ND	ND ND
P-10	12/4/1996		1.80	1.40	ND ND	ND ND	ND ND	ND
P-11	12/4/1996		ND 1.00	ND ND	ND ND	ND ND	ND ND	ND ND
	6/3/1994 9/8/1994		1.00 ND	ND ND	ND ND	ND ND	ND ND	ND ND
	12/7/1994		ND ND	ND ND	ND	ND ND	ND ND	ND ND
	2/27/1995	<u></u>	ND ND	ND ND	ND	ND ND	ND ND	ND
	6/7/1995		ND	ND	ND	ND	ND ND	ND
	9/8/1995		ND	ND	ND	ND	ND ND	ND
	12/8/1995		ND	ND	ND	ND	ND ND	ND
	3/6/1996	<del></del>	ND	ND	ND	ND	ND ND	ND
P-13	6/6/1996	<del></del>	ND	ND	ND	ND	ND	ND
	9/4/1996	<del></del>	ND	ND	ND	ND	ND ND	ND
	12/4/1996		ND	ND	ND	ND	ND	ND
	3/5/1997		ND	ND	ND	ND	ND	ND
	6/4/1997		ND	ND	ND	ND	ND	ND
	9/3/1997		ND	ND	ND	ND	ND	ND
	12/3/1997		ND	ND	ND	ND	ND	ND
	3/10/1998		ND	ND	ND	ND	ND	ND
	3/10/1998 6/2/1998		ND	ND	ND	ND	ND	ND

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Oregon Tool - International Way Facility, Milwaukie, Oregon

Policy   P						VOCs (ug	ı/L)		
Valestization to Quistion Art - Occupational   Si			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Groundwater in an Exemuter   15,000   18,000   18,000   18,000   3.3   5.8	Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Commercial Chronic Mayor (Instant RECW)   130   13   1,800   180,000   44,000   660   10,000	Volatilization to	o Outdoor Air - Occupational	>S	20,000	>S	>S	2,400,000	5,900	68,000
Commercial Chronic Vapor Institution RFOwn   138		·				180,000		·	· · · · · · · · · · · · · · · · · · ·
P-13 (cent)   1/15/1909						·	'		
P-13 (cont)					,		· · · · · · · · · · · · · · · · · · ·		
13/41/996									
321/2000   ND   ND   ND   ND   ND   ND   ND	F-13 (COIII)								
32772001   ND   ND   ND   ND   ND   ND   ND   N									
1,000   ND   ND   ND   ND   ND   ND   ND									
1.00   1.00									
### 108/2004 ND									
109/2004   ND									
\$2,92,005									
P-8    \$3282006   ND   ND   ND   ND   ND   ND   ND   N									
P-8  P-8    327/2007									
P-8    32/7/2007 (Dupp)   ND		10/16/2006	ND	ND	ND	ND	ND	ND	ND
P-8    10/30/2007		3/27/2007	ND	ND	ND	ND	ND	ND	ND
P-8		3/27/2007 (Dup)	ND	ND	ND	ND	ND	ND	ND
1/31/2008	D 9	10/30/2007	ND	ND	ND	ND	ND	ND	ND
11/23/2009	P-0	7/31/2008	ND	ND	ND	ND	ND	ND	ND
3/22/2010		3/24/2009	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
10/12/2010		11/23/2009	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
4/26/2011		3/22/2010	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
4/26/2011 (Dup)									
10/20/2011									
10/20/2011 (Dup)		1 1							
3/22/2012									
3/5/2013									
6/26/2014   0.500 U   0.									
11/19/2014									
RW-1    10/23/1989     2,550   82.0   5.10   ND   12.0   1.70     37/1990     1,100   52.8   2.60   ND   ND   ND   1.00     4/11/1990     1,030   501   8.00   ND   ND   10.6   1.90     12/28/1990     690   51.0   2.00   ND   ND   ND   ND   3.90     3/12/1991     520   490   ND   ND   ND   ND   ND   12.0     6/17/1991     1,600   69.0   ND   ND   ND   ND   ND   0.700     12/6/1991     330   330   11.4   3.30   6.40   6.90     RW-1   3/9/1992     705   104   1.10   3.30   6.40   2.70     6/5/1992     2,000   95.4   3.20   1.40   ND   ND   ND   1.40     9/29/1992     1,000   ND   ND   ND   ND   ND   ND   3.00     6/17/1993     900   36.0   ND   ND   ND   ND   ND   ND     3/2/1994     380   27.0   0.990   ND   ND   ND   ND   ND   ND     3/2/1994     380   27.0   ND   ND   ND   ND   ND   ND   ND     6/11/1994     590   24.0   ND   ND   ND   ND   ND   ND   ND     1.90									
3/7/1990			0.500 U						
A/11/1990									
RW-1				· · · · · · · · · · · · · · · · · · ·					
RW-1									
RW-1									
RW-1									
RW-1 3/9/1992 705 104 1.10 3.30 6.40 2.70 6/5/1992 2,000 95.4 3.20 1.40 ND ND 1.40 9/29/1992 1,000 ND									
6/5/1992          2,000         95.4         3.20         1.40         ND         ND         1.40           9/29/1992          1,000         ND         2.90           6/17/1993          980         37.0         ND         1.90         ND         ND         ND         ND         1.90         1.90         ND         ND         ND         ND         ND         1.90         1.90         ND         ND         ND         ND         1.90         1.90         1.90         ND         ND         ND         ND         1.90         1.	RW-1								
9/29/1992          1,000         ND         ND         ND         ND         ND         ND         3.00           6/17/1993          900         36.0         ND         3.80         ND         3.80         ND         ND         ND         ND         ND         1.90         1.90	1744-1								
6/17/1993          900         36.0         ND         ND         ND         ND         2.90           12/1/1993          980         37.0         ND         3.80         3.80         21.0         0.900         ND         ND         ND         ND         1.90           6/11/1994          590         24.0         ND         ND         ND         ND         1.90									
12/1/1993          980         37.0         ND         3.80         3.80         3.80         ND         ND         ND         ND         ND         ND         1.90									
3/2/1994          380         21.0         0.900         ND         ND         ND         3.80           6/11/1994          590         24.0         ND         ND         ND         ND         ND         1.90									•
6/11/1994 <b>590</b> 24.0 ND ND ND ND 1.90									
									•
		9/8/1994		640	57.0	ND	ND	ND	ND

Table 3
VOC Concentrations in Groundwater – Historical Summary for All Wells
Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug.	/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	VC	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization	to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	hronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
	12/7/1994		480	23.0	0.500	ND	ND	3.30
	2/27/1995		280	20.0	0.700	ND	ND	2.70
	6/7/1995		500	31.0	0.900	ND	ND	1.90
	9/8/1995		570	25.0	0.600	ND	ND	1.60
	12/8/1995		560	19.0	0.700	ND	ND	1.70
	3/6/1996 6/6/1996 9/4/1996		300	13.0	0.800	ND	ND	1.30
			390	27.0	1.10	ND	ND	0.700
			770	26.0	0.900	ND	ND	0.500
			590	22.0	1.00	ND	ND	1.00
	3/5/1997		400	14.0	0.800	ND	ND	1.00
	6/4/1997		440	27.0	5.00 U	5.00 U	5.00 U	5.00 U
	9/3/1997		590	27.0	5.00 U	5.00 U	5.00 U	5.00 U
	12/3/1997		170	7.00	1.00 U	1.00 U	1.00 U	1.00
	3/10/1998		120	8.00	1.00 U	1.00 U	1.00 U	1.00 U
	6/3/1998		160	10.0	ND	ND	ND	ND
	1/15/1999		140	6.80	ND	ND	ND	0.800
	7/28/1999	3.20	120	5.40	ND	ND	ND	1.00
	8/25/1999	4.20	170	8.90	ND	ND	ND	0.900
	11/9/1999	3.20	140	23.0	1.10	ND	ND	0.500
	3/21/2000	3.10	110	5.50	ND	ND	ND	0.600
RW-1 (cont)	3/21/2000 (Dup)	3.20	110	5.80	ND	ND	ND	0.700
` ,	9/19/2000	4.20	130	3.70	ND	ND	ND	0.700
	3/27/2001	4.10	92.0	6.70	ND	ND NB	ND ND	0.500
	9/20/2001	8.00	280	4.90	ND	ND	ND	0.890
	3/25/2002	2.40	98.0 220	11.0 4.10	ND ND	ND ND	ND ND	ND ND
	5/13/2002 5/17/2002	7.50 3.20	97.0	3.80	ND ND	ND ND	ND ND	ND ND
	5/23/2002	1.20	37.0	3.40	ND ND	ND ND	ND ND	ND ND
	6/3/2002	0.920	50.0	3.40	ND ND	ND ND	ND ND	ND
	6/17/2002	3.40	140	8.40	ND ND	ND	ND	ND ND
	7/2/2002	8.20	320	17.0	0.570	ND	ND	ND
	7/15/2002	10.0	510	21.0	ND	ND	ND	ND
	7/29/2002	7.10	290	11.0	ND	ND	ND	ND
	8/12/2002	31.0	1,000	25.0	ND	ND	ND	ND
	9/16/2002	30.0	990	33.0	ND	ND	ND	ND
	9/23/2002	14.0	450	16.0	0.500	ND	ND	ND
	10/14/2002	5.10	160	12.0	ND	ND	ND	ND
	11/4/2002	16.0	500	17.0	0.590	ND	ND	0.530
	11/25/2002	15.0	440	12.0	ND	ND	ND	ND
	12/16/2002	13.0	400	13.0	0.500	ND	ND	ND
	2/11/2003	4.00	110	5.20	ND	ND	ND	ND
	3/3/2003	13.0	350	6.90	ND	ND	ND	ND

Table 3
VOC Concentrations in Groundwater – Historical Summary for All Wells
Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	VC	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization t	to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	nronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
Commorcial 7	3/24/2003	22.0	440	7.90	ND	ND	ND	ND
	4/14/2003	22.0	410	9.50	ND ND	ND	ND ND	ND
	5/5/2003	14.0	240	8.10	ND ND	ND ND	ND ND	ND
	5/28/2003	14.0	380	10.0	0.550	ND	ND	ND
	6/17/2003	21.0	500	13.0	ND	ND	ND	ND
	7/28/2003	5.00	110	10.0	ND	ND	ND	ND
	8/18/2003	33.0	990	27.0	ND	ND	ND	ND
	9/16/2003	22.0	750	26.0	1.60	ND	ND	ND
	10/7/2003	1.10	34.0	4.80	ND	ND	ND	ND
	10/31/2003	4.20	150	11.0	ND	ND	ND	ND
	11/24/2003	3.20	100	10.0	ND	ND	ND	ND
	12/16/2003	2.80	110	7.20	ND	ND	ND	ND
	4/7/2004	7.30	390	11.0	ND	ND	ND	ND
	5/14/2004 6/21/2004	3.50	85.0	9.90	ND	ND	ND	ND
		5.10	250	14.0	ND	ND	ND	ND
	9/10/2004	4.30	180	9.10	ND	ND	ND	ND
	10/8/2004	7.50	360	13.0	ND	ND	ND	ND
	10/8/2004 (Dup)	7.70	380	14.0	ND	ND	ND	ND
	3/29/2005	4.20	150	15.0	0.710	ND	0.580	ND
	6/21/2005	8.30	330	13.0	ND	ND	ND	ND
RW-1 (cont)	9/27/2005	5.10	190	18.0	ND	ND	ND	ND
rever (done)	3/28/2006	4.70	190	16.0	0.580	ND	ND	ND
	10/16/2006	2.30	110	11.0	ND	ND	ND	ND
	3/27/2007	4.10	270	32.0	1.60	ND	ND	ND
	4/27/2007	8.10	710	240	7.00	ND	3.60	ND
	5/30/2007	6.90	290	15.0	0.540	ND	ND	ND
	6/26/2007	4.90	220	22.0	0.620	ND	ND	ND
	7/26/2007	6.10	260	8.80	ND	ND	ND	ND
	8/31/2007	4.60	180	8.30	ND	ND	ND	ND
	9/25/2007	9.70	350	29.0	0.870	ND	ND	ND
	10/30/2007	4.90	190	15.0	ND	ND	ND	ND
	11/29/2007	5.30	200	12.0	ND	ND	ND	ND
	12/19/2007	7.20	340	40.0	1.10	ND ND	ND ND	ND
	2/27/2008	4.70	210	23.0	0.750	ND ND	ND ND	ND ND
	3/31/2008	3.30	140	19.0	0.570	ND ND	ND ND	ND ND
	4/29/2008	4.70 5.70	300	17.0	0.600	ND ND	ND ND	ND ND
	5/27/2008 6/27/2008	5.70 11.0	280 430	40.0 12.0	1.10 ND	ND ND	ND	ND ND
	7/29/2008		220		ND ND	ND	ND	ND ND
	8/27/2008	8.10 9.60	340	11.0 15.0	ND ND	ND	ND	ND ND
		9.60 8.10	280	22.0	0.500	ND	ND	ND ND
	9/30/2008 10/28/2008	2.70	110	12.0	0.500 ND	ND ND	ND	ND ND

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Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization	to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	Chronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
Commercial	11/25/2008	3.20	200	7.80	ND ND	ND	ND	ND
	1/5/2009	5.20	220	24.0	0.760	0.500 U	0.500 U	0.500 U
	1/27/2009	5.40	230	36.0	1.10	0.500 U	0.500 U	0.500 U
	2/24/2009	4.30	210	24.0	0.670	0.500 U	0.500 U	0.500 U
	3/24/2009	4.10	190	12.0	0.500 U	0.500 U	0.500 U	0.500 U
	3/24/2009 (Dup)	3.90	170	11.0	0.500 U	0.500 U	0.500 U	0.500 U
	4/27/2009	4.60	180	26.0	0.760	0.500 U	0.500 U	0.500 U
	5/26/2009	4.70	230	29.0	0.820	0.500 U	0.500 U	0.500 U
	7/6/2009	4.40	150	12.0	0.500 U	0.500 U	0.500 U	0.500 U
	8/18/2009	8.40	270	13.0	0.500 U	0.500 U	0.500 U	0.500 U
	9/29/2009	17.0	500	12.0	0.500 U	0.500 U	0.500 U	0.500 U
	11/10/2009	14.0	420	23.0	0.800	0.500 U	0.500 U	0.500 U
	11/23/2009	6.78	236	9.34	0.520	0.500 U	0.500 U	0.500 U
	12/29/2009	12.0	270	28.0	0.780	0.500 U	0.500 U	0.500 U
	2/9/2010	3.90	110	14.0	0.500 U	0.500 U	0.500 U	0.500 U
	3/22/2010	4.60	140	16.0	0.500 U	0.500 U	0.500 U	0.500 U
	5/4/2010	4.20	140	21.0	0.640	0.500 U	0.500 U	0.500 U
	6/13/2010	2.70	82.0	17.0	0.500	0.500 U	0.500 U	0.500 U
	8/10/2010	7.30	270	21.0	0.500 U	0.500 U	0.500 U	0.500 U
	10/12/2010	18.0	410	32.0	0.850	0.500 U	0.500 U	0.500 U
DW 4 ( )	12/7/2010	3.60	72.0	6.40	0.500 U	0.500 U	0.500 U	0.500 U
RW-1 (cont)	2/25/2011	2.40	73.0	35.0	0.740	0.500 U	0.500 U	0.500 U
	4/26/2011	3.80	65.0	10.0	0.500 U	0.500 U	0.500 U	0.500 U
	6/27/2011	13.0	190	23.0	0.710	0.500 U	0.500 U	0.500 U
	8/19/2011	18.0	280	25.0	0.750	0.500 U	0.500 U	0.500 U
	10/20/2011	11.0	230	44.0	1.00	0.500 U	0.500 U	0.500 U
	12/12/2011	4.30	100	34.0	0.920	0.500 U	0.500 U	0.500 U
	1/18/2012	3.30	110	57.0	1.60	0.500 U	0.500 U	0.500 U
	3/22/2012	2.50	76.0	24.0	0.650	0.500 U	0.500 U	0.500 U
	5/30/2012	3.98	70.5	4.87	0.500 U	0.500 U	0.500 U	0.500 U
	7/23/2012	9.70	180	17.0	0.720	0.500 U	0.500 U	0.500 U
	9/21/2012	13.0	340	50.0	1.50	0.500 U	0.500 U	0.500 U
	3/5/2013	2.10	80.0	40.0	1.20	0.500 U	0.500 U	0.500 U
	10/3/2013	7.02	186	33.8	0.840	0.500 U	0.500 U	0.500 U
	6/26/2014 11/19/2014 11/3/2016 2/15/2018	4.06	71.1	32.5	0.660	0.500 U	0.500 U	0.500 U
		2.18	51.4	35.3	0.770	0.500 U	0.500 U	0.500 U
		1.08	67.6	9.38	0.500 U	0.500 U	0.500 U	0.500 U
		0.620	10.7	62.9	1.46	0.400 U	0.858	0.400 U
	12/16/2018	2.11	26.8	22.6	0.673	0.400 U	0.400 U	0.400 U
	10/21/2020	1.63	14.3	9.10	0.400 U	0. 4 U	0.400 U	0.400 U
	10/25/2021	1.50	38.3	18.1	0.400 U	0. 4 U	0.400 U	0.400 U
	3/24/2023	1.74	26.0	23.6	0.500	0.400 U	0.400 U	0.400 U

Table 3
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Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	1/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization	to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	Chronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
Commercial	7/17/2023	0.810	29.1	26.4	0.730	0.500 U	0.500 U	0.500 U
RW-1 (cont)	10/17/2023	1.19	25.5	17.8	0.730	0.400 U	0.250	0.400 U
	10/17/1989		ND	ND	ND	0.400 0 ND	ND	0.400 0 ND
	12/31/1990		ND ND	ND	ND ND	ND	ND	ND ND
	3/12/1991		5.10	ND	ND ND	ND	ND	ND ND
	6/18/1991		1.00	ND	ND	ND	ND	ND ND
	9/13/1991		ND	0.700	ND	ND	ND ND	ND ND
	12/6/1991		ND	ND	ND	ND	ND ND	ND
	3/9/1992		ND	ND	ND	ND	ND ND	ND
	6/5/1992		ND	ND	ND	ND	ND ND	ND
	9/29/1992		ND	ND	ND	ND	ND	ND
	6/17/1993		ND	ND	ND	ND	ND	ND
	12/1/1993		ND	0.900	ND	ND	ND	ND
	3/2/1994		0.800	1.00	ND	ND	ND	ND
	6/11/1994		0.600	ND	ND	ND	ND	ND
	9/8/1994		0.600	1.00	ND	ND	ND	ND
	12/7/1994		ND	1.10	ND	ND	ND	ND
	2/27/1995		ND	1.00	ND	ND	ND	ND
	6/7/1995		1.00	1.10	ND	ND	ND	ND
	9/8/1995		0.800	1.10	ND	ND	ND	ND
	12/8/1995		ND	0.900	ND	ND	ND	ND
RW-2	3/6/1996		0.700	0.600	ND	ND	ND	ND
RVV-2	6/6/1996		ND	0.700	ND	ND	ND	ND
	9/4/1996		0.700	0.700	ND	ND	ND	ND
	12/4/1996		ND	0.800	ND	ND	ND	ND
	3/5/1997		0.900	0.900	ND	ND	ND	ND
	6/4/1997		ND	0.800	ND	ND	ND	ND
	9/3/1997		ND	1.10	ND	ND	ND	ND
	12/3/1997		ND	1.00	ND	ND	ND	ND
	3/10/1998		ND	ND	ND	ND	ND	ND
	6/3/1998		0.500	ND	ND	ND	ND	ND
	1/15/1999		1.70	ND	ND	ND	ND	ND
	7/28/1999	ND	ND	ND	ND	ND	ND	ND
	7/28/1999 (Dup)	ND	ND	ND	ND	ND	ND	ND
	8/25/1999	ND	ND	ND	ND	ND	ND	ND
	11/9/1999	ND	ND	0.500	ND	ND	ND	ND
	3/21/2000	ND	1.00	ND	ND	ND	ND ND	ND
	9/19/2000	ND	0.600	0.900	ND	ND	ND	ND
	3/27/2001	ND	ND	0.500	ND	ND	ND	ND
	9/20/2001	ND	ND	1.00	ND	ND	ND ND	ND
	3/25/2002	ND	ND	0.570	ND	ND	ND ND	ND
	9/23/2002	ND	ND	1.00	ND	ND	ND	ND

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					VOCs (ug	ŋ/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilizatior	n to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	<b>&gt;</b> S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
	Chronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	I Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
	3/24/2003	ND	ND	ND	ND	ND	ND	ND
	9/16/2003	ND	ND	ND	ND	ND	ND	ND
	4/7/2004	ND	0.680	1.90	ND	ND	ND	ND
	10/8/2004	ND	ND	ND	ND	ND	ND	ND
	3/29/2005	ND	ND	ND	ND	ND	ND	ND
	9/27/2005	ND	ND	0.870	ND	ND	ND	ND
	3/28/2006	ND	0.500	ND	ND	ND	ND	ND
	10/16/2006	ND	ND	1.30	ND	ND	ND	ND
	3/27/2007	ND	ND	ND	ND	ND	ND	ND
	10/30/2007	ND	ND	0.700	ND	ND	ND	ND
RW-2 (cont)	7/31/2008	ND	ND	ND	ND	ND	ND	ND
RVV-2 (COIII)	3/24/2009	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	11/23/2009	0.500 U	0.500 U	0.960	0.500 U	0.500 U	0.500 U	0.500 U
	3/22/2010	0.500 U	0.500 U	1.40	0.500 U	0.500 U	0.500 U	0.500 U
	10/12/2010	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	4/26/2011	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	10/20/2011	0.500 U	0.500 U	1.30	0.500 U	0.500 U	0.500 U	0.500 U
	3/22/2012	0.500 U	0.500 U	0.960	0.500 U	0.500 U	0.500 U	0.500 U
	3/5/2013	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	10/3/2013	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	6/26/2014	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	11/19/2014	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	10/23/1989		2.50	13.0	ND	ND	ND	ND
	12/31/1990		8.40	4.90	ND	ND	ND	1.00
	3/12/1991		21.0	ND 0.40	ND ND	ND ND	ND ND	2.30
	6/18/1991 9/13/1991		3.80 <b>16.0</b>	6.40	ND ND	ND ND	ND ND	ND ND
	12/6/1991		ND	68.4	1.30	ND ND	ND ND	12.0
	3/9/1992		5.80	31.7	ND	ND ND	ND ND	3.00
	6/5/1992	<del></del>	1.20	34.3	ND ND	ND ND	ND ND	4.40
	9/29/1992		4.00	23.0	ND ND	ND ND	ND ND	2.00
	6/17/1993		5.70	24.0	ND	ND	ND	8.00
RW-3	12/1/1993		3.70	29.0	0.800	ND	ND	7.40
	3/2/1994		7.50	22.0	0.600	ND ND	ND ND	4.40
	6/11/1994		8.60	21.0	ND	ND	ND	2.40
	9/8/1994		3.60	28.0	0.500	ND	ND	5.00
	12/7/1994		4.00	19.0	0.600	ND	ND	4.70
	2/27/1995		4.00	12.0	ND	ND	ND	3.40
	6/7/1995		3.90	15.0	ND	ND	ND	3.00
	9/8/1995		1.70	9.30	ND	ND	ND	2.20
	12/8/1995		2.30	7.90	ND	ND	ND	3.20
	3/6/1996		3.20	6.20	ND	ND	ND	1.80

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					VOCs (ug	/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	VC	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization	to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>\$	2,400,000	5,900	68,000
(	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
Commercial C	Chronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
	6/6/1996		2.90	8.70	ND	ND	ND	1.70
	9/4/1996		3.90	14.0	ND	ND	ND	1.30
	12/4/1996		3.60	12.0	ND	ND	ND	1.30
	3/5/1997		2.60	6.90	ND	ND	ND	1.50
	6/4/1997		1.90	6.40	ND	ND	ND	1.40
	9/3/1997 12/3/1997 3/10/1998		3.00	10.0	ND	ND	ND	1.00
			3.20	9.20	ND	0.900	ND	ND
			1.30	5.80	ND	ND	ND	1.00
	6/3/1998		1.50	7.10	ND	ND	ND	0.700
	1/15/1999		3.70	6.80	ND	ND	ND	0.800
	7/28/1999	ND	2.00	6.70	ND	ND	ND	0.700
	8/25/1999	ND	1.80	6.30	ND	ND	ND	ND
	11/9/1999	ND	1.40	5.80	ND	ND	ND	0.500
	3/21/2000	ND	2.00	5.10	ND	ND	ND	0.600
	9/19/2000	ND	1.50	3.60	ND	ND	ND	ND
	3/27/2001	ND	1.10	3.70	ND	ND	ND	0.600
	9/20/2001	ND	1.40	3.20	ND	ND	ND	0.570
	3/25/2002	ND	0.840	2.60	ND	ND	ND	ND
	9/23/2002	ND	ND	4.80	ND	ND	ND	ND
	3/24/2003	ND	0.570	3.50	ND	ND	ND	ND
RW-3 (cont)	9/16/2003	ND	ND	3.00	ND	ND ND	ND	ND
•	9/16/2003 (Dup)	ND	ND 0.540	3.20	ND	ND NB	ND ND	ND
	4/7/2004	ND	0.510	2.80	ND	ND ND	ND NB	ND ND
	10/8/2004	ND	ND	3.10	ND	ND	ND ND	ND ND
	3/29/2005	ND	ND 0.630	1.90 3.80	ND ND	ND ND	ND ND	ND ND
	9/27/2005 3/28/2006	ND ND	0.620 ND	0.580	ND ND	ND ND	ND ND	ND ND
	10/16/2006	ND ND	ND ND	2.10	ND ND	ND ND	ND ND	ND ND
	3/27/2007	ND ND	ND ND	1.10	ND	ND ND	ND ND	ND ND
	10/30/2007	ND	ND ND	0.770	ND ND	ND ND	ND ND	ND
	7/31/2008	ND ND	ND ND	1.60	ND ND	ND ND	ND ND	ND
	3/24/2009	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	11/23/2009	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	3/22/2010	0.500 U	0.500 U	0.500	0.500 U	0.500 U	0.500 U	0.500 U
	10/12/2010	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	10/12/2010 4/26/2011 10/20/2011	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	3/22/2012	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	3/5/2013	0.500 U	0.500 U	0.560	0.500 U	0.500 U	0.500 U	0.500 U
	10/3/2013	0.500 U	0.500 U	0.560	0.500 U	0.500 U	0.500 U	0.500 U
	10/3/2013 (Dup)	0.500 U	0.500 U	0.660	0.500 U	0.500 U	0.500 U	0.500 U
	6/26/2014	0.500 U	0.500 U	1.03	0.500 U	0.500 U	0.500 U	0.500 U

Table 3
VOC Concentrations in Groundwater – Historical Summary for All Wells
Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	I/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilizatio	n to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
Commercial	Chronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	al Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
RW-3 (cont)	11/19/2014	0.500 U	0.500 U	1.07	0.500 U	0.500 U	0.500 U	0.500 U
KVV-3 (COIII)	10/27/1989		60.0	158	3.70	0.300 0 ND	41.0	5.00
	11/3/1989		225	236	9.90	4.80	125	4.70
	12/28/1990		77.9	17.9	1.90	ND	11.1	8.00
	3/13/1991		140	ND	ND	ND ND	ND	3.00
	6/17/1991		138	60.0	0.500	ND	ND ND	1.80
	9/13/1991	<del></del>	68.0	86.0	5.00	ND	12.0	6.00
	12/9/1991		2.20	2.30	ND	ND	ND	ND
	3/9/1992		82.9	91.2	1.80	ND	3.20	5.10
	6/5/1992		140	45.8	ND	ND	ND	0.900
	9/29/1992		130	52.0	0.800	ND	ND	5.00
	6/17/1993		100	39.0	ND	ND	ND	5.30
	12/1/1993		200	24.0	1.00	ND	ND	ND
	3/2/1994		59.0	9.80	ND	ND	ND	2.90
	6/11/1994		110	28.0	1.70	ND	1.00	3.70
	9/8/1994		220	34.0	ND	ND	ND	ND
	12/7/1994		51.0	32.0	2.50	ND	1.40	4.30
	2/27/1995		14.0	26.0	1.00	ND	ND	4.40
	6/7/1995		47.0	31.0	0.800	ND	ND	1.60
	9/8/1995		17.0	32.0	0.900	ND	ND	1.70
	12/8/1995		40.0	40.0	1.10	ND	ND	2.80
RW-4	3/6/1996		28.0	30.0	1.60	ND	ND	2.00
	6/6/1996		25.0	27.0	1.50	ND	ND	1.70
	9/4/1996		0.500	31.0	1.40	ND	ND	2.00
	12/4/1996		44.0	33.0	2.10	ND	ND	1.40
	3/5/1997		30.0	29.0	2.20	ND	ND	2.30
	6/4/1997		32.0	28.0	1.70	ND	ND	1.50
	9/3/1997		43.0	38.0	2.10	ND	ND	1.60
	12/3/1997		20.0	21.0	1.30	ND	ND	1.60
	3/10/1998		28.0	20.0	1.20	ND	ND	1.30
	6/3/1998		24.0	20.0	1.00	ND	ND	0.800
	1/15/1999		27.0	17.0	1.10	ND	ND	1.20
	7/28/1999	ND	45.0	15.0	1.10	ND	ND	ND
	8/25/1999 11/9/1999 3/21/2000	ND	58.0	43.0	1.80	ND	ND	1.00
		ND	20.0	58.0	2.30	ND	ND	0.600
		ND	37.0	18.0	1.00	ND	ND	1.00
	3/27/2001	2.30	77.0	21.0	1.20	ND	ND	1.00
	3/27/2001 (Dup)	2.40	74.0	21.0	1.20	ND	ND	1.00
	3/25/2002	2.40	1.20	12.0	0.620	ND	2.60	0.560
	5/13/2002	ND	8.20	3.90	ND	ND	ND	0.740
	5/17/2002	ND	2.90	1.60	ND	ND	ND	0.510
	5/23/2002	ND	1.10	0.670	ND	ND	ND	0.620

Table 3
VOC Concentrations in Groundwater – Historical Summary for All Wells
Oregon Tool - International Way Facility, Milwaukie, Oregon

			VOCs (ug/L)							
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	VC	1,1-DCA		
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3		
Volatilization	Volatilization to Outdoor Air - Occupational <sup>1</sup>		20,000	>S	>\$	2,400,000	5,900	68,000		
1	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000		
	Chronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55		
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600			
	6/3/2002	ND	ND	ND	ND	ND	ND	0.550		
	6/17/2002	ND	2.80	4.80	ND	ND	0.580	ND		
	7/2/2002	ND	2.50	5.30	ND	ND	0.830	ND		
	7/15/2002	ND	5.40	9.60	0.690	ND	2.40	ND		
	7/29/2002	ND	23.0	21.0	1.60	0.930	4.30	0.770		
	8/12/2002	ND	4.60	4.90	ND	ND	ND	0.630		
	9/16/2002	ND	10.0	25.0	1.40	ND	2.80	0.740		
	9/23/2002	ND	4.90	9.40	0.520	ND	1.10	0.770		
	10/14/2002	ND	ND	ND	ND	ND	ND	ND		
	11/4/2002	ND	1.30	1.70	ND	ND	ND	ND		
	11/25/2002	ND	29.0	21.0	1.80	0.700	2.10	1.00		
	12/16/2002	ND	14.0	20.0	1.20	ND	1.10	0.750		
	2/11/2003	ND	23.0	21.0	1.70	0.750	2.00	0.710		
	3/3/2003	ND	55.0	21.0	0.760	0.590	ND	0.630		
	3/24/2003	ND	34.0	26.0	1.70	0.780	1.80	0.670		
	4/14/2003	ND	28.0	23.0	1.60	0.890	2.10	0.580		
	5/5/2003	ND	2.70	17.0	1.30	ND	7.60	ND		
	5/28/2003	ND	20.0	23.0	1.50	0.720	4.50	0.590		
	6/17/2003	ND	8.90	13.0	1.40	ND	2.40	0.760		
	7/28/2003	ND	18.0	14.0	ND	ND	ND	0.720		
RW-4 (cont)	8/18/2003	ND	5.40	15.0	0.760	ND	3.80	1.10		
RVV-4 (COIII)	9/16/2003	ND	1.10	4.40	ND	ND	1.10	1.00		
	10/7/2003	ND	0.890	2.10	ND	ND	ND	0.590		
	10/31/2003	ND	0.540	2.00	ND	ND	ND	1.10		
	11/24/2003	ND	ND	4.80	0.630	ND	ND	1.40		
	12/16/2003	ND	2.10	40.0	2.80	ND	6.30	1.50		
	4/7/2004	ND	7.00	42.0	2.70	ND	3.40	ND		
	5/14/2004	ND	0.660	15.0	1.30	ND	3.80	ND		
	6/21/2004	ND	18.0	42.0	3.30	0.530	2.00	0.510		
	9/10/2004	ND	1.80	5.40	ND	ND	ND	ND		
	10/8/2004	ND	2.10	16.0	1.10	ND	2.90	0.610		
	3/29/2005	ND	1.50	17.0	1.50	ND	3.40	ND		
	6/21/2005	ND	0.690	42.0	3.20	ND	4.50	0.550		
	9/27/2005	ND	1.00	13.0	1.50	ND	0.710	0.640		
	3/28/2006	ND	6.30	66.0	5.00	0.520	ND	ND		
	10/16/2006	ND	1.20	44.0	3.60	ND	2.00	ND		
	3/27/2007	ND	ND	17.0	2.00	ND	2.80	ND		
	10/30/2007	ND	ND	0.580	ND	ND	ND	ND		
	7/31/2008	ND	ND	5.50	ND	ND	ND	ND		
	3/24/2009	0.500 U	0.500 U	2.80	0.500 U	0.500 U	0.500 U	0.500 U		
	11/23/2009	0.500 U	0.500 U	0.590	0.500 U	0.500 U	0.500 U	0.500 U		
	11/23/2009 (Dup)	0.500 U	0.500 U	0.730	0.500 U	0.500 U	0.500 U	0.500 U		

Table 3
VOC Concentrations in Groundwater – Historical Summary for All Wells
Oregon Tool - International Way Facility, Milwaukie, Oregon

		VOCs (ug/L)						
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization to	Volatilization to Outdoor Air - Occupational <sup>1</sup>		20,000	>S	>S	2,400,000	5,900	68,000
Gı	roundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
Commercial Ch	ronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
	3/22/2010	0.500 U	0.500 U	1.70	0.500 U	0.500 U	0.500 U	0.500 U
	10/12/2010	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	4/26/2011	0.500 U	0.500 U	2.90	0.500 U	0.500 U	0.500 U	0.500 U
DW 4 ( 1)	10/20/2011	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
RW-4 (cont)	3/22/2012	0.500 U	0.500 U	2.90	0.500 U	0.500 U	0.500 U	0.500 U
	10/3/2013	0.500 U	0.500 U	1.43	0.500 U	0.500 U	0.500 U	0.500 U
	6/26/2014	0.500 U	0.500 U	2.46	0.500 U	0.500 U	0.500 U	0.500 U
	10/21/2020	0.400 U	0.400 U	2.35	0.400 U	0.400 U	0.400 U	0.400 U
	10/20/1988		1.00					
	11/17/1988		9.00					
	11/29/1988		4.10					
	11/29/1988		4.20					
	1/5/1989		1.80	ND	ND	ND	ND	ND
	2/23/1989		2.30					
	6/17/1991		ND	ND	ND	ND	ND	ND
	9/13/1991		ND	ND	ND	ND	ND	ND
	12/6/1991		1.10	ND	ND	ND	ND	ND
	3/11/1992		ND	ND	ND	ND	ND	ND
	6/5/1992		ND	ND	ND	ND	ND	ND
	9/29/1992		ND	ND	ND	ND	ND	ND
	6/17/1993							
	12/1/1993		1.00	ND	ND	ND	ND	ND
	1/25/1994		0.700	ND	ND	ND	ND ND	ND
	3/2/1994		1.20	ND	ND	ND	ND ND	ND
Supply Well 1 (SW-1)	6/11/1994		1.00	ND ND	ND ND	ND ND	ND ND	ND
	9/8/1994 12/7/1994		0.600 0.800	ND ND	ND ND	ND ND	ND ND	ND ND
	2/27/1995	 	0.800	ND ND	ND ND	ND ND	ND ND	ND
	6/7/1995		0.800	ND	ND ND	ND ND	ND ND	ND ND
	9/8/1995		0.600	ND	ND ND	ND ND	ND ND	ND ND
	12/8/1995	<del></del>	0.800	ND ND	ND ND	ND ND	ND ND	ND
	3/6/1996		1.00	ND	ND ND	ND ND	ND ND	ND
	6/6/1996		ND	ND	ND ND	ND ND	ND ND	ND
	9/4/1996		ND ND	ND	ND ND	ND ND	ND ND	ND
	12/4/1996		ND	ND	ND ND	ND	ND ND	ND
	3/5/1997		0.600	ND	ND	ND	ND	ND
	6/4/1997		ND	ND	ND	ND	ND	ND
	9/3/1997		ND	ND	ND	ND	ND	ND
	12/3/1997		ND	ND	ND	ND	ND	ND
	3/10/1998		ND	ND	ND	ND	ND	ND
	6/3/1998		ND	ND	ND	ND	ND	ND
	1/15/1999	ND	ND	ND	ND	ND	ND	ND

Table 3
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Oregon Tool - International Way Facility, Milwaukie, Oregon

		VOCs (ug/L)						
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization to	Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
Groundwater in an Excavation <sup>1</sup>		5,600	430	18,000	180,000	44,000	960	10,000
	onic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	cute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
	9/7/1999	ND	1.60	ND	ND	ND	ND	ND
	4/19/2002		ND			-		
	6/28/2002		ND					
	9/23/2002		ND					
	1/13/2003	ND	ND		ND	ND	ND	ND
	4/29/2003		ND					
	7/28/2003	ND	ND	ND	ND	ND	ND	ND
	10/31/2003	ND	ND	ND	ND	ND	ND	ND
	3/30/2004	ND	ND	ND	ND	ND	ND	ND
	6/24/2004	ND	ND	ND	ND	ND	ND	ND
	12/8/2004	ND	ND	ND	ND	ND	ND	ND
	3/7/2005	ND	ND	ND	ND	ND	ND	ND
	6/22/2005	ND	ND	ND	ND	ND	ND	ND
	9/29/2005	ND	ND	ND	ND	ND	ND	ND
	2/13/2006	ND	ND	ND	ND	ND	ND	ND
	5/24/2006	ND	ND	ND	ND	ND	ND	ND
	7/10/2006	ND	ND	ND	ND	ND	ND	ND
	11/1/2006	ND	ND	ND	ND	ND	ND	ND
	1/29/2007	ND	ND	ND	ND	ND	ND	ND
Supply Well 1 (SW-1)	5/21/2007	ND	ND	ND	ND	ND	ND	ND
(cont)	9/19/2007	ND	ND	ND	ND	ND	ND	ND
	12/12/2007	ND	ND	ND	ND	ND	ND	ND
	3/13/2008	ND	ND	ND	ND	ND	ND	ND
	4/24/2008	ND	ND	ND	ND	ND	ND	ND
	9/15/2008	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
	12/2/2008	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
	3/20/2009	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
	5/8/2009	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
	9/16/2009	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
	12/23/2009	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
	2/5/2010	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
	4/30/2010	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
	6/3/2011	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
	3/9/2012	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
	5/10/2012	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
	12/21/2012	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
	3/28/2013	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
	6/21/2013	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	9/27/2013	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	12/20/2013	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U

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Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	VC	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilizatio	n to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
Commercial	Chronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	al Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
	10/20/1988		610					
	11/17/1988		1,070					
	2/1/1989		206					
	2/14/1989		421					
	2/18/1989		686					
	2/24/1989		422				34.0	
	3/24/1989		119	142	ND	ND	ND	1.00
	5/18/1989		224	171	6.00	ND	16.0	7.50
	6/9/1989		283	172	4.60	2.10	14.0	3.30
	8/17/1989		326	100	6.00	2.00	22.0	1.00
	12/28/1990		260	18.4	1.10	ND	21.4	6.50
	3/12/1991		460	ND	ND	ND	ND	8.40
	6/18/1991		47.0	36.0	ND	ND	ND	1.50
	9/13/1991		82.0	74.0	5.00	3.00	13.0	10.0
	12/6/1991		240	210	3.60	ND	ND	6.10
	3/9/1992		45.6	84.6	1.40	ND	7.90	5.90
	6/5/1992		55.4	68.7	0.800	1.40	ND	1.40
	9/29/1992		12.0	20.0	ND	ND	ND	3.00
	6/17/1993		35.0	35.0	1.60	ND	4.80	8.00
	12/1/1993		130	17.0	ND	1.00	ND	ND
Z-1	3/2/1994		46.0	19.0	0.800	ND	ND	4.00
	6/11/1994		23.0	13.0	0.800	ND	1.30	5.10
	9/8/1994		230	32.0	ND	ND 2.722	ND	ND
	2/27/1995		93.0	43.0	3.50	0.500	0.900	4.80
	6/7/1995		480	59.0	5.20	1.00	2.00	3.70
	9/8/1995		130 120	29.0 51.0	2.40 4.70	ND 0.000	ND 1.20	1.80
	12/8/1995		57.0	34.0		0.800 ND	ND	3.10 2.10
	3/6/1996 6/6/1996	<del></del>	63.0	40.0	1.90 3.10	0.900	2.30	2.00
	9/4/1996		490	54.0	4.60	ND	1.40	2.10
	12/4/1996		50.0	7.20	ND	ND ND	ND	ND
	3/5/1997		81.0	17.0	0.700	ND ND	ND ND	1.10
	6/4/1997		67.0	25.0	1.30	ND ND	ND ND	1.80
	9/3/1997		71.0	37.0	1.70	ND ND	ND ND	ND
	12/3/1997		88.0	33.0	1.30	0.700	1.60	1.50
	3/10/1998		44.0	19.0	0.800	ND	ND	0.800
	6/3/1998		16.0	10.0	ND	ND	ND	ND
	1/15/1999		27.0	10.0	ND	ND	ND	ND
	7/28/1999	0.700	57.0	13.0	0.800	ND	0.600	1.00
	8/25/1999	ND	90.0	42.0	2.10	ND	ND	0.600
	8/25/1999 (Dup)	ND	97.0	42.0	2.20	ND	ND	0.600
	11/9/1999	ND	94.0	64.0	4.60	0.900	2.20 J	0.700

Table 3
VOC Concentrations in Groundwater – Historical Summary for All Wells
Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilizatio	n to Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
	Groundwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
Commercial	Chronic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
	al Acute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
				20.0	İ			0.500
	11/9/1999 (Dup)	ND	91.0	60.0	3.70	0.500	1.00 J	0.500
	3/21/2000	0.700	43.0	11.0	ND	ND ND	ND	ND 0.000
	3/27/2001	3.50	180	12.0	0.600	ND ND	ND 0.700	0.600
	3/25/2002	0.930	80.0	25.0	1.60	ND	0.730	0.980
	5/13/2002	0.500	58.0	20.0	1.70	ND ND	0.940	0.820
	5/17/2002 5/23/2002	ND ND	12.0 4.80	7.60 4.10	0.750 ND	ND ND	ND ND	0.870 0.710
	6/3/2002	ND ND	4.80	3.60	ND ND	ND ND	ND ND	0.710
	6/17/2002	ND ND	2.40	2.00	ND ND	ND ND	ND ND	0.550 ND
	7/2/2002	ND ND	48.0	21.0	1.90	ND ND	1.40	0.720
	7/15/2002	0.570	45.0	16.0	1.30	ND ND	ND	0.710
	7/13/2002	ND	26.0	13.0	0.950	ND ND	ND ND	0.800
	8/12/2002	ND ND	37.0	16.0	ND	ND ND	ND ND	0.840
	9/16/2002	ND ND	30.0	22.0	2.30	ND ND	0.540	1.10
	9/23/2002	ND ND	110	73.0	5.20	0.520	2.40	1.10
	10/14/2002	ND ND	72.0	62.0	3.70	0.580	2.10	0.630
	11/4/2002	ND ND	48.0	31.0	2.40	0.580	0.980	1.30
	11/25/2002	ND ND	56.0	25.0	1.90	0.530	0.950	1.30
	12/16/2002	ND	43.0	27.0	1.10	0.570	ND	1.20
	2/11/2003	ND	25.0	19.0	0.770	ND	0.540	0.740
7.4 (	3/3/2003	ND	33.0	25.0	1.70	0.830	2.20	0.730
Z-1 (cont)	3/24/2003	0.600	58.0	18.0	ND	0.660	ND	ND
	4/14/2003	1.40	78.0	25.0	1.10	1.10	0.740	0.530
	5/5/2003	0.550	56.0	35.0	1.60	0.770	1.30	0.550
	5/28/2003	3.30	74.0	28.0	1.60	0.600	1.10	0.650
	6/17/2003	0.810	46.0	20.0	1.50	ND	ND	1.00
	7/28/2003	ND	9.40	9.60	ND	ND	ND	0.640
	8/18/2003	ND	16.0	18.0	1.10	ND	ND	1.20
	9/16/2003	ND	4.80	9.60	1.00	ND	ND	0.630
	10/7/2003	ND	4.70	11.0	1.30	ND	ND	ND
	10/31/2003	ND	4.20	7.00	0.740	ND	ND	0.520
	11/24/2003	ND	5.80	8.60	0.900	ND	ND	0.640
	12/16/2003	ND	23.0	24.0	2.00	ND	0.640	0.690
	4/7/2004	ND	56.0	43.0	3.10	ND	1.30	0.920
	4/7/2004 (Dup)	ND	34.0	26.0	1.80	ND	0.720	1.10
	5/14/2004	ND	9.60	14.0	1.10	ND	ND	ND
	6/21/2004	ND	10.0	7.70	0.510	ND	ND	ND
	9/10/2004	ND	26.0	25.0	2.20	ND	ND	0.560
	10/8/2004	ND	30.0	47.0	3.70	ND	0.640	0.560
	3/29/2005	ND	21.0	35.0	2.70	ND	0.570	ND
	3/29/2005 (Dup)	ND	22.0	37.0	3.20	ND	0.570	ND
	6/21/2005	ND	46.0	79.0	6.40	0.550	1.10	0.840

Table 3 **VOC Concentrations in Groundwater – Historical Summary for All Wells** Oregon Tool - International Way Facility, Milwaukie, Oregon

					VOCs (ug	/L)		
		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	vc	1,1-DCA
Well	Date	127-18-4	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	75-34-3
Volatilization to 0	Outdoor Air - Occupational <sup>1</sup>	>S	20,000	>S	>S	2,400,000	5,900	68,000
Gro	undwater in an Excavation <sup>1</sup>	5,600	430	18,000	180,000	44,000	960	10,000
Commercial Chro	nic Vapor Intrusion RBCwi <sup>2</sup>	130	13	1,800	750	1,300	3.3	55
Commercial Act	ute Vapor Intrusion RBCwi <sup>2</sup>	330	27		10,000	890	4,600	
	9/27/2005	ND	6.60	16.0	1.60	ND	ND	ND
	3/28/2006	ND	56.0	83.0	7.20	0.630	ND	ND
	3/28/2006 (Dup)	ND	61.0	94.0	7.50	0.690	ND	ND
	10/16/2006	ND	10.0	24.0	2.20	ND	ND	ND
	3/27/2007	ND	46.0	66.0	3.40	ND	ND	ND
	10/30/2007	ND	66.0	100	5.50	0.690	0.770	ND
	7/31/2008	ND	39.0	86.0	5.30	0.520	0.920	ND
	3/24/2009	0.500 U	42.0	70.0	4.00	0.570	0.500	0.500 U
	11/23/2009	0.500 U	48.7	130	5.74	0.510	0.540	0.500 U
Z-1 (cont)	3/22/2010	0.500 U	32.0	67.0	3.70	0.500 U	0.500 U	0.500 U
2-1 (cont)	10/12/2010	0.500 U	47.0	150	8.10	0.620	0.530	0.500 U
	4/26/2011	0.500 U	25.0	59.0	3.20	0.500 U	0.500 U	0.500 U
	10/20/2011	0.500 U	60.0	160	8.90	0.780	0.700	0.500 U
	3/22/2012	0.500 U	24.0	78.0	3.80	0.500 U	0.500 U	0.500 U
	3/5/2013	0.500 U	14.0	78.0	3.70	0.500 U	0.500 U	0.500 U
	10/3/2013	0.500 U	10.2	112	5.26	0.500 U	0.500 U	0.500 U
	6/26/2014	0.500 U	0.500 U	52.2	2.41	0.500 U	0.500 U	0.500 U
	11/19/2014	0.500 U	11.9	58.7	2.97	0.500 U	0.500 U	0.500 U
	12/16/2018	0.400 U	14.6	60.1	3.21	0.400 U	0.400 U	0.400 U
	10/21/2020	0.400 U	2.88	59.9	1.97	0.400 U	0.400 U	0.400 U

#### Notes:

### **Shaded Bold** = detection limit or analyte concentration exceeds at least one RBC

#### Abbreviations:

-- = not measured

μg/L = micrograms per liter

>S = RBC exceeds the solubility limit

DCA = dichloroethane

DCE = dichloroethene

ERD = enhanced reductive dechlorination

ND = historical data not detected at or above the detection limit; detection limit unknown

PCE = tetrachloroethene

RBC = Oregon Department of Environmental Quality Risk-Based Concentration

TCE = trichloroethene

TOC = total organic carbon

U = analyte not detected at or above the given detection limit

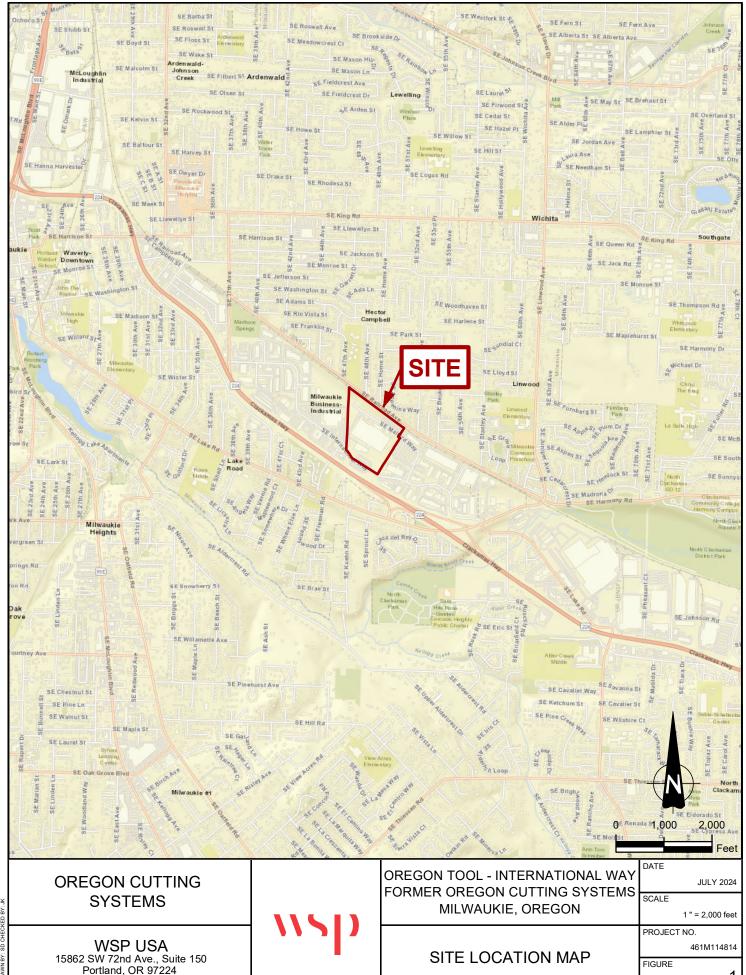
VC = vinyl chloride

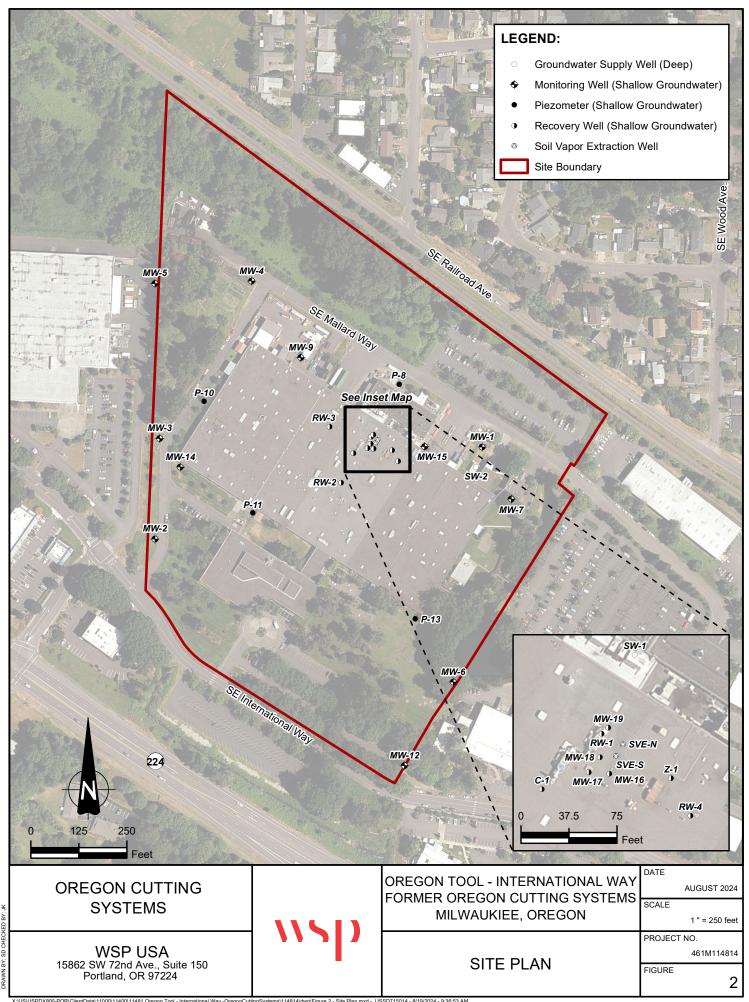
461M114814

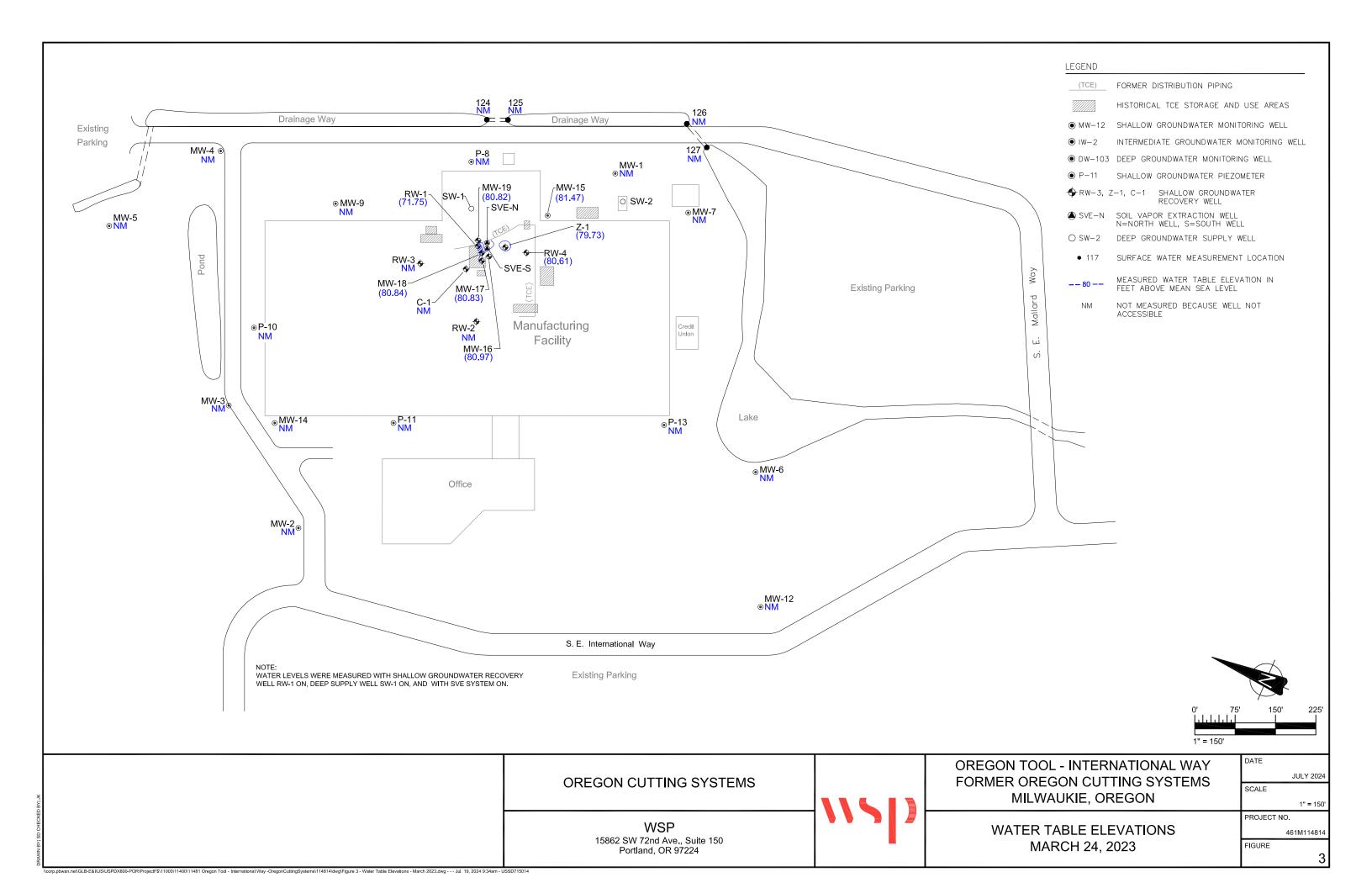
<sup>&</sup>lt;sup>1</sup> = Oregon Department of Environmental Quality Risk-Based Concentrations for Individual Chemicals, August 2023.

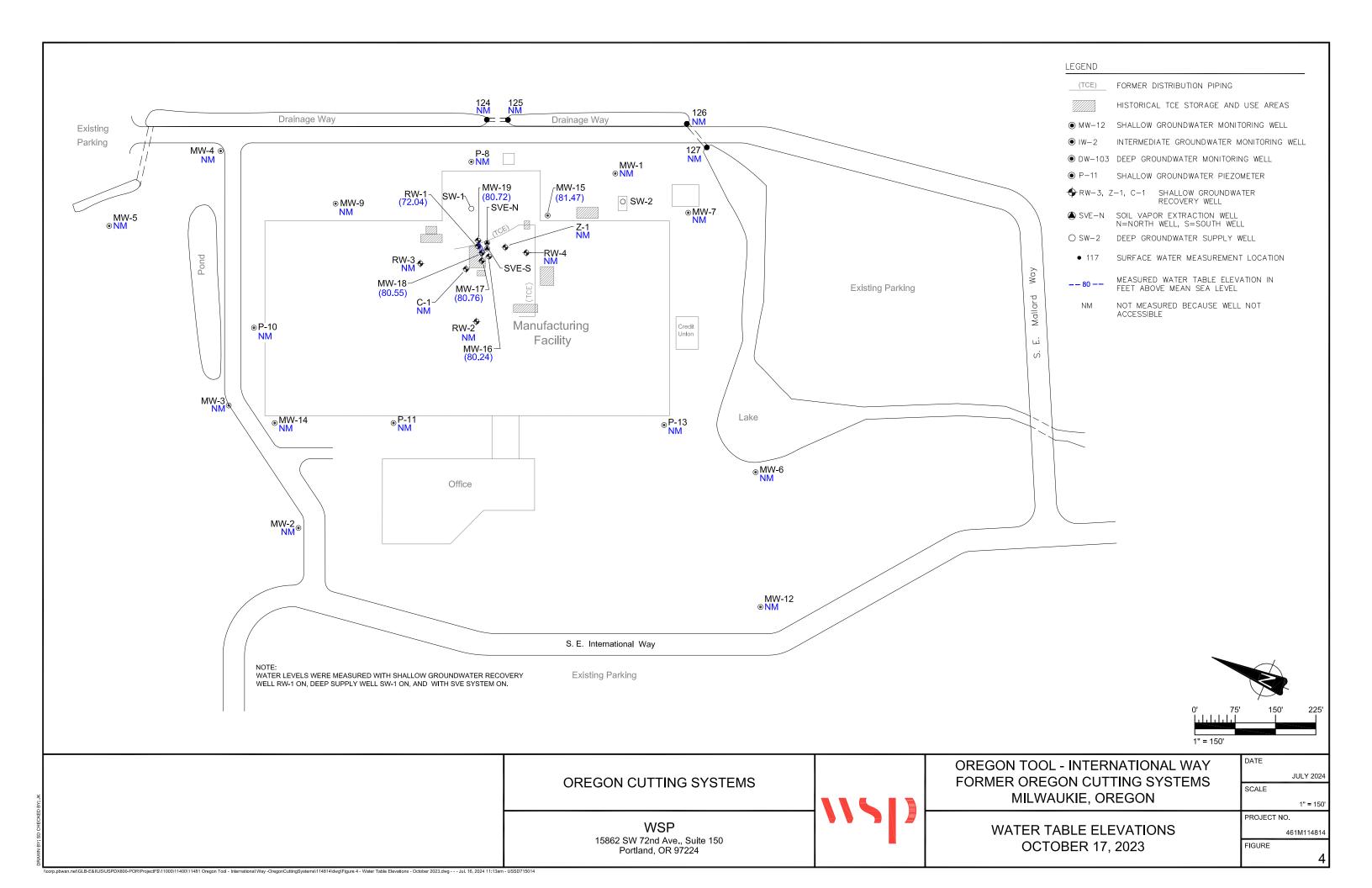
<sup>&</sup>lt;sup>2</sup> = Oregon Department of Environmental Quality Chronic and Acute Vapor Intrusion Risk-Based Concentrations, March 2024. Injection of enhanced reductive dechlorination amendment occurred on April 15, 22, and 28, 2023

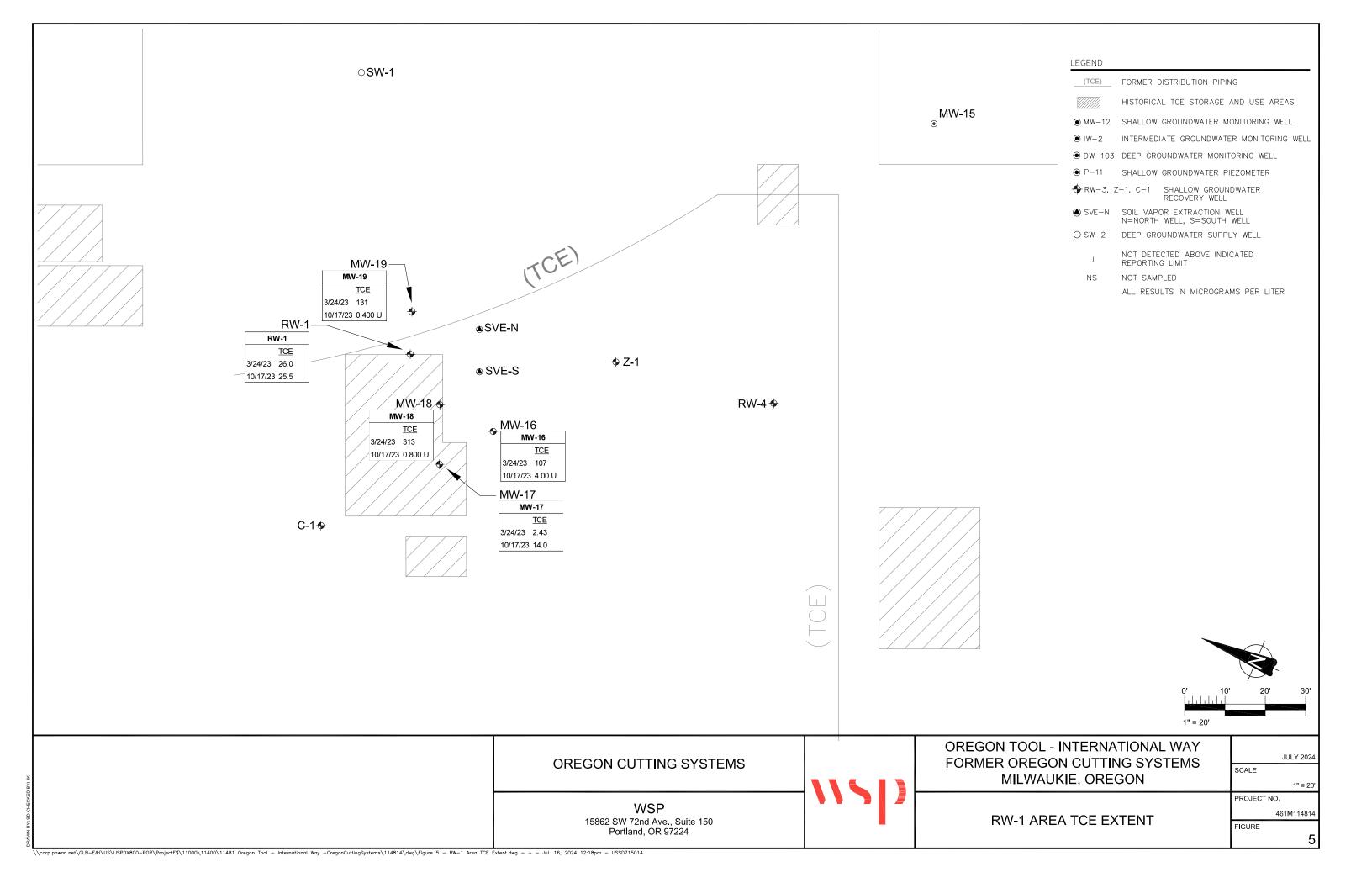
# **FIGURES**











## **APPENDIX A**

LABORATORY REPORTS



#### Apex Laboratories, LLC

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

Saturday, April 8, 2023 Russ Bunker WSP USA Environment & Infrastructure Inc. 15862 SW 72nd Ave. Suite 150 Portland, OR 97224

RE: A3C0961 - OCS - 461M114811

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 A3C0961, which was received by the laboratory on 3/27/2023 at 1:25:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: <a href="mailto:pnerenberg@apex-labs.com">pnerenberg@apex-labs.com</a>, 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)

Default Cooler 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

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Philip Nerenberg, Lab Director

Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION									
Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received					
RW1-20230324	A3C0961-01	Water	03/24/23 13:30	03/27/23 13:25					
MW16-20230324	A3C0961-02	Water	03/24/23 14:30	03/27/23 13:25					
MW17-20230324	A3C0961-03	Water	03/24/23 11:15	03/27/23 13:25					
MW18-20230324	A3C0961-04	Water	03/24/23 10:30	03/27/23 13:25					
MW19-20230324	A3C0961-05	Water	03/24/23 12:30	03/27/23 13:25					

Apex Laboratories

Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### ANALYTICAL SAMPLE RESULTS

	V	olatile Organi	ic Compound	ds by EPA 8.	260D			
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
RW1-20230324 (A3C0961-01)				Matrix: Wa	ater	Batch:	23C1174	
Acetone	ND		20.0	ug/L	1	03/30/23 00:00	EPA 8260D	
Acrylonitrile	ND		2.00	ug/L	1	03/30/23 00:00	EPA 8260D	
Benzene	ND		0.200	ug/L	1	03/30/23 00:00	EPA 8260D	
Bromobenzene	ND		0.500	ug/L	1	03/30/23 00:00	EPA 8260D	
Bromochloromethane	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
Bromodichloromethane	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
Bromoform	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
Bromomethane	ND		5.00	ug/L	1	03/30/23 00:00	EPA 8260D	
2-Butanone (MEK)	ND		10.0	ug/L	1	03/30/23 00:00	EPA 8260D	
n-Butylbenzene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
sec-Butylbenzene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
tert-Butylbenzene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
Carbon disulfide	ND		10.0	ug/L	1	03/30/23 00:00	EPA 8260D	
Carbon tetrachloride	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
Chlorobenzene	ND		0.500	ug/L	1	03/30/23 00:00	EPA 8260D	
Chloroethane	ND		5.00	ug/L	1	03/30/23 00:00	EPA 8260D	
Chloroform	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
Chloromethane	ND		5.00	ug/L	1	03/30/23 00:00	EPA 8260D	
2-Chlorotoluene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
4-Chlorotoluene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
Dibromochloromethane	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	03/30/23 00:00	EPA 8260D	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1	03/30/23 00:00	EPA 8260D	
Dibromomethane	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
1,2-Dichlorobenzene	ND		0.500	ug/L	1	03/30/23 00:00	EPA 8260D	
1,3-Dichlorobenzene	ND		0.500	ug/L	1	03/30/23 00:00	EPA 8260D	
1,4-Dichlorobenzene	ND		0.500	ug/L	1	03/30/23 00:00	EPA 8260D	
Dichlorodifluoromethane	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
1,1-Dichloroethane	ND		0.400	ug/L	1	03/30/23 00:00	EPA 8260D	
1,2-Dichloroethane (EDC)	ND		0.400	ug/L	1	03/30/23 00:00	EPA 8260D	
1,1-Dichloroethene	ND		0.400	ug/L	1	03/30/23 00:00	EPA 8260D	
cis-1,2-Dichloroethene	23.6		0.400	ug/L	1	03/30/23 00:00	EPA 8260D	
trans-1,2-Dichloroethene	0.500		0.400	ug/L	1	03/30/23 00:00	EPA 8260D	

Apex Laboratories

Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### ANALYTICAL SAMPLE RESULTS

	V	olatile Organ	ic Compound	ds by EPA 8.	260D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
RW1-20230324 (A3C0961-01)				Matrix: Wa	ater	Batch: 2	23C1174	
1,2-Dichloropropane	ND		0.500	ug/L	1	03/30/23 00:00	EPA 8260D	
1,3-Dichloropropane	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
2,2-Dichloropropane	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
1,1-Dichloropropene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
cis-1,3-Dichloropropene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
trans-1,3-Dichloropropene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	03/30/23 00:00	EPA 8260D	
Hexachlorobutadiene	ND		5.00	ug/L	1	03/30/23 00:00	EPA 8260D	
2-Hexanone	ND		10.0	ug/L	1	03/30/23 00:00	EPA 8260D	
Isopropylbenzene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
4-Isopropyltoluene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
Methylene chloride	ND		10.0	ug/L	1	03/30/23 00:00	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1	03/30/23 00:00	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	03/30/23 00:00	EPA 8260D	
n-Propylbenzene	ND		0.500	ug/L	1	03/30/23 00:00	EPA 8260D	
Styrene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND		0.400	ug/L	1	03/30/23 00:00	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1	03/30/23 00:00	EPA 8260D	
Tetrachloroethene (PCE)	1.74		0.400	ug/L	1	03/30/23 00:00	EPA 8260D	
Toluene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1	03/30/23 00:00	EPA 8260D	
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1	03/30/23 00:00	EPA 8260D	
1,1,1-Trichloroethane	ND		0.400	ug/L	1	03/30/23 00:00	EPA 8260D	
1,1,2-Trichloroethane	ND		0.500	ug/L	1	03/30/23 00:00	EPA 8260D	
Trichloroethene (TCE)	26.0		0.400	ug/L	1	03/30/23 00:00	EPA 8260D	
Trichlorofluoromethane	ND		2.00	ug/L	1	03/30/23 00:00	EPA 8260D	
1,2,3-Trichloropropane	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
Vinyl chloride	ND		0.400	ug/L	1	03/30/23 00:00	EPA 8260D	
n,p-Xylene	ND		1.00	ug/L	1	03/30/23 00:00	EPA 8260D	
o-Xylene	ND		0.500	ug/L	1	03/30/23 00:00	EPA 8260D	

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Philip Nevenberg

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Philip Nerenberg, Lab Director

Page 4 of 52



#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### ANALYTICAL SAMPLE RESULTS

	V	olatile Organ	ic Compou	nds by EPA 826	0D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
RW1-20230324 (A3C0961-01)				Matrix: Wate	r	Batch: 2	23C1174	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ery: 101 %	Limits: 80-120 %	1	03/30/23 00:00	EPA 8260D	
Toluene-d8 (Surr)			102 %	80-120 %	1	03/30/23 00:00	EPA 8260D	
4-Bromofluorobenzene (Surr)			99 %	80-120 %	1	03/30/23 00:00	EPA 8260D	
MW16-20230324 (A3C0961-02RE1)				Matrix: Wate	r	Batch: 2	23D0057	
Acetone	ND		20.0	ug/L	1	04/04/23 04:31	EPA 8260D	
Acrylonitrile	ND		2.00	ug/L	1	04/04/23 04:31	EPA 8260D	
Benzene	ND		0.200	ug/L	1	04/04/23 04:31	EPA 8260D	
Bromobenzene	ND		0.500	ug/L	1	04/04/23 04:31	EPA 8260D	
Bromochloromethane	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
Bromodichloromethane	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
Bromoform	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
Bromomethane	ND		5.00	ug/L	1	04/04/23 04:31	EPA 8260D	
2-Butanone (MEK)	ND		10.0	ug/L	1	04/04/23 04:31	EPA 8260D	
n-Butylbenzene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
sec-Butylbenzene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
tert-Butylbenzene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
Carbon disulfide	ND		10.0	ug/L	1	04/04/23 04:31	EPA 8260D	
Carbon tetrachloride	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
Chlorobenzene	ND		0.500	ug/L	1	04/04/23 04:31	EPA 8260D	
Chloroethane	ND		5.00	ug/L	1	04/04/23 04:31	EPA 8260D	
Chloroform	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
Chloromethane	ND		5.00	ug/L	1	04/04/23 04:31	EPA 8260D	
2-Chlorotoluene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
4-Chlorotoluene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
Dibromochloromethane	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	04/04/23 04:31	EPA 8260D	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1	04/04/23 04:31	EPA 8260D	
Dibromomethane	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
1,2-Dichlorobenzene	ND		0.500	ug/L	1	04/04/23 04:31	EPA 8260D	
1,3-Dichlorobenzene	ND		0.500	ug/L	1	04/04/23 04:31	EPA 8260D	
1,4-Dichlorobenzene	ND		0.500	ug/L	1	04/04/23 04:31	EPA 8260D	
Dichlorodifluoromethane	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
1,1-Dichloroethane	0.500		0.400	ug/L	1	04/04/23 04:31	EPA 8260D	

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Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### ANALYTICAL SAMPLE RESULTS

			ic Compound	JUNY LEM O	-00D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW16-20230324 (A3C0961-02RE1)				Matrix: Wa	ater	Batch:	23D0057	
1,2-Dichloroethane (EDC)	ND		0.400	ug/L	1	04/04/23 04:31	EPA 8260D	
1,1-Dichloroethene	0.650		0.400	ug/L	1	04/04/23 04:31	EPA 8260D	
cis-1,2-Dichloroethene	158		0.400	ug/L	1	04/04/23 04:31	EPA 8260D	
trans-1,2-Dichloroethene	12.6		0.400	ug/L	1	04/04/23 04:31	EPA 8260D	
1,2-Dichloropropane	ND		0.500	ug/L	1	04/04/23 04:31	EPA 8260D	
1,3-Dichloropropane	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
2,2-Dichloropropane	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
1,1-Dichloropropene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
cis-1,3-Dichloropropene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
rans-1,3-Dichloropropene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	04/04/23 04:31	EPA 8260D	
Hexachlorobutadiene	ND		5.00	ug/L	1	04/04/23 04:31	EPA 8260D	
2-Hexanone	ND		10.0	ug/L	1	04/04/23 04:31	EPA 8260D	
sopropylbenzene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
4-Isopropyltoluene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
Methylene chloride	ND		10.0	ug/L	1	04/04/23 04:31	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1	04/04/23 04:31	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	04/04/23 04:31	EPA 8260D	
n-Propylbenzene	ND		0.500	ug/L	1	04/04/23 04:31	EPA 8260D	
Styrene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND		0.400	ug/L	1	04/04/23 04:31	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1	04/04/23 04:31	EPA 8260D	
Tetrachloroethene (PCE)	ND		0.400	ug/L	1	04/04/23 04:31	EPA 8260D	
Toluene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1	04/04/23 04:31	EPA 8260D	
,2,4-Trichlorobenzene	ND		2.00	ug/L	1	04/04/23 04:31	EPA 8260D	
,1,1-Trichloroethane	ND		0.400	ug/L	1	04/04/23 04:31	EPA 8260D	
,1,2-Trichloroethane	ND		0.500	ug/L	1	04/04/23 04:31	EPA 8260D	
Trichloroethene (TCE)	107		0.400	ug/L	1	04/04/23 04:31	EPA 8260D	
Crichlorofluoromethane	ND		2.00	ug/L	1	04/04/23 04:31	EPA 8260D	
,2,3-Trichloropropane	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
,2,4-Trimethylbenzene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### ANALYTICAL SAMPLE RESULTS

	V	olatile Organ	ic Compou	nds by EPA 826	50D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW16-20230324 (A3C0961-02RE1)				Matrix: Wate	er	Batch:	23D0057	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
Vinyl chloride	12.2		0.400	ug/L	1	04/04/23 04:31	EPA 8260D	
m,p-Xylene	ND		1.00	ug/L	1	04/04/23 04:31	EPA 8260D	
o-Xylene	ND		0.500	ug/L	1	04/04/23 04:31	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ery: 102 %	Limits: 80-120 %	1	04/04/23 04:31	EPA 8260D	
Toluene-d8 (Surr)			101 %	80-120 %	1	04/04/23 04:31	EPA 8260D	
4-Bromofluorobenzene (Surr)			108 %	80-120 %	1	04/04/23 04:31	EPA 8260D	
MW17-20230324 (A3C0961-03)				Matrix: Wate	r	Batch:	23C1174	
Acetone	ND		20.0	ug/L	1	03/30/23 00:22	EPA 8260D	
Acrylonitrile	ND		2.00	ug/L	1	03/30/23 00:22	EPA 8260D	
Benzene	ND		0.200	ug/L	1	03/30/23 00:22	EPA 8260D	
Bromobenzene	ND		0.500	ug/L	1	03/30/23 00:22	EPA 8260D	
Bromochloromethane	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
Bromodichloromethane	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
Bromoform	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
Bromomethane	ND		5.00	ug/L	1	03/30/23 00:22	EPA 8260D	
2-Butanone (MEK)	ND		10.0	ug/L	1	03/30/23 00:22	EPA 8260D	
n-Butylbenzene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
sec-Butylbenzene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
tert-Butylbenzene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
Carbon disulfide	ND		10.0	ug/L	1	03/30/23 00:22	EPA 8260D	
Carbon tetrachloride	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
Chlorobenzene	ND		0.500	ug/L	1	03/30/23 00:22	EPA 8260D	
Chloroethane	ND		5.00	ug/L	1	03/30/23 00:22	EPA 8260D	
Chloroform	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
Chloromethane	ND		5.00	ug/L	1	03/30/23 00:22	EPA 8260D	
2-Chlorotoluene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
4-Chlorotoluene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
Dibromochloromethane	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	03/30/23 00:22	EPA 8260D	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1	03/30/23 00:22	EPA 8260D	
Dibromomethane	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
1,2-Dichlorobenzene	ND		0.500	ug/L	1	03/30/23 00:22	EPA 8260D	

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

### ANALYTICAL SAMPLE RESULTS

	V	olatile Organ	ic Compound	ds by EPA 8	260D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW17-20230324 (A3C0961-03)				Matrix: Wa	ater	Batch:	23C1174	
1,3-Dichlorobenzene	ND		0.500	ug/L	1	03/30/23 00:22	EPA 8260D	
1,4-Dichlorobenzene	ND		0.500	ug/L	1	03/30/23 00:22	EPA 8260D	
Dichlorodifluoromethane	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
1,1-Dichloroethane	ND		0.400	ug/L	1	03/30/23 00:22	EPA 8260D	
1,2-Dichloroethane (EDC)	ND		0.400	ug/L	1	03/30/23 00:22	EPA 8260D	
1,1-Dichloroethene	ND		0.400	ug/L	1	03/30/23 00:22	EPA 8260D	
cis-1,2-Dichloroethene	2.78		0.400	ug/L	1	03/30/23 00:22	EPA 8260D	
trans-1,2-Dichloroethene	ND		0.400	ug/L	1	03/30/23 00:22	EPA 8260D	
1,2-Dichloropropane	ND		0.500	ug/L	1	03/30/23 00:22	EPA 8260D	
1,3-Dichloropropane	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
2,2-Dichloropropane	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
1,1-Dichloropropene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
cis-1,3-Dichloropropene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
trans-1,3-Dichloropropene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	03/30/23 00:22	EPA 8260D	
Hexachlorobutadiene	ND		5.00	ug/L	1	03/30/23 00:22	EPA 8260D	
2-Hexanone	ND		10.0	ug/L	1	03/30/23 00:22	EPA 8260D	
sopropylbenzene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
4-Isopropyltoluene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
Methylene chloride	ND		10.0	ug/L	1	03/30/23 00:22	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1	03/30/23 00:22	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	03/30/23 00:22	EPA 8260D	
n-Propylbenzene	ND		0.500	ug/L	1	03/30/23 00:22	EPA 8260D	
Styrene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
1,1,2-Tetrachloroethane	ND		0.400	ug/L	1	03/30/23 00:22	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1	03/30/23 00:22	EPA 8260D	
Tetrachloroethene (PCE)	ND		0.400	ug/L	1	03/30/23 00:22	EPA 8260D	
Toluene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
,2,3-Trichlorobenzene	ND		2.00	ug/L	1	03/30/23 00:22	EPA 8260D	
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1	03/30/23 00:22	EPA 8260D	
1,1,1-Trichloroethane	ND		0.400	ug/L	1	03/30/23 00:22	EPA 8260D	
,1,2-Trichloroethane	ND		0.500	ug/L	1	03/30/23 00:22	EPA 8260D	

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Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### ANALYTICAL SAMPLE RESULTS

	V	olatile Organ	ic Compou	nds by EPA 826	0D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW17-20230324 (A3C0961-03)				Matrix: Wate	er	Batch: 2	23C1174	
Trichloroethene (TCE)	2.43		0.400	ug/L	1	03/30/23 00:22	EPA 8260D	
Trichlorofluoromethane	ND		2.00	ug/L	1	03/30/23 00:22	EPA 8260D	
1,2,3-Trichloropropane	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
Vinyl chloride	ND		0.400	ug/L	1	03/30/23 00:22	EPA 8260D	
m,p-Xylene	ND		1.00	ug/L	1	03/30/23 00:22	EPA 8260D	
o-Xylene	ND		0.500	ug/L	1	03/30/23 00:22	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Reco	very: 99 %	Limits: 80-120 %	1	03/30/23 00:22	EPA 8260D	
Toluene-d8 (Surr)			102 %	80-120 %	1	03/30/23 00:22	EPA 8260D	
4-Bromofluorobenzene (Surr)			98 %	80-120 %	1	03/30/23 00:22	EPA 8260D	
MW18-20230324 (A3C0961-04)				Matrix: Wate	er	Batch: 2	23C1174	
Acetone	ND		20.0	ug/L	1	03/30/23 00:45	EPA 8260D	
Acrylonitrile	ND		2.00	ug/L	1	03/30/23 00:45	EPA 8260D	
Benzene	ND		0.200	ug/L	1	03/30/23 00:45	EPA 8260D	
Bromobenzene	ND		0.500	ug/L	1	03/30/23 00:45	EPA 8260D	
Bromochloromethane	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
Bromodichloromethane	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
Bromoform	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
Bromomethane	ND		5.00	ug/L	1	03/30/23 00:45	EPA 8260D	
2-Butanone (MEK)	ND		10.0	ug/L	1	03/30/23 00:45	EPA 8260D	
n-Butylbenzene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
sec-Butylbenzene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
ert-Butylbenzene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
Carbon disulfide	ND		10.0	ug/L	1	03/30/23 00:45	EPA 8260D	
Carbon tetrachloride	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
Chlorobenzene	ND		0.500	ug/L	1	03/30/23 00:45	EPA 8260D	
Chloroethane	ND		5.00	ug/L	1	03/30/23 00:45	EPA 8260D	
Chloroform	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
Chloromethane	ND		5.00	ug/L	1	03/30/23 00:45	EPA 8260D	
2-Chlorotoluene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
l-Chlorotoluene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
Dibromochloromethane	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	

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Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### ANALYTICAL SAMPLE RESULTS

	V	olatile Organ	ic Compound	ds by EPA 8	260D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW18-20230324 (A3C0961-04)				Matrix: Wa	ater	Batch:	23C1174	
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	03/30/23 00:45	EPA 8260D	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1	03/30/23 00:45	EPA 8260D	
Dibromomethane	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
1,2-Dichlorobenzene	ND		0.500	ug/L	1	03/30/23 00:45	EPA 8260D	
1,3-Dichlorobenzene	ND		0.500	ug/L	1	03/30/23 00:45	EPA 8260D	
1,4-Dichlorobenzene	ND		0.500	ug/L	1	03/30/23 00:45	EPA 8260D	
Dichlorodifluoromethane	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
1,1-Dichloroethane	0.750		0.400	ug/L	1	03/30/23 00:45	EPA 8260D	
1,2-Dichloroethane (EDC)	ND		0.400	ug/L	1	03/30/23 00:45	EPA 8260D	
1,1-Dichloroethene	1.19		0.400	ug/L	1	03/30/23 00:45	EPA 8260D	
trans-1,2-Dichloroethene	42.0		0.400	ug/L	1	03/30/23 00:45	EPA 8260D	
1,2-Dichloropropane	ND		0.500	ug/L	1	03/30/23 00:45	EPA 8260D	
1,3-Dichloropropane	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
2,2-Dichloropropane	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
1,1-Dichloropropene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
cis-1,3-Dichloropropene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
trans-1,3-Dichloropropene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	03/30/23 00:45	EPA 8260D	
Hexachlorobutadiene	ND		5.00	ug/L	1	03/30/23 00:45	EPA 8260D	
2-Hexanone	ND		10.0	ug/L	1	03/30/23 00:45	EPA 8260D	
Isopropylbenzene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
4-Isopropyltoluene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
Methylene chloride	ND		10.0	ug/L	1	03/30/23 00:45	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1	03/30/23 00:45	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
Naphthalene	ND		2.00	ug/L	1	03/30/23 00:45	EPA 8260D	
n-Propylbenzene	ND		0.500	ug/L	1	03/30/23 00:45	EPA 8260D	
Styrene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
,1,1,2-Tetrachloroethane	ND		0.400	ug/L	1	03/30/23 00:45	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1	03/30/23 00:45	EPA 8260D	
Fetrachloroethene (PCE)	ND		0.400	ug/L	1	03/30/23 00:45	EPA 8260D	
Toluene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1	03/30/23 00:45	EPA 8260D	

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### ANALYTICAL SAMPLE RESULTS

	V	olatile Organic	Compou	nds by EPA 826	0D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW18-20230324 (A3C0961-04)				Matrix: Wate	r	Batch: 2	23C1174	
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1	03/30/23 00:45	EPA 8260D	
1,1,1-Trichloroethane	ND		0.400	ug/L	1	03/30/23 00:45	EPA 8260D	
1,1,2-Trichloroethane	ND		0.500	ug/L	1	03/30/23 00:45	EPA 8260D	
Trichlorofluoromethane	ND		2.00	ug/L	1	03/30/23 00:45	EPA 8260D	
1,2,3-Trichloropropane	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
Vinyl chloride	72.8		0.400	ug/L	1	03/30/23 00:45	EPA 8260D	
m,p-Xylene	ND		1.00	ug/L	1	03/30/23 00:45	EPA 8260D	
o-Xylene	ND		0.500	ug/L	1	03/30/23 00:45	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recover	y: 103 %	Limits: 80-120 %	1	03/30/23 00:45	EPA 8260D	
Toluene-d8 (Surr)			101 %	80-120 %	1	03/30/23 00:45	EPA 8260D	
4-Bromofluorobenzene (Surr)			99 %	80-120 %	1	03/30/23 00:45	EPA 8260D	
MW18-20230324 (A3C0961-04RE1)				Matrix: Wate	r	Batch: 2	23C1207	
cis-1,2-Dichloroethene	575		8.00	ug/L	20	03/30/23 17:08	EPA 8260D	
Trichloroethene (TCE)	313		8.00	ug/L	20	03/30/23 17:08	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ry: 97%	Limits: 80-120 %	1	03/30/23 17:08	EPA 8260D	
Toluene-d8 (Surr)			103 %	80-120 %	I	03/30/23 17:08	EPA 8260D	
4-Bromofluorobenzene (Surr)			99 %	80-120 %	1	03/30/23 17:08	EPA 8260D	
MW19-20230324 (A3C0961-05)				Matrix: Wate	r	Batch: 2	23C1174	
Acetone	ND		20.0	ug/L	1	03/30/23 01:07	EPA 8260D	
Acrylonitrile	ND		2.00	ug/L	1	03/30/23 01:07	EPA 8260D	
Benzene	ND		0.200	ug/L	1	03/30/23 01:07	EPA 8260D	
Bromobenzene	ND		0.500	ug/L	1	03/30/23 01:07	EPA 8260D	
Bromochloromethane	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
Bromodichloromethane	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
Bromoform	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
Bromomethane	ND		5.00	ug/L	1	03/30/23 01:07	EPA 8260D	
2-Butanone (MEK)	ND		10.0	ug/L	1	03/30/23 01:07	EPA 8260D	
()					1	03/30/23 01:07	EPA 8260D	
n-Butylbenzene	ND		1 ()()	1][0/1].			EFA 62001)	
n-Butylbenzene sec-Butylbenzene	ND ND		1.00 1.00	ug/L ug/L	1	03/30/23 01:07	EPA 8260D EPA 8260D	

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Philip Nerenberg, Lab Director

Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### ANALYTICAL SAMPLE RESULTS

		olatile Organ	·	,				
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW19-20230324 (A3C0961-05)				Matrix: Wa	ater	Batch:	23C1174	
Carbon disulfide	ND		10.0	ug/L	1	03/30/23 01:07	EPA 8260D	
Carbon tetrachloride	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
Chlorobenzene	ND		0.500	ug/L	1	03/30/23 01:07	EPA 8260D	
Chloroethane	ND		5.00	ug/L	1	03/30/23 01:07	EPA 8260D	
Chloroform	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
Chloromethane	ND		5.00	ug/L	1	03/30/23 01:07	EPA 8260D	
2-Chlorotoluene	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
4-Chlorotoluene	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
Dibromochloromethane	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	03/30/23 01:07	EPA 8260D	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1	03/30/23 01:07	EPA 8260D	
Dibromomethane	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
1,2-Dichlorobenzene	ND		0.500	ug/L	1	03/30/23 01:07	EPA 8260D	
1,3-Dichlorobenzene	ND		0.500	ug/L	1	03/30/23 01:07	EPA 8260D	
1,4-Dichlorobenzene	ND		0.500	ug/L	1	03/30/23 01:07	EPA 8260D	
Dichlorodifluoromethane	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
1,1-Dichloroethane	ND		0.400	ug/L	1	03/30/23 01:07	EPA 8260D	
1,2-Dichloroethane (EDC)	ND		0.400	ug/L	1	03/30/23 01:07	EPA 8260D	
1,1-Dichloroethene	ND		0.400	ug/L	1	03/30/23 01:07	EPA 8260D	
cis-1,2-Dichloroethene	24.5		0.400	ug/L	1	03/30/23 01:07	EPA 8260D	
trans-1,2-Dichloroethene	1.49		0.400	ug/L	1	03/30/23 01:07	EPA 8260D	
1,2-Dichloropropane	ND		0.500	ug/L	1	03/30/23 01:07	EPA 8260D	
1,3-Dichloropropane	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
2,2-Dichloropropane	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
1,1-Dichloropropene	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
cis-1,3-Dichloropropene	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
rans-1,3-Dichloropropene	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	03/30/23 01:07	EPA 8260D	
Hexachlorobutadiene	ND		5.00	ug/L	1	03/30/23 01:07	EPA 8260D	
2-Hexanone	ND		10.0	ug/L	1	03/30/23 01:07	EPA 8260D	
sopropylbenzene	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
4-Isopropyltoluene	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D	
Methylene chloride	ND		10.0	ug/L	1	03/30/23 01:07	EPA 8260D	

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D												
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes				
MW19-20230324 (A3C0961-05)				Matrix: Wate	١r	Batch:	23C1174					
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1	03/30/23 01:07	EPA 8260D	_				
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D					
Naphthalene	ND		2.00	ug/L	1	03/30/23 01:07	EPA 8260D					
n-Propylbenzene	ND		0.500	ug/L	1	03/30/23 01:07	EPA 8260D					
Styrene	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D					
1,1,2-Tetrachloroethane	ND		0.400	ug/L	1	03/30/23 01:07	EPA 8260D					
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1	03/30/23 01:07	EPA 8260D					
Tetrachloroethene (PCE)	2.22		0.400	ug/L	1	03/30/23 01:07	EPA 8260D					
Toluene	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D					
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1	03/30/23 01:07	EPA 8260D					
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1	03/30/23 01:07	EPA 8260D					
1,1,1-Trichloroethane	ND		0.400	ug/L	1	03/30/23 01:07	EPA 8260D					
1,1,2-Trichloroethane	ND		0.500	ug/L	1	03/30/23 01:07	EPA 8260D					
Trichloroethene (TCE)	131		0.400	ug/L	1	03/30/23 01:07	EPA 8260D					
Trichlorofluoromethane	ND		2.00	ug/L	1	03/30/23 01:07	EPA 8260D					
1,2,3-Trichloropropane	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D					
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D					
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D					
Vinyl chloride	0.690		0.400	ug/L	1	03/30/23 01:07	EPA 8260D					
m,p-Xylene	ND		1.00	ug/L	1	03/30/23 01:07	EPA 8260D					
o-Xylene	ND		0.500	ug/L	1	03/30/23 01:07	EPA 8260D					
Surrogate: 1,4-Difluorobenzene (Surr)		Recover	ry: 106 %	Limits: 80-120 %	6 <i>I</i>	03/30/23 01:07	EPA 8260D					
Toluene-d8 (Surr)			103 %	80-120 %		03/30/23 01:07	EPA 8260D					
4-Bromofluorobenzene (Surr)			100 %	80-120 %	6 I	03/30/23 01:07	EPA 8260D					

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### ANALYTICAL SAMPLE RESULTS

Total Orgai	nic Carbon (No	on-Purgeable	e) by Persulfa	te Oxidatio	n by Stand	ard Method 531	0C	
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
RW1-20230324 (A3C0961-01)				Matrix: Wa	ater	Batch:	23D0067	
Total Organic Carbon	1.56		1.00	mg/L	1	04/04/23 04:44	SM 5310 C	
MW16-20230324 (A3C0961-02)				Matrix: Wa	ater	Batch:	23D0067	
Total Organic Carbon	2.20		1.00	mg/L	1	04/04/23 05:14	SM 5310 C	
MW17-20230324 (A3C0961-03)				Matrix: Wa	ater	Batch:	23D0067	
Total Organic Carbon	1.51		1.00	mg/L	1	04/04/23 05:44	SM 5310 C	
MW18-20230324 (A3C0961-04)				Matrix: Wa	ater	Batch:	23D0067	
Total Organic Carbon	1.93		1.00	mg/L	1	04/04/23 06:14	SM 5310 C	
MW19-20230324 (A3C0961-05)		_	_	Matrix: W	ater	Batch:	23D0067	
Total Organic Carbon	1.40		1.00	mg/L	1	04/04/23 06:44	SM 5310 C	

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15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23C1174 - EPA 5030C							Wat	er				
Blank (23C1174-BLK1)			Prepared	: 03/29/23	13:58 Anal	yzed: 03/29/	23 20:37					
EPA 8260D												
Acetone	ND		20.0	ug/L	1							
Acrylonitrile	ND		2.00	ug/L	1							
Benzene	ND		0.200	ug/L	1							
Bromobenzene	ND		0.500	ug/L	1							
Bromochloromethane	ND		1.00	ug/L	1							
Bromodichloromethane	ND		1.00	ug/L	1							
Bromoform	ND		1.00	ug/L	1							
Bromomethane	ND		5.00	ug/L	1							
2-Butanone (MEK)	ND		10.0	ug/L	1							
n-Butylbenzene	ND		1.00	ug/L	1							
sec-Butylbenzene	ND		1.00	ug/L	1							
ert-Butylbenzene	ND		1.00	ug/L	1							
Carbon disulfide	ND		10.0	ug/L	1							
Carbon tetrachloride	ND		1.00	ug/L	1							
Chlorobenzene	ND		0.500	ug/L	1							
Chloroethane	ND		5.00	ug/L	1							
Chloroform	ND		1.00	ug/L	1							
Chloromethane	ND		5.00	ug/L	1							
2-Chlorotoluene	ND		1.00	ug/L	1							
1-Chlorotoluene	ND		1.00	ug/L	1							
Dibromochloromethane	ND		1.00	ug/L	1							
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1							
Dibromomethane	ND		1.00	ug/L	1							
1,2-Dichlorobenzene	ND		0.500	ug/L	1							
1,3-Dichlorobenzene	ND		0.500	ug/L	1							
1,4-Dichlorobenzene	ND		0.500	ug/L	1							
Dichlorodifluoromethane	ND		1.00	ug/L	1							
,1-Dichloroethane	ND		0.400	ug/L	1							
1,2-Dichloroethane (EDC)	ND		0.400	ug/L	1							
,1-Dichloroethene	ND		0.400	ug/L	1							
cis-1,2-Dichloroethene	ND		0.400	ug/L	1							
rans-1,2-Dichloroethene	ND		0.400	ug/L	1							

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23C1174 - EPA 5030C							Wa	ter				
Blank (23C1174-BLK1)			Prepared	: 03/29/23	13:58 Ana	yzed: 03/29/	/23 20:37					
1,2-Dichloropropane	ND		0.500	ug/L	1							
1,3-Dichloropropane	ND		1.00	ug/L	1							
2,2-Dichloropropane	ND		1.00	ug/L	1							
1,1-Dichloropropene	ND		1.00	ug/L	1							
cis-1,3-Dichloropropene	ND		1.00	ug/L	1							
trans-1,3-Dichloropropene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Hexachlorobutadiene	ND		5.00	ug/L	1							
2-Hexanone	ND		10.0	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
4-Isopropyltoluene	ND		1.00	ug/L	1							
Methylene chloride	ND		10.0	ug/L	1							
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		2.00	ug/L	1							
n-Propylbenzene	ND		0.500	ug/L	1							
Styrene	ND		1.00	ug/L	1							
1,1,2-Tetrachloroethane	ND		0.400	ug/L	1							
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1							
Tetrachloroethene (PCE)	ND		0.400	ug/L	1							
Toluene	ND		1.00	ug/L	1							
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1							
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1							
1,1,1-Trichloroethane	ND		0.400	ug/L	1							
1,1,2-Trichloroethane	ND		0.500	ug/L	1							
Trichloroethene (TCE)	ND		0.400	ug/L	1							
Trichlorofluoromethane	ND		2.00	ug/L	1							
1,2,3-Trichloropropane	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							
Vinyl chloride	ND		0.400	ug/L	1							
m,p-Xylene	ND		1.00	ug/L	1							
o-Xylene	ND		0.500	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Rec	overy: 97 %	Limits: 80	)-120 %	Dilı	ution: 1x					<del></del>

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

	Volatile Organic Compounds by EPA 8260D												
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 23C1174 - EPA 5030C							Wa	ter					
Blank (23C1174-BLK1)			Prepared	1: 03/29/23	13:58 Anal	lyzed: 03/29	/23 20:37						
Surr: Toluene-d8 (Surr)		Reco	very: 102 %	Limits: 80	0-120 %	Dilt	ution: 1x						
4-Bromofluorobenzene (Surr)			99 %	80	0-120 %		"						
LCS (23C1174-BS1)			Prepared	1: 03/29/23	13:58 Ana	lyzed: 03/29	/23 19:53						
EPA 8260D													
Acetone	43.0		20.0	ug/L	1	40.0		107	80-120%				
Acrylonitrile	21.8		2.00	ug/L	1	20.0		109	80-120%				
Benzene	20.3		0.200	ug/L	1	20.0		102	80-120%				
Bromobenzene	19.0		0.500	ug/L	1	20.0		95	80-120%				
Bromochloromethane	24.2		1.00	ug/L	1	20.0		121	80-120%			Q-5	
Bromodichloromethane	22.0		1.00	ug/L	1	20.0		110	80-120%				
Bromoform	22.7		1.00	ug/L	1	20.0		113	80-120%				
Bromomethane	26.6		5.00	ug/L	1	20.0		133	80-120%			Q-5	
2-Butanone (MEK)	46.6		10.0	ug/L	1	40.0		117	80-120%				
n-Butylbenzene	22.4		1.00	ug/L	1	20.0		112	80-120%				
sec-Butylbenzene	23.7		1.00	ug/L	1	20.0		118	80-120%				
tert-Butylbenzene	22.9		1.00	ug/L	1	20.0		115	80-120%				
Carbon disulfide	22.0		10.0	ug/L	1	20.0		110	80-120%				
Carbon tetrachloride	24.0		1.00	ug/L	1	20.0		120	80-120%				
Chlorobenzene	20.5		0.500	ug/L	1	20.0		103	80-120%				
Chloroethane	28.0		5.00	ug/L	1	20.0		140	80-120%			Q-5	
Chloroform	20.7		1.00	ug/L	1	20.0		103	80-120%				
Chloromethane	25.4		5.00	ug/L	1	20.0		127	80-120%			Q-5	
2-Chlorotoluene	20.5		1.00	ug/L	1	20.0		103	80-120%				
4-Chlorotoluene	21.7		1.00	ug/L	1	20.0		109	80-120%				
Dibromochloromethane	21.8		1.00	ug/L	1	20.0		109	80-120%				
1,2-Dibromo-3-chloropropane	19.1		5.00	ug/L	1	20.0		95	80-120%				
1,2-Dibromoethane (EDB)	21.1		0.500	ug/L	1	20.0		105	80-120%				
Dibromomethane	20.8		1.00	ug/L	1	20.0		104	80-120%				
1,2-Dichlorobenzene	20.0		0.500	ug/L	1	20.0		100	80-120%				
1,3-Dichlorobenzene	20.6		0.500	ug/L	1	20.0		103	80-120%				
1,4-Dichlorobenzene	19.2		0.500	ug/L	1	20.0		96	80-120%				
Dichlorodifluoromethane	29.9		1.00	ug/L	1	20.0		149	80-120%			Q-5	
1,1-Dichloroethane	21.7		0.400	ug/L	1	20.0		109	80-120%				

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23C1174 - EPA 5030C							Wa	ter				
LCS (23C1174-BS1)			Prepared	: 03/29/23	13:58 Anal	yzed: 03/29	/23 19:53					
1,2-Dichloroethane (EDC)	23.3		0.400	ug/L	1	20.0		117	80-120%			
1,1-Dichloroethene	23.2		0.400	ug/L	1	20.0		116	80-120%			
cis-1,2-Dichloroethene	21.3		0.400	ug/L	1	20.0		106	80-120%			
trans-1,2-Dichloroethene	21.3		0.400	ug/L	1	20.0		107	80-120%			
1,2-Dichloropropane	19.9		0.500	ug/L	1	20.0		99	80-120%			
1,3-Dichloropropane	21.6		1.00	ug/L	1	20.0		108	80-120%			
2,2-Dichloropropane	24.6		1.00	ug/L	1	20.0		123	80-120%			Q-56
1,1-Dichloropropene	22.3		1.00	ug/L	1	20.0		111	80-120%			
cis-1,3-Dichloropropene	22.5		1.00	ug/L	1	20.0		113	80-120%			
trans-1,3-Dichloropropene	25.3		1.00	ug/L	1	20.0		126	80-120%			Q-56
Ethylbenzene	22.3		0.500	ug/L	1	20.0		111	80-120%			
Hexachlorobutadiene	20.7		5.00	ug/L	1	20.0		103	80-120%			
2-Hexanone	45.4		10.0	ug/L	1	40.0		113	80-120%			
Isopropylbenzene	23.1		1.00	ug/L	1	20.0		116	80-120%			
4-Isopropyltoluene	23.3		1.00	ug/L	1	20.0		116	80-120%			
Methylene chloride	20.2		10.0	ug/L	1	20.0		101	80-120%			
4-Methyl-2-pentanone (MiBK)	51.7		10.0	ug/L	1	40.0		129	80-120%			Q-56
Methyl tert-butyl ether (MTBE)	20.9		1.00	ug/L	1	20.0		105	80-120%			
Naphthalene	16.2		2.00	ug/L	1	20.0		81	80-120%			
n-Propylbenzene	21.6		0.500	ug/L	1	20.0		108	80-120%			
Styrene	23.0		1.00	ug/L	1	20.0		115	80-120%			
1,1,1,2-Tetrachloroethane	20.9		0.400	ug/L	1	20.0		105	80-120%			
1,1,2,2-Tetrachloroethane	21.4		0.500	ug/L	1	20.0		107	80-120%			
Tetrachloroethene (PCE)	21.6		0.400	ug/L	1	20.0		108	80-120%			
Toluene	20.3		1.00	ug/L	1	20.0		101	80-120%			
1,2,3-Trichlorobenzene	20.6		2.00	ug/L	1	20.0		103	80-120%			
1,2,4-Trichlorobenzene	18.8		2.00	ug/L	1	20.0		94	80-120%			
1,1,1-Trichloroethane	22.8		0.400	ug/L	1	20.0		114	80-120%			
1,1,2-Trichloroethane	21.0		0.500	ug/L	1	20.0		105	80-120%			
Trichloroethene (TCE)	18.7		0.400	ug/L	1	20.0		94	80-120%			
Trichlorofluoromethane	25.7		2.00	ug/L	1	20.0		128	80-120%			Q-56
1,2,3-Trichloropropane	21.5		1.00	ug/L	1	20.0		108	80-120%			
1,2,4-Trimethylbenzene	23.1		1.00	ug/L	1	20.0		116	80-120%			
1,3,5-Trimethylbenzene	23.0		1.00	ug/L	1	20.0		115	80-120%			

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23C1174 - EPA 5030C							Wa	ter				
LCS (23C1174-BS1)			Prepared	1: 03/29/23	13:58 Ana	lyzed: 03/29	/23 19:53					
Vinyl chloride	23.5		0.400	ug/L	1	20.0		117	80-120%			
m,p-Xylene	48.2		1.00	ug/L	1	40.0		121	80-120%			Q-
o-Xylene	22.4		0.500	ug/L	1	20.0		112	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Rec	overy: 93 %	Limits: 80	0-120 %	Dilı	ution: 1x					<del></del>
Toluene-d8 (Surr)			99 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			94 %	80	)-120 %		"					
Duplicate (23C1174-DUP1)			Prepared	1: 03/29/23	13:58 Ana	lyzed: 03/30	/23 04:52					
OC Source Sample: MW16-20230	324 (A3C09	061-02)										
EPA 8260D												
Acetone	ND		200	ug/L	10		ND				30%	
Acrylonitrile	ND		20.0	ug/L	10		ND				30%	
Benzene	ND		2.00	ug/L	10		ND				30%	
Bromobenzene	ND		5.00	ug/L	10		ND				30%	
Bromochloromethane	ND		10.0	ug/L	10		ND				30%	
Bromodichloromethane	ND		10.0	ug/L	10		ND				30%	
Bromoform	ND		10.0	ug/L	10		ND				30%	
Bromomethane	ND		50.0	ug/L	10		ND				30%	
2-Butanone (MEK)	ND		100	ug/L	10		ND				30%	
n-Butylbenzene	ND		10.0	ug/L	10		ND				30%	
sec-Butylbenzene	ND		10.0	ug/L	10		ND				30%	
tert-Butylbenzene	ND		10.0	ug/L	10		ND				30%	
Carbon disulfide	ND		100	ug/L	10		ND				30%	
Carbon tetrachloride	ND		10.0	ug/L	10		ND				30%	
Chlorobenzene	ND		5.00	ug/L	10		ND				30%	
Chloroethane	ND		50.0	ug/L	10		ND				30%	
Chloroform	ND		10.0	ug/L	10		ND				30%	
Chloromethane	ND		50.0	ug/L	10		ND				30%	
2-Chlorotoluene	ND		10.0	ug/L	10		ND				30%	
4-Chlorotoluene	ND		10.0	ug/L	10		ND				30%	
Dibromochloromethane	ND		10.0	ug/L	10		ND				30%	
1,2-Dibromo-3-chloropropane	ND		50.0	ug/L	10		ND				30%	
1,2-Dibromoethane (EDB)	ND		5.00	ug/L	10		ND				30%	

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Dibromomethane

ND

10.0

ug/L

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ND

30%

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10



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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

### QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

## Detection Reporting Spike Source % REC RPD e Result Limit Limit Units Dilution Amount Result % REC Limits RPD Limit Not

Analyte	Result	Limit	Limit Limit	Units	Dilution	Amount	Source Result	% REC	% REC Limits	RPD	Limit	Notes
Batch 23C1174 - EPA 5030C		-		-	-	-	Wat	er			-	
Duplicate (23C1174-DUP1)			Prepared	: 03/29/23	13:58 Ana	lyzed: 03/30	/23 04:52					
QC Source Sample: MW16-20230	324 (A3C09	061-02)										
1,2-Dichlorobenzene	ND		5.00	ug/L	10		ND				30%	
1,3-Dichlorobenzene	ND		5.00	ug/L	10		ND				30%	
1,4-Dichlorobenzene	ND		5.00	ug/L	10		ND				30%	
Dichlorodifluoromethane	ND		10.0	ug/L	10		ND				30%	
1,1-Dichloroethane	ND		4.00	ug/L	10		ND				30%	
1,2-Dichloroethane (EDC)	ND		4.00	ug/L	10		ND				30%	
1,1-Dichloroethene	ND		4.00	ug/L	10		ND				30%	
cis-1,2-Dichloroethene	123		4.00	ug/L	10		130			5	30%	
trans-1,2-Dichloroethene	10.0		4.00	ug/L	10		10.8			8	30%	
1,2-Dichloropropane	ND		5.00	ug/L	10		ND				30%	
1,3-Dichloropropane	ND		10.0	ug/L	10		ND				30%	
2,2-Dichloropropane	ND		10.0	ug/L	10		ND				30%	
1,1-Dichloropropene	ND		10.0	ug/L	10		ND				30%	
cis-1,3-Dichloropropene	ND		10.0	ug/L	10		ND				30%	
trans-1,3-Dichloropropene	ND		10.0	ug/L	10		ND				30%	
Ethylbenzene	ND		5.00	ug/L	10		ND				30%	
Hexachlorobutadiene	ND		50.0	ug/L	10		ND				30%	
2-Hexanone	ND		100	ug/L	10		ND				30%	
Isopropylbenzene	ND		10.0	ug/L	10		ND				30%	
4-Isopropyltoluene	ND		10.0	ug/L	10		ND				30%	
Methylene chloride	ND		100	ug/L	10		ND				30%	
4-Methyl-2-pentanone (MiBK)	ND		100	ug/L	10		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		10.0	ug/L	10		ND				30%	
Naphthalene	ND		20.0	ug/L	10		ND				30%	
n-Propylbenzene	ND		5.00	ug/L	10		ND				30%	
Styrene	ND		10.0	ug/L	10		ND				30%	
1,1,1,2-Tetrachloroethane	ND		4.00	ug/L	10		ND				30%	
1,1,2,2-Tetrachloroethane	ND		5.00	ug/L	10		ND				30%	
Tetrachloroethene (PCE)	ND		4.00	ug/L	10		ND				30%	
Toluene	ND		10.0	ug/L	10		ND				30%	
1,2,3-Trichlorobenzene	ND		20.0	ug/L	10		ND				30%	
1,2,4-Trichlorobenzene	ND		20.0	ug/L	10		ND				30%	
1,1,1-Trichloroethane	ND		4.00	ug/L	10		ND				30%	

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Philip Nerenberg, Lab Director

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23C1174 - EPA 5030C							Wa	ter				
Duplicate (23C1174-DUP1)			Prepared	1: 03/29/23	13:58 Ana	lyzed: 03/30	/23 04:52					
QC Source Sample: MW16-20230	324 (A3C09	061-02)										
1,1,2-Trichloroethane	ND		5.00	ug/L	10		ND				30%	
Trichloroethene (TCE)	82.1		4.00	ug/L	10		86.0			5	30%	
Trichlorofluoromethane	ND		20.0	ug/L	10		ND				30%	
1,2,3-Trichloropropane	ND		10.0	ug/L	10		ND				30%	
1,2,4-Trimethylbenzene	ND		10.0	ug/L	10		ND				30%	
1,3,5-Trimethylbenzene	ND		10.0	ug/L	10		ND				30%	
Vinyl chloride	10.9		4.00	ug/L	10		11.7			7	30%	
m,p-Xylene	ND		10.0	ug/L	10		ND				30%	
o-Xylene	ND		5.00	ug/L	10		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 102 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			103 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			97 %	80	0-120 %		"					
Matrix Spike (23C1174-MS1)			Prepared	1: 03/29/23	13:58 Ana	lyzed: 03/30	/23 02:15					
QC Source Sample: Non-SDG (A3	C1021-02)											
EPA 8260D												
Acetone	50.0		20.0	ug/L	1	40.0	ND	125	39-160%			
Acrylonitrile	20.3		2.00	ug/L	1	20.0	ND	101	63-135%			
Benzene	20.7		0.200	ug/L	1	20.0	ND	103	79-120%			
Bromobenzene	18.8		0.500	ug/L	1	20.0	ND	94	80-120%			
Bromochloromethane	24.3		1.00	ug/L	1	20.0	ND	122	78-123%			Q-5
Bromodichloromethane	22.7		1.00	ug/L	1	20.0	ND	113	79-125%			
Bromoform	22.5		1.00	ug/L	1	20.0	ND	112	66-130%			
Bromomethane	27.8		5.00	ug/L	1	20.0	ND	139	53-141%			Q-54
2-Butanone (MEK)	37.5		10.0	ug/L	1	40.0	ND	94	56-143%			
n-Butylbenzene	21.6		1.00	ug/L	1	20.0	ND	108	75-128%			
sec-Butylbenzene	23.9		1.00	ug/L	1	20.0	ND	120	77-126%			
tert-Butylbenzene	22.9		1.00	ug/L	1	20.0	ND	115	78-124%			
Carbon disulfide	23.0		10.0	ug/L	1	20.0	ND	115	64-133%			
Carbon tetrachloride	25.9		1.00	ug/L	1	20.0	ND	130	72-136%			
Chlorobenzene	21.0		0.500	ug/L	1	20.0	ND	105	80-120%			
Chloroethane	29.4		5.00	ug/L	1	20.0	ND	147	60-138%			Q-54
Chloroform	21.2		1.00	ug/L	1	20.0	ND	106	79-124%			

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23C1174 - EPA 5030C							Wa	ter				
Matrix Spike (23C1174-MS1)			Prepared	: 03/29/23	13:58 Anal	yzed: 03/30	/23 02:15					
QC Source Sample: Non-SDG (A3	C1021-02)											
Chloromethane	26.1		5.00	ug/L	1	20.0	ND	131	50-139%			Q-54k
2-Chlorotoluene	20.2		1.00	ug/L	1	20.0	ND	101	79-122%			
4-Chlorotoluene	21.4		1.00	ug/L	1	20.0	ND	107	78-122%			
Dibromochloromethane	22.1		1.00	ug/L	1	20.0	ND	110	74-126%			
1,2-Dibromo-3-chloropropane	19.2		5.00	ug/L	1	20.0	ND	96	62-128%			
1,2-Dibromoethane (EDB)	20.6		0.500	ug/L	1	20.0	ND	103	77-121%			
Dibromomethane	20.7		1.00	ug/L	1	20.0	ND	104	79-123%			
1,2-Dichlorobenzene	19.8		0.500	ug/L	1	20.0	ND	99	80-120%			
1,3-Dichlorobenzene	20.6		0.500	ug/L	1	20.0	ND	103	80-120%			
1,4-Dichlorobenzene	19.3		0.500	ug/L	1	20.0	ND	97	79-120%			
Dichlorodifluoromethane	31.6		1.00	ug/L	1	20.0	ND	158	32-152%			Q-54f
1,1-Dichloroethane	22.4		0.400	ug/L	1	20.0	ND	112	77-125%			
1,2-Dichloroethane (EDC)	23.8		0.400	ug/L	1	20.0	ND	119	73-128%			
1,1-Dichloroethene	23.5		0.400	ug/L	1	20.0	ND	118	71-131%			
cis-1,2-Dichloroethene	20.6		0.400	ug/L	1	20.0	ND	103	78-123%			
trans-1,2-Dichloroethene	21.5		0.400	ug/L	1	20.0	ND	108	75-124%			
1,2-Dichloropropane	20.2		0.500	ug/L	1	20.0	ND	101	78-122%			
1,3-Dichloropropane	21.4		1.00	ug/L	1	20.0	ND	107	80-120%			
2,2-Dichloropropane	22.1		1.00	ug/L	1	20.0	ND	110	60-139%			Q-54g
1,1-Dichloropropene	22.4		1.00	ug/L	1	20.0	ND	112	79-125%			
cis-1,3-Dichloropropene	21.7		1.00	ug/L	1	20.0	ND	108	75-124%			
trans-1,3-Dichloropropene	24.1		1.00	ug/L	1	20.0	ND	120	73-127%			Q-54j
Ethylbenzene	22.5		0.500	ug/L	1	20.0	ND	113	79-121%			
Hexachlorobutadiene	21.3		5.00	ug/L	1	20.0	ND	106	66-134%			
2-Hexanone	31.4		10.0	ug/L	1	40.0	ND	79	57-139%			
Isopropylbenzene	23.2		1.00	ug/L	1	20.0	ND	116	72-131%			
4-Isopropyltoluene	23.0		1.00	ug/L	1	20.0	ND	115	77-127%			
Methylene chloride	19.6		10.0	ug/L	1	20.0	ND	98	74-124%			
4-Methyl-2-pentanone (MiBK)	47.0		10.0	ug/L	1	40.0	ND	118	67-130%			Q-54m
Methyl tert-butyl ether (MTBE)	20.5		1.00	ug/L	1	20.0	ND	103	71-124%			
Naphthalene	14.9		2.00	ug/L	1	20.0	ND	75	61-128%			
n-Propylbenzene	21.6		0.500	ug/L	1	20.0	ND	108	76-126%			
Styrene	23.3		1.00	ug/L	1	20.0	ND	116	78-123%			

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#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID:

A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D Detection % REC RPD Reporting Spike Source % REC Analyte Result Limit Units Dilution RPD Limit Amount Result Limits Limit Notes Batch 23C1174 - EPA 5030C Water Matrix Spike (23C1174-MS1) Prepared: 03/29/23 13:58 Analyzed: 03/30/23 02:15 QC Source Sample: Non-SDG (A3C1021-02) 1,1,1,2-Tetrachloroethane 21.1 0.400 ug/L 1 20.0 ND 106 78-124% 20.6 0.500 20.0 1,1,2,2-Tetrachloroethane ug/L 1 ND 103 71-121% 20.0 74-129% Tetrachloroethene (PCE) 22.6 0.400 ug/L 1 ND 113 Toluene 20.6 1.00 ug/L 1 20.0 ND 103 80-121% 1,2,3-Trichlorobenzene 20.4 2.00 ug/L 1 20.0 ND 102 69-129% 1,2,4-Trichlorobenzene 18.2 2.00 20.0 91 ug/L 1 ND 69-130% 1,1,1-Trichloroethane 23.9 0.400ug/L 1 20.0 ND 119 74-131% 1,1,2-Trichloroethane 20.5 0.500 20.0 ND 103 80-120% ug/L 1 20.0 97 Trichloroethene (TCE) 19.4 0.400 ug/L 1 ND 79-123% Trichlorofluoromethane 27.5 2.00 ug/L 1 20.0 ND 138 65-141% Q-541 1,2,3-Trichloropropane 21.0 1.00 ug/L 1 20.0 ND 105 73-122% 1,2,4-Trimethylbenzene 23.2 1.00 20.0 ND 76-124% ug/L 1 116 20.0 75-124% 1,3,5-Trimethylbenzene 23.1 1.00 ug/L 1 ND 116 20.0 Vinyl chloride 24.0 0.400 ND 58-137% ug/L 1 120 1.00 40.0 Q-54 m,p-Xylene 48.9 ug/L 1 ND 122 80-121% 78-122% o-Xylene 22.0 ---0.500 ug/L 1 20.0 ND 110 ---Surr: 1,4-Difluorobenzene (Surr) 94 % Dilution: 1x Recovery: Limits: 80-120 % Toluene-d8 (Surr) 99 % 80-120 % 92 % 80-120 % 4-Bromofluorobenzene (Surr)

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WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23C1207 - EPA 5030C	Water											
Blank (23C1207-BLK1)	Prepared: 03/30/23 10:00 Analyzed: 03/30/23 11:35											
EPA 8260D												
Acetone	ND		20.0	ug/L	1							
Acrylonitrile	ND		2.00	ug/L	1							
Benzene	ND		0.200	ug/L	1							
Bromobenzene	ND		0.500	ug/L	1							
Bromochloromethane	ND		1.00	ug/L	1							
Bromodichloromethane	ND		1.00	ug/L	1							
Bromoform	ND		1.00	ug/L	1							
Bromomethane	ND		5.00	ug/L	1							
2-Butanone (MEK)	ND		10.0	ug/L	1							
n-Butylbenzene	ND		1.00	ug/L	1							
sec-Butylbenzene	ND		1.00	ug/L	1							
tert-Butylbenzene	ND		1.00	ug/L	1							
Carbon disulfide	ND		10.0	ug/L	1							
Carbon tetrachloride	ND		1.00	ug/L	1							
Chlorobenzene	ND		0.500	ug/L	1							
Chloroethane	ND		5.00	ug/L	1							
Chloroform	ND		1.00	ug/L	1							
Chloromethane	ND		5.00	ug/L	1							
2-Chlorotoluene	ND		1.00	ug/L	1							
4-Chlorotoluene	ND		1.00	ug/L	1							
Dibromochloromethane	ND		1.00	ug/L	1							
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1							
Dibromomethane	ND		1.00	ug/L	1							
1,2-Dichlorobenzene	ND		0.500	ug/L	1							
1,3-Dichlorobenzene	ND		0.500	ug/L	1							
1,4-Dichlorobenzene	ND		0.500	ug/L	1							
Dichlorodifluoromethane	ND		1.00	ug/L ug/L	1							
1,1-Dichloroethane	ND		0.400	ug/L ug/L	1							
1,2-Dichloroethane (EDC)	ND		0.400	ug/L ug/L	1							
1,1-Dichloroethene	ND		0.400	ug/L ug/L	1							
cis-1,2-Dichloroethene	ND		0.400	ug/L ug/L	1							
trans-1,2-Dichloroethene	ND		0.400	ug/L ug/L	1							
uano-1,2-Diemorocuiene	ND		0.700	ug/L	1							

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WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23C1207 - EPA 5030C	Water											
Blank (23C1207-BLK1)	Prepared: 03/30/23 10:00 Analyzed: 03/30/23 11:35											
1,2-Dichloropropane	ND		0.500	ug/L	1							
1,3-Dichloropropane	ND		1.00	ug/L	1							
2,2-Dichloropropane	ND		1.00	ug/L	1							
1,1-Dichloropropene	ND		1.00	ug/L	1							
cis-1,3-Dichloropropene	ND		1.00	ug/L	1							
trans-1,3-Dichloropropene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Hexachlorobutadiene	ND		5.00	ug/L	1							
2-Hexanone	ND		10.0	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
4-Isopropyltoluene	ND		1.00	ug/L	1							
Methylene chloride	ND		10.0	ug/L	1							
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		2.00	ug/L	1							
n-Propylbenzene	ND		0.500	ug/L	1							
Styrene	ND		1.00	ug/L	1							
1,1,2-Tetrachloroethane	ND		0.400	ug/L	1							
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1							
Tetrachloroethene (PCE)	ND		0.400	ug/L	1							
Toluene	ND		1.00	ug/L	1							
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1							
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1							
1,1,1-Trichloroethane	ND		0.400	ug/L	1							
1,1,2-Trichloroethane	ND		0.500	ug/L	1							
Trichloroethene (TCE)	ND		0.400	ug/L	1							
Trichlorofluoromethane	ND		2.00	ug/L	1							
1,2,3-Trichloropropane	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							
Vinyl chloride	ND		0.400	ug/L	1							
m,p-Xylene	ND		1.00	ug/L	1							
o-Xylene	ND		0.500	ug/L ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)			overy: 99 %	Limits: 80			ıtion: 1x					<del></del>

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D % REC RPD Detection Reporting Spike Source % REC Result Units Dilution RPD Analyte Limit Limit Amount Result Limits Limit Notes Batch 23C1207 - EPA 5030C Water Blank (23C1207-BLK1) Prepared: 03/30/23 10:00 Analyzed: 03/30/23 11:35 Surr: Toluene-d8 (Surr) Recovery: 103 % Limits: 80-120 % Dilution: 1x 4-Bromofluorobenzene (Surr) 98 % 80-120 % Prepared: 03/30/23 10:00 Analyzed: 03/30/23 10:37 LCS (23C1207-BS1) EPA 8260D Acetone 40.1 20.0 ug/L 40.0 100 80-120% Acrylonitrile 20.2 2.00 ug/L 1 20.0 101 80-120% Benzene 20.1 0.200 1 20.0 100 80-120% ug/L Bromobenzene 18.6 0.500 20.0 93 80-120% ug/L 1 Bromochloromethane 23.6 1.00 1 20.0 118 80-120% ug/L Bromodichloromethane 1.00 20.0 22.5 ug/L 1 ---113 80-120% Bromoform 22.9 1.00 ug/L 1 20.0 114 80-120% Bromomethane 26.8 5.00 1 20.0 134 80-120% Q-56 ug/L 2-Butanone (MEK) 43.9 10.0 1 40.0 110 80-120% ug/L 80-120% 21.7 1.00 ug/L 20.0 109 n-Butylbenzene 1 --sec-Butylbenzene 22.6 1.00 1 20.0 113 80-120% ug/L ug/L tert-Butylbenzene 21.6 1.00 20.0 108 80-120% 1 Carbon disulfide 22.2 10.0 ug/L 1 20.0 111 80-120% Carbon tetrachloride 25.3 1.00 ug/L 1 20.0 127 80-120% Q-56 Chlorobenzene 20.2 0.500 ug/L 1 20.0 101 80-120% Chloroethane 27.3 5.00 20.0 137 80-120% Q-56 1 ug/L Chloroform 21.0 1.00 ug/L 1 20.0 105 80-120% Chloromethane 24.9 5.00 1 20.0 124 80-120% Q-56 ug/L 2-Chlorotoluene 19.5 1.00 ug/L 1 20.0 97 80-120% 4-Chlorotoluene 20.9 1.00 ug/L 1 20.0 104 80-120% Dibromochloromethane 21.6 1.00 ug/L 1 20.0 108 80-120% 91 1,2-Dibromo-3-chloropropane 18.3 5.00 ug/L 1 20.0 80-120% 20.0 1,2-Dibromoethane (EDB) 20.4 0.500 ug/L 1 102 80-120% Dibromomethane 20.9 1.00 1 20.0 104 80-120% ug/L 1,2-Dichlorobenzene 19.4 0.500 ug/L 1 20.0 97 80-120% 1,3-Dichlorobenzene 20.2 0.500 ug/L 1 20.0 101 80-120% 18.9 0.500 20.0 94 1.4-Dichlorobenzene ug/L 1 80-120% Q-56 Dichlorodifluoromethane 30.8 1.00 ug/L 1 20.0 154 80-120% 1,1-Dichloroethane 0.400 20.0 108 80-120% 21.6 ug/L 1

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23C1207 - EPA 5030C							Wa	ter				
LCS (23C1207-BS1)			Prepared	: 03/30/23	10:00 Ana	lyzed: 03/30/	/23 10:37					
1,2-Dichloroethane (EDC)	23.9		0.400	ug/L	1	20.0		119	80-120%			
1,1-Dichloroethene	22.6		0.400	ug/L	1	20.0		113	80-120%			
cis-1,2-Dichloroethene	20.2		0.400	ug/L	1	20.0		101	80-120%			
trans-1,2-Dichloroethene	20.1		0.400	ug/L	1	20.0		101	80-120%			
1,2-Dichloropropane	19.8		0.500	ug/L	1	20.0		99	80-120%			
1,3-Dichloropropane	20.7		1.00	ug/L	1	20.0		104	80-120%			
2,2-Dichloropropane	25.6		1.00	ug/L	1	20.0		128	80-120%			Q-56
1,1-Dichloropropene	21.4		1.00	ug/L	1	20.0		107	80-120%			
cis-1,3-Dichloropropene	21.3		1.00	ug/L	1	20.0		106	80-120%			
trans-1,3-Dichloropropene	24.3		1.00	ug/L	1	20.0		121	80-120%			Q-56
Ethylbenzene	21.4		0.500	ug/L	1	20.0		107	80-120%			
Hexachlorobutadiene	20.1		5.00	ug/L	1	20.0		100	80-120%			
2-Hexanone	41.2		10.0	ug/L	1	40.0		103	80-120%			
Isopropylbenzene	21.8		1.00	ug/L	1	20.0		109	80-120%			
4-Isopropyltoluene	22.1		1.00	ug/L	1	20.0		110	80-120%			
Methylene chloride	20.0		10.0	ug/L	1	20.0		100	80-120%			
4-Methyl-2-pentanone (MiBK)	46.4		10.0	ug/L	1	40.0		116	80-120%			
Methyl tert-butyl ether (MTBE)	20.5		1.00	ug/L	1	20.0		103	80-120%			
Naphthalene	14.2		2.00	ug/L	1	20.0		71	80-120%			Q-55
n-Propylbenzene	20.7		0.500	ug/L	1	20.0		104	80-120%			
Styrene	22.3		1.00	ug/L	1	20.0		112	80-120%			
1,1,2-Tetrachloroethane	20.6		0.400	ug/L	1	20.0		103	80-120%			
1,1,2,2-Tetrachloroethane	20.9		0.500	ug/L	1	20.0		104	80-120%			
Tetrachloroethene (PCE)	21.8		0.400	ug/L	1	20.0		109	80-120%			
Toluene	19.6		1.00	ug/L	1	20.0		98	80-120%			
1,2,3-Trichlorobenzene	19.4		2.00	ug/L	1	20.0		97	80-120%			
1,2,4-Trichlorobenzene	17.4		2.00	ug/L	1	20.0		87	80-120%			
1,1,1-Trichloroethane	23.0		0.400	ug/L	1	20.0		115	80-120%			
1,1,2-Trichloroethane	20.7		0.500	ug/L	1	20.0		103	80-120%			
Trichloroethene (TCE)	18.5		0.400	ug/L	1	20.0		92	80-120%			
Trichlorofluoromethane	26.3		2.00	ug/L	1	20.0		132	80-120%			Q-56
1,2,3-Trichloropropane	21.4		1.00	ug/L	1	20.0		107	80-120%			
1,2,4-Trimethylbenzene	22.4		1.00	ug/L	1	20.0		112	80-120%			
1,3,5-Trimethylbenzene	22.4		1.00	ug/L	1	20.0		112	80-120%			

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23C1207 - EPA 5030C							Wa	ter				
LCS (23C1207-BS1)			Prepared	1: 03/30/23	10:00 Ana	lyzed: 03/30	/23 10:37					
Vinyl chloride	22.6		0.400	ug/L	1	20.0		113	80-120%			
n,p-Xylene	46.6		1.00	ug/L	1	40.0		117	80-120%			
o-Xylene	20.9		0.500	ug/L	1	20.0		105	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Rec	overy: 95 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			99 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			91 %	80	0-120 %		"					
Duplicate (23C1207-DUP1)			Prepared	1: 03/30/23	11:50 Anal	yzed: 03/30	/23 18:15					
OC Source Sample: Non-SDG (A3	C1058-05)											
Acetone	ND		200	ug/L	5		ND				30%	R-
Acrylonitrile	ND		10.0	ug/L	5		ND				30%	
Benzene	175		1.00	ug/L	5		175			0.2	30%	
Bromobenzene	ND		2.50	ug/L	5		ND				30%	
Bromochloromethane	ND		5.00	ug/L	5		ND				30%	
Bromodichloromethane	ND		5.00	ug/L	5		ND				30%	
Bromoform	ND		5.00	ug/L	5		ND				30%	
Bromomethane	ND		25.0	ug/L	5		ND				30%	
2-Butanone (MEK)	ND		50.0	ug/L	5		ND				30%	
n-Butylbenzene	21.3		5.00	ug/L	5		20.7			3	30%	
sec-Butylbenzene	9.80		5.00	ug/L	5		9.10			7	30%	
ert-Butylbenzene	5.60		5.00	ug/L	5		4.95			12	30%	
Carbon disulfide	ND		50.0	ug/L	5		ND				30%	
Carbon tetrachloride	ND		5.00	ug/L	5		ND				30%	
Chlorobenzene	ND		2.50	ug/L	5		ND				30%	
Chloroethane	ND		25.0	ug/L	5		ND				30%	
Chloroform	ND		5.00	ug/L	5		ND				30%	
Chloromethane	ND		25.0	ug/L	5		ND				30%	
2-Chlorotoluene	ND		5.00	ug/L	5		ND				30%	
4-Chlorotoluene	ND		5.00	ug/L	5		ND				30%	
Dibromochloromethane	ND		5.00	ug/L	5		ND				30%	
1,2-Dibromo-3-chloropropane	ND		25.0	ug/L	5		ND				30%	
1,2-Dibromoethane (EDB)	ND		2.50	ug/L	5		ND				30%	
Dibromomethane	ND		5.00	ug/L	5		ND				30%	
1,2-Dichlorobenzene	ND		2.50	ug/L	5		ND				30%	

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23C1207 - EPA 5030C							Wa	ter				
Duplicate (23C1207-DUP1)			Prepared	1: 03/30/23	11:50 Anal	lyzed: 03/30	/23 18:15					
QC Source Sample: Non-SDG (A3	C1058-05)											
1,3-Dichlorobenzene	ND		2.50	ug/L	5		ND				30%	
1,4-Dichlorobenzene	ND		2.50	ug/L	5		ND				30%	
Dichlorodifluoromethane	ND		5.00	ug/L	5		ND				30%	
1,1-Dichloroethane	ND		2.00	ug/L	5		ND				30%	
1,2-Dichloroethane (EDC)	ND		2.00	ug/L	5		ND				30%	
1,1-Dichloroethene	ND		2.00	ug/L	5		ND				30%	
cis-1,2-Dichloroethene	ND		2.00	ug/L	5		ND				30%	
trans-1,2-Dichloroethene	ND		2.00	ug/L	5		ND				30%	
1,2-Dichloropropane	ND		2.50	ug/L	5		ND				30%	
1,3-Dichloropropane	ND		5.00	ug/L	5		ND				30%	
2,2-Dichloropropane	ND		5.00	ug/L	5		ND				30%	
1,1-Dichloropropene	ND		5.00	ug/L	5		ND				30%	
cis-1,3-Dichloropropene	ND		5.00	ug/L	5		ND				30%	
trans-1,3-Dichloropropene	ND		5.00	ug/L	5		ND				30%	
Ethylbenzene	90.8		2.50	ug/L	5		90.8			0	30%	
Hexachlorobutadiene	ND		25.0	ug/L	5		ND				30%	
2-Hexanone	ND		50.0	ug/L	5		ND				30%	
Isopropylbenzene	43.2		5.00	ug/L	5		42.0			3	30%	
4-Isopropyltoluene	ND		5.00	ug/L	5		ND				30%	
Methylene chloride	ND		50.0	ug/L	5		ND				30%	
4-Methyl-2-pentanone (MiBK)	ND		50.0	ug/L	5		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		5.00	ug/L	5		ND				30%	
Naphthalene	208		10.0	ug/L	5		197			5	30%	Q-54o
n-Propylbenzene	146		2.50	ug/L	5		144			0.8	30%	
Styrene	ND		5.00	ug/L	5		ND				30%	
1,1,1,2-Tetrachloroethane	ND		2.00	ug/L	5		ND				30%	
1,1,2,2-Tetrachloroethane	ND		2.50	ug/L	5		ND				30%	
Tetrachloroethene (PCE)	ND		10.0	ug/L	5		ND				30%	R-06
Toluene	53.4		5.00	ug/L	5		53.6			0.5	30%	
1,2,3-Trichlorobenzene	ND		10.0	ug/L	5		ND				30%	
1,2,4-Trichlorobenzene	ND		10.0	ug/L	5		ND				30%	
1,1,1-Trichloroethane	ND		2.00	ug/L	5		ND				30%	
1,1,2-Trichloroethane	ND		2.50	ug/L	5		ND				30%	

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23C1207 - EPA 5030C							Wa	ter				
Duplicate (23C1207-DUP1)			Prepared	1: 03/30/23	11:50 Anal	yzed: 03/30	/23 18:15					
QC Source Sample: Non-SDG (A3	C1058-05)											
Trichloroethene (TCE)	ND		2.00	ug/L	5		ND				30%	
Trichlorofluoromethane	ND		10.0	ug/L	5		ND				30%	
1,2,3-Trichloropropane	ND		5.00	ug/L	5		ND				30%	
1,2,4-Trimethylbenzene	31.8		5.00	ug/L	5		30.5			4	30%	
1,3,5-Trimethylbenzene	10.4		5.00	ug/L	5		9.85			5	30%	
Vinyl chloride	ND		2.00	ug/L	5		ND				30%	
m,p-Xylene	122		5.00	ug/L	5		122			0	30%	
o-Xylene	29.4		2.50	ug/L	5		28.4			3	30%	
Surr: 1,4-Difluorobenzene (Surr)		Rec	overy: 95 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			102 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			98 %	80	0-120 %		"					
QC Source Sample: Non-SDG (A3	C0853-01)											
EPA 8260D Acetone	459		200	ug/L	10	400	ND	115	39-160%			
Acrylonitrile	221		20.0	ug/L ug/L	10	200	ND ND	113	63-135%			
Benzene	215		2.00	ug/L ug/L	10	200	ND ND	107	79-120%			
Bromobenzene	202		5.00	ug/L ug/L	10	200	ND ND	107	79-120% 80-120%			
Bromochloromethane	253		10.0	ug/L ug/L	10	200	ND ND	126	78-123%			Q-(
Bromodichloromethane	230		10.0	ug/L ug/L	10	200	ND ND	115	79-125%			Q-1
Bromoform	224		10.0	ug/L	10	200	ND	112	66-130%			
Bromomethane	265		50.0	ug/L	10	200	ND	133	53-141%			Q-5
2-Butanone (MEK)	486		100	ug/L	10	400	ND	122	56-143%			4,2
n-Butylbenzene	249		10.0	ug/L	10	200	ND	125	75-128%			
sec-Butylbenzene	258		10.0	ug/L	10	200	ND	129	77-126%			Q-(
tert-Butylbenzene	249		10.0	ug/L	10	200	ND	125	77-120 % 78-124%			Q-(
Carbon disulfide	231		100	ug/L	10	200	ND	115	64-133%			~
Carbon tetrachloride	262		10.0	ug/L	10	200	ND	131	72-136%			Q-5
Chlorobenzene	215		5.00	ug/L	10	200	ND	108	80-120%			
Chloroethane	262		50.0	ug/L	10	200	ND	131	60-138%			Q-5
Chloroform	217		10.0	ug/L	10	200	ND	108	79-124%			

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23C1207 - EPA 5030C							Wa	ter				
Matrix Spike (23C1207-MS1)			Prepared	: 03/30/23	11:50 Anal	yzed: 03/30	/23 19:44					
QC Source Sample: Non-SDG (A3	C0853-01)											
2-Chlorotoluene	218		10.0	ug/L	10	200	ND	109	79-122%			
4-Chlorotoluene	231		10.0	ug/L	10	200	ND	115	78-122%			
Dibromochloromethane	226		10.0	ug/L	10	200	ND	113	74-126%			
1,2-Dibromo-3-chloropropane	200		50.0	ug/L	10	200	ND	100	62-128%			
1,2-Dibromoethane (EDB)	216		5.00	ug/L	10	200	ND	108	77-121%			
Dibromomethane	214		10.0	ug/L	10	200	ND	107	79-123%			
1,2-Dichlorobenzene	212		5.00	ug/L	10	200	ND	106	80-120%			
1,3-Dichlorobenzene	218		5.00	ug/L	10	200	ND	109	80-120%			
1,4-Dichlorobenzene	200		5.00	ug/L	10	200	ND	100	79-120%			
Dichlorodifluoromethane	321		10.0	ug/L	10	200	ND	160	32-152%			Q-54h
1,1-Dichloroethane	229		4.00	ug/L	10	200	ND	114	77-125%			
1,2-Dichloroethane (EDC)	241		4.00	ug/L	10	200	ND	121	73-128%			
1,1-Dichloroethene	253		4.00	ug/L	10	200	ND	126	71-131%			
cis-1,2-Dichloroethene	228		4.00	ug/L	10	200	ND	114	78-123%			
trans-1,2-Dichloroethene	230		4.00	ug/L	10	200	ND	115	75-124%			
1,2-Dichloropropane	209		5.00	ug/L	10	200	ND	105	78-122%			
1,3-Dichloropropane	225		10.0	ug/L	10	200	ND	113	80-120%			
2,2-Dichloropropane	244		10.0	ug/L	10	200	ND	122	60-139%			Q-541
1,1-Dichloropropene	245		10.0	ug/L	10	200	ND	122	79-125%			
cis-1,3-Dichloropropene	215		10.0	ug/L	10	200	ND	107	75-124%			
trans-1,3-Dichloropropene	256		10.0	ug/L	10	200	ND	128	73-127%			Q-54
Ethylbenzene	231		5.00	ug/L	10	200	ND	116	79-121%			
Hexachlorobutadiene	237		50.0	ug/L	10	200	ND	119	66-134%			
2-Hexanone	478		100	ug/L	10	400	ND	120	57-139%			
Isopropylbenzene	248		10.0	ug/L	10	200	ND	124	72-131%			
4-Isopropyltoluene	254		10.0	ug/L	10	200	ND	127	77-127%			
Methylene chloride	207		100	ug/L	10	200	ND	104	74-124%			
4-Methyl-2-pentanone (MiBK)	536		100	ug/L	10	400	ND	134	67-130%			Q-01
Methyl tert-butyl ether (MTBE)	219		10.0	ug/L	10	200	ND	110	71-124%			
Naphthalene	180		20.0	ug/L	10	200	ND	90	61-128%			Q-54o
n-Propylbenzene	231		5.00	ug/L	10	200	ND	116	76-126%			
Styrene	240		10.0	ug/L	10	200	ND	120	78-123%			
1,1,1,2-Tetrachloroethane	212		4.00	ug/L	10	200	ND	106	78-124%			

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID:

A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D Detection % REC RPD Reporting Spike Source Analyte Result Limit Units Dilution % REC RPD Limit Amount Result Limits Limit Notes Batch 23C1207 - EPA 5030C Water Matrix Spike (23C1207-MS1) Prepared: 03/30/23 11:50 Analyzed: 03/30/23 19:44 QC Source Sample: Non-SDG (A3C0853-01) 1,1,2,2-Tetrachloroethane 218 5.00 ug/L 10 200 ND 109 71-121% Tetrachloroethene (PCE) 241 200 4.00 ug/L 10 11.9 115 74-129% 80-121% Toluene 212 10.0 ug/L 10 200 ND 106 1,2,3-Trichlorobenzene 226 20.0 ug/L 10 200 ND 113 69-129% 1,2,4-Trichlorobenzene 208 20.0 ug/L 10 200 ND 104 69-130% 200 1,1,1-Trichloroethane 4.00 ND 241 ug/L 10 120 74-131% 1,1,2-Trichloroethane 215 5.00 ug/L 10 200 ND 108 80-120% Trichloroethene (TCE) 202 4.00 200 ND 101 79-123% ug/L 10 271 Q-54a Trichlorofluoromethane 20.0 ug/L 10 200 ND 135 65-141% 1,2,3-Trichloropropane 221 10.0 ug/L 10 200 ND 110 73-122% 1,2,4-Trimethylbenzene 248 10.0 ug/L 10 200 ND 124 76-124% 200 1,3,5-Trimethylbenzene 247 10.0 10 ND 75-124% ug/L 123 200 ND 123 58-137% Vinyl chloride 246 4.00 ug/L 10 Q-01 400 m,p-Xylene 505 10.0 10 ND 80-121% ug/L 126 5.00 78-122% o-Xylene ug/L 10 ND 120 Surr: 1,4-Difluorobenzene (Surr) 94% Limits: 80-120 % Dilution: 1x Recovery: Toluene-d8 (Surr) 98 % 80-120 % 4-Bromofluorobenzene (Surr) 95 % 80-120 %

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WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID:

A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

# Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23D0057 - EPA 5030C							Wa	ter				
Blank (23D0057-BLK1)			Prepared	: 04/03/23	14:41 Anal	yzed: 04/04/	/23 00:27					
EPA 8260D												
Acetone	ND		20.0	ug/L	1							
Acrylonitrile	ND		2.00	ug/L	1							
Benzene	ND		0.200	ug/L	1							
Bromobenzene	ND		0.500	ug/L	1							
Bromochloromethane	ND		1.00	ug/L	1							
Bromodichloromethane	ND		1.00	ug/L	1							
Bromoform	ND		1.00	ug/L	1							
Bromomethane	ND		5.00	ug/L	1							
2-Butanone (MEK)	ND		10.0	ug/L	1							
n-Butylbenzene	ND		1.00	ug/L	1							
sec-Butylbenzene	ND		1.00	ug/L	1							
tert-Butylbenzene	ND		1.00	ug/L	1							
Carbon disulfide	ND		10.0	ug/L	1							
Carbon tetrachloride	ND		1.00	ug/L	1							
Chlorobenzene	ND		0.500	ug/L	1							
Chloroethane	ND		5.00	ug/L	1							
Chloroform	ND		1.00	ug/L	1							
Chloromethane	ND		5.00	ug/L	1							
2-Chlorotoluene	ND		1.00	ug/L	1							
4-Chlorotoluene	ND		1.00	ug/L	1							
Dibromochloromethane	ND		1.00	ug/L	1							
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1							
Dibromomethane	ND		1.00	ug/L	1							
1,2-Dichlorobenzene	ND		0.500	ug/L	1							
1,3-Dichlorobenzene	ND		0.500	ug/L	1							
1,4-Dichlorobenzene	ND		0.500	ug/L	1							
Dichlorodifluoromethane	ND		1.00	ug/L ug/L	1							
1,1-Dichloroethane	ND		0.400	ug/L ug/L	1							
1,2-Dichloroethane (EDC)	ND		0.400	ug/L ug/L	1							
1,1-Dichloroethene	ND		0.400	ug/L ug/L	1							
cis-1,2-Dichloroethene	ND		0.400	ug/L ug/L	1							
trans-1,2-Dichloroethene	ND		0.400	ug/L ug/L	1							

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID:

A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23D0057 - EPA 5030C							Wat	ter				
Blank (23D0057-BLK1)			Prepared	: 04/03/23	14:41 Anal	yzed: 04/04/	/23 00:27					
1,2-Dichloropropane	ND		0.500	ug/L	1							
1,3-Dichloropropane	ND		1.00	ug/L	1							
2,2-Dichloropropane	ND		1.00	ug/L	1							
1,1-Dichloropropene	ND		1.00	ug/L	1							
cis-1,3-Dichloropropene	ND		1.00	ug/L	1							
trans-1,3-Dichloropropene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Hexachlorobutadiene	ND		5.00	ug/L	1							
2-Hexanone	ND		10.0	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
4-Isopropyltoluene	ND		1.00	ug/L	1							
Methylene chloride	ND		10.0	ug/L	1							
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		2.00	ug/L	1							
n-Propylbenzene	ND		0.500	ug/L	1							
Styrene	ND		1.00	ug/L	1							
1,1,2-Tetrachloroethane	ND		0.400	ug/L	1							
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1							
Tetrachloroethene (PCE)	ND		0.400	ug/L	1							
Toluene	ND		1.00	ug/L	1							
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1							
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1							
1,1,1-Trichloroethane	ND		0.400	ug/L	1							
1,1,2-Trichloroethane	ND		0.500	ug/L	1							
Trichloroethene (TCE)	ND		0.400	ug/L	1							
Trichlorofluoromethane	ND		2.00	ug/L	1							
1,2,3-Trichloropropane	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							
Vinyl chloride	ND		0.400	ug/L	1							
m,p-Xylene	ND		1.00	ug/L	1							
o-Xylene	ND		0.500	ug/L ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)			very: 102 %	Limits: 80			ution: 1x					

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Philip Nerenberg, Lab Director

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23D0057 - EPA 5030C							Wa	ter				
Blank (23D0057-BLK1)			Prepared	: 04/03/23	14:41 Ana	lyzed: 04/04/	/23 00:27					
Surr: Toluene-d8 (Surr)		Reco	very: 101 %	Limits: 80	0-120 %	Dilı	ution: 1x					
4-Bromofluorobenzene (Surr)			108 %	80	0-120 %		"					
LCS (23D0057-BS1)			Prepared	: 04/03/23	14:41 Ana	lyzed: 04/03	/23 23:33					
EPA 8260D												
Acetone	37.2		20.0	ug/L	1	40.0		93	80-120%			
Acrylonitrile	19.5		2.00	ug/L	1	20.0		98	80-120%			
Benzene	19.9		0.200	ug/L	1	20.0		100	80-120%			
Bromobenzene	19.5		0.500	ug/L	1	20.0		97	80-120%			
Bromochloromethane	20.8		1.00	ug/L	1	20.0		104	80-120%			
Bromodichloromethane	21.6		1.00	ug/L	1	20.0		108	80-120%			
Bromoform	21.4		1.00	ug/L	1	20.0		107	80-120%			
Bromomethane	22.4		5.00	ug/L	1	20.0		112	80-120%			
2-Butanone (MEK)	41.6		10.0	ug/L	1	40.0		104	80-120%			
n-Butylbenzene	21.8		1.00	ug/L	1	20.0		109	80-120%			
sec-Butylbenzene	20.9		1.00	ug/L	1	20.0		104	80-120%			
tert-Butylbenzene	20.0		1.00	ug/L	1	20.0		100	80-120%			
Carbon disulfide	19.5		10.0	ug/L	1	20.0		98	80-120%			
Carbon tetrachloride	22.8		1.00	ug/L	1	20.0		114	80-120%			
Chlorobenzene	19.3		0.500	ug/L	1	20.0		96	80-120%			
Chloroethane	15.0		5.00	ug/L	1	20.0		75	80-120%			
Chloroform	19.9		1.00	ug/L	1	20.0		100	80-120%			
Chloromethane	17.0		5.00	ug/L	1	20.0		85	80-120%			
2-Chlorotoluene	19.9		1.00	ug/L	1	20.0		99	80-120%			
4-Chlorotoluene	20.0		1.00	ug/L	1	20.0		100	80-120%			
Dibromochloromethane	18.8		1.00	ug/L	1	20.0		94	80-120%			
1,2-Dibromo-3-chloropropane	18.8		5.00	ug/L	1	20.0		94	80-120%			
1,2-Dibromoethane (EDB)	19.7		0.500	ug/L	1	20.0		98	80-120%			
Dibromomethane	20.5		1.00	ug/L	1	20.0		102	80-120%			
1,2-Dichlorobenzene	20.7		0.500	ug/L	1	20.0		103	80-120%			
1,3-Dichlorobenzene	19.8		0.500	ug/L	1	20.0		99	80-120%			
,4-Dichlorobenzene	19.2		0.500	ug/L	1	20.0		96	80-120%			
Dichlorodifluoromethane	17.3		1.00	ug/L	1	20.0		86	80-120%			
1,1-Dichloroethane	20.4		0.400	ug/L	1	20.0		102	80-120%			

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Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23D0057 - EPA 5030C							Wa	ter				
LCS (23D0057-BS1)			Prepared	: 04/03/23	14:41 Anal	yzed: 04/03/	/23 23:33					
1,2-Dichloroethane (EDC)	19.9		0.400	ug/L	1	20.0		100	80-120%			
1,1-Dichloroethene	19.6		0.400	ug/L	1	20.0		98	80-120%			
cis-1,2-Dichloroethene	20.6		0.400	ug/L	1	20.0		103	80-120%			
trans-1,2-Dichloroethene	20.5		0.400	ug/L	1	20.0		103	80-120%			
1,2-Dichloropropane	20.0		0.500	ug/L	1	20.0		100	80-120%			
1,3-Dichloropropane	20.0		1.00	ug/L	1	20.0		100	80-120%			
2,2-Dichloropropane	25.2		1.00	ug/L	1	20.0		126	80-120%			Q-56
1,1-Dichloropropene	20.4		1.00	ug/L	1	20.0		102	80-120%			
cis-1,3-Dichloropropene	23.8		1.00	ug/L	1	20.0		119	80-120%			
trans-1,3-Dichloropropene	22.4		1.00	ug/L	1	20.0		112	80-120%			
Ethylbenzene	20.0		0.500	ug/L	1	20.0		100	80-120%			
Hexachlorobutadiene	20.6		5.00	ug/L	1	20.0		103	80-120%			
2-Hexanone	42.9		10.0	ug/L	1	40.0		107	80-120%			
Isopropylbenzene	21.0		1.00	ug/L	1	20.0		105	80-120%			
4-Isopropyltoluene	21.8		1.00	ug/L	1	20.0		109	80-120%			
Methylene chloride	19.8		10.0	ug/L	1	20.0		99	80-120%			
4-Methyl-2-pentanone (MiBK)	42.8		10.0	ug/L	1	40.0		107	80-120%			
Methyl tert-butyl ether (MTBE)	21.0		1.00	ug/L	1	20.0		105	80-120%			
Naphthalene	17.1		2.00	ug/L	1	20.0		86	80-120%			
n-Propylbenzene	20.0		0.500	ug/L	1	20.0		100	80-120%			
Styrene	21.5		1.00	ug/L	1	20.0		108	80-120%			
1,1,2-Tetrachloroethane	18.9		0.400	ug/L	1	20.0		94	80-120%			
1,1,2,2-Tetrachloroethane	20.7		0.500	ug/L	1	20.0		103	80-120%			
Tetrachloroethene (PCE)	19.8		0.400	ug/L	1	20.0		99	80-120%			
Toluene	19.7		1.00	ug/L	1	20.0		99	80-120%			
1,2,3-Trichlorobenzene	17.7		2.00	ug/L	1	20.0		88	80-120%			
1,2,4-Trichlorobenzene	19.5		2.00	ug/L	1	20.0		97	80-120%			
1,1,1-Trichloroethane	22.9		0.400	ug/L	1	20.0		115	80-120%			
1,1,2-Trichloroethane	20.0		0.500	ug/L	1	20.0		100	80-120%			
Trichloroethene (TCE)	19.9		0.400	ug/L	1	20.0		100	80-120%			
Trichlorofluoromethane	18.6		2.00	ug/L	1	20.0		93	80-120%			
1,2,3-Trichloropropane	19.5		1.00	ug/L	1	20.0		97	80-120%			
1,2,4-Trimethylbenzene	22.2		1.00	ug/L	1	20.0		111	80-120%			
1,3,5-Trimethylbenzene	21.4		1.00	ug/L	1	20.0		107	80-120%			

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23D0057 - EPA 5030C							Wa	ter				
LCS (23D0057-BS1)			Prepared	1: 04/03/23	14:41 Ana	lyzed: 04/03	/23 23:33					
Vinyl chloride	18.6		0.400	ug/L	1	20.0		93	80-120%			
m,p-Xylene	40.3		1.00	ug/L	1	40.0		101	80-120%			
o-Xylene	20.8		0.500	ug/L	1	20.0		104	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 101 %	Limits: 80	0-120 %	Dilı	ution: 1x					<del></del>
Toluene-d8 (Surr)			99 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			96 %	80	-120 %		"					
Duplicate (23D0057-DUP1)			Prepared	d: 04/03/23	14:41 Ana	lyzed: 04/04/	/23 05:52					
OC Source Sample: Non-SDG (A3	C1025-02)											
Acetone	ND		100	ug/L	5		ND				30%	
Acrylonitrile	ND		10.0	ug/L	5		ND				30%	
Benzene	ND		1.00	ug/L	5		ND				30%	
Bromobenzene	ND		2.50	ug/L	5		ND				30%	
Bromochloromethane	ND		5.00	ug/L	5		ND				30%	
Bromodichloromethane	ND		5.00	ug/L	5		ND				30%	
Bromoform	ND		5.00	ug/L	5		ND				30%	
Bromomethane	ND		25.0	ug/L	5		ND				30%	
2-Butanone (MEK)	ND		50.0	ug/L	5		ND				30%	
n-Butylbenzene	ND		5.00	ug/L	5		ND				30%	
sec-Butylbenzene	ND		5.00	ug/L	5		ND				30%	
ert-Butylbenzene	ND		5.00	ug/L	5		ND				30%	
Carbon disulfide	ND		50.0	ug/L	5		ND				30%	
Carbon tetrachloride	ND		5.00	ug/L	5		ND				30%	
Chlorobenzene	ND		2.50	ug/L	5		ND				30%	
Chloroethane	ND		25.0	ug/L	5		ND				30%	
Chloroform	ND		5.00	ug/L	5		ND				30%	
Chloromethane	ND		25.0	ug/L	5		ND				30%	
-Chlorotoluene	ND		5.00	ug/L	5		ND				30%	
-Chlorotoluene	ND		5.00	ug/L	5		ND				30%	
Dibromochloromethane	ND		5.00	ug/L	5		ND				30%	
,2-Dibromo-3-chloropropane	ND		25.0	ug/L	5		ND				30%	
,2-Dibromoethane (EDB)	ND		2.50	ug/L	5		ND				30%	
Dibromomethane	ND		5.00	ug/L	5		ND				30%	
				-								

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1,2-Dichlorobenzene

ND

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ND

30%

Philip Nerenberg, Lab Director

5

ug/L

2.50



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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23D0057 - EPA 5030C							Wa	ter				
Duplicate (23D0057-DUP1)			Prepared	: 04/03/23	14:41 Ana	lyzed: 04/04/	/23 05:52					
QC Source Sample: Non-SDG (A3	C1025-02)											
1,3-Dichlorobenzene	ND		2.50	ug/L	5		ND				30%	
1,4-Dichlorobenzene	ND		2.50	ug/L	5		ND				30%	
Dichlorodifluoromethane	ND		5.00	ug/L	5		ND				30%	
1,1-Dichloroethane	ND		2.00	ug/L	5		ND				30%	
1,2-Dichloroethane (EDC)	ND		2.00	ug/L	5		ND				30%	
1,1-Dichloroethene	ND		2.00	ug/L	5		ND				30%	
cis-1,2-Dichloroethene	57.5		2.00	ug/L	5		59.2			3	30%	
trans-1,2-Dichloroethene	ND		2.00	ug/L	5		ND				30%	
1,2-Dichloropropane	ND		2.50	ug/L	5		ND				30%	
1,3-Dichloropropane	ND		5.00	ug/L	5		ND				30%	
2,2-Dichloropropane	ND		5.00	ug/L	5		ND				30%	
1,1-Dichloropropene	ND		5.00	ug/L	5		ND				30%	
cis-1,3-Dichloropropene	ND		5.00	ug/L	5		ND				30%	
trans-1,3-Dichloropropene	ND		5.00	ug/L	5		ND				30%	
Ethylbenzene	ND		2.50	ug/L	5		ND				30%	
Hexachlorobutadiene	ND		25.0	ug/L	5		ND				30%	
2-Hexanone	ND		50.0	ug/L	5		ND				30%	
Isopropylbenzene	ND		5.00	ug/L	5		ND				30%	
4-Isopropyltoluene	ND		5.00	ug/L	5		ND				30%	
Methylene chloride	ND		50.0	ug/L	5		ND				30%	
4-Methyl-2-pentanone (MiBK)	ND		50.0	ug/L	5		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		5.00	ug/L	5		ND				30%	
Naphthalene	ND		10.0	ug/L	5		ND				30%	
n-Propylbenzene	ND		2.50	ug/L	5		ND				30%	
Styrene	ND		5.00	ug/L	5		ND				30%	
1,1,2-Tetrachloroethane	ND		2.00	ug/L	5		ND				30%	
1,1,2,2-Tetrachloroethane	ND		2.50	ug/L	5		ND				30%	
Tetrachloroethene (PCE)	3.10		2.00	ug/L	5		3.55			14	30%	
Toluene	ND		5.00	ug/L	5		ND				30%	
1,2,3-Trichlorobenzene	ND		10.0	ug/L	5		ND				30%	
1,2,4-Trichlorobenzene	ND		10.0	ug/L	5		ND				30%	
1,1,1-Trichloroethane	ND		2.00	ug/L	5		ND				30%	
1,1,2-Trichloroethane	ND		2.50	ug/L	5		ND				30%	

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23D0057 - EPA 5030C							Wat	ter				
Duplicate (23D0057-DUP1)			Prepared	: 04/03/23	14:41 Ana	yzed: 04/04/	/23 05:52					
QC Source Sample: Non-SDG (A3	C1025-02)											
Trichloroethene (TCE)	336		2.00	ug/L	5		359			7	30%	
Trichlorofluoromethane	ND		10.0	ug/L	5		ND				30%	
1,2,3-Trichloropropane	ND		5.00	ug/L	5		ND				30%	
,2,4-Trimethylbenzene	ND		5.00	ug/L	5		ND				30%	
1,3,5-Trimethylbenzene	ND		5.00	ug/L	5		ND				30%	
Vinyl chloride	ND		2.00	ug/L	5		ND				30%	
n,p-Xylene	ND		5.00	ug/L	5		ND				30%	
o-Xylene	ND		2.50	ug/L	5		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 104 %	Limits: 80	0-120 %	Dilı	ıtion: 1x					
Toluene-d8 (Surr)			101 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			111 %	80	0-120 %		"					
QC Source Sample: Non-SDG (A3												
Acetone	ND		400	ug/L	20		ND				30%	
Acrylonitrile	ND		40.0	ug/L	20		ND				30%	
Benzene	ND		4.00	ug/L	20		ND				30%	
Bromobenzene	ND		10.0	ug/L	20		ND				30%	
Bromochloromethane	ND		20.0	ug/L	20		ND				30%	
Bromodichloromethane	ND		20.0	ug/L	20		ND				30%	
Bromoform	ND		20.0	ug/L	20		ND				30%	
Bromomethane	ND		100	ug/L	20		ND				30%	
2-Butanone (MEK)	ND		200	ug/L	20		ND				30%	
n-Butylbenzene	ND		20.0	ug/L	20		ND				30%	
ec-Butylbenzene	ND		20.0	ug/L	20		ND				30%	
ert-Butylbenzene	ND		20.0	ug/L	20		ND				30%	
Carbon disulfide	ND		200	ug/L	20		ND				30%	
Carbon tetrachloride	ND		20.0	ug/L	20		ND				30%	
Chlorobenzene	ND		10.0	ug/L	20		ND				30%	
Chloroethane	ND		100	ug/L	20		ND				30%	
Chloroform	ND		20.0	ug/L	20		ND				30%	
Chloromethane	ND		100	ug/L	20		ND				30%	
2-Chlorotoluene	ND		20.0	ug/L	20		ND				30%	

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Philip Nerenberg, Lab Director

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

# QUALITY CONTROL (QC) SAMPLE RESULTS Volatile Organic Compounds by EPA 8260D

#### Detection Reporting Spike Source % REC **RPD** % REC Dilution Amount Analyte Result Ĺimit Units Result Limits RPD Limit Notes Limit Batch 23D0057 - EPA 5030C Water

Duplicate (23D0057-DUP2)		Prepared:	04/03/23 14	:41 Anal	yzed: 04/04	/23 09:29		
QC Source Sample: Non-SDG (A3C	C1150-29)							
4-Chlorotoluene	ND	 20.0	ug/L	20		ND	 	 30%
Dibromochloromethane	ND	 20.0	ug/L	20		ND	 	 30%
1,2-Dibromo-3-chloropropane	ND	 100	ug/L	20		ND	 	 30%
1,2-Dibromoethane (EDB)	ND	 10.0	ug/L	20		ND	 	 30%
Dibromomethane	ND	 20.0	ug/L	20		ND	 	 30%
1,2-Dichlorobenzene	ND	 10.0	ug/L	20		ND	 	 30%
1,3-Dichlorobenzene	ND	 10.0	ug/L	20		ND	 	 30%
1,4-Dichlorobenzene	ND	 10.0	ug/L	20		ND	 	 30%
Dichlorodifluoromethane	ND	 20.0	ug/L	20		ND	 	 30%
1,1-Dichloroethane	ND	 8.00	ug/L	20		ND	 	 30%
1,2-Dichloroethane (EDC)	ND	 8.00	ug/L	20		ND	 	 30%
1,1-Dichloroethene	ND	 8.00	ug/L	20		ND	 	 30%
cis-1,2-Dichloroethene	ND	 8.00	ug/L	20		ND	 	 30%
trans-1,2-Dichloroethene	ND	 8.00	ug/L	20		ND	 	 30%
1,2-Dichloropropane	ND	 10.0	ug/L	20		ND	 	 30%
1,3-Dichloropropane	ND	 20.0	ug/L	20		ND	 	 30%
2,2-Dichloropropane	ND	 20.0	ug/L	20		ND	 	 30%
1,1-Dichloropropene	ND	 20.0	ug/L	20		ND	 	 30%
cis-1,3-Dichloropropene	ND	 20.0	ug/L	20		ND	 	 30%
trans-1,3-Dichloropropene	ND	 20.0	ug/L	20		ND	 	 30%
Ethylbenzene	ND	 10.0	ug/L	20		ND	 	 30%
Hexachlorobutadiene	ND	 100	ug/L	20		ND	 	 30%
2-Hexanone	ND	 200	ug/L	20		ND	 	 30%
Isopropylbenzene	ND	 20.0	ug/L	20		ND	 	 30%
4-Isopropyltoluene	ND	 20.0	ug/L	20		ND	 	 30%
Methylene chloride	ND	 200	ug/L	20		ND	 	 30%
4-Methyl-2-pentanone (MiBK)	ND	 200	ug/L	20		ND	 	 30%
Methyl tert-butyl ether (MTBE)	ND	 20.0	ug/L	20		ND	 	 30%
Naphthalene	ND	 40.0	ug/L	20		ND	 	 30%
n-Propylbenzene	ND	 10.0	ug/L	20		ND	 	 30%
Styrene	ND	 20.0	ug/L	20		ND	 	 30%
1,1,1,2-Tetrachloroethane	ND	 8.00	ug/L	20		ND	 	 30%
1,1,2,2-Tetrachloroethane	ND	 10.0	ug/L	20		ND	 	 30%

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

		•	Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23D0057 - EPA 5030C							Wa	ter				
Duplicate (23D0057-DUP2)			Prepared	: 04/03/23	14:41 Anal	yzed: 04/04/	/23 09:29					
QC Source Sample: Non-SDG (A3	C1150-29)											
Tetrachloroethene (PCE)	ND		8.00	ug/L	20		ND				30%	
Toluene	ND		20.0	ug/L	20		ND				30%	
,2,3-Trichlorobenzene	ND		40.0	ug/L	20		ND				30%	
,2,4-Trichlorobenzene	ND		40.0	ug/L	20		ND				30%	
,1,1-Trichloroethane	ND		8.00	ug/L	20		ND				30%	
,1,2-Trichloroethane	ND		10.0	ug/L	20		ND				30%	
Trichloroethene (TCE)	ND		8.00	ug/L	20		ND				30%	
richlorofluoromethane	ND		40.0	ug/L	20		ND				30%	
,2,3-Trichloropropane	ND		20.0	ug/L	20		ND				30%	
,2,4-Trimethylbenzene	ND		20.0	ug/L	20		ND				30%	
,3,5-Trimethylbenzene	ND		20.0	ug/L	20		ND				30%	
/inyl chloride	ND		8.00	ug/L	20		ND				30%	
n,p-Xylene	ND		20.0	ug/L	20		ND				30%	
-Xylene	ND		10.0	ug/L	20		ND				30%	
urr: 1,4-Difluorobenzene (Surr)		Recov	very: 102 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			101 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			109 %	80	-120 %		"					
Matrix Spike (23D0057-MS1)			Prepared	: 04/03/23	14:41 Anal	yzed: 04/04/	/23 07:13					
QC Source Sample: Non-SDG (A3	D0727-01)											
EPA 8260D	<u>-</u> _											
Acetone	421		200	ug/L	10	400	ND	105	39-160%			
Acrylonitrile	199		20.0	ug/L	10	200	ND	99	63-135%			
Benzene	315		2.00	ug/L	10	200	110	102	79-120%			
Bromobenzene	186		5.00	ug/L	10	200	ND	93	80-120%			
Fromochloromethane	215		10.0	ug/L	10	200	ND	107	78-123%			
Gromodichloromethane	227		10.0	ug/L	10	200	ND	113	79-125%			
romoform	225		10.0	ug/L	10	200	ND	113	66-130%			
romomethane	237		50.0	ug/L	10	200	ND	118	53-141%			
-Butanone (MEK)	426		100	ug/L	10	400	ND	106	56-143%			
-Butylbenzene	218		10.0	ug/L	10	200	7.50	105	75-128%			
ec-Butylbenzene	198		10.0	ug/L	10	200	5.60	96	77-126%			
,	189		10.0	ug/L								

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#### **Apex Laboratories, LLC**

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23D0057 - EPA 5030C							Wa	ter				
Matrix Spike (23D0057-MS1)			Prepared	: 04/03/23	14:41 Ana	yzed: 04/04	/23 07:13					
QC Source Sample: Non-SDG (A3	D0727-01)											
Carbon disulfide	199		100	ug/L	10	200	ND	99	64-133%			
Carbon tetrachloride	255		10.0	ug/L	10	200	ND	128	72-136%			
Chlorobenzene	194		5.00	ug/L	10	200	ND	97	80-120%			
Chloroethane	170		50.0	ug/L	10	200	ND	85	60-138%			Q-54n
Chloroform	207		10.0	ug/L	10	200	ND	104	79-124%			
Chloromethane	184		50.0	ug/L	10	200	ND	92	50-139%			
2-Chlorotoluene	189		10.0	ug/L	10	200	ND	94	79-122%			
4-Chlorotoluene	190		10.0	ug/L	10	200	ND	95	78-122%			
Dibromochloromethane	198		10.0	ug/L	10	200	ND	99	74-126%			
1,2-Dibromo-3-chloropropane	194		50.0	ug/L	10	200	ND	97	62-128%			
1,2-Dibromoethane (EDB)	203		5.00	ug/L	10	200	ND	101	77-121%			
Dibromomethane	208		10.0	ug/L	10	200	ND	104	79-123%			
1,2-Dichlorobenzene	200		5.00	ug/L	10	200	ND	100	80-120%			
1,3-Dichlorobenzene	190		5.00	ug/L	10	200	ND	95	80-120%			
1,4-Dichlorobenzene	184		5.00	ug/L	10	200	ND	92	79-120%			
Dichlorodifluoromethane	178		10.0	ug/L	10	200	ND	89	32-152%			
1,1-Dichloroethane	214		4.00	ug/L	10	200	ND	107	77-125%			
1,2-Dichloroethane (EDC)	203		4.00	ug/L	10	200	ND	102	73-128%			
1,1-Dichloroethene	201		4.00	ug/L	10	200	ND	101	71-131%			
cis-1,2-Dichloroethene	213		4.00	ug/L	10	200	ND	106	78-123%			
trans-1,2-Dichloroethene	211		4.00	ug/L	10	200	ND	105	75-124%			
1,2-Dichloropropane	206		5.00	ug/L	10	200	ND	103	78-122%			
1,3-Dichloropropane	200		10.0	ug/L	10	200	ND	100	80-120%			
2,2-Dichloropropane	216		10.0	ug/L	10	200	ND	108	60-139%			Q-54j
1,1-Dichloropropene	205		10.0	ug/L	10	200	ND	102	79-125%			
cis-1,3-Dichloropropene	232		10.0	ug/L	10	200	ND	116	75-124%			
trans-1,3-Dichloropropene	225		10.0	ug/L	10	200	ND	112	73-127%			
Ethylbenzene	254		5.00	ug/L	10	200	54.7	100	79-121%			
Hexachlorobutadiene	188		50.0	ug/L	10	200	ND	94	66-134%			
2-Hexanone	430		100	ug/L	10	400	ND	107	57-139%			
Isopropylbenzene	213		10.0	ug/L	10	200	8.30	102	72-131%			
4-Isopropyltoluene	238		10.0	ug/L	10	200	9.30	114	77-127%			
Methylene chloride	203		100	ug/L	10	200	ND	101	74-124%			

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D Detection % REC RPD Reporting Spike Source Analyte Result Limit Units Dilution % REC RPD Limit Amount Result Limits Limit Notes Batch 23D0057 - EPA 5030C Water Matrix Spike (23D0057-MS1) Prepared: 04/03/23 14:41 Analyzed: 04/04/23 07:13 QC Source Sample: Non-SDG (A3D0727-01) 4-Methyl-2-pentanone (MiBK) 428 100 ug/L 10 400 ND 107 67-130% Methyl tert-butyl ether (MTBE) 10.0 200 214 ug/L 10 ND 107 71-124% ug/L Naphthalene 374 20.0 10 200 177 98 61-128% n-Propylbenzene 202 5.00 ug/L 10 200 14.1 94 76-126% 212 10.0 ug/L 10 200 ND 106 78-123% Styrene 200 1,1,1,2-Tetrachloroethane 201 ND 4.00 ug/L 10 100 78-124% 1,1,2,2-Tetrachloroethane 200 5.00 ug/L 10 200 ND 100 71-121% Tetrachloroethene (PCE) 187 4.00 200 74-129% ug/L 10 ND 94 Toluene 652 10.0 ug/L 10 200 469 91 80-121% 1,2,3-Trichlorobenzene 187 20.0 ug/L 10 200 ND 94 69-129% 1,2,4-Trichlorobenzene 203 20.0 ug/L 10 200 ND 102 69-130% 1,1,1-Trichloroethane 4.00 10 200 ND 74-131% 243 ug/L 121 200 200 80-120% 1,1,2-Trichloroethane 5.00 ug/L 10 ND 100 200 Trichloroethene (TCE) 204 4.00 10 99 79-123% ug/L 5.50 20.0 Trichlorofluoromethane 191 ug/L 10 200 ND 95 65-141% 1,2,3-Trichloropropane 188 10.0 ug/L 10 200 ND 94 73-122% \_\_\_ 1,2,4-Trimethylbenzene 414 10.0 ug/L 10 200 193 111 76-124% 1,3,5-Trimethylbenzene 284 10.0 200 75.9 75-124% 10 104 ug/L Vinyl chloride 200 200 ND 58-137% 4.00 ug/L 10 100 709 10.0 400 m,p-Xylene 10 309 100 80-121% ug/L 462 200 250 106 78-122% o-Xylene 5.00 ug/L 10

Recovery:

100 %

98%

94%

Limits: 80-120 %

80-120 %

80-120 %

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Surr: 1,4-Difluorobenzene (Surr)

4-Bromofluorobenzene (Surr)

Toluene-d8 (Surr)

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Dilution: 1x

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#### **Apex Laboratories, LLC**

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Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### QUALITY CONTROL (QC) SAMPLE RESULTS

Total	Organic	Carbon (	Non-Purgea	ble) by F	Persulfate	Oxidatio	n by Sta	ndard Met	thod 5310	0C		
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23D0067 - Method Prep:	: <b>A</b> q						Wat	ter				
Blank (23D0067-BLK1)			Prepared	: 04/03/23	15:45 Anal	yzed: 04/04	/23 02:14					
SM 5310 C												
Total Organic Carbon	ND		1.00	mg/L	1							
LCS (23D0067-BS1)			Prepared	: 04/03/23	15:45 Anal	yzed: 04/04	/23 02:44					
SM 5310 C												
Total Organic Carbon	10.3		1.00	mg/L	1	10.0		103	90-114%			
Matrix Spike (23D0067-MS1)			Prepared	: 04/03/23	15:45 Anal	yzed: 04/04	/23 03:44					
QC Source Sample: Non-SDG (A3	C0951-01)											
<u>SM 5310 C</u>												
Total Organic Carbon	11.7		1.01	mg/L	1	10.0	1.25	105	85-115%			
Matrix Spike Dup (23D0067-M	ISD1)		Prepared	: 04/03/23	15:45 Ana	yzed: 04/04	/23 04:14					
OC Source Sample: Non-SDG (A3	C0951-01)											
Total Organic Carbon	11.7		1.01	mg/L	1	10.0	1.25	104	85-115%	0.4	15%	

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15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID:

A3C0961 - 04 08 23 2122

#### SAMPLE PREPARATION INFORMATION

		Volatile	Organic Compounds	s by EPA 8260D			
Prep: EPA 5030C					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 23C1174							
A3C0961-01	Water	EPA 8260D	03/24/23 13:30	03/29/23 13:58	5mL/5mL	5mL/5mL	1.00
A3C0961-03	Water	EPA 8260D	03/24/23 11:15	03/29/23 13:58	5mL/5mL	5mL/5mL	1.00
A3C0961-04	Water	EPA 8260D	03/24/23 10:30	03/29/23 13:58	5mL/5mL	5mL/5mL	1.00
A3C0961-05	Water	EPA 8260D	03/24/23 12:30	03/29/23 13:58	5mL/5mL	5mL/5mL	1.00
Batch: 23C1207							
A3C0961-04RE1	Water	EPA 8260D	03/24/23 10:30	03/30/23 11:50	5mL/5mL	5mL/5mL	1.00
Batch: 23D0057							
A3C0961-02RE1	Water	EPA 8260D	03/24/23 14:30	04/03/23 14:41	5mL/5mL	5mL/5mL	1.00

	Total Orgar	nic Carbon (Non-Pur	geable) by Persulfate	Oxidation by Stand	dard Method 5310	C	
Prep: Method Prep: A	<u>va</u>				Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 23D0067							
A3C0961-01	Water	SM 5310 C	03/24/23 13:30	04/03/23 15:45	40mL/40mL	40mL/40mL	1.00
A3C0961-02	Water	SM 5310 C	03/24/23 14:30	04/03/23 15:45	40mL/40mL	40mL/40mL	1.00
A3C0961-03	Water	SM 5310 C	03/24/23 11:15	04/03/23 15:45	40mL/40mL	40mL/40mL	1.00
A3C0961-04	Water	SM 5310 C	03/24/23 10:30	04/03/23 15:45	40mL/40mL	40mL/40mL	1.00
A3C0961-05	Water	SM 5310 C	03/24/23 12:30	04/03/23 15:45	40mL/40mL	40mL/40mL	1.00

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WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3C0961 - 04 08 23 2122

#### **QUALIFIER DEFINITIONS**

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

## Apex Laboratories

pex Laborat	<u>tories</u>
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +1%. The results are reported as Estimated Values.
Q-54a	Daily Continuing Calibration Verification recovery for this analyte failed the $\pm$ -20% criteria listed in EPA method 8260/8270 by $\pm$ 12%. The results are reported as Estimated Values.
Q-54b	Daily Continuing Calibration Verification recovery for this analyte failed the $\pm$ -20% criteria listed in EPA method 8260/8270 by $\pm$ 13%. The results are reported as Estimated Values.
Q-54c	Daily Continuing Calibration Verification recovery for this analyte failed the $\pm$ -20% criteria listed in EPA method 8260/8270 by $\pm$ 14%. The results are reported as Estimated Values.
Q-54d	Daily Continuing Calibration Verification recovery for this analyte failed the $\pm$ -20% criteria listed in EPA method 8260/8270 by $\pm$ 17%. The results are reported as Estimated Values.
Q-54e	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +20%. The results are reported as Estimated Values.
Q-54f	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +29%. The results are reported as Estimated Values.
Q-54g	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +3%. The results are reported as Estimated Values.
Q-54h	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +34%. The results are reported as Estimated Values.
Q-54i	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +4%. The results are reported as Estimated Values.
Q-54j	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +6%. The results are reported as Estimated Values.
Q-54k	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +7%. The results are reported as Estimated Values.
Q-54l	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +8%. The results are reported as Estimated Values.
Q-54m	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +9%. The results are reported as Estimated Values.
Q-54n	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -5%. The results are reported as Estimated Values.
Q-54o	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -9%. The results are reported as Estimated Values.

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Philip Nerenberg, Lab Director

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#### **Apex Laboratories, LLC**

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc. Project: OCS

 15862 SW 72nd Ave. Suite 150
 Project Number: 461M114811
 Report ID:

 Portland, OR 97224
 Project Manager: Russ Bunker
 A3C0961 - 04 08 23 2122

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.

Q-56 Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260

R-02 The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.

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

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Philip Nevenberg

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#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP <u>USA Environment & Infrastructure Inc.</u>

15862 SW 72nd Ave. Suite 150 Project Number: 461M114811
Portland, OR 97224 Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### REPORTING NOTES AND CONVENTIONS:

<u>oc</u>s

Project:

#### **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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Philip Nerenberg, Lab Director

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#### Apex Laboratories, LLC

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15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### 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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Philip Nerenberg, Lab Director

Philip Nevenberg

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#### Apex Laboratories, LLC

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Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

#### 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

Philip Nevenberg

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Philip Nerenberg, Lab Director

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#### **Apex Laboratories, LLC**

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15862 SW 72nd Ave. Suite 150

Portland, OR 97224

Project: OCS

Project Number: 461M114811

Project Manager: Russ Bunker

Report ID: A3C0961 - 04 08 23 2122

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MWIT- 20330324		11:16								-	-	ļ						×	×			
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MW 19- 20380324	4	12.30	7															×	×			
																			*********			
																			20.00 to 10.00 to 10.		4	
		$\top$			_						-		$\perp$								$\dashv$	
	$\top$	+	+	+	+	_		+	+	+							_	_			+	
4	-	-	- ;	۱	$\dashv$	4		-	-	- -	-	_			$\exists$						$\dashv$	4
Standard 1 turn Around 1 time (1A.1) = 10 Business Days	mir pun	e(IAI)=	10 Busn	ness Da	SS.					<u> </u>	SPECIAL INSTRUCTIONS:	LINS	IKUC	ION	e de							
	1 Day	7	2 Day		3 Day																	
1A1 Kequested (circle) 5	5 Day (	Sta	Standard		Other:																	
SAMPLES ARE HELD FOR 30 DAYS	E HELD	FOR 30 L	MYS							-												
ister BY:	3 /24  33	)	RECEIVED BY: Signature: Allo-M	D BY:	ړ	<b>√</b> .3	Date: 5/27/23	1/2	$\sim$	Sign	RELINQUISHED BY: Signature:	UISHE	D BY:		Q	Date:	··· v2	RECE.	RECEIVED BY: Signature:	Date:	3	
Printed Name: Time Time Carche 13:	Time: 13.35	Æ	rinted Nat.	dhame: Alussa Wilhow	M	کے	Time:	13:25	25	Pri	Printed Name	me:			-	Гіте:		Printed Name	Мате:	Time:		
W5P		Ö	Company:	- Sap	χ					ত্ত	Сопрану.							Соперапу	ay:			

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.

Philip Nerenberg, Lab Director

Philip Nevenberg

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### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150

Portland, OR 97224

Project: OCS

Project Number: 461M114811

Project Manager: Russ Bunker

Report ID:

A3C0961 - 04 08 23 2122

	APEX LABS COOLER RECEIPT FORM
Client: WR	Element WO#: A3C6961
Project/Project #: OC	5 461M114811
Delivery Info:	
Date/time received: $3/2$	7/23 @ 13:25 By: AAW
	ent_XESSFedEx_UPS_RadioMorganSDSEvergreenOther
Cooler Inspection Da	te/time inspected: 3/27/23 @ 13 25 By: AAW
Chain of Custody included	
Signed/dated by client?	Yes No
	Cooler #1 Cooler #2 Cooler #3 Cooler #4 Cooler #5 Cooler #6 Cooler #7
Temperature (°C)	
Custody seals? (Y/N)	<u>N</u>
Received on ice? (Y/N)	<u>Y</u>
Temp. blanks? (Y/N)	<u> </u>
Ice type: (Gel/Real/Other)	<u>Gel</u>
Condition (In/Out):	In
	#e/time inspected: 3/2/1/23 @ 13:49 Byo SM B
Bottle labels/COCs agree?	Yes X No @ Comments: TB Provided, not on COL.
COC/container discrepanc	ies form initiated? Yes No _\(\sum_{\text{No}}\)
	red appropriate for analysis? Yes \( \subseteq \) No Comments:
Containers, volumes recerv	ed appropriate for analysis. Tes X 170 Comments.
Do VOA vials have visible	e headspace? Yes No $\checkmark$ NA
Comments	
	d: Yes ¥ No NA pH appropriate? Yes ✓ No NA
Water samples: pH checke	ed: Yes Y_NoNA pH appropriate? Yes Y_NoNA
Water samples: pH checke	ed: Yes <u>/ No NA pH</u> appropriate? Yes <u>/ No NA</u>
Water samples: pH checke Comments:	
Water samples: pH checke Comments:	Available Mediatoria in the Mark State of State
Water samples: pH checke Comments:	
Water samples: pH checke Comments:	

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Philip Nerenberg, Lab Director

Philip Nevenberg

Page 52 of 52



#### Apex Laboratories, LLC

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

Monday, July 31, 2023 Russ Bunker WSP USA Environment & Infrastructure Inc. 15862 SW 72nd Ave. Suite 150 Portland, OR 97224

RE: A3G1248 - OCS - 461M114814.02

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 A3G1248, which was received by the laboratory on 7/18/2023 at 9:08:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: <a href="mailto:pnerenberg@apex-labs.com">pnerenberg@apex-labs.com</a>, 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)

Default Cooler 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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Philip Nerenberg, Lab Director

Philip Nevenberg

Page 1 of 40



#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114814.02**Project Manager: **Russ Bunker** 

Report ID: A3G1248 - 07 31 23 1914

#### ANALYTICAL REPORT FOR SAMPLES

	SAMPLE INFO	RMATION		
Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW16-20230717	A3G1248-01	Water	07/17/23 12:25	07/18/23 09:08
MW17-20230717	A3G1248-02	Water	07/17/23 13:30	07/18/23 09:08
RW1-20230717	A3G1248-03	Water	07/17/23 15:00	07/18/23 09:08

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Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114814.02**Project Manager: **Russ Bunker** 

Report ID: A3G1248 - 07 31 23 1914

#### ANALYTICAL SAMPLE RESULTS

		olatile Organi	•	~, <u>_</u> ∧ 0				
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Re	ef. Notes
MW16-20230717 (A3G1248-01RE1)				Matrix: Wa	iter	Batch: 2	23G0733	H-04, R-04, V-0
Acetone	1100	500	1000	ug/L	50	07/25/23 18:52	EPA 8260E	)
Acrylonitrile	ND	50.0	100	ug/L	50	07/25/23 18:52	EPA 8260E	)
Benzene	ND	6.25	12.5	ug/L	50	07/25/23 18:52	EPA 8260E	)
Bromobenzene	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260D	)
Bromochloromethane	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260E	)
Bromodichloromethane	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	)
Bromoform	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260E	)
Bromomethane	ND	250	250	ug/L	50	07/25/23 18:52	EPA 8260D	)
2-Butanone (MEK)	2610	250	500	ug/L	50	07/25/23 18:52	EPA 8260E	)
n-Butylbenzene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260E	)
sec-Butylbenzene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	)
tert-Butylbenzene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	)
Carbon disulfide	ND	250	500	ug/L	50	07/25/23 18:52	EPA 8260D	)
Carbon tetrachloride	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	)
Chlorobenzene	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260D	)
Chloroethane	ND	250	250	ug/L	50	07/25/23 18:52	EPA 8260E	)
Chloroform	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260E	)
Chloromethane	ND	125	250	ug/L	50	07/25/23 18:52	EPA 8260E	)
2-Chlorotoluene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260E	)
4-Chlorotoluene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260E	)
Dibromochloromethane	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	)
1,2-Dibromo-3-chloropropane	ND	125	250	ug/L	50	07/25/23 18:52	EPA 8260E	)
1,2-Dibromoethane (EDB)	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260D	)
Dibromomethane	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	)
1,2-Dichlorobenzene	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260E	)
1,3-Dichlorobenzene	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260Γ	)
1,4-Dichlorobenzene	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260Γ	)
Dichlorodifluoromethane	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260Γ	)
1,1-Dichloroethane	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260Γ	)
1,2-Dichloroethane (EDC)	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260E	)
1,1-Dichloroethene	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260E	
cis-1,2-Dichloroethene	501	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260E	)
trans-1,2-Dichloroethene	32.0	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260E	

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

#### ANALYTICAL SAMPLE RESULTS

	V	olatile Organ	ic Compoun	ds by EPA 8	260D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Re	ef. Notes
MW16-20230717 (A3G1248-01RE1)				Matrix: Wa	ater	Batch:	23G0733	H-04, R-04, V-01
1,2-Dichloropropane	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260D	
1,3-Dichloropropane	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	1
2,2-Dichloropropane	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	•
1,1-Dichloropropene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	1
cis-1,3-Dichloropropene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	
trans-1,3-Dichloropropene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	1
Ethylbenzene	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260D	
Hexachlorobutadiene	ND	125	250	ug/L	50	07/25/23 18:52	EPA 8260D	1
2-Hexanone	ND	250	500	ug/L	50	07/25/23 18:52	EPA 8260D	•
Isopropylbenzene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	•
4-Isopropyltoluene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	)
Methylene chloride	ND	250	500	ug/L	50	07/25/23 18:52	EPA 8260D	)
4-Methyl-2-pentanone (MiBK)	ND	250	500	ug/L	50	07/25/23 18:52	EPA 8260D	•
Methyl tert-butyl ether (MTBE)	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	)
Naphthalene	ND	100	200	ug/L	50	07/25/23 18:52	EPA 8260D	•
n-Propylbenzene	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260D	•
Styrene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260D	•
1,1,2,2-Tetrachloroethane	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260D	•
Tetrachloroethene (PCE)	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260D	)
Toluene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	
1,2,3-Trichlorobenzene	ND	50.0	100	ug/L	50	07/25/23 18:52	EPA 8260D	•
1,2,4-Trichlorobenzene	ND	50.0	100	ug/L	50	07/25/23 18:52	EPA 8260D	
1,1,1-Trichloroethane	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260D	•
1,1,2-Trichloroethane	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260D	
Trichloroethene (TCE)	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260D	•
Trichlorofluoromethane	ND	50.0	100	ug/L	50	07/25/23 18:52	EPA 8260D	•
1,2,3-Trichloropropane	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	•
1,2,4-Trimethylbenzene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	)
1,3,5-Trimethylbenzene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	•
Vinyl chloride	77.0	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260D	)
m,p-Xylene	ND	25.0	50.0	ug/L	50	07/25/23 18:52	EPA 8260D	•
o-Xylene	ND	12.5	25.0	ug/L	50	07/25/23 18:52	EPA 8260D	1

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02 Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

#### ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D								
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ro	ef. Notes
	Result	Lillit	Limit					
MW16-20230717 (A3G1248-01RE1)				Matrix: Wate			23G0733	H-04, R-04, V-01
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ery: 102 %	Limits: 80-120 %		07/25/23 18:52	EPA 82601	
Toluene-d8 (Surr)			104 %	80-120 %		07/25/23 18:52	EPA 82601	
4-Bromofluorobenzene (Surr)			98 %	80-120 %	1	07/25/23 18:52	EPA 82601	
MW17-20230717 (A3G1248-02RE1)				Matrix: Wate	r	Batch: 2	23G0733	H-04, R-04, V-01
Acetone	ND	500	1000	ug/L	50	07/25/23 19:37	EPA 8260E	)
Acrylonitrile	ND	50.0	100	ug/L	50	07/25/23 19:37	EPA 8260E	)
Benzene	ND	6.25	12.5	ug/L	50	07/25/23 19:37	EPA 8260E	)
Bromobenzene	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
Bromochloromethane	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
Bromodichloromethane	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
Bromoform	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
Bromomethane	ND	250	250	ug/L	50	07/25/23 19:37	EPA 8260E	)
2-Butanone (MEK)	662	250	500	ug/L	50	07/25/23 19:37	EPA 8260E	)
n-Butylbenzene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
sec-Butylbenzene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
tert-Butylbenzene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
Carbon disulfide	ND	250	500	ug/L	50	07/25/23 19:37	EPA 8260E	)
Carbon tetrachloride	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
Chlorobenzene	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
Chloroethane	ND	250	250	ug/L	50	07/25/23 19:37	EPA 8260E	)
Chloroform	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
Chloromethane	ND	125	250	ug/L	50	07/25/23 19:37	EPA 8260E	)
2-Chlorotoluene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
4-Chlorotoluene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
Dibromochloromethane	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
1,2-Dibromo-3-chloropropane	ND	125	250	ug/L	50	07/25/23 19:37	EPA 8260E	)
1,2-Dibromoethane (EDB)	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
Dibromomethane	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
1,2-Dichlorobenzene	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
1,3-Dichlorobenzene	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
1,4-Dichlorobenzene	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
Dichlorodifluoromethane	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260E	)
1,1-Dichloroethane	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260E	)

Apex Laboratories

Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

#### ANALYTICAL SAMPLE RESULTS

	V	olatile Organ	ic Compoun	ds by EPA 8	260D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Re	ef. Notes
MW17-20230717 (A3G1248-02RE1)				Matrix: Wa	ater	Batch:	23G0733	H-04, R-04, V-01
1,2-Dichloroethane (EDC)	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260D	1
1,1-Dichloroethene	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260D	1
cis-1,2-Dichloroethene	15.5	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260D	) J
trans-1,2-Dichloroethene	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260D	1
1,2-Dichloropropane	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260D	١
1,3-Dichloropropane	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260D	1
2,2-Dichloropropane	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260D	,
1,1-Dichloropropene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260D	1
cis-1,3-Dichloropropene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260D	,
trans-1,3-Dichloropropene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260D	,
Ethylbenzene	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260D	,
Hexachlorobutadiene	ND	125	250	ug/L	50	07/25/23 19:37	EPA 8260D	١
2-Hexanone	ND	250	500	ug/L	50	07/25/23 19:37	EPA 8260D	,
Isopropylbenzene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260D	١
4-Isopropyltoluene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260D	1
Methylene chloride	ND	250	500	ug/L	50	07/25/23 19:37	EPA 8260D	١
4-Methyl-2-pentanone (MiBK)	ND	250	500	ug/L	50	07/25/23 19:37	EPA 8260D	,
Methyl tert-butyl ether (MTBE)	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260D	,
Naphthalene	ND	100	200	ug/L	50	07/25/23 19:37	EPA 8260D	١
n-Propylbenzene	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260D	,
Styrene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260D	١
1,1,1,2-Tetrachloroethane	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260D	,
1,1,2,2-Tetrachloroethane	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260D	,
Tetrachloroethene (PCE)	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260D	1
Toluene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260D	,
1,2,3-Trichlorobenzene	ND	50.0	100	ug/L	50	07/25/23 19:37	EPA 8260D	•
1,2,4-Trichlorobenzene	ND	50.0	100	ug/L	50	07/25/23 19:37	EPA 8260D	,
1,1,1-Trichloroethane	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260D	•
1,1,2-Trichloroethane	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260D	1
Trichloroethene (TCE)	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260D	•
Trichlorofluoromethane	ND	50.0	100	ug/L	50	07/25/23 19:37	EPA 8260D	,
1,2,3-Trichloropropane	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260D	,
1,2,4-Trimethylbenzene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260D	ı

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

#### ANALYTICAL SAMPLE RESULTS

	V	olatile Organi	c Compou	nds by EPA 826	0D			
Analyta	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method R	ef. Notes
Analyte	Kesuit	LIIIII	Lillit			•		
MW17-20230717 (A3G1248-02RE1)				Matrix: Wate	er	Batch:	23G0733	H-04, R-04, V-01
1,3,5-Trimethylbenzene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260I	)
Vinyl chloride	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260I	)
m,p-Xylene	ND	25.0	50.0	ug/L	50	07/25/23 19:37	EPA 8260I	)
o-Xylene	ND	12.5	25.0	ug/L	50	07/25/23 19:37	EPA 8260I	)
Surrogate: 1,4-Difluorobenzene (Surr)		Recover	ry: 106 %	Limits: 80-120 %	I	07/25/23 19:37	EPA 82601	D
Toluene-d8 (Surr)			104 %	80-120 %	1	07/25/23 19:37	EPA 82601	D
4-Bromofluorobenzene (Surr)			99 %	80-120 %	I	07/25/23 19:37	EPA 82601	D
RW1-20230717 (A3G1248-03RE1)				Matrix: Wate	er	Batch:	23G0733	
Acetone	ND	10.0	20.0	ug/L	1	07/25/23 14:22	EPA 8260I	)
Acrylonitrile	ND	1.00	2.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
Benzene	ND	0.125	0.250	ug/L	1	07/25/23 14:22	EPA 8260I	)
Bromobenzene	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260I	)
Bromochloromethane	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
Bromodichloromethane	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
Bromoform	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
Bromomethane	ND	5.00	5.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	07/25/23 14:22	EPA 8260I	)
n-Butylbenzene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
Carbon disulfide	ND	5.00	10.0	ug/L	1	07/25/23 14:22	EPA 8260I	)
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
Chlorobenzene	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260I	)
Chloroethane	ND	5.00	5.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
Chloroform	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
Chloromethane	ND	2.50	5.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
Dibromochloromethane	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260I	)
Dibromomethane	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260I	)
				-				

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

#### ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D								
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
RW1-20230717 (A3G1248-03RE1)				Matrix: Wa	ater	Batch:	23G0733	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D	
1,1-Dichloroethane	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	
1,1-Dichloroethene	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	
cis-1,2-Dichloroethene	26.4	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	
trans-1,2-Dichloroethene	0.730	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	07/25/23 14:22	EPA 8260D	
2-Hexanone	ND	5.00	10.0	ug/L	1	07/25/23 14:22	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	07/25/23 14:22	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	07/25/23 14:22	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D	
Naphthalene	ND	2.00	4.00	ug/L	1	07/25/23 14:22	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D	
1,1,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	
Tetrachloroethene (PCE)	0.810	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	07/25/23 14:22	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	07/25/23 14:22	EPA 8260D	
1,1,1-Trichloroethane	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D	

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114814.02**Project Manager: **Russ Bunker** 

Report ID: A3G1248 - 07 31 23 1914

#### ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D									
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
RW1-20230717 (A3G1248-03RE1)				Matrix: Wate	er	Batch: 23G0733			
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D		
Trichloroethene (TCE)	29.1	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D		
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	07/25/23 14:22	EPA 8260D		
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D		
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D		
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D		
Vinyl chloride	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D		
m,p-Xylene	ND	0.500	1.00	ug/L	1	07/25/23 14:22	EPA 8260D		
o-Xylene	ND	0.250	0.500	ug/L	1	07/25/23 14:22	EPA 8260D		
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	very: 111 %	Limits: 80-120 %	6 1	07/25/23 14:22	EPA 8260D		
Toluene-d8 (Surr)			103 %	80-120 %	6 I	07/25/23 14:22	EPA 8260D		
4-Bromofluorobenzene (Surr)			100 %	80-120 %	6 1	07/25/23 14:22	EPA 8260D		

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114814.02**Project Manager: **Russ Bunker** 

Report ID: A3G1248 - 07 31 23 1914

#### ANALYTICAL SAMPLE RESULTS

Total Organi	c Carbon (No	on-Purgeable	e) by Persulfa	ate Oxidatio	n by Stand	ard Method 531	10C	
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW16-20230717 (A3G1248-01RE1)				Matrix: Water Batch: 23G0674				
Total Organic Carbon	8520		1000	mg/L	1000	07/27/23 23:17	SM 5310 C	
MW17-20230717 (A3G1248-02RE1)				Matrix: Water Batch: 23G0674				
Total Organic Carbon	4790		500	mg/L	500	07/27/23 23:47	SM 5310 C	
RW1-20230717 (A3G1248-03RE1)				Matrix: Water Batch: 23G0674				
Total Organic Carbon	1.61		1.00	mg/L	1	07/28/23 00:17	SM 5310 C	

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

# Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0667 - EPA 5030C							Wat	ter				
Blank (23G0667-BLK1)			Prepared	: 07/24/23	10:00 Anal	yzed: 07/24	/23 10:55					
EPA 8260D												
Acetone	ND	10.0	20.0	ug/L	1							
Acrylonitrile	ND	1.00	2.00	ug/L	1							
Benzene	ND	0.125	0.250	ug/L	1							
Bromobenzene	ND	0.250	0.500	ug/L	1							
Bromochloromethane	ND	0.500	1.00	ug/L	1							
Bromodichloromethane	ND	0.500	1.00	ug/L	1							
Bromoform	ND	0.500	1.00	ug/L	1							
Bromomethane	ND	5.00	5.00	ug/L	1							
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1							
n-Butylbenzene	ND	0.500	1.00	ug/L	1							
sec-Butylbenzene	ND	0.500	1.00	ug/L	1							
tert-Butylbenzene	ND	0.500	1.00	ug/L	1							
Carbon disulfide	ND	5.00	10.0	ug/L	1							
Carbon tetrachloride	ND	0.500	1.00	ug/L	1							
Chlorobenzene	ND	0.250	0.500	ug/L	1							
Chloroethane	ND	5.00	5.00	ug/L	1							
Chloroform	ND	0.500	1.00	ug/L	1							
Chloromethane	ND	2.50	5.00	ug/L	1							
2-Chlorotoluene	ND	0.500	1.00	ug/L	1							
4-Chlorotoluene	ND	0.500	1.00	ug/L	1							
Dibromochloromethane	ND	0.500	1.00	ug/L	1							
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1							
Dibromomethane	ND	0.500	1.00	ug/L ug/L	1							
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L ug/L	1							
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1							
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L ug/L	1							
Dichlorodifluoromethane	ND ND	0.230	1.00	_	1							
1,1-Dichloroethane	ND ND	0.250	0.500	ug/L	1							
	ND ND	0.250	0.500	ug/L	1							
1,2-Dichloroethane (EDC)				ug/L								
1,1-Dichloroethene	ND	0.250	0.500	ug/L	1							
cis-1,2-Dichloroethene	ND	0.250	0.500	ug/L	1							
trans-1,2-Dichloroethene	ND	0.250	0.500	ug/L	1							

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150

Portland, OR 97224

Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

# **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0667 - EPA 5030C							Wat	ter				
Blank (23G0667-BLK1)			Prepared	: 07/24/23	10:00 Anal	yzed: 07/24/	23 10:55					
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1							
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1							
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1							
,1-Dichloropropene	ND	0.500	1.00	ug/L	1							
sis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1							
rans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1							
Ethylbenzene	ND	0.250	0.500	ug/L	1							
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1							
2-Hexanone	ND	5.00	10.0	ug/L	1							
sopropylbenzene	ND	0.500	1.00	ug/L	1							
1-Isopropyltoluene	ND	0.500	1.00	ug/L	1							
Methylene chloride	ND	5.00	10.0	ug/L	1							
-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1							
Naphthalene	ND	2.00	4.00	ug/L	1							
n-Propylbenzene	ND	0.250	0.500	ug/L	1							
Styrene	ND	0.500	1.00	ug/L	1							
,1,1,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1							
,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1							
Cetrachloroethene (PCE)	ND	0.250	0.500	ug/L	1							
Toluene	ND	0.500	1.00	ug/L	1							
,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1							
,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1							
,1,1-Trichloroethane	ND	0.250	0.500	ug/L	1							
,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1							
Frichloroethene (TCE)	ND	0.250	0.500	ug/L	1							
richlorofluoromethane	ND	1.00	2.00	ug/L	1							
,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1							
,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1							
,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1							
/inyl chloride	ND	0.250	0.500	ug/L	1							
n,p-Xylene	ND	0.500	1.00	ug/L	1							
-Xylene	ND	0.250	0.500	ug/L ug/L	1							
/ Ayrenc furr: 1,4-Difluorobenzene (Surr)	110		very: 102 %	Limits: 80			tion: 1x					

Surr: 1,4-Difluorobenzene (Surr) Recovery: 102 % Limits: 80-120 % Dilution: 1.

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Philip Nerenberg, Lab Director

Page 12 of 40



# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114814.02**Project Manager: **Russ Bunker** 

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

		,	Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0667 - EPA 5030C							Wa	ter				
Blank (23G0667-BLK1)			Prepared	1: 07/24/23	10:00 Ana	lyzed: 07/24	/23 10:55					
Surr: Toluene-d8 (Surr)		Recon	very: 102 %	Limits: 8	0-120 %	Dilt	ution: 1x					
4-Bromofluorobenzene (Surr)			102 %	80	0-120 %		"					
LCS (23G0667-BS1)			Prepared	1: 07/24/23	10:00 Ana	lyzed: 07/24	/23 10:10					
EPA 8260D												
Acetone	37.8	10.0	20.0	ug/L	1	40.0		94	80-120%			
Acrylonitrile	21.2	1.00	2.00	ug/L	1	20.0		106	80-120%			
Benzene	20.0	0.125	0.250	ug/L	1	20.0		100	80-120%			
Bromobenzene	18.2	0.250	0.500	ug/L	1	20.0		91	80-120%			
Bromochloromethane	22.8	0.500	1.00	ug/L	1	20.0		114	80-120%			
Bromodichloromethane	20.1	0.500	1.00	ug/L	1	20.0		101	80-120%			
Bromoform	21.7	0.500	1.00	ug/L	1	20.0		108	80-120%			
Bromomethane	26.2	5.00	5.00	ug/L	1	20.0		131	80-120%			Q-5
2-Butanone (MEK)	40.1	5.00	10.0	ug/L	1	40.0		100	80-120%			
n-Butylbenzene	20.2	0.500	1.00	ug/L	1	20.0		101	80-120%			
sec-Butylbenzene	20.8	0.500	1.00	ug/L	1	20.0		104	80-120%			
tert-Butylbenzene	19.6	0.500	1.00	ug/L	1	20.0		98	80-120%			
Carbon disulfide	20.6	5.00	10.0	ug/L	1	20.0		103	80-120%			
Carbon tetrachloride	22.0	0.500	1.00	ug/L	1	20.0		110	80-120%			
Chlorobenzene	19.7	0.250	0.500	ug/L	1	20.0		98	80-120%			
Chloroethane	22.3	5.00	5.00	ug/L	1	20.0		112	80-120%			
Chloroform	19.9	0.500	1.00	ug/L	1	20.0		99	80-120%			
Chloromethane	19.2	2.50	5.00	ug/L	1	20.0		96	80-120%			
2-Chlorotoluene	20.6	0.500	1.00	ug/L	1	20.0		103	80-120%			
4-Chlorotoluene	21.8	0.500	1.00	ug/L	1	20.0		109	80-120%			
Dibromochloromethane	20.3	0.500	1.00	ug/L	1	20.0		102	80-120%			
1,2-Dibromo-3-chloropropane	18.9	2.50	5.00	ug/L	1	20.0		94	80-120%			
1,2-Dibromoethane (EDB)	20.3	0.250	0.500	ug/L	1	20.0		101	80-120%			
Dibromomethane	20.4	0.500	1.00	ug/L	1	20.0		102	80-120%			
1,2-Dichlorobenzene	19.5	0.250	0.500	ug/L	1	20.0		97	80-120%			
1,3-Dichlorobenzene	20.8	0.250	0.500	ug/L	1	20.0		104	80-120%			
1,4-Dichlorobenzene	18.7	0.250	0.500	ug/L	1	20.0		93	80-120%			
Dichlorodifluoromethane	23.1	0.500	1.00	ug/L	1	20.0		116	80-120%			
1,1-Dichloroethane	20.3	0.250	0.500	ug/L		20.0		101	80-120%			

Apex Laboratories

Philip Nevenberg

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

# **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0667 - EPA 5030C							Wa	ter				
LCS (23G0667-BS1)			Prepared	: 07/24/23	10:00 Anal	yzed: 07/24/	/23 10:10					
1,2-Dichloroethane (EDC)	20.0	0.250	0.500	ug/L	1	20.0		100	80-120%			
1,1-Dichloroethene	21.8	0.250	0.500	ug/L	1	20.0		109	80-120%			
cis-1,2-Dichloroethene	20.0	0.250	0.500	ug/L	1	20.0		100	80-120%			
rans-1,2-Dichloroethene	19.5	0.250	0.500	ug/L	1	20.0		97	80-120%			
1,2-Dichloropropane	19.6	0.250	0.500	ug/L	1	20.0		98	80-120%			
1,3-Dichloropropane	19.6	0.500	1.00	ug/L	1	20.0		98	80-120%			
2,2-Dichloropropane	22.3	0.500	1.00	ug/L	1	20.0		111	80-120%			
,1-Dichloropropene	21.8	0.500	1.00	ug/L	1	20.0		109	80-120%			
eis-1,3-Dichloropropene	21.6	0.500	1.00	ug/L	1	20.0		108	80-120%			
rans-1,3-Dichloropropene	22.0	0.500	1.00	ug/L	1	20.0		110	80-120%			
Ethylbenzene	21.6	0.250	0.500	ug/L	1	20.0		108	80-120%			
Hexachlorobutadiene	19.9	2.50	5.00	ug/L	1	20.0		99	80-120%			
?-Hexanone	35.3	5.00	10.0	ug/L	1	40.0		88	80-120%			
sopropylbenzene	19.0	0.500	1.00	ug/L	1	20.0		95	80-120%			
l-Isopropyltoluene	19.7	0.500	1.00	ug/L	1	20.0		99	80-120%			
Methylene chloride	21.1	5.00	10.0	ug/L	1	20.0		105	80-120%			
4-Methyl-2-pentanone (MiBK)	40.0	5.00	10.0	ug/L	1	40.0		100	80-120%			
Methyl tert-butyl ether (MTBE)	21.4	0.500	1.00	ug/L	1	20.0		107	80-120%			
Naphthalene	16.1	2.00	4.00	ug/L	1	20.0		80	80-120%			
n-Propylbenzene	21.6	0.250	0.500	ug/L	1	20.0		108	80-120%			
Styrene	19.2	0.500	1.00	ug/L	1	20.0		96	80-120%			
,1,1,2-Tetrachloroethane	21.1	0.250	0.500	ug/L	1	20.0		106	80-120%			
1,1,2,2-Tetrachloroethane	21.4	0.250	0.500	ug/L	1	20.0		107	80-120%			
Tetrachloroethene (PCE)	20.8	0.250	0.500	ug/L	1	20.0		104	80-120%			
Toluene	19.9	0.500	1.00	ug/L	1	20.0		99	80-120%			
,2,3-Trichlorobenzene	19.5	1.00	2.00	ug/L	1	20.0		98	80-120%			
,2,4-Trichlorobenzene	18.4	1.00	2.00	ug/L	1	20.0		92	80-120%			
,1,1-Trichloroethane	20.8	0.250	0.500	ug/L	1	20.0		104	80-120%			
,1,2-Trichloroethane	19.3	0.250	0.500	ug/L	1	20.0		96	80-120%			
Trichloroethene (TCE)	19.3	0.250	0.500	ug/L	1	20.0		97	80-120%			
Frichlorofluoromethane	23.0	1.00	2.00	ug/L	1	20.0		115	80-120%			
,2,3-Trichloropropane	20.7	0.500	1.00	ug/L ug/L	1	20.0		104	80-120%			
1,2,4-Trimethylbenzene	20.1	0.500	1.00	ug/L ug/L	1	20.0		101	80-120%			
1,3,5-Trimethylbenzene	20.2	0.500	1.00	ug/L ug/L	1	20.0		101	80-120%			

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Philip Manherz

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

		,	Volatile Or	ganic Co	mpounds	by EPA 8	260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
atch 23G0667 - EPA 5030C							Wa	ter				
.CS (23G0667-BS1)			Prepared	1: 07/24/23	10:00 Ana	yzed: 07/24	/23 10:10					
inyl chloride	21.2	0.250	0.500	ug/L	1	20.0		106	80-120%			
ı,p-Xylene	40.6	0.500	1.00	ug/L	1	40.0		101	80-120%			
-Xylene	18.1	0.250	0.500	ug/L	1	20.0		90	80-120%			
urr: 1,4-Difluorobenzene (Surr)		Recon	very: 101 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			99 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			94 %	80	-120 %		"					
Ouplicate (23G0667-DUP1)			Prepared	1: 07/24/23	10:00 Ana	lyzed: 07/24	/23 17:43					
OC Source Sample: Non-SDG (A3	G1211-01)		<del>-</del>									
cetone	ND	100	200	ug/L	10		ND				30%	
crylonitrile	ND	10.0	20.0	ug/L	10		ND				30%	
senzene	ND	1.25	2.50	ug/L	10		ND				30%	
romobenzene	ND	2.50	5.00	ug/L	10		ND				30%	
romochloromethane	ND	5.00	10.0	ug/L	10		ND				30%	
romodichloromethane	ND	5.00	10.0	ug/L	10		ND				30%	
romoform	ND	5.00	10.0	ug/L	10		ND				30%	
romomethane	ND	50.0	50.0	ug/L	10		ND				30%	
-Butanone (MEK)	ND	50.0	100	ug/L	10		ND				30%	
-Butylbenzene	ND	5.00	10.0	ug/L	10		ND				30%	
ec-Butylbenzene	ND	5.00	10.0	ug/L	10		ND				30%	
ert-Butylbenzene	ND	5.00	10.0	ug/L	10		ND				30%	
arbon disulfide	ND	50.0	100	ug/L	10		ND				30%	
arbon tetrachloride	ND	5.00	10.0	ug/L	10		ND				30%	
Chlorobenzene	27.4	2.50	5.00	ug/L	10		27.1			1	30%	
Thloroethane	ND	50.0	50.0	ug/L	10		ND				30%	
'hloroform	ND	5.00	10.0	ug/L	10		ND				30%	
Thloromethane	ND	25.0	50.0	ug/L	10		ND				30%	
-Chlorotoluene	ND	5.00	10.0	ug/L	10		ND				30%	
-Chlorotoluene	ND	5.00	10.0	ug/L	10		ND				30%	
Dibromochloromethane	ND	5.00	10.0	ug/L	10		ND				30%	
,2-Dibromo-3-chloropropane	ND	25.0	50.0	ug/L ug/L	10		ND				30%	
,2-Dibromoethane (EDB)	ND	2.50	5.00	ug/L	10		ND				30%	
Dibromomethane	ND	5.00	10.0	ug/L ug/L	10		ND				30%	
,2-Dichlorobenzene	ND	2.50	5.00	ug/L ug/L	10		ND				20/0	

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

Project: 15862 SW 72nd Ave. Suite 150

Project Number: 461M114814.02 Report ID: Portland, OR 97224 Project Manager: Russ Bunker A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS Volatile Organic Compounds by EPA 8260D

<u>ocs</u>

#### Detection Reporting Spike Source % REC **RPD** Dilution % REC Analyte Result Ĺimit Units Amount Result Limits RPD Limit Notes Limit

Batch 23G0667 - EPA 5030C							Wa	iter			
Duplicate (23G0667-DUP1)			Prepared:	07/24/23 10	):00 Anal	yzed: 07/24	1/23 17:43				
QC Source Sample: Non-SDG (A30	G1211-01)										
1,3-Dichlorobenzene	ND	2.50	5.00	ug/L	10		ND		 	30%	
1,4-Dichlorobenzene	3.60	2.50	5.00	ug/L	10		3.60		 0	30%	J
Dichlorodifluoromethane	ND	5.00	10.0	ug/L	10		ND		 	30%	
1,1-Dichloroethane	ND	2.50	5.00	ug/L	10		ND		 	30%	
1,2-Dichloroethane (EDC)	ND	2.50	5.00	ug/L	10		ND		 	30%	
1,1-Dichloroethene	ND	2.50	5.00	ug/L	10		ND		 	30%	
cis-1,2-Dichloroethene	ND	2.50	5.00	ug/L	10		ND		 	30%	
trans-1,2-Dichloroethene	ND	2.50	5.00	ug/L	10		ND		 	30%	
1,2-Dichloropropane	ND	2.50	5.00	ug/L	10		ND		 	30%	
1,3-Dichloropropane	ND	5.00	10.0	ug/L	10		ND		 	30%	
2,2-Dichloropropane	ND	5.00	10.0	ug/L	10		ND		 	30%	
1,1-Dichloropropene	ND	5.00	10.0	ug/L	10		ND		 	30%	
cis-1,3-Dichloropropene	ND	5.00	10.0	ug/L	10		ND		 	30%	
trans-1,3-Dichloropropene	ND	5.00	10.0	ug/L	10		ND		 	30%	
Ethylbenzene	ND	2.50	5.00	ug/L	10		ND		 	30%	
Hexachlorobutadiene	ND	25.0	50.0	ug/L	10		ND		 	30%	
2-Hexanone	ND	50.0	100	ug/L	10		ND		 	30%	
Isopropylbenzene	ND	5.00	10.0	ug/L	10		ND		 	30%	
4-Isopropyltoluene	ND	5.00	10.0	ug/L	10		ND		 	30%	
Methylene chloride	ND	50.0	100	ug/L	10		ND		 	30%	
4-Methyl-2-pentanone (MiBK)	ND	50.0	100	ug/L	10		ND		 	30%	
Methyl tert-butyl ether (MTBE)	ND	5.00	10.0	ug/L	10		ND		 	30%	
Naphthalene	ND	20.0	40.0	ug/L	10		ND		 	30%	
n-Propylbenzene	ND	2.50	5.00	ug/L	10		ND		 	30%	
Styrene	ND	5.00	10.0	ug/L	10		ND		 	30%	
1,1,1,2-Tetrachloroethane	ND	2.50	5.00	ug/L	10		ND		 	30%	
1,1,2,2-Tetrachloroethane	ND	2.50	5.00	ug/L	10		ND		 	30%	
Tetrachloroethene (PCE)	ND	2.50	5.00	ug/L	10		ND		 	30%	
Toluene	ND	5.00	10.0	ug/L	10		ND		 	30%	
1,2,3-Trichlorobenzene	ND	10.0	20.0	ug/L	10		ND		 	30%	
1,2,4-Trichlorobenzene	ND	10.0	20.0	ug/L	10		ND		 	30%	
1,1,1-Trichloroethane	ND	2.50	5.00	ug/L	10		ND		 	30%	
1,1,2-Trichloroethane	ND	2.50	5.00	ug/L	10		ND		 	30%	

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Page 16 of 40 Philip Nerenberg, Lab Director



# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

		,	Volatile Or	ganic Co	mpounds	by EPA 8	260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0667 - EPA 5030C							Wat	er				
Duplicate (23G0667-DUP1)			Prepared	1: 07/24/23	10:00 Anal	yzed: 07/24/	23 17:43					
QC Source Sample: Non-SDG (A3	G1211-01)											
Trichloroethene (TCE)	ND	2.50	5.00	ug/L	10		ND				30%	
Trichlorofluoromethane	ND	10.0	20.0	ug/L	10		ND				30%	
1,2,3-Trichloropropane	ND	5.00	10.0	ug/L	10		ND				30%	
,2,4-Trimethylbenzene	ND	5.00	10.0	ug/L	10		ND				30%	
1,3,5-Trimethylbenzene	ND	5.00	10.0	ug/L	10		ND				30%	
Vinyl chloride	ND	2.50	5.00	ug/L	10		ND				30%	
n,p-Xylene	ND	5.00	10.0	ug/L	10		ND				30%	
o-Xylene	ND	2.50	5.00	ug/L	10		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Recor	very: 106 %	Limits: 80	0-120 %	Dilı	tion: 1x					
Toluene-d8 (Surr)			103 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			98 %	80	-120 %		"					
QC Source Sample: MW17-20230' EPA 8260D	717 (A3G12	<u>248-02)</u>										
Acetone	ND	5000	10000	ug/L	500		ND				30%	
Acrylonitrile	ND	500	1000	ug/L	500		ND				30%	
Benzene	ND	62.5	125	ug/L	500		ND				30%	
Bromobenzene	ND	125	250	ug/L	500		ND				30%	
Bromochloromethane	ND	250	500	ug/L	500		ND				30%	
Bromodichloromethane	ND	250	500	ug/L	500		ND				30%	
Bromoform	ND	250	500	ug/L	500		ND				30%	
Bromomethane	ND	2500	2500	ug/L	500		ND				30%	
2-Butanone (MEK)	ND	2500	5000	ug/L	500		ND				30%	
n-Butylbenzene	ND	250	500	ug/L	500		ND				30%	
ec-Butylbenzene	ND	250	500	ug/L	500		ND				30%	
ert-Butylbenzene	ND	250	500	ug/L	500		ND				30%	
Carbon disulfide	ND	2500	5000	ug/L	500		ND				30%	
Carbon tetrachloride	ND	250	500	ug/L	500		ND				30%	
Chlorobenzene	ND	125	250	ug/L	500		ND				30%	
Chloroethane	ND	2500	2500	ug/L	500		ND				30%	
Chloroform	ND	250	500	ug/L	500		ND				30%	
				6	200		110				2070	

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150

Portland, OR 97224

Project: OCS

Project Number: 461M114814.02

Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

# **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0667 - EPA 5030C							Wat	ter				
Duplicate (23G0667-DUP2)			Prepared	: 07/24/23	10:00 Ana	lyzed: 07/24	/23 19:35					V-01
QC Source Sample: MW17-202307	/17 (A3G12	248-02)										
2-Chlorotoluene	ND	250	500	ug/L	500		ND				30%	
4-Chlorotoluene	ND	250	500	ug/L	500		ND				30%	
Dibromochloromethane	ND	250	500	ug/L	500		ND				30%	
1,2-Dibromo-3-chloropropane	ND	1250	2500	ug/L	500		ND				30%	
1,2-Dibromoethane (EDB)	ND	125	250	ug/L	500		ND				30%	
Dibromomethane	ND	250	500	ug/L	500		ND				30%	
1,2-Dichlorobenzene	ND	125	250	ug/L	500		ND				30%	
1,3-Dichlorobenzene	ND	125	250	ug/L	500		ND				30%	
1,4-Dichlorobenzene	ND	125	250	ug/L	500		ND				30%	
Dichlorodifluoromethane	ND	250	500	ug/L	500		ND				30%	
1,1-Dichloroethane	ND	125	250	ug/L	500		ND				30%	
1,2-Dichloroethane (EDC)	ND	125	250	ug/L	500		ND				30%	
1,1-Dichloroethene	ND	125	250	ug/L	500		ND				30%	
cis-1,2-Dichloroethene	ND	125	250	ug/L	500		ND				30%	
trans-1,2-Dichloroethene	ND	125	250	ug/L	500		ND				30%	
1,2-Dichloropropane	ND	125	250	ug/L	500		ND				30%	
1,3-Dichloropropane	ND	250	500	ug/L	500		ND				30%	
2,2-Dichloropropane	ND	250	500	ug/L	500		ND				30%	
1,1-Dichloropropene	ND	250	500	ug/L	500		ND				30%	
cis-1,3-Dichloropropene	ND	250	500	ug/L	500		ND				30%	
trans-1,3-Dichloropropene	ND	250	500	ug/L	500		ND				30%	
Ethylbenzene	ND	125	250	ug/L	500		ND				30%	
Hexachlorobutadiene	ND	1250	2500	ug/L	500		ND				30%	
2-Hexanone	ND	2500	5000	ug/L	500		ND				30%	
Isopropylbenzene	ND	250	500	ug/L	500		ND				30%	
4-Isopropyltoluene	ND	250	500	ug/L	500		ND				30%	
Methylene chloride	ND	2500	5000	ug/L	500		ND				30%	
4-Methyl-2-pentanone (MiBK)	ND	2500	5000	ug/L	500		ND				30%	
Methyl tert-butyl ether (MTBE)	ND	250	500	ug/L	500		ND				30%	
Naphthalene	ND	1000	2000	ug/L	500		ND				30%	
n-Propylbenzene	ND	125	250	ug/L	500		ND				30%	
Styrene	ND	250	500	ug/L	500		ND				30%	
1,1,1,2-Tetrachloroethane	ND	125	250	ug/L	500		ND				30%	

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

		V	olatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0667 - EPA 5030C							Wa	ter				
Duplicate (23G0667-DUP2)			Prepared	1: 07/24/23	10:00 Ana	yzed: 07/24	/23 19:35					V-
QC Source Sample: MW17-20230	717 (A3G12	48-02)										
1,1,2,2-Tetrachloroethane	ND	125	250	ug/L	500		ND				30%	
Tetrachloroethene (PCE)	ND	125	250	ug/L	500		ND				30%	
Toluene	ND	250	500	ug/L	500		ND				30%	
1,2,3-Trichlorobenzene	ND	500	1000	ug/L	500		ND				30%	
1,2,4-Trichlorobenzene	ND	500	1000	ug/L	500		ND				30%	
1,1,1-Trichloroethane	ND	125	250	ug/L	500		ND				30%	
1,1,2-Trichloroethane	ND	125	250	ug/L	500		ND				30%	
Trichloroethene (TCE)	ND	125	250	ug/L	500		ND				30%	
Trichlorofluoromethane	ND	500	1000	ug/L	500		ND				30%	
1,2,3-Trichloropropane	ND	250	500	ug/L	500		ND				30%	
1,2,4-Trimethylbenzene	ND	250	500	ug/L	500		ND				30%	
1,3,5-Trimethylbenzene	ND	250	500	ug/L	500		ND				30%	
Vinyl chloride	ND	125	250	ug/L	500		ND				30%	
m,p-Xylene	ND	250	500	ug/L	500		ND				30%	
o-Xylene	ND	125	250	ug/L	500		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Recove	ery: 107 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			104 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			101 %	80	0-120 %		"					
Matrix Spike (23G0667-MS1)			Prepared	1: 07/24/23	10:00 Ana	yzed: 07/24	/23 13:33					
QC Source Sample: Non-SDG (A3	G1310-01)											
EPA 8260D												
Acetone	37.9	10.0	20.0	ug/L	1	40.0	ND	95	39-160%			
Acrylonitrile	20.6	1.00	2.00	ug/L	1	20.0	ND	103	63-135%			
Benzene	21.5	0.125	0.250	ug/L	1	20.0	ND	107	79-120%			

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Bromobenzene

Bromoform

Bromomethane

n-Butylbenzene

sec-Butylbenzene

2-Butanone (MEK)

Bromochloromethane

Bromodichloromethane

18.8

23.3

21.2

21.9

28.1

40.5

21.6

22.7

0.250

0.500

0.500

0.500

5.00

5.00

0.500

0.500

0.500

1.00

1.00

1.00

5.00

10.0

1.00

1.00

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

1

1

1

1

1

1

1

1

20.0

20.0

20.0

20.0

20.0

40.0

20.0

20.0

ND

ND

ND

ND

ND

ND

ND

ND

94

117

106

110

140

101

108

113

80-120%

78-123%

79-125%

66-130%

53-141%

56-143%

75-128%

77-126%

Q-54

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.



# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114814.02**Project Manager: **Russ Bunker** 

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS Volatile Organic Compounds by EPA 8260D

#### Detection Reporting Spike Source % REC **RPD** Dilution % REC Limits RPD Analyte Result Ĺimit Units Amount Result Limit Notes Limit

Batch 23G0667 - EPA 5030C							Wa	ater		
Matrix Spike (23G0667-MS1)			Prepared:	07/24/23 10	:00 Ana	lyzed: 07/24/	/23 13:33			
QC Source Sample: Non-SDG (A30	G1310-01)									
tert-Butylbenzene	21.0	0.500	1.00	ug/L	1	20.0	ND	105	78-124%	 
Carbon disulfide	22.7	5.00	10.0	ug/L	1	20.0	ND	113	64-133%	 
Carbon tetrachloride	24.0	0.500	1.00	ug/L	1	20.0	ND	120	72-136%	 
Chlorobenzene	20.8	0.250	0.500	ug/L	1	20.0	ND	104	80-120%	 
Chloroethane	24.3	5.00	5.00	ug/L	1	20.0	ND	122	60-138%	 
Chloroform	21.2	0.500	1.00	ug/L	1	20.0	ND	106	79-124%	 
Chloromethane	21.0	2.50	5.00	ug/L	1	20.0	ND	105	50-139%	 
-Chlorotoluene	21.8	0.500	1.00	ug/L	1	20.0	ND	109	79-122%	 
-Chlorotoluene	23.1	0.500	1.00	ug/L	1	20.0	ND	116	78-122%	 
Dibromochloromethane	21.0	0.500	1.00	ug/L	1	20.0	ND	105	74-126%	 
,2-Dibromo-3-chloropropane	19.1	2.50	5.00	ug/L	1	20.0	ND	96	62-128%	 
,2-Dibromoethane (EDB)	20.8	0.250	0.500	ug/L	1	20.0	ND	104	77-121%	 
Dibromomethane	20.7	0.500	1.00	ug/L	1	20.0	ND	103	79-123%	 
,2-Dichlorobenzene	19.9	0.250	0.500	ug/L	1	20.0	ND	100	80-120%	 
,3-Dichlorobenzene	21.6	0.250	0.500	ug/L	1	20.0	ND	108	80-120%	 
,4-Dichlorobenzene	19.5	0.250	0.500	ug/L	1	20.0	ND	97	79-120%	 
Dichlorodifluoromethane	25.4	0.500	1.00	ug/L	1	20.0	ND	127	32-152%	 
,1-Dichloroethane	21.8	0.250	0.500	ug/L	1	20.0	ND	109	77-125%	 
,2-Dichloroethane (EDC)	20.8	0.250	0.500	ug/L	1	20.0	ND	104	73-128%	 
,1-Dichloroethene	24.2	0.250	0.500	ug/L	1	20.0	ND	121	71-131%	 
is-1,2-Dichloroethene	21.6	0.250	0.500	ug/L	1	20.0	ND	108	78-123%	 
rans-1,2-Dichloroethene	21.4	0.250	0.500	ug/L	1	20.0	ND	107	75-124%	 
1,2-Dichloropropane	20.7	0.250	0.500	ug/L	1	20.0	ND	103	78-122%	 
,3-Dichloropropane	20.4	0.500	1.00	ug/L	1	20.0	ND	102	80-120%	 
2,2-Dichloropropane	23.8	0.500	1.00	ug/L	1	20.0	ND	119	60-139%	 
,1-Dichloropropene	24.1	0.500	1.00	ug/L	1	20.0	ND	120	79-125%	 
is-1,3-Dichloropropene	19.2	0.500	1.00	ug/L	1	20.0	ND	96	75-124%	 
ans-1,3-Dichloropropene	23.1	0.500	1.00	ug/L	1	20.0	ND	115	73-127%	 
Ethylbenzene	23.3	0.250	0.500	ug/L	1	20.0	ND	116	79-121%	 
Iexachlorobutadiene	20.7	2.50	5.00	ug/L	1	20.0	ND	104	66-134%	 
2-Hexanone	36.0	5.00	10.0	ug/L	1	40.0	ND	90	57-139%	 
sopropylbenzene	20.8	0.500	1.00	ug/L	1	20.0	ND	104	72-131%	 
1-Isopropyltoluene	21.1	0.500	1.00	ug/L	1	20.0	ND	105	77-127%	 

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Philip Nerenberg, Lab Director

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#### Apex Laboratories, LLC

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D Detection % REC RPD Reporting Spike Source Analyte Result Limit Units Dilution % REC RPD Limit Amount Result Limits Limit Notes Batch 23G0667 - EPA 5030C Water Matrix Spike (23G0667-MS1) Prepared: 07/24/23 10:00 Analyzed: 07/24/23 13:33 QC Source Sample: Non-SDG (A3G1310-01) Methylene chloride 20.3 5.00 10.0 ug/L 1 20.0 ND 102 74-124% 5.00 10.0 40.0 4-Methyl-2-pentanone (MiBK) 40.7 ug/L 1 ND 102 67-130% Methyl tert-butyl ether (MTBE) 22.0 0.500 1.00 ug/L 1 20.0 ND 110 71-124% Naphthalene 16.9 2.00 4.00 ug/L 1 20.0 ND 85 61-128% n-Propylbenzene 23.3 0.250 0.500 ug/L 1 20.0 ND 116 76-126% 20.7 0.500 1.00 20.0 ND Styrene ug/L 1 104 78-123% 1,1,1,2-Tetrachloroethane 21.9 0.250 0.500 ug/L 1 20.0 ND 110 78-124% 1,1,2,2-Tetrachloroethane 0.500 20.0 ND 107 21.4 0.250 ug/L 1 71-121% 20.0 Tetrachloroethene (PCE) 22.0 0.250 0.500 ug/L 1 ND 110 74-129% Toluene 21.3 0.500 1.00 ug/L 1 20.0 ND 106 80-121% 1,2,3-Trichlorobenzene 20.2 1.00 2.00 ug/L 1 20.0 ND 101 69-129% 1,2,4-Trichlorobenzene 19.7 1.00 2.00 20.0 ND 69-130% ug/L 1 98 22.8 0.250 20.0 1,1,1-Trichloroethane 0.500 ug/L 1 ND 114 74-131% 1,1,2-Trichloroethane 20.0 19.8 0.250 0.500 ND 99 ug/L 1 80-120% 0.250 Trichloroethene (TCE) 20.4 0.500 ug/L 1 20.0 ND 102 79-123% Trichlorofluoromethane 25.2 1.00 2.00 ug/L 1 20.0 ND 126 65-141% 1,2,3-Trichloropropane 20.9 0.500 1.00 ug/L 1 20.0 ND 104 73-122% 21.2 0.500 1.00 20.0 106 1,2,4-Trimethylbenzene ug/L ND 76-124% 1 1,3,5-Trimethylbenzene 20.0 ND 75-124% 21.6 0.500 1.00 ug/L 1 108 0.250 0.500 20.0 Vinyl chloride 24.2 ND 121 58-137% ug/L 1 m,p-Xylene 44.3 0.500 1.00 40.0 ND 111 80-121% ug/L 1 o-Xylene 19.5 0.250 0.500 ug/L 1 20.0 ND 98 78-122% 101 % Surr: 1,4-Difluorobenzene (Surr) lχ Recovery: Limits: 80-120 % Dilution: Toluene-d8 (Surr) 98 % 80-120 %

80-120 %

92 %

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4-Bromofluorobenzene (Surr)

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Philip Nerenberg, Lab Director

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# **Apex Laboratories, LLC**

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114814.02**Project Manager: **Russ Bunker** 

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

# Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0733 - EPA 5030C							Wat	er				
Blank (23G0733-BLK1)			Prepared	: 07/25/23	09:00 Anal	yzed: 07/25	/23 11:23					
EPA 8260D												
Acetone	ND	10.0	20.0	ug/L	1							
Acrylonitrile	ND	1.00	2.00	ug/L	1							
Benzene	ND	0.125	0.250	ug/L	1							
Bromobenzene	ND	0.250	0.500	ug/L	1							
Bromochloromethane	ND	0.500	1.00	ug/L	1							
Bromodichloromethane	ND	0.500	1.00	ug/L	1							
Bromoform	ND	0.500	1.00	ug/L	1							
Bromomethane	ND	5.00	5.00	ug/L	1							
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1							
n-Butylbenzene	ND	0.500	1.00	ug/L	1							
ec-Butylbenzene	ND	0.500	1.00	ug/L	1							
ert-Butylbenzene	ND	0.500	1.00	ug/L	1							
Carbon disulfide	ND	5.00	10.0	ug/L	1							
Carbon tetrachloride	ND	0.500	1.00	ug/L	1							
Chlorobenzene	ND	0.250	0.500	ug/L	1							
Chloroethane	ND	5.00	5.00	ug/L	1							
Chloroform	ND	0.500	1.00	ug/L	1							
Chloromethane	ND	2.50	5.00	ug/L	1							
2-Chlorotoluene	ND	0.500	1.00	ug/L	1							
l-Chlorotoluene	ND	0.500	1.00	ug/L	1							
Dibromochloromethane	ND	0.500	1.00	ug/L	1							
,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1							
,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1							
Dibromomethane	ND	0.500	1.00	ug/L	1							
,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1							
,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1							
,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1							
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1							
,1-Dichloroethane	ND	0.250	0.500	ug/L	1							
,2-Dichloroethane (EDC)	ND	0.250	0.500	ug/L	1							
,1-Dichloroethene	ND	0.250	0.500	ug/L	1							
eis-1,2-Dichloroethene	ND	0.250	0.500	ug/L	1							
rans-1,2-Dichloroethene	ND	0.250	0.500	ug/L	1							

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Philip Manherz

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# **Apex Laboratories, LLC**

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

# **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0733 - EPA 5030C							Wat	ter				
Blank (23G0733-BLK1)			Prepared	: 07/25/23	09:00 Anal	yzed: 07/25	/23 11:23					
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1							
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1							
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1							
,1-Dichloropropene	ND	0.500	1.00	ug/L	1							
is-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1							
rans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1							
Ethylbenzene	ND	0.250	0.500	ug/L	1							
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1							
2-Hexanone	ND	5.00	10.0	ug/L	1							
sopropylbenzene	ND	0.500	1.00	ug/L	1							
1-Isopropyltoluene	ND	0.500	1.00	ug/L	1							
Methylene chloride	ND	5.00	10.0	ug/L	1							
-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1							
Naphthalene	ND	2.00	4.00	ug/L	1							
n-Propylbenzene	ND	0.250	0.500	ug/L	1							
Styrene	ND	0.500	1.00	ug/L	1							
,1,1,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1							
,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1							
Tetrachloroethene (PCE)	ND	0.250	0.500	ug/L	1							
Toluene	ND	0.500	1.00	ug/L	1							
,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1							
,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1							
,1,1-Trichloroethane	ND	0.250	0.500	ug/L	1							
,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1							
Trichloroethene (TCE)	ND	0.250	0.500	ug/L	1							
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1							
,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1							
,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1							
,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1							
Vinyl chloride	ND	0.250	0.500	ug/L	1							
n,p-Xylene	ND	0.500	1.00	ug/L	1							
o-Xylene	ND	0.250	0.500	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 105 %	Limits: 80	0-120 %	Dilı	ution: 1x					

Surr: 1,4-Difluorobenzene (Surr) Recovery: 105 % Limits: 80-120 % Dilution: 1.

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Philip Nerenberg, Lab Director

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0733 - EPA 5030C							Wa	ter				
Blank (23G0733-BLK1)			Prepared	1: 07/25/23	09:00 Ana	lyzed: 07/25	/23 11:23					
Surr: Toluene-d8 (Surr)		Reco	very: 103 %	Limits: 80	0-120 %	Dilı	ution: 1x					
4-Bromofluorobenzene (Surr)			101 %	80	0-120 %		"					
LCS (23G0733-BS1)			Prepared	1: 07/25/23	09:00 Ana	yzed: 07/25	/23 10:28					
EPA 8260D												
Acetone	39.1	10.0	20.0	ug/L	1	40.0		98	80-120%			
Acrylonitrile	21.5	1.00	2.00	ug/L	1	20.0		108	80-120%			
Benzene	20.0	0.125	0.250	ug/L	1	20.0		100	80-120%			
Bromobenzene	18.5	0.250	0.500	ug/L	1	20.0		92	80-120%			
Bromochloromethane	22.9	0.500	1.00	ug/L	1	20.0		114	80-120%			
Bromodichloromethane	20.2	0.500	1.00	ug/L	1	20.0		101	80-120%			
Bromoform	21.6	0.500	1.00	ug/L	1	20.0		108	80-120%			
Bromomethane	26.9	5.00	5.00	ug/L	1	20.0		134	80-120%			Q-5
2-Butanone (MEK)	42.0	5.00	10.0	ug/L	1	40.0		105	80-120%			
n-Butylbenzene	20.3	0.500	1.00	ug/L	1	20.0		102	80-120%			
sec-Butylbenzene	20.9	0.500	1.00	ug/L	1	20.0		104	80-120%			
tert-Butylbenzene	19.8	0.500	1.00	ug/L	1	20.0		99	80-120%			
Carbon disulfide	20.4	5.00	10.0	ug/L	1	20.0		102	80-120%			
Carbon tetrachloride	21.8	0.500	1.00	ug/L	1	20.0		109	80-120%			
Chlorobenzene	19.8	0.250	0.500	ug/L	1	20.0		99	80-120%			
Chloroethane	22.7	5.00	5.00	ug/L	1	20.0		113	80-120%			
Chloroform	20.0	0.500	1.00	ug/L	1	20.0		100	80-120%			
Chloromethane	19.8	2.50	5.00	ug/L	1	20.0		99	80-120%			
2-Chlorotoluene	20.7	0.500	1.00	ug/L	1	20.0		103	80-120%			
4-Chlorotoluene	22.4	0.500	1.00	ug/L	1	20.0		112	80-120%			
Dibromochloromethane	20.6	0.500	1.00	ug/L	1	20.0		103	80-120%			
1,2-Dibromo-3-chloropropane	19.1	2.50	5.00	ug/L	1	20.0		96	80-120%			
1,2-Dibromoethane (EDB)	20.6	0.250	0.500	ug/L	1	20.0		103	80-120%			
Dibromomethane	20.2	0.500	1.00	ug/L	1	20.0		101	80-120%			
1,2-Dichlorobenzene	19.6	0.250	0.500	ug/L	1	20.0		98	80-120%			
1,3-Dichlorobenzene	21.0	0.250	0.500	ug/L	1	20.0		105	80-120%			
1,4-Dichlorobenzene	18.9	0.250	0.500	ug/L	1	20.0		94	80-120%			
Dichlorodifluoromethane	22.8	0.500	1.00	ug/L	1	20.0		114	80-120%			
1,1-Dichloroethane	20.4	0.250	0.500	ug/L	1	20.0		102	80-120%			

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

# **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0733 - EPA 5030C							Wa	ter				
LCS (23G0733-BS1)			Prepared	: 07/25/23	09:00 Anal	yzed: 07/25/	23 10:28					
1,2-Dichloroethane (EDC)	20.4	0.250	0.500	ug/L	1	20.0		102	80-120%			
1,1-Dichloroethene	22.3	0.250	0.500	ug/L	1	20.0		112	80-120%			
cis-1,2-Dichloroethene	20.3	0.250	0.500	ug/L	1	20.0		102	80-120%			
trans-1,2-Dichloroethene	19.8	0.250	0.500	ug/L	1	20.0		99	80-120%			
1,2-Dichloropropane	19.5	0.250	0.500	ug/L	1	20.0		97	80-120%			
1,3-Dichloropropane	19.9	0.500	1.00	ug/L	1	20.0		100	80-120%			
2,2-Dichloropropane	22.9	0.500	1.00	ug/L	1	20.0		114	80-120%			
1,1-Dichloropropene	21.8	0.500	1.00	ug/L	1	20.0		109	80-120%			
cis-1,3-Dichloropropene	22.1	0.500	1.00	ug/L	1	20.0		110	80-120%			
trans-1,3-Dichloropropene	23.0	0.500	1.00	ug/L	1	20.0		115	80-120%			
Ethylbenzene	21.7	0.250	0.500	ug/L	1	20.0		109	80-120%			
Hexachlorobutadiene	19.8	2.50	5.00	ug/L	1	20.0		99	80-120%			
2-Hexanone	35.6	5.00	10.0	ug/L	1	40.0		89	80-120%			
Isopropylbenzene	19.0	0.500	1.00	ug/L	1	20.0		95	80-120%			
4-Isopropyltoluene	19.8	0.500	1.00	ug/L	1	20.0		99	80-120%			
Methylene chloride	20.6	5.00	10.0	ug/L	1	20.0		103	80-120%			
4-Methyl-2-pentanone (MiBK)	41.3	5.00	10.0	ug/L	1	40.0		103	80-120%			
Methyl tert-butyl ether (MTBE)	21.6	0.500	1.00	ug/L	1	20.0		108	80-120%			
Naphthalene	15.9	2.00	4.00	ug/L	1	20.0		80	80-120%			
n-Propylbenzene	21.8	0.250	0.500	ug/L	1	20.0		109	80-120%			
Styrene	19.6	0.500	1.00	ug/L	1	20.0		98	80-120%			
1,1,2-Tetrachloroethane	21.3	0.250	0.500	ug/L	1	20.0		106	80-120%			
1,1,2,2-Tetrachloroethane	22.2	0.250	0.500	ug/L	1	20.0		111	80-120%			
Tetrachloroethene (PCE)	20.6	0.250	0.500	ug/L	1	20.0		103	80-120%			
Toluene	20.1	0.500	1.00	ug/L	1	20.0		100	80-120%			
1,2,3-Trichlorobenzene	19.2	1.00	2.00	ug/L	1	20.0		96	80-120%			
1,2,4-Trichlorobenzene	18.0	1.00	2.00	ug/L	1	20.0		90	80-120%			
1,1,1-Trichloroethane	21.0	0.250	0.500	ug/L	1	20.0		105	80-120%			
1,1,2-Trichloroethane	19.6	0.250	0.500	ug/L	1	20.0		98	80-120%			
Trichloroethene (TCE)	19.0	0.250	0.500	ug/L	1	20.0		95	80-120%			
Trichlorofluoromethane	22.9	1.00	2.00	ug/L	1	20.0		115	80-120%			
1,2,3-Trichloropropane	21.7	0.500	1.00	ug/L	1	20.0		108	80-120%			
1,2,4-Trimethylbenzene	20.3	0.500	1.00	ug/L	1	20.0		102	80-120%			
1,3,5-Trimethylbenzene	20.3	0.500	1.00	ug/L	1	20.0		102	80-120%			

Apex Laboratories

Philip Manherz

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.



# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

		1	Volatile Or	ganic Co	mpounds	by EPA 8	260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0733 - EPA 5030C							Wa	ter				
LCS (23G0733-BS1)			Prepared	1: 07/25/23	09:00 Ana	lyzed: 07/25	/23 10:28					
Vinyl chloride	22.0	0.250	0.500	ug/L	1	20.0		110	80-120%			
m,p-Xylene	41.4	0.500	1.00	ug/L	1	40.0		104	80-120%			
o-Xylene	18.1	0.250	0.500	ug/L	1	20.0		91	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Recov	very: 101 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			100 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			93 %	80	0-120 %		"					
Duplicate (23G0733-DUP1)			Prepared	1: 07/25/23	09:00 Ana	lyzed: 07/25	/23 18:07					
OC Source Sample: Non-SDG (A3	G1346-01)											
Acetone	ND	100	200	ug/L	10		ND				30%	
Acrylonitrile	ND	10.0	20.0	ug/L	10		ND				30%	
Benzene	ND	1.25	2.50	ug/L	10		ND				30%	
Bromobenzene	ND	2.50	5.00	ug/L	10		ND				30%	
Bromochloromethane	ND	5.00	10.0	ug/L	10		ND				30%	
Bromodichloromethane	ND	5.00	10.0	ug/L	10		ND				30%	
Bromoform	ND	5.00	10.0	ug/L	10		ND				30%	
Bromomethane	ND	50.0	50.0	ug/L	10		ND				30%	
2-Butanone (MEK)	ND	50.0	100	ug/L	10		ND				30%	
n-Butylbenzene	ND	5.00	10.0	ug/L	10		ND				30%	
sec-Butylbenzene	ND	5.00	10.0	ug/L	10		ND				30%	
ert-Butylbenzene	ND	5.00	10.0	ug/L	10		ND				30%	
Carbon disulfide	ND	50.0	100	ug/L	10		ND				30%	
Carbon tetrachloride	ND	5.00	10.0	ug/L	10		ND				30%	
Chlorobenzene	ND	2.50	5.00	ug/L	10		ND				30%	
Chloroethane	ND	50.0	50.0	ug/L	10		ND				30%	
Chloroform	ND	5.00	10.0	ug/L	10		ND				30%	
Chloromethane	ND	25.0	50.0	ug/L	10		ND				30%	
2-Chlorotoluene	ND	5.00	10.0	ug/L	10		ND				30%	
1-Chlorotoluene	ND	5.00	10.0	ug/L	10		ND				30%	
Dibromochloromethane	ND	5.00	10.0	ug/L	10		ND				30%	
,2-Dibromo-3-chloropropane	ND	25.0	50.0	ug/L	10		ND				30%	
,2-Dibromoethane (EDB)	ND	2.50	5.00	ug/L	10		ND				30%	
Dibromomethane	ND	5.00	10.0	ug/L	10		ND				30%	

Apex Laboratories

Philip Nevenberg

1,2-Dichlorobenzene

ND

2.50

5.00

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ND

30%

Philip Nerenberg, Lab Director

10

ug/L



#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

ND

5.00

5.00

2.50

25.0

50.0

5.00

5.00

50.0

50.0

5.00

20.0

2.50

10.0

10.0

5.00

50.0

100

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10.0

100

100

10.0

40.0

5.00

ug/L

11σ/Ι

10

10

10

10

10

10

10

10

10

10

10

10

ND

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15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

30%

30%

30%

30%

30%

30%

30%

30%

30%

30%

30%

30%

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# QUALITY CONTROL (QC) SAMPLE RESULTS Volatile Organic Compounds by EPA 8260D

#### Detection % REC RPD Reporting Spike Source Analyte Result Limit Units Dilution Result % REC RPD Limit Amount Limits Limit Notes Batch 23G0733 - EPA 5030C Water Duplicate (23G0733-DUP1) Prepared: 07/25/23 09:00 Analyzed: 07/25/23 18:07 QC Source Sample: Non-SDG (A3G1346-01) 1,3-Dichlorobenzene ND 2.50 5.00 ug/L 10 ND 30% ND 2.50 5.00 10 1,4-Dichlorobenzene ug/L ND 30% Dichlorodifluoromethane ND 5.00 10.0 ug/L 10 ND 30% 1,1-Dichloroethane ND 2.50 5.00 ug/L 10 ND 30% 1,2-Dichloroethane (EDC) ND 2.50 5.00 ug/L 10 ND 30% ------ND 5.00 1,1-Dichloroethene 2.50 ug/L 10 ND 30% cis-1,2-Dichloroethene ND 2.50 5.00 ug/L 10 ND 30% 5.00 trans-1,2-Dichloroethene ND ND 30% 2.50 ug/L 10 1,2-Dichloropropane ND 2.50 5.00 ug/L 10 ND 30% 1,3-Dichloropropane ND 5.00 10.0 ug/L 10 ND 30% 2,2-Dichloropropane ND 5.00 10.0 ug/L 10 ND 30% ND 5.00 10.0 10 ND 30% 1,1-Dichloropropene ug/L

н тторутосиисис	112	2.50	5.00	ug L	10	1112		5070
Styrene	ND	5.00	10.0	ug/L	10	 ND	 	 30%
1,1,1,2-Tetrachloroethane	ND	2.50	5.00	ug/L	10	 ND	 	 30%
1,1,2,2-Tetrachloroethane	ND	2.50	5.00	ug/L	10	 ND	 	 30%
Tetrachloroethene (PCE)	ND	2.50	5.00	ug/L	10	 ND	 	 30%
Toluene	ND	5.00	10.0	ug/L	10	 ND	 	 30%
1,2,3-Trichlorobenzene	ND	10.0	20.0	ug/L	10	 ND	 	 30%
1,2,4-Trichlorobenzene	ND	10.0	20.0	ug/L	10	 ND	 	 30%
1,1,1-Trichloroethane	ND	2.50	5.00	ug/L	10	 ND	 	 30%
1,1,2-Trichloroethane	ND	2.50	5.00	ug/L	10	 ND	 	 30%

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Philip Nevenberg

cis-1,3-Dichloropropene

Hexachlorobutadiene

Isopropylbenzene

4-Isopropyltoluene

Methylene chloride

4-Methyl-2-pentanone (MiBK)

Methyl tert-butyl ether (MTBE)

Ethylbenzene

2-Hexanone

Naphthalene

n-Propylbenzene

trans-1,3-Dichloropropene

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Philip Nerenberg, Lab Director

Page 27 of 40



15862 SW 72nd Ave. Suite 150

Portland, OR 97224

# ANALYTICAL REPORT

# Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

Project: OCS

Project Number: 461M114814.02

Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

Result   Climit   C				Volatile Or	ganic Co	mpounds	by EPA 8	3260D				
Prepared: 07/25/23 09:00   Analyzed: 07/25/23 18:07	Analyte	Result			Units	Dilution			% REC	RPD	RPD Limit	Notes
OC Source Sample: Non-SDG (A3G1346-01)	atch 23G0733 - EPA 5030C							Wa	ter			
Trichloroethene (TCE)   ND   2.50   5.00   ug/L   10     ND	ouplicate (23G0733-DUP1)			Prepared	1: 07/25/23	09:00 Ana	lyzed: 07/25	/23 18:07				
Trichlorofluoromethane	QC Source Sample: Non-SDG (A	3G1346-01)										
1,2,3-Trichloropropane	richloroethene (TCE)	ND	2.50	5.00	ug/L	10		ND		 	30%	
1,2,4-Trimethylbenzene   ND   5.00   10.0   ug/L   10     ND       30     1,3,5-Trimethylbenzene   ND   5.00   10.0   ug/L   10     ND       30     Niryl chloride   ND   2.50   5.00   ug/L   10     ND       30     Niryl chloride   ND   5.00   10.0   ug/L   10     ND       30     Np-Xylene   ND   5.00   10.0   ug/L   10     ND       30     Np-Xylene   ND   2.50   5.00   ug/L   10     ND       30     Np-Xylene   ND   2.50   5.00   ug/L   10     ND       30     Nurr   1,4-Difluorobenzene (Surr)   Recovery: 106 %   Limits: 80-120 %   Dilution: 1x     Toluene-48 (Surr)   101 %   80-120 %   Dilution: 1x     Toluene-48 (Surr)   100 %   ND %     30     Decense ND	richlorofluoromethane	ND	10.0	20.0	ug/L	10		ND		 	30%	
1,3,5-Trimethylbenzene	,2,3-Trichloropropane	ND	5.00	10.0	ug/L	10		ND		 	30%	
Viryl chloride	,2,4-Trimethylbenzene	ND	5.00	10.0	ug/L	10		ND		 	30%	
ND   S.00   10.0   ug/L   10     ND       30    -Xylene   ND   2.50   5.00   ug/L   10     ND       30    -Xylene   ND   100%   80-120%      -Xylene   ND   100%   80-120%      -Xylene   ND   100%   2000   ug/L   100     ND       30    -Xylene   ND   200   200   ug/L   100     ND       30    -Xylene   ND   25.0   50.0   ug/L   100     ND       30    -Xylene   ND   50.0   100   ug/L   100     ND       30    -Xylene   N	3,5-Trimethylbenzene	ND	5.00	10.0	ug/L	10		ND		 	30%	
Description	inyl chloride	ND	2.50	5.00	ug/L	10		ND		 	30%	
Name	•	ND	5.00	10.0	ug/L	10		ND		 	30%	
105 %   80-120 %   "	-Xylene	ND	2.50	5.00	ug/L	10		ND		 	30%	
Prepared: 07/25/23 09:00   Analyzed: 07/25/23 20:44     Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44   Octoor   Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44     Octoor   Analyzed: 07/25/23 20:44     Octoor	urr: 1,4-Difluorobenzene (Surr)		Recon	very: 106 %	Limits: 80	0-120 %	Dilı	ution: 1x				
Prepared: 07/25/23 09:00   Analyzed: 07/25/23 20:44	Toluene-d8 (Surr)			105 %	80	0-120 %		"				
OC Source Sample: Non-SDG (A3G1370-01)           Acetone         ND         1000         2000         ug/L         100          ND           30           Acetone         ND         200         200         ug/L         100          ND           30           Bernene         23200         12.5         25.0         ug/L         100          ND          2         30           Bromobenzene         ND         25.0         50.0         ug/L         100          ND           30           Bromochloromethane         ND         50.0         100         ug/L         100          ND          30           Bromoform         ND         50.0         100         ug/L         100          ND          30           Bromoform         ND         50.0         100         ug/L         100          ND          30           Bromomethane         ND         50         500         ug/L         100          ND          30	4-Bromofluorobenzene (Surr)			101 %	80	0-120 %		"				
Acrylonitrile ND 200 200 ug/L 100 ND 23800 2 30 Benzene 23200 12.5 25.0 ug/L 100 23800 2 30 Bromobenzene ND 25.0 50.0 ug/L 100 ND 30 Bromochloromethane ND 50.0 100 ug/L 100 ND 30 Bromochloromethane ND 50.0 100 ug/L 100 ND 30 Bromoform ND 50.0 100 ug/L 100 ND 30 Bromoform ND 50.0 100 ug/L 100 ND 30 Bromomethane ND 50.0 100 ug/L 100 ND 30 Bromomethane ND 500 100 ug/L 100 ND 30 Bromomethane ND 500 100 ug/L 100 ND 30 Bromomethane ND 500 1000 ug/L 100 ND 30 Bromomethane ND 500 1000 ug/L 100 ND 30 Bromomethane ND 50.0 100 ug/L 100 ND 30 Bromomethane ND 50.0 50.0 ug/L 100 ND 30 Bromomethane ND ND 30 Bromometh		<u> </u>	1000	2000	119/1	100		ND		 	30%	
Serior   S					_							
Stromobenzene   ND   25.0   50.0   ug/L   100     ND       30	•				_						30%	
Stromochloromethane   ND   50.0   100   ug/L   100     ND       30					_						30%	
ND   Stromodichloromethane   ND   Stromodichloromethane   ND   Stromoform   ND   Stromoform   ND   Stromoform   ND   Stromoform   ND   Stromomethane   ND					_						30%	
Stromoform   ND   50.0   100   ug/L   100     ND       30					-						30%	
Stomomethane   ND   500   500   ug/L   100     ND       30    -Butanone (MEK)   ND   500   1000   ug/L   100     ND       30    -Butylbenzene   ND   50.0   100   ug/L   100     ND       30    -Butylbenzene   ND   50.0   1000   ug/L   100     ND       30    -Butylbenzene   ND   50.0   50.0   ug/L   100     ND         30    -Butylbenzene   ND   50.0   50.0   ug/L   100     ND         30    -Butylbenzene   ND   50.0   50.0   ug/L   100     ND         30    -Butylbenzene   ND   50.0   50.					_						30%	
2-Butanone (MEK)  ND  500  1000  ug/L  100   ND   ND   30  n-Butylbenzene  ND  50.0  100  ug/L  100   ND   30  sec-Butylbenzene  ND  50.0  100  ug/L  100   ND   ND   30  sec-Butylbenzene  ND  50.0  100  ug/L  100   ND   ND   30  Carbon disulfide  ND  500  1000  ug/L  100   ND   30  Carbon tetrachloride  ND  50.0  100  ug/L  100   ND   30  Carbon tetrachloride  ND  50.0  100  ug/L  100   ND   30  Carbon tetrachloride  ND  50.0  100  ug/L  100   ND   30  Chlorobenzene  ND  50.0  50.0  ug/L  100   ND   30  Chloroethane					-						30%	
ND   S0.0   100   ug/L   100     ND       30   sec-Butylbenzene   ND   S0.0   100   ug/L   100     ND       30   sec-Butylbenzene   ND   S0.0   100   ug/L   100     ND       30   Carbon disulfide   ND   S00   1000   ug/L   100     ND       30   Carbon tetrachloride   ND   S0.0   100   ug/L   100     ND       30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND       30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND       30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND       30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND       30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND       30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND       30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND       30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND       30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND       30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND         30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND         30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND         30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND         30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND         30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND         30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND         30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND         30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND         30   Carbon tetrachloride   ND   S0.0   S0.0   ug/L   100     ND         30   Carbon tetrachloride   ND   S0.0					_						30%	
ND   So.0   100   ug/L   100     ND       30   ert-Butylbenzene   ND   So.0   100   ug/L   100     ND       30   Carbon disulfide   ND   So.0   1000   ug/L   100     ND       30   Carbon tetrachloride   ND   So.0   100   ug/L   100     ND       30   Carbon tetrachloride   ND   So.0   100   ug/L   100     ND       30   Chlorobenzene   ND   25.0   So.0   ug/L   100     ND       30   Chloroethane   ND   So.0   So.0   ug/L   100     ND         30   Chloroethane   ND   So.0   So.0   ug/L   100     ND         30   Chloroethane   ND   So.0   So.0   ug/L   100     ND         30   Chloroethane   ND   So.0   So.0   ug/L   100     ND         30   Chloroethane   ND   So.0   So.0   ug/L   100     ND         30   Chloroethane   ND   So.0   So.0   ug/L   100     ND         30   Chloroethane   ND   So.0   So.0   ug/L   100     ND         30   Chloroethane   ND   So.0   So.0   Ug/L   100     ND         30   Chloroethane   ND   So.0   So.0   Ug/L   100     ND         30   Chloroethane   ND   So.0   So.0   Ug/L   100     ND           30   Chloroethane   ND   So.0   So.0   Ug/L   100     ND               30   Chloroethane   ND   So.0   So.0   Ug/L   100     ND	` '				_						30%	
ert-Butylbenzene         ND         50.0         100         ug/L         100          ND           30           Carbon disulfide         ND         500         1000         ug/L         100          ND           30           Carbon tetrachloride         ND         50.0         100         ug/L         100          ND           30           Chlorobenzene         ND         25.0         50.0         ug/L         100          ND           30           Chloroethane         ND         500         500         ug/L         100          ND           30	•				_						30%	
Carbon disulfide         ND         500         1000         ug/L         100          ND           30           Carbon tetrachloride         ND         50.0         100         ug/L         100          ND           30           Chlorobenzene         ND         25.0         50.0         ug/L         100          ND           30           Chloroethane         ND         500         500         ug/L         100          ND           30	•				_						30%	
Carbon tetrachloride         ND         50.0         100         ug/L         100          ND           30           Chlorobenzene         ND         25.0         50.0         ug/L         100          ND           30           Chloroethane         ND         500         500         ug/L         100          ND           30	•				-						30%	
Chlorobenzene         ND         25.0         50.0         ug/L         100          ND           30           Chloroethane         ND         500         500         ug/L         100          ND           30					_						30%	
Chloroethane ND 500 500 ug/L 100 ND 30					_						30%	
											30%	
											30%	
Chloromethons ND 250 500 // 100 ND 20					_						30%	
											30% 30%	

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#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

30%

30%

30%

30%

30%

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WSP USA Environment & Infrastructure Inc.

Project: **OCS** 

15862 SW 72nd Ave. Suite 150 Project Number: 461M114814.02 Report ID: Portland, OR 97224 Project Manager: Russ Bunker A3G1248 - 07 31 23 1914

#### QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

#### % REC RPD Detection Reporting Spike Source Analyte Result Units Dilution % REC RPD Limit Limit Amount Result Limits Limit Notes Batch 23G0733 - EPA 5030C Water Duplicate (23G0733-DUP2) Prepared: 07/25/23 09:00 Analyzed: 07/25/23 20:44 QC Source Sample: Non-SDG (A3G1370-01) 4-Chlorotoluene ND 50.0 100 ug/L 100 ND 30% 100 ND 50.0 100 Dibromochloromethane ug/L ND 30% ug/L 1,2-Dibromo-3-chloropropane ND 250 500 100 ND 30% 1,2-Dibromoethane (EDB) ND 25.0 50.0 ug/L 100 ND 30% Dibromomethane ND 50.0 100 ug/L 100 ND 30% ------ND 25.0 50.0 1,2-Dichlorobenzene ug/L 100 ND 30% 1,3-Dichlorobenzene ND 25.0 50.0 ug/L 100 ND 30% ND 50.0 ND 30% 1,4-Dichlorobenzene 25.0 ug/L 100 Dichlorodifluoromethane ND 50.0 100 ug/L 100 ND 30% 1,1-Dichloroethane ND 25.0 50.0 ug/L 100 ND 30% 1,2-Dichloroethane (EDC) ND 25.0 50.0 ug/L 100 ND 30% 1,1-Dichloroethene ND 25.0 50.0 30% ug/L 100 ND cis-1,2-Dichloroethene ND 25.0 50.0 ug/L 100 ND 30% ND 25.0 50.0 100 30% trans-1,2-Dichloroethene ug/L ND 1,2-Dichloropropane ND 25.0 ug/L 100 ND 30% 1,3-Dichloropropane ND 50.0 100 ug/L 100 ND \_\_\_ 30% 2,2-Dichloropropane ND 50.0 100 ug/L 100 ND 30% ND 50.0 100 30% 1,1-Dichloropropene 100 ND ug/L ND cis-1,3-Dichloropropene 50.0 100 ug/L 100 ND 30% 100 trans-1,3-Dichloropropene ND 50.0 100 ND 30% ug/L 3 Ethylbenzene 377 25.0 50.0 ug/L 100 390 30% Hexachlorobutadiene ND 250 500 ug/L 100 ND ---30% 2-Hexanone ND 500 1000 ug/L 100 ND 30% ND 30% Isopropylbenzene 50.0 100 ug/L 100 ND ---ND 50.0 100 30% 4-Isopropyltoluene ug/L 100 ND ND 500 1000 100 ND 30% Methylene chloride ug/L 4-Methyl-2-pentanone (MiBK) ND 500 1000 100 ND 30% ug/L Methyl tert-butyl ether (MTBE) 316 314 50.0 100 ug/L 100 ---0.6 30%

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1.1.1.2-Tetrachloroethane

1,1,2,2-Tetrachloroethane

ND

ND

ND

ND

ND

200

25.0

50.0

25.0

25.0

400

50.0

100

50.0

50.0

ug/L

ug/L

ug/L

ug/L

ug/L

100

100

100

100

100

Naphthalene

Styrene

n-Propylbenzene

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ND

ND

ND

ND

ND

Page 29 of 40 Philip Nerenberg, Lab Director



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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

		,	Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0733 - EPA 5030C							Wa	ter				
Duplicate (23G0733-DUP2)			Prepared	d: 07/25/23	09:00 Ana	yzed: 07/25	/23 20:44					
QC Source Sample: Non-SDG (A3	G1370-01)											
Tetrachloroethene (PCE)	ND	25.0	50.0	ug/L	100		ND				30%	
Toluene	118	50.0	100	ug/L	100		116			2	30%	
1,2,3-Trichlorobenzene	ND	100	200	ug/L	100		ND				30%	
1,2,4-Trichlorobenzene	ND	100	200	ug/L	100		ND				30%	
1,1,1-Trichloroethane	ND	25.0	50.0	ug/L	100		ND				30%	
1,1,2-Trichloroethane	ND	25.0	50.0	ug/L	100		ND				30%	
Trichloroethene (TCE)	ND	25.0	50.0	ug/L	100		ND				30%	
Trichlorofluoromethane	ND	100	200	ug/L	100		ND				30%	
1,2,3-Trichloropropane	ND	50.0	100	ug/L	100		ND				30%	
1,2,4-Trimethylbenzene	ND	50.0	100	ug/L	100		ND				30%	
1,3,5-Trimethylbenzene	ND	50.0	100	ug/L	100		ND				30%	
Vinyl chloride	ND	25.0	50.0	ug/L	100		ND				30%	
m,p-Xylene	126	50.0	100	ug/L	100		127			0.8	30%	
o-Xylene	27.0	25.0	50.0	ug/L	100		27.0			0	30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	overy: 92 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			105 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			101 %	80	0-120 %		"					
Matrix Spike (23G0733-MS1)			Prepared	1: 07/25/23	09:00 Anal	lyzed: 07/25	/23 13:37					
QC Source Sample: Non-SDG (A3	G1360-01)											
EPA 8260D												
Acetone	52.4	10.0	20.0	ug/L	1	40.0	25.2	68	39-160%			
Acrylonitrile	21.6	1.00	2.00	ug/L	1	20.0	ND	108	63-135%			
Benzene	22.0	0.125	0.250	ug/L	1	20.0	ND	110	79-120%			
Bromobenzene	19.1	0.250	0.500	ug/L	1	20.0	ND	95	80-120%			
Bromochloromethane	24.5	0.500	1.00	ug/L	1	20.0	ND	122	78-123%			
Bromodichloromethane	21.8	0.500	1.00	ug/L	1	20.0	ND	109	79-125%			
Bromoform	22.4	0.500	1.00	ug/L	1	20.0	ND	112	66-130%			
Bromomethane	31.4	5.00	5.00	ug/L	1	20.0	ND	157	53-141%			Q-54
2-Butanone (MEK)	49.8	5.00	10.0	ug/L	1	40.0	10.4	98	56-143%			
n-Butylbenzene	21.5	0.500	1.00	ug/L	1	20.0	ND	108	75-128%			
sec-Butylbenzene	22.6	0.500	1.00	ug/L	1	20.0	ND	113	77-126%			
tert-Butylbenzene	21.1	0.500	1.00	ug/L	1	20.0	ND	106	78-124%			

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114814.02**Project Manager: **Russ Bunker** 

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

# **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0733 - EPA 5030C							Wa	ter				
Matrix Spike (23G0733-MS1)			Prepared	: 07/25/23	09:00 Ana	yzed: 07/25/	23 13:37					
QC Source Sample: Non-SDG (A3	3G1360-01)											
Carbon disulfide	23.6	5.00	10.0	ug/L	1	20.0	ND	118	64-133%			
Carbon tetrachloride	24.8	0.500	1.00	ug/L	1	20.0	ND	124	72-136%			
Chlorobenzene	21.2	0.250	0.500	ug/L	1	20.0	ND	106	80-120%			
Chloroethane	26.7	5.00	5.00	ug/L	1	20.0	ND	134	60-138%			
Chloroform	22.1	0.500	1.00	ug/L	1	20.0	ND	111	79-124%			
Chloromethane	25.0	2.50	5.00	ug/L	1	20.0	ND	125	50-139%			
2-Chlorotoluene	22.1	0.500	1.00	ug/L	1	20.0	ND	110	79-122%			
4-Chlorotoluene	23.6	0.500	1.00	ug/L	1	20.0	ND	118	78-122%			
Dibromochloromethane	21.5	0.500	1.00	ug/L	1	20.0	ND	107	74-126%			
1,2-Dibromo-3-chloropropane	18.9	2.50	5.00	ug/L	1	20.0	ND	94	62-128%			
1,2-Dibromoethane (EDB)	21.1	0.250	0.500	ug/L	1	20.0	ND	106	77-121%			
Dibromomethane	21.7	0.500	1.00	ug/L	1	20.0	ND	109	79-123%			
1,2-Dichlorobenzene	20.3	0.250	0.500	ug/L	1	20.0	ND	101	80-120%			
1,3-Dichlorobenzene	22.0	0.250	0.500	ug/L	1	20.0	ND	110	80-120%			
1,4-Dichlorobenzene	19.8	0.250	0.500	ug/L	1	20.0	ND	99	79-120%			
Dichlorodifluoromethane	26.7	0.500	1.00	ug/L	1	20.0	ND	133	32-152%			
1.1-Dichloroethane	22.7	0.250	0.500	ug/L	1	20.0	ND	113	77-125%			
1,2-Dichloroethane (EDC)	21.9	0.250	0.500	ug/L	1	20.0	ND	110	73-128%			
1,1-Dichloroethene	25.0	0.250	0.500	ug/L	1	20.0	ND	125	71-131%			
cis-1.2-Dichloroethene	22.0	0.250	0.500	ug/L	1	20.0	ND	110	78-123%			
trans-1,2-Dichloroethene	21.8	0.250	0.500	ug/L	1	20.0	ND	109	75-124%			
1,2-Dichloropropane	21.2	0.250	0.500	ug/L	1	20.0	ND	106	78-122%			
1,3-Dichloropropane	20.7	0.500	1.00	ug/L	1	20.0	ND	103	80-120%			
2,2-Dichloropropane	24.8	0.500	1.00	ug/L	1	20.0	ND	124	60-139%			
1,1-Dichloropropene	24.9	0.500	1.00	ug/L	1	20.0	ND	125	79-125%			
cis-1,3-Dichloropropene	18.6	0.500	1.00	ug/L	1	20.0	ND	93	75-124%			
trans-1,3-Dichloropropene	23.4	0.500	1.00	ug/L ug/L	1	20.0	ND	117	73-124%			
Ethylbenzene	23.5	0.250	0.500	ug/L	1	20.0	ND	117	79-121%			
Hexachlorobutadiene	20.4	2.50	5.00	ug/L	1	20.0	ND	102	66-134%			
2-Hexanone	35.2	5.00	10.0	ug/L ug/L	1	40.0	ND	88	57-139%			
Isopropylbenzene	20.4	0.500	1.00	ug/L ug/L	1	20.0	ND	102	72-131%			
4-Isopropyltoluene	21.0	0.500	1.00	ug/L ug/L	1	20.0	ND	102	77-127%			
Methylene chloride	21.0	5.00	1.00	ug/L ug/L	1	20.0	ND	103	74-124%			
Memylene chioride	21.3	3.00	10.0	ug/L	1	∠0.0	ND	10/	/4-124%			

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#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D Detection % REC RPD Reporting Spike Source Analyte Result Units Dilution % REC RPD Limit Limit Amount Result Limits Limit Notes Batch 23G0733 - EPA 5030C Water Matrix Spike (23G0733-MS1) Prepared: 07/25/23 09:00 Analyzed: 07/25/23 13:37 QC Source Sample: Non-SDG (A3G1360-01) 4-Methyl-2-pentanone (MiBK) 41.4 5.00 10.0 ug/L 1 40.0 ND 103 67-130% Methyl tert-butyl ether (MTBE) 0.500 20.0 22.3 1.00 ug/L 1 ND 111 71-124% Naphthalene 15.5 2.00 4.00 ug/L 1 20.0 ND 77 61-128% n-Propylbenzene 23.6 0.250 0.500 ug/L 1 20.0 ND 118 76-126% 20.8 0.500 1.00 ug/L 1 20.0 ND 104 78-123% Styrene 1,1,1,2-Tetrachloroethane 22.9 0.250 0.500 20.0 ug/L 1 ND 114 78-124% 1,1,2,2-Tetrachloroethane 22.9 0.250 0.500 ug/L 1 20.0 ND 115 71-121% Tetrachloroethene (PCE) 22.4 0.250 0.500 20.0 74-129% ug/L 1 ND 112 20.0 Toluene 21.8 0.500 1.00 ug/L 1 ND 109 80-121% 1,2,3-Trichlorobenzene 19.1 1.00 2.00 ug/L 1 20.0 ND 96 69-129% 1,2,4-Trichlorobenzene 17.8 1.00 2.00 ug/L 1 20.0 ND 89 69-130% 1,1,1-Trichloroethane 0.250 0.500 20.0 ND 74-131% 23.6 ug/L 1 118 20.2 0.250 20.0 1,1,2-Trichloroethane 0.500 ug/L 1 ND 101 80-120% 20.0 Trichloroethene (TCE) 20.5 0.250 0.500 ND 103 79-123% ug/L 1 Trichlorofluoromethane 26.4 1.00 2.00 ug/L 1 20.0 ND 132 65-141% 1,2,3-Trichloropropane 22.1 0.500 1.00 ug/L 1 20.0 ND 110 73-122% \_\_\_ 1,2,4-Trimethylbenzene 21.7 0.500 1.00 ug/L 1 20.0 ND 108 76-124% 1,3,5-Trimethylbenzene 0.500 20.0 109 75-124% 21.8 1.00 ND ug/L 1 Vinyl chloride 25.0 0.250 0.500 20.0 ND 58-137% ug/L 1 125 0.500 1.00 40.0 m,p-Xylene 44.8 ND 112 80-121% ug/L 1 19.2 0.250 0.500 20.0 ND 78-122% o-Xylene ug/L 96 Surr: 1,4-Difluorobenzene (Surr) Recovery: 101 % Limits: 80-120 % Dilution: 1x 98% Toluene-d8 (Surr) 80-120 %

80-120 %

91%

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4-Bromofluorobenzene (Surr)

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Philip Nerenberg, Lab Director

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# **Apex Laboratories, LLC**

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

# QUALITY CONTROL (QC) SAMPLE RESULTS

Total	Organio	Carbon (N	lon-Purgea	ble) by F	Persulfate	Oxidatio	n by Sta	ndard Met	hod 531	0C		
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0674 - Method Prep	: Aq						Wa	ter				
Blank (23G0674-BLK1)			Prepared	: 07/24/23	08:56 Anal	lyzed: 07/26	/23 20:33					
SM 5310 C Total Organic Carbon	ND		1.00	mg/L	1							
LCS (23G0674-BS1)			Prepared	: 07/24/23	08:56 Anal	lyzed: 07/26	/23 21:03					
SM 5310 C												
Total Organic Carbon	10.2		1.00	mg/L	1	10.0		102	90-114%			
Matrix Spike (23G0674-MS1)			Prepared	: 07/24/23	08:56 Ana	lyzed: 07/27	/23 00:03					
QC Source Sample: Non-SDG (A3	G1100-32)											
SM 5310 C												
Total Organic Carbon	10.5		1.01	mg/L	1	10.0	ND	105	85-115%			
Matrix Spike Dup (23G0674-M	ISD1)		Prepared	: 07/24/23	08:56 Ana	lyzed: 07/27	/23 00:33					
OC Source Sample: Non-SDG (A3	G1100-32)											
Total Organic Carbon	10.5		1.01	mg/L	1	10.0	ND	105	85-115%	0.2	15%	

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114814.02**Project Manager: **Russ Bunker** 

Report ID: A3G1248 - 07 31 23 1914

#### SAMPLE PREPARATION INFORMATION

		Volatile	Organic Compounds	by EPA 8260D			
Prep: EPA 5030C					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 23G0733							
A3G1248-01RE1	Water	EPA 8260D	07/17/23 12:25	07/25/23 09:00	5mL/5mL	5mL/5mL	1.00
A3G1248-02RE1	Water	EPA 8260D	07/17/23 13:30	07/25/23 09:00	5mL/5mL	5mL/5mL	1.00
A3G1248-03RE1	Water	EPA 8260D	07/17/23 15:00	07/25/23 09:00	5mL/5mL	5mL/5mL	1.00

	Total Orgar	nic Carbon (Non-Pur	geable) by Persulfate	e Oxidation by Stand	dard Method 5310	C	
Prep: Method Prep: A	<u>√q</u>				Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 23G0674							
A3G1248-01RE1	Water	SM 5310 C	07/17/23 12:25	07/24/23 08:56	40mL/40mL	40mL/40mL	1.00
A3G1248-02RE1	Water	SM 5310 C	07/17/23 13:30	07/24/23 08:56	40mL/40mL	40mL/40mL	1.00
A3G1248-03RE1	Water	SM 5310 C	07/17/23 15:00	07/24/23 08:56	40mL/40mL	40mL/40mL	1.00

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#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114814.02**Project Manager: **Russ Bunker** 

Report ID: A3G1248 - 07 31 23 1914

#### **QUALIFIER DEFINITIONS**

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

#### **Apex Laboratories**

- E Estimated Value. The result is above the calibration range of the instrument.
- H-04 Insufficient preservative to reduce the sample pH to less than 2. Sample was analyzed within 14 days of sampling, but beyond the 7 days recommended for nonpreserved VOAs.
- J Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
- Q-54 Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +11%. The results are reported as Estimated Values.
- Q-54a Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +14%. The results are reported as Estimated Values.
- Q-56 Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260
- **R-04** Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.
- V-01 Sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).

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#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP <u>USA Environment & Infrastructure Inc.</u>

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

#### 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.

#### **<u>Detection Limits:</u>** 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'.

Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

#### 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).

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.

Philip Nerenberg, Lab Director

Philip Nevenberg

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#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP <u>USA Environment & Infrastructure Inc.</u>

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

#### **REPORTING NOTES AND CONVENTIONS (Cont.):**

#### 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.
- -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, if results are not reported to the MDL.

#### **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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Philip Nerenberg, Lab Director

Philip Nevenberg

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#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02
Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

#### 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

Philip Nevenberg

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.

Philip Nerenberg, Lab Director

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150

Portland, OR 97224

Project: OCS

Project Number: 461M114814.02

Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

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Apex Laboratories

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Philip Nerenberg, Lab Director

Philip Merenberg

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114814.02

Project Manager: Russ Bunker

Report ID: A3G1248 - 07 31 23 1914

	APEX LABS COOLER		TAT		
Client: WSF	>	Element	WO#: A	3 4124	8_
Project/Project #:	OCS (On contrinces)	814.02			
Delivery Info:	,				
Date/time received: 3-18.7	<u> 23 @ 908</u> Ву:	D15			
	nt <u>~ESSFedExUPSRadio</u>				Other
	te/time inspected: 7-18-23 @				
Chain of Custody included				34,000	
Signed/dated by client?	Yes No				
	Cooler #1 Cooler #2 Cooler	#3 Cooler #4 C	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	0.4				
Custody seals? (Y/N)	Ν				
Received on ice? (Y/N)	<u> </u>				
Temp. blanks? (Y/N)	λ				
Ice type: (Gel/Real/Other)					
Condition (In/Out):					
All samples intact? Yes 💃	s form initiated? Yes/50 e/time inspected: #10/12 @  No Comments:		***************************************		******
	Yes No Comments:	67/10			
	Yes No X Comments:	Too Time			
MWIF reads 1	330, loc mades 1	3:3.		********	
MW17 reads 1 COC/container discrepanci	es form initiated? Yes No	3:3.			
MW17 reads 1 COC/container discrepanci		3:3.			
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Apex Laboratories

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Philip Nerenberg, Lab Director

Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

Monday, August 21, 2023 Russ Bunker WSP USA Environment & Infrastructure Inc. 15862 SW 72nd Ave. Suite 150 Portland, OR 97224

RE: A3H0991 - OCS - [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 A3H0991, which was received by the laboratory on 8/9/2023 at 1:55:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: <a href="mailto:pnerenberg@apex-labs.com">pnerenberg@apex-labs.com</a>, 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

Acceptable Receipt Temperature is <6 degC (not frozen), or received on ice the same day as sampling

(See Cooler Receipt Form for details)

Default Cooler 4.3 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

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Philip Nerenberg, Lab Director

Philip Nevenberg

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# Apex Laboratories, LLC

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

ORELAP ID: OR100062

 $\underline{WSP\ USA\ Environment\ \&\ Infrastructure\ Inc.}$ 

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: [none]

Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION								
Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received				
MW18-20230809	АЗН0991-01	Water	08/09/23 11:30	08/09/23 13:55				

Apex Laboratories

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Philip Nerenberg, Lab Director

Philip Nevenberg

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: [none]
Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# ANALYTICAL SAMPLE RESULTS

			Panarting			Date		
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Note
MW18-20230809 (A3H0991-01RE1)				Matrix: Wa	ater	Batch:	23H0542	
Acetone	ND		20.0	ug/L	1	08/15/23 20:31	EPA 8260D	_ <b></b>
Acrylonitrile	ND		2.00	ug/L	1	08/15/23 20:31	EPA 8260D	
Benzene	ND		0.200	ug/L	1	08/15/23 20:31	EPA 8260D	
Bromobenzene	ND		0.500	ug/L	1	08/15/23 20:31	EPA 8260D	
Bromochloromethane	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D	
Bromodichloromethane	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D	
Bromoform	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D	
Bromomethane	ND		5.00	ug/L	1	08/15/23 20:31	EPA 8260D	
2-Butanone (MEK)	ND		10.0	ug/L	1	08/15/23 20:31	EPA 8260D	
n-Butylbenzene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D	
sec-Butylbenzene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D	
ert-Butylbenzene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D	
Carbon disulfide	ND		10.0	ug/L	1	08/15/23 20:31	EPA 8260D	
Carbon tetrachloride	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D	
Chlorobenzene	ND		0.500	ug/L	1	08/15/23 20:31	EPA 8260D	
Chloroethane	ND		5.00	ug/L	1	08/15/23 20:31	EPA 8260D	
Chloroform	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D	
Chloromethane	ND		5.00	ug/L	1	08/15/23 20:31	EPA 8260D	
2-Chlorotoluene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D	
1-Chlorotoluene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D	
Dibromochloromethane	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D	
,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	08/15/23 20:31	EPA 8260D	
,2-Dibromoethane (EDB)	ND		0.500	ug/L	1	08/15/23 20:31	EPA 8260D	
Dibromomethane	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D	
,2-Dichlorobenzene	ND		0.500	ug/L	1	08/15/23 20:31	EPA 8260D	
,3-Dichlorobenzene	ND		0.500	ug/L	1	08/15/23 20:31	EPA 8260D	
,4-Dichlorobenzene	ND		0.500	ug/L	1	08/15/23 20:31	EPA 8260D	
Dichlorodifluoromethane	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D	
,1-Dichloroethane	ND		0.400	ug/L	1	08/15/23 20:31	EPA 8260D	
,2-Dichloroethane (EDC)	ND		0.400	ug/L	1	08/15/23 20:31	EPA 8260D	
,1-Dichloroethene	ND		0.400	ug/L	1	08/15/23 20:31	EPA 8260D	
is-1,2-Dichloroethene	50.4		0.400	ug/L	1	08/15/23 20:31	EPA 8260D	
rans-1,2-Dichloroethene	3.43		0.400	ug/L	1	08/15/23 20:31	EPA 8260D	

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Philip Nerenberg, Lab Director

Philip Nevenberg

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: [none]
Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# ANALYTICAL SAMPLE RESULTS

	Volatile Organic Compounds by EPA 8260D								
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Note	
MW18-20230809 (A3H0991-01RE1)				Matrix: Wa	ater	Batch:	23H0542		
1,2-Dichloropropane	ND		0.500	ug/L	1	08/15/23 20:31	EPA 8260D		
1,3-Dichloropropane	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D		
2,2-Dichloropropane	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D		
1,1-Dichloropropene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D		
cis-1,3-Dichloropropene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D		
trans-1,3-Dichloropropene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D		
Ethylbenzene	ND		0.500	ug/L	1	08/15/23 20:31	EPA 8260D		
Hexachlorobutadiene	ND		5.00	ug/L	1	08/15/23 20:31	EPA 8260D		
2-Hexanone	ND		10.0	ug/L	1	08/15/23 20:31	EPA 8260D		
Isopropylbenzene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D		
4-Isopropyltoluene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D		
Methylene chloride	ND		10.0	ug/L	1	08/15/23 20:31	EPA 8260D		
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1	08/15/23 20:31	EPA 8260D		
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D		
Naphthalene	ND		4.00	ug/L	1	08/15/23 20:31	EPA 8260D		
n-Propylbenzene	ND		0.500	ug/L	1	08/15/23 20:31	EPA 8260D		
Styrene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D		
1,1,2-Tetrachloroethane	ND		0.400	ug/L	1	08/15/23 20:31	EPA 8260D		
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1	08/15/23 20:31	EPA 8260D		
Tetrachloroethene (PCE)	ND		0.400	ug/L	1	08/15/23 20:31	EPA 8260D		
Toluene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D		
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1	08/15/23 20:31	EPA 8260D		
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1	08/15/23 20:31	EPA 8260D		
1,1,1-Trichloroethane	ND		0.400	ug/L	1	08/15/23 20:31	EPA 8260D		
1,1,2-Trichloroethane	ND		0.500	ug/L	1	08/15/23 20:31	EPA 8260D		
Frichloroethene (TCE)	21.8		0.400	ug/L	1	08/15/23 20:31	EPA 8260D		
Frichlorofluoromethane	ND		2.00	ug/L	1	08/15/23 20:31	EPA 8260D		
,2,3-Trichloropropane	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D		
,2,4-Trimethylbenzene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D		
,3,5-Trimethylbenzene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D		
Vinyl chloride	0.210		0.200	ug/L	1	08/15/23 20:31	EPA 8260D		
n,p-Xylene	ND		1.00	ug/L	1	08/15/23 20:31	EPA 8260D		
o-Xylene	ND		0.500	ug/L ug/L	1	08/15/23 20:31	EPA 8260D		

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.
15862 SW 72nd Ave. Suite 150

Portland, OR 97224

Project: OCS
Project Number: [none]
Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D										
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	S	Dilution	Date Analyzed	Method Ref.	Notes	
MW18-20230809 (A3H0991-01RE1)		Matrix: Water				Batch: 23H0542				
Surrogate: 1,4-Difluorobenzene (Surr)		Reco	very: 96 %	Limits: 80	-120 %	I	08/15/23 20:31	EPA 8260D		
Toluene-d8 (Surr)			103 %	80	-120 %	1	08/15/23 20:31	EPA 8260D		
4-Bromofluorobenzene (Surr)			100 %	80	-120 %	1	08/15/23 20:31	EPA 8260D		

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Philip Nerenberg, Lab Director

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS
Project Number: [none]
Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# ANALYTICAL SAMPLE RESULTS

Total Organic Carbon (Non-Purgeable) by Persulfate Oxidation by Standard Method 5310C										
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes		
MW18-20230809 (A3H0991-01)				Matrix: Water Batch: 23H0505			23H0505			
Total Organic Carbon	1.59		1.00	mg/L	1	08/15/23 12:05	SM 5310 C			

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Philip Nerenberg, Lab Director

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## Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc. Project: OCS

15862 SW 72nd Ave. Suite 150 Project Number: [none]

Portland, OR 97224 Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D Detection % REC RPD Reporting Spike Source Dilution Analyte Result Limit Units % REC RPD Limit Amount Result Limits Limit Notes Batch 23H0501 - EPA 5030C Water Blank (23H0501-BLK1) Prepared: 08/14/23 10:22 Analyzed: 08/14/23 12:58 EPA 8260D ND 20.0 ug/L Acetone ND 2.00 Acrylonitrile ug/L 1 Benzene ND 0.200 ug/L 1 Bromobenzene ND 0.500 ug/L 1 Bromochloromethane ND 1.00 ug/L 1 Bromodichloromethane ND 1.00 ug/L 1 Bromoform ND 1.00 ug/L 5.00 Bromomethane ND ug/L 1 2-Butanone (MEK) ND 10.0 ug/L 1 n-Butylbenzene ND 1.00 ug/L 1 sec-Butylbenzene ND 1.00 ug/L 1 ND tert-Butylbenzene 1.00 1 ug/L ---Carbon disulfide ND 10.0 ug/L 1 Carbon tetrachloride ND 1.00 ug/L 1 Chlorobenzene ND 0.500 ug/L 1 Chloroethane ND 10.0 ug/L 1 ---Chloroform ND 1.00 ug/L 1 ND 5.00 Chloromethane 1 ug/L 2-Chlorotoluene ND 1.00 ug/L 1 4-Chlorotoluene ND 1.00 ug/L 1 Dibromochloromethane ND 1.00 ug/L 1 1,2-Dibromo-3-chloropropane ND 5.00 ug/L 1 1,2-Dibromoethane (EDB) ND 0.500 ug/L 1 ug/L Dibromomethane ND 1.00 1 0.500 1,2-Dichlorobenzene ND ug/L 1 1,3-Dichlorobenzene ND 0.500 ug/L 1 1,4-Dichlorobenzene ND 0.500 ug/L 1 Dichlorodifluoromethane ND 1.00 ug/L 1 ---1,1-Dichloroethane ND 0.400ug/L 1 1,2-Dichloroethane (EDC) ND 0.400ug/L 1 1,1-Dichloroethene ND 0.400ug/L 1 cis-1,2-Dichloroethene ND 0.400 ug/L 1 trans-1,2-Dichloroethene 0.400 ND ug/L 1

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Philip Nerenberg, Lab Director

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:[none]Portland, OR 97224Project Manager:Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

# Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23H0501 - EPA 5030C							Wa	ter				
Blank (23H0501-BLK1)			Prepared	: 08/14/23	10:22 Anal	yzed: 08/14	/23 12:58					
1,2-Dichloropropane	ND		0.500	ug/L	1							
1,3-Dichloropropane	ND		1.00	ug/L	1							
2,2-Dichloropropane	ND		1.00	ug/L	1							
1,1-Dichloropropene	ND		1.00	ug/L	1							
cis-1,3-Dichloropropene	ND		1.00	ug/L	1							
trans-1,3-Dichloropropene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Hexachlorobutadiene	ND		5.00	ug/L	1							
2-Hexanone	ND		10.0	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
4-Isopropyltoluene	ND		1.00	ug/L	1							
Methylene chloride	ND		10.0	ug/L	1							
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		4.00	ug/L	1							
n-Propylbenzene	ND		0.500	ug/L	1							
Styrene	ND		1.00	ug/L	1							
1,1,1,2-Tetrachloroethane	ND		0.400	ug/L	1							
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1							
Tetrachloroethene (PCE)	ND		0.400	ug/L	1							
Toluene	ND		1.00	ug/L	1							
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1							
1,2,4-Trichlorobenzene	ND		2.00	ug/L ug/L	1							
1,1,1-Trichloroethane	ND		0.400	ug/L	1							
1,1,2-Trichloroethane	ND		0.500	ug/L ug/L	1							
Trichloroethene (TCE)	ND		0.400	ug/L ug/L	1							
Trichlorofluoromethane	ND		2.00	ug/L	1							
1,2,3-Trichloropropane	ND ND		1.00	ug/L ug/L	1							
1,2,4-Trimethylbenzene	ND ND		1.00	ug/L ug/L	1							
1,3,5-Trimethylbenzene	ND ND		1.00	ug/L ug/L	1							
Vinyl chloride	ND ND		0.200	_	1							
•			1.00	ug/L								
m,p-Xylene	ND			ug/L	1							
o-Xylene Surr: 1,4-Difluorobenzene (Surr)	ND		0.500 very: 102 %	ug/L Limits: 80	1		ution: 1x					

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Philip Nerenberg, Lab Director

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:[none]Portland, OR 97224Project Manager:Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23H0501 - EPA 5030C							Wa	ter				
Blank (23H0501-BLK1)			Prepared	: 08/14/23	10:22 Anal	yzed: 08/14	/23 12:58					
Surr: Toluene-d8 (Surr)		Reco	very: 103 %	Limits: 80	0-120 %	Dilı	ution: 1x					
4-Bromofluorobenzene (Surr)			104 %	80	0-120 %		"					
LCS (23H0501-BS1)			Prepared	: 08/14/23	10:22 Anal	lyzed: 08/14/	/23 12:04					
EPA 8260D												
Acetone	39.0		20.0	ug/L	1	40.0		98	80-120%			
Acrylonitrile	20.6		2.00	ug/L	1	20.0		103	80-120%			
Benzene	19.7		0.200	ug/L	1	20.0		99	80-120%			
Bromobenzene	18.3		0.500	ug/L	1	20.0		91	80-120%			
Bromochloromethane	20.8		1.00	ug/L	1	20.0		104	80-120%			
Bromodichloromethane	19.8		1.00	ug/L	1	20.0		99	80-120%			
Bromoform	17.4		1.00	ug/L	1	20.0		87	80-120%			
Bromomethane	25.6		5.00	ug/L	1	20.0		128	80-120%			Q-5
2-Butanone (MEK)	43.8		10.0	ug/L	1	40.0		109	80-120%			
n-Butylbenzene	19.8		1.00	ug/L	1	20.0		99	80-120%			
sec-Butylbenzene	18.4		1.00	ug/L	1	20.0		92	80-120%			
tert-Butylbenzene	18.1		1.00	ug/L	1	20.0		90	80-120%			
Carbon disulfide	18.0		10.0	ug/L	1	20.0		90	80-120%			
Carbon tetrachloride	18.4		1.00	ug/L	1	20.0		92	80-120%			
Chlorobenzene	19.0		0.500	ug/L	1	20.0		95	80-120%			
Chloroethane	19.8		10.0	ug/L	1	20.0		99	80-120%			ICV-0
Chloroform	20.2		1.00	ug/L	1	20.0		101	80-120%			
Chloromethane	23.0		5.00	ug/L	1	20.0		115	80-120%			
2-Chlorotoluene	18.2		1.00	ug/L	1	20.0		91	80-120%			
4-Chlorotoluene	19.0		1.00	ug/L	1	20.0		95	80-120%			
Dibromochloromethane	19.0		1.00	ug/L	1	20.0		95	80-120%			
1,2-Dibromo-3-chloropropane	18.4		5.00	ug/L	1	20.0		92	80-120%			
1,2-Dibromoethane (EDB)	18.9		0.500	ug/L	1	20.0		94	80-120%			
Dibromomethane	19.5		1.00	ug/L	1	20.0		97	80-120%			
1,2-Dichlorobenzene	19.9		0.500	ug/L	1	20.0		99	80-120%			
1,3-Dichlorobenzene	19.1		0.500	ug/L	1	20.0		95	80-120%			
1,4-Dichlorobenzene	19.7		0.500	ug/L	1	20.0		99	80-120%			
Dichlorodifluoromethane	19.1		1.00	ug/L	1	20.0		95	80-120%			
1,1-Dichloroethane	20.1		0.400	ug/L	1	20.0		101	80-120%			

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:[none]Portland, OR 97224Project Manager:Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

# **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23H0501 - EPA 5030C							Wa	ter				
LCS (23H0501-BS1)			Prepared	: 08/14/23	10:22 Anal	yzed: 08/14/	/23 12:04					
1,2-Dichloroethane (EDC)	20.3		0.400	ug/L	1	20.0		101	80-120%			
1,1-Dichloroethene	19.4		0.400	ug/L	1	20.0		97	80-120%			
cis-1,2-Dichloroethene	19.9		0.400	ug/L	1	20.0		99	80-120%			
trans-1,2-Dichloroethene	19.8		0.400	ug/L	1	20.0		99	80-120%			
1,2-Dichloropropane	20.0		0.500	ug/L	1	20.0		100	80-120%			
1,3-Dichloropropane	19.4		1.00	ug/L	1	20.0		97	80-120%			
2,2-Dichloropropane	19.8		1.00	ug/L	1	20.0		99	80-120%			
1,1-Dichloropropene	19.3		1.00	ug/L	1	20.0		96	80-120%			
cis-1,3-Dichloropropene	19.6		1.00	ug/L	1	20.0		98	80-120%			
trans-1,3-Dichloropropene	20.5		1.00	ug/L	1	20.0		102	80-120%			
Ethylbenzene	19.0		0.500	ug/L	1	20.0		95	80-120%			
Hexachlorobutadiene	19.4		5.00	ug/L	1	20.0		97	80-120%			
2-Hexanone	40.5		10.0	ug/L	1	40.0		101	80-120%			
Isopropylbenzene	17.9		1.00	ug/L	1	20.0		90	80-120%			
4-Isopropyltoluene	18.6		1.00	ug/L	1	20.0		93	80-120%			
Methylene chloride	21.2		10.0	ug/L	1	20.0		106	80-120%			
4-Methyl-2-pentanone (MiBK)	40.0		10.0	ug/L	1	40.0		100	80-120%			
Methyl tert-butyl ether (MTBE)	17.6		1.00	ug/L	1	20.0		88	80-120%			
Naphthalene	16.4		4.00	ug/L	1	20.0		82	80-120%			
n-Propylbenzene	19.3		0.500	ug/L	1	20.0		96	80-120%			
Styrene	18.6		1.00	ug/L	1	20.0		93	80-120%			
1,1,2-Tetrachloroethane	19.4		0.400	ug/L	1	20.0		97	80-120%			
1,1,2,2-Tetrachloroethane	22.8		0.500	ug/L	1	20.0		114	80-120%			
Tetrachloroethene (PCE)	18.2		0.400	ug/L	1	20.0		91	80-120%			
Toluene	19.2		1.00	ug/L	1	20.0		96	80-120%			
1,2,3-Trichlorobenzene	17.9		2.00	ug/L	1	20.0		90	80-120%			
1,2,4-Trichlorobenzene	18.6		2.00	ug/L	1	20.0		93	80-120%			
1,1,1-Trichloroethane	18.9		0.400	ug/L	1	20.0		94	80-120%			
1,1,2-Trichloroethane	19.0		0.500	ug/L	1	20.0		95	80-120%			
Trichloroethene (TCE)	17.9		0.400	ug/L	1	20.0		90	80-120%			
Trichlorofluoromethane	23.9		2.00	ug/L	1	20.0		120	80-120%			
1,2,3-Trichloropropane	21.0		1.00	ug/L	1	20.0		105	80-120%			
1,2,4-Trimethylbenzene	19.4		1.00	ug/L	1	20.0		97	80-120%			
1,3,5-Trimethylbenzene	19.3		1.00	ug/L	1	20.0		97	80-120%			

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Philip Nerenberg, Lab Director

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc. Project: OCS
15862 SW 72nd Ave. Suite 150 Project Number: [none]

Portland, OR 97224 Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23H0501 - EPA 5030C							Wa	ter				
LCS (23H0501-BS1)			Prepared	1: 08/14/23	10:22 Anal	yzed: 08/14	/23 12:04					
Vinyl chloride	20.4		0.200	ug/L	1	20.0		102	80-120%			
m,p-Xylene	39.1		1.00	ug/L	1	40.0		98	80-120%			
o-Xylene	18.5		0.500	ug/L	1	20.0		92	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 101 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			100 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			94 %	80	0-120 %		"					
Duplicate (23H0501-DUP1)			Prepared	1: 08/14/23	10:22 Anal	yzed: 08/14	/23 23:59					
OC Source Sample: Non-SDG (A3	H1006-07)											
Acetone	ND		200	ug/L	10		ND				30%	
Acrylonitrile	ND		30.0	ug/L	10		ND				30%	R-0
Benzene	182		2.00	ug/L	10		173			5	30%	
Bromobenzene	ND		5.00	ug/L	10		ND				30%	
Bromochloromethane	ND		10.0	ug/L	10		ND				30%	
Bromodichloromethane	ND		10.0	ug/L	10		ND				30%	
Bromoform	ND		10.0	ug/L	10		ND				30%	
Bromomethane	ND		50.0	ug/L	10		ND				30%	
2-Butanone (MEK)	ND		100	ug/L	10		ND				30%	
n-Butylbenzene	13.8		10.0	ug/L	10		13.0			6	30%	
sec-Butylbenzene	ND		10.0	ug/L	10		8.40			***	30%	
tert-Butylbenzene	ND		10.0	ug/L	10		ND				30%	
Carbon disulfide	ND		100	ug/L	10		ND				30%	
Carbon tetrachloride	ND		10.0	ug/L	10		ND				30%	
Chlorobenzene	ND		5.00	ug/L	10		ND				30%	
Chloroethane	ND		100	ug/L	10		ND				30%	
Chloroform	ND		10.0	ug/L	10		ND				30%	
Chloromethane	ND		50.0	ug/L	10		ND				30%	
2-Chlorotoluene	ND		10.0	ug/L	10		ND				30%	
4-Chlorotoluene	ND		10.0	ug/L	10		ND				30%	
Dibromochloromethane	ND		10.0	ug/L	10		ND				30%	
1,2-Dibromo-3-chloropropane	ND		50.0	ug/L	10		ND				30%	
1,2-Dibromoethane (EDB)	ND		5.00	ug/L	10		ND				30%	
Dibromomethane	ND		10.0	ug/L	10		ND				30%	

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1,2-Dichlorobenzene

ND

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ND

30%

Philip Nerenberg, Lab Director

10

ug/L

5.00



## Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

Project: OCS

15862 SW 72nd Ave. Suite 150

Project Number: [none]

Portland, OR 97224

Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D % REC RPD Detection Reporting Spike Source Analyte Result Units Dilution % REC RPD Limit Limit Amount Result Limits Limit Notes Batch 23H0501 - EPA 5030C Water Duplicate (23H0501-DUP1) Prepared: 08/14/23 10:22 Analyzed: 08/14/23 23:59 QC Source Sample: Non-SDG (A3H1006-07) 1,3-Dichlorobenzene ND 5.00 ug/L 10 ND 30% ND 1,4-Dichlorobenzene 5.00 ug/L 10 ND 30% ug/L Dichlorodifluoromethane ND 10.0 10 ND 30% 1,1-Dichloroethane ND 4.00 ug/L 10 ND 30% 1,2-Dichloroethane (EDC) ND 4.00 ug/L 10 ND 30% ------1,1-Dichloroethene ND 4.00 ug/L 10 ND 30% cis-1,2-Dichloroethene ND 4.00 ug/L 10 ND 30% trans-1,2-Dichloroethene 30% ND 4.00 ug/L 10 ND 1,2-Dichloropropane ND 5.00 ug/L 10 ND 30% 1,3-Dichloropropane ND 10.0 ug/L 10 ND 30% 2,2-Dichloropropane ND 10.0 ug/L 10 ND 30% ND 10.0 30% 1,1-Dichloropropene ug/L 10 ND cis-1,3-Dichloropropene ND 10.0 ug/L 10 ND 30% ND 10.0 10 30% trans-1,3-Dichloropropene ug/L ND ug/L Ethylbenzene 1800 5.00 10 1720 5 30% Hexachlorobutadiene ND 50.0 ug/L 10 ND \_\_\_ 30% 2-Hexanone ND 100 ug/L 10 ND 30% 10.0 7 30% Isopropylbenzene 10 59.5 64.0 ug/L 4-Isopropyltoluene ND 10.0 ug/L 10 ND 30% 100 Methylene chloride ND 10 ND 30% ug/L 4-Methyl-2-pentanone (MiBK) ND 100 ug/L 10 ND 30% Methyl tert-butyl ether (MTBE) ND ---10.0 ug/L 10 ND ---30% Naphthalene 483 40.0 ug/L 10 468 3 30% 30% n-Propylbenzene 173 5.00 10 164 6 ug/L ND 10.0 30% Styrene ug/L 10 ND ND 4.00 1,1,1,2-Tetrachloroethane 10 ND 30% ug/L 1,1,2,2-Tetrachloroethane ND 5.00 10 ND 30% ug/L Tetrachloroethene (PCE) ND 4.00 ug/L 10 ND ------30% 21.4 10.0 ug/L 10 20.7 3 30% ND 20.0 10 30% 1.2.3-Trichlorobenzene ug/L ND ---1,2,4-Trichlorobenzene ND 20.0 ug/L 10 ND 30% 4.00 1,1,1-Trichloroethane ND 10 ND 30% ug/L ------1,1,2-Trichloroethane ND 5.00 ug/L 10 ND 30%

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:[none]Portland, OR 97224Project Manager:Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23H0501 - EPA 5030C							Wa	ter				
Duplicate (23H0501-DUP1)			Prepared	1: 08/14/23	10:22 Ana	yzed: 08/14	/23 23:59					
QC Source Sample: Non-SDG (A3	H1006-07)											
Trichloroethene (TCE)	ND		4.00	ug/L	10		ND				30%	
Trichlorofluoromethane	ND		20.0	ug/L	10		ND				30%	
1,2,3-Trichloropropane	ND		10.0	ug/L	10		ND				30%	
,2,4-Trimethylbenzene	25.3		10.0	ug/L	10		23.8			6	30%	
1,3,5-Trimethylbenzene	18.5		10.0	ug/L	10		18.2			2	30%	
Vinyl chloride	ND		2.00	ug/L	10		ND				30%	
n,p-Xylene	146		10.0	ug/L	10		143			2	30%	
o-Xylene	26.2		5.00	ug/L	10		25.3			3	30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 101 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			100 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			96 %	80	-120 %		"					
QC Source Sample: MW18-202308 EPA 8260D	809 (A3H09	<u>91-01)</u>										
Acetone	ND		100	ug/L	5		ND				30%	
Acrylonitrile	ND		10.0	ug/L	5		ND				30%	
Benzene	ND		1.00	ug/L	5		ND				30%	
Bromobenzene	ND		2.50	ug/L	5		ND				30%	
Bromochloromethane	ND		5.00	ug/L	5		ND				30%	
Bromodichloromethane	ND		5.00	ug/L	5		ND				30%	
Bromoform	ND		5.00	ug/L	5		ND				30%	
Bromomethane	ND		25.0	ug/L	5		ND				30%	
2-Butanone (MEK)	ND		50.0	ug/L	5		ND				30%	
n-Butylbenzene	ND		5.00	ug/L	5		ND				30%	
sec-Butylbenzene	ND		5.00	ug/L	5		ND				30%	
ert-Butylbenzene	ND		5.00	ug/L	5		ND				30%	
Carbon disulfide	ND		50.0	ug/L	5		ND				30%	
Carbon tetrachloride	ND		5.00	ug/L	5		ND				30%	
Chlorobenzene	ND		2.50	ug/L	5		ND				30%	
Chloroethane	ND		50.0	ug/L	5		ND				30%	
Chloroform	ND		5.00	ug/L	5		ND				30%	
Chloromethane	ND		25.0	ug/L	5		ND				30%	

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Portland, OR 97224

# ANALYTICAL REPORT

# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:[none]

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

Project Manager: Russ Bunker

# **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23H0501 - EPA 5030C							Wa	ter				
Duplicate (23H0501-DUP2)			Prepared	: 08/14/23	10:22 Ana	lyzed: 08/15	/23 00:26					T-02
QC Source Sample: MW18-20230	809 (A3H09	991-01 <u>)</u>										
2-Chlorotoluene	ND		5.00	ug/L	5		ND				30%	
4-Chlorotoluene	ND		5.00	ug/L	5		ND				30%	
Dibromochloromethane	ND		5.00	ug/L	5		ND				30%	
1,2-Dibromo-3-chloropropane	ND		25.0	ug/L	5		ND				30%	
1,2-Dibromoethane (EDB)	ND		2.50	ug/L	5		ND				30%	
Dibromomethane	ND		5.00	ug/L	5		ND				30%	
1,2-Dichlorobenzene	ND		2.50	ug/L	5		ND				30%	
1,3-Dichlorobenzene	ND		2.50	ug/L	5		ND				30%	
1,4-Dichlorobenzene	ND		2.50	ug/L	5		ND				30%	
Dichlorodifluoromethane	ND		5.00	ug/L	5		ND				30%	
1,1-Dichloroethane	ND		2.00	ug/L	5		ND				30%	
1,2-Dichloroethane (EDC)	ND		2.00	ug/L	5		ND				30%	
1,1-Dichloroethene	ND		2.00	ug/L	5		ND				30%	
cis-1,2-Dichloroethene	42.8		2.00	ug/L	5		43.0			0.5	30%	
trans-1,2-Dichloroethene	2.85		2.00	ug/L	5		2.90			2	30%	
1,2-Dichloropropane	ND		2.50	ug/L	5		ND				30%	
1,3-Dichloropropane	ND		5.00	ug/L	5		ND				30%	
2,2-Dichloropropane	ND		5.00	ug/L	5		ND				30%	
1,1-Dichloropropene	ND		5.00	ug/L	5		ND				30%	
cis-1,3-Dichloropropene	ND		5.00	ug/L	5		ND				30%	
trans-1,3-Dichloropropene	ND		5.00	ug/L	5		ND				30%	
Ethylbenzene	5.75		2.50	ug/L	5		4.70			20	30%	
Hexachlorobutadiene	ND		25.0	ug/L	5		ND				30%	
2-Hexanone	ND		50.0	ug/L	5		ND				30%	
Isopropylbenzene	ND		5.00	ug/L	5		ND				30%	
4-Isopropyltoluene	ND		5.00	ug/L	5		ND				30%	
Methylene chloride	ND		50.0	ug/L	5		ND				30%	
4-Methyl-2-pentanone (MiBK)	ND		50.0	ug/L	5		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		5.00	ug/L	5		ND				30%	
Naphthalene	ND		20.0	ug/L	5		ND				30%	
n-Propylbenzene	ND		2.50	ug/L ug/L	5		ND				30%	
Styrene	ND		5.00	ug/L	5		ND				30%	
1,1,1,2-Tetrachloroethane	ND		2.00	ug/L ug/L	5		ND				30%	
1,1,1,2-1etrachioroethane	ND		2.00	ug/L	3		ND				30%	

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Philip Nerenberg, Lab Director

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc. Project: OCS
15862 SW 72nd Ave. Suite 150 Project Number: [none]

Portland, OR 97224 Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23H0501 - EPA 5030C							Wa	ter				
Duplicate (23H0501-DUP2)			Prepared	1: 08/14/23	10:22 Anal	lyzed: 08/15	5/23 00:26					T-02
QC Source Sample: MW18-20230	809 (A3H09	<u>991-01)</u>										
1,1,2,2-Tetrachloroethane	ND		2.50	ug/L	5		ND				30%	
Tetrachloroethene (PCE)	ND		2.00	ug/L	5		ND				30%	
Toluene	ND		5.00	ug/L	5		ND				30%	
1,2,3-Trichlorobenzene	ND		10.0	ug/L	5		ND				30%	
1,2,4-Trichlorobenzene	ND		10.0	ug/L	5		ND				30%	
1,1,1-Trichloroethane	ND		2.00	ug/L	5		ND				30%	
1,1,2-Trichloroethane	ND		2.50	ug/L	5		ND				30%	
Trichloroethene (TCE)	20.6		2.00	ug/L	5		21.2			3	30%	
Trichlorofluoromethane	ND		10.0	ug/L	5		ND				30%	
1,2,3-Trichloropropane	ND		5.00	ug/L	5		ND				30%	
1,2,4-Trimethylbenzene	ND		5.00	ug/L	5		ND				30%	
1,3,5-Trimethylbenzene	ND		5.00	ug/L	5		ND				30%	
Vinyl chloride	ND		1.00	ug/L	5		ND				30%	
m,p-Xylene	ND		8.50	ug/L	5		ND				30%	R-0
o-Xylene	ND		2.50	ug/L	5		ND				30%	R-0
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 102 %	Limits: 8	0-120 %	Dili	ution: 1x					
Toluene-d8 (Surr)			103 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			104 %	80	0-120 %		"					
Matrix Spike (23H0501-MS1)			Prepared	1: 08/14/23	10:22 Ana	lyzed: 08/14	/23 21:17					
QC Source Sample: Non-SDG (A3	3H0986-10)											
EPA 8260D												
Acetone	52.4		20.0	ug/L	1	40.0	ND	96	39-160%			
Acrylonitrile	20.1		2.00	ug/L	1	20.0	ND	100	63-135%			
Benzene	20.2		0.200	ug/L	1	20.0	0.110	100	79-120%			
Bromobenzene	18.4		0.500	ug/L	1	20.0	ND	92	80-120%			
Bromochloromethane	20.0		1.00	ug/L	1	20.0	ND	100	78-123%			
Bromodichloromethane	19.2		1.00	ug/L	1	20.0	ND	96	79-125%			
Bromoform	16.2		1.00	ug/L	1	20.0	ND	81	66-130%			
Bromomethane	26.2		5.00	ug/L	1	20.0	ND	131	53-141%			Q-54
2-Butanone (MEK)	43.1		10.0	ug/L	1	40.0	ND	108	56-143%			
n-Butylbenzene	19.0		1.00	ug/L	1	20.0	ND	95	75-128%			
,	10.0								12070			

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sec-Butylbenzene

18.9

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95

77-126%

ND

Philip Nerenberg, Lab Director

1

20.0

ug/L

1.00



# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS
Project Number: [none]

Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS Volatile Organic Compounds by EPA 8260D

#### Detection Reporting Spike Source % REC **RPD** % REC Dilution Analyte Result Ĺimit Units Amount Result Limits RPD Limit Notes Limit

Batch 23H0501 - EPA 5030C						Wa	ater			
Matrix Spike (23H0501-MS1)		Prepared:	08/14/23 10	:22 Ana	lyzed: 08/14	/23 21:17				
QC Source Sample: Non-SDG (A3	H0986-10)									
tert-Butylbenzene	18.8	 1.00	ug/L	1	20.0	ND	94	78-124%	 	
Carbon disulfide	18.0	 10.0	ug/L	1	20.0	ND	90	64-133%	 	
Carbon tetrachloride	20.3	 1.00	ug/L	1	20.0	ND	101	72-136%	 	
Chlorobenzene	19.0	 0.500	ug/L	1	20.0	ND	95	80-120%	 	
Chloroethane	21.2	 10.0	ug/L	1	20.0	ND	106	60-138%	 	ICV-0
Chloroform	20.2	 1.00	ug/L	1	20.0	ND	101	79-124%	 	
Chloromethane	22.3	 5.00	ug/L	1	20.0	ND	112	50-139%	 	
2-Chlorotoluene	18.3	 1.00	ug/L	1	20.0	ND	91	79-122%	 	
4-Chlorotoluene	18.6	 1.00	ug/L	1	20.0	ND	93	78-122%	 	
Dibromochloromethane	18.2	 1.00	ug/L	1	20.0	ND	91	74-126%	 	
1,2-Dibromo-3-chloropropane	17.7	 5.00	ug/L	1	20.0	ND	88	62-128%	 	
1,2-Dibromoethane (EDB)	19.1	 0.500	ug/L	1	20.0	ND	95	77-121%	 	
Dibromomethane	19.2	 1.00	ug/L	1	20.0	ND	96	79-123%	 	
1,2-Dichlorobenzene	19.7	 0.500	ug/L	1	20.0	ND	99	80-120%	 	
1,3-Dichlorobenzene	18.5	 0.500	ug/L	1	20.0	ND	93	80-120%	 	
1,4-Dichlorobenzene	19.1	 0.500	ug/L	1	20.0	ND	96	79-120%	 	
Dichlorodifluoromethane	22.6	 1.00	ug/L	1	20.0	ND	113	32-152%	 	
1,1-Dichloroethane	20.5	 0.400	ug/L	1	20.0	ND	102	77-125%	 	
1,2-Dichloroethane (EDC)	20.2	 0.400	ug/L	1	20.0	ND	101	73-128%	 	
1,1-Dichloroethene	21.5	 0.400	ug/L	1	20.0	ND	107	71-131%	 	
cis-1,2-Dichloroethene	20.2	 0.400	ug/L	1	20.0	ND	101	78-123%	 	
trans-1,2-Dichloroethene	20.4	 0.400	ug/L	1	20.0	ND	102	75-124%	 	
1,2-Dichloropropane	19.7	 0.500	ug/L	1	20.0	ND	98	78-122%	 	
1,3-Dichloropropane	19.2	 1.00	ug/L	1	20.0	ND	96	80-120%	 	
2,2-Dichloropropane	17.5	 1.00	ug/L	1	20.0	ND	88	60-139%	 	
1,1-Dichloropropene	21.0	 1.00	ug/L	1	20.0	ND	105	79-125%	 	
cis-1,3-Dichloropropene	17.8	 1.00	ug/L	1	20.0	ND	89	75-124%	 	
trans-1,3-Dichloropropene	19.3	 1.00	ug/L	1	20.0	ND	97	73-127%	 	
Ethylbenzene	21.8	 0.500	ug/L	1	20.0	2.79	95	79-121%	 	
Hexachlorobutadiene	17.7	 5.00	ug/L	1	20.0	ND	89	66-134%	 	
2-Hexanone	39.8	 10.0	ug/L	1	40.0	ND	100	57-139%	 	
Isopropylbenzene	19.3	 1.00	ug/L	1	20.0	ND	96	72-131%	 	
4-Isopropyltoluene	18.6	 1.00	ug/L	1	20.0	ND	93	77-127%	 	

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Philip Nerenberg, Lab Director

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## Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS
Project Number: [none]
Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D Detection % REC RPD Reporting Spike Source Analyte Result Limit Units Dilution % REC RPD Limit Amount Result Limits Limit Notes Batch 23H0501 - EPA 5030C Water Matrix Spike (23H0501-MS1) Prepared: 08/14/23 10:22 Analyzed: 08/14/23 21:17 QC Source Sample: Non-SDG (A3H0986-10) Methylene chloride 20.4 10.0 ug/L 1 20.0 ND 102 74-124% 98 39.2 10.0 40.0 4-Methyl-2-pentanone (MiBK) ug/L 1 ND 67-130% Methyl tert-butyl ether (MTBE) ug/L 17.8 1.00 1 20.0 ND 89 71-124% Naphthalene 16.3 4.00 ug/L 1 20.0 ND 82 61-128% n-Propylbenzene 19.6 0.500 ug/L 1 20.0 ND 98 76-126% Q-01 12.7 1.00 20.0 Styrene ug/L 1 ND 64 78-123% 1,1,1,2-Tetrachloroethane 18.9 0.400 ug/L 1 20.0 ND 94 78-124% 1,1,2,2-Tetrachloroethane 21.6 0.500 20.0 ND 108 71-121% ug/L 1 Tetrachloroethene (PCE) 19.8 0.400 ug/L 1 20.0 ND 99 74-129% Toluene 19.9 1.00 ug/L 1 20.0 ND 99 80-121% 1,2,3-Trichlorobenzene 16.8 2.00 ug/L 1 20.0 ND 84 69-129% 2.00 20.0 ND 69-130% 1.2.4-Trichlorobenzene 17.6 ug/L 1 88 20.0 1,1,1-Trichloroethane 20.6 0.400 ug/L 1 ND 103 74-131% 1,1,2-Trichloroethane 20.0 18.8 0.500 ND 94 ug/L 1 80-120% 0.400 Trichloroethene (TCE) 19.0 ug/L 1 20.0 ND 95 79-123% Trichlorofluoromethane 26.2 2.00 ug/L 1 20.0 ND 131 65-141% 1,2,3-Trichloropropane 20.6 1.00 ug/L 1 20.0 ND 103 73-122% 17.9 1.00 20.0 0.950 85 1,2,4-Trimethylbenzene 76-124% ug/L 1 1,3,5-Trimethylbenzene 18.6 20.0 93 75-124% 1.00 ug/L 1 ND 0.200 20.0 Vinyl chloride 22.5 ND 113 58-137% ug/L 1 m,p-Xylene 47.2 1.00 40.0 8.77 96 80-121% ug/L 1 o-Xylene 20.4 ---0.500 ug/L 1 20.0 1.64 94 78-122% Surr: 1,4-Difluorobenzene (Surr) 101 % Dilution: lχ Limits: 80-120 % Recovery: Toluene-d8 (Surr) 98 % 80-120 %

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4-Bromofluorobenzene (Surr)

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80-120 %

96 %



## Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

Project: OCS

15862 SW 72nd Ave. Suite 150

Project Number: [none]

Portland, OR 97224 Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D Detection % REC RPD Reporting Spike Source Dilution Analyte Result Limit Units % REC RPD Limit Amount Result Limits Limit Notes Batch 23H0542 - EPA 5030C Water Blank (23H0542-BLK1) Prepared: 08/15/23 10:05 Analyzed: 08/15/23 18:15 EPA 8260D ND 20.0 ug/L Acetone ND 2.00 Acrylonitrile ug/L 1 Benzene ND 0.200 ug/L 1 Bromobenzene ND 0.500 ug/L 1 Bromochloromethane ND 1.00 ug/L 1 Bromodichloromethane ND 1.00 ug/L 1 Bromoform ND 1.00 ug/L 5.00 Bromomethane ND ug/L 1 2-Butanone (MEK) ND 10.0 ug/L 1 n-Butylbenzene ND 1.00 ug/L 1 sec-Butylbenzene ND 1.00 ug/L 1 ND tert-Butylbenzene 1.00 1 ug/L ---Carbon disulfide ND 10.0 ug/L 1 Carbon tetrachloride ND 1.00 ug/L 1 Chlorobenzene ND 0.500 ug/L 1 Chloroethane ND 5.00 ug/L 1 ---Chloroform ND 1.00 ug/L 1 5.00 Chloromethane ND 1 ug/L 2-Chlorotoluene ND 1.00 ug/L 1 4-Chlorotoluene ND 1.00 ug/L 1 Dibromochloromethane ND 1.00 ug/L 1 1,2-Dibromo-3-chloropropane ND 5.00 ug/L 1 1,2-Dibromoethane (EDB) ND 0.500 ug/L 1 ug/L Dibromomethane ND 1.00 1 0.500 1,2-Dichlorobenzene ND ug/L 1 ug/L 1,3-Dichlorobenzene ND 0.500 1 1,4-Dichlorobenzene ND 0.500 ug/L 1 Dichlorodifluoromethane ND 1.00 ug/L 1 ---1,1-Dichloroethane ND 0.400ug/L 1 1,2-Dichloroethane (EDC) ND 0.400ug/L 1 1,1-Dichloroethene ND 0.400ug/L 1 cis-1,2-Dichloroethene ND 0.400 ug/L 1 0.400 trans-1,2-Dichloroethene ND ug/L 1

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## Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:[none]Portland, OR 97224Project Manager:Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS Volatile Organic Compounds by EPA 8260D

#### Detection % REC RPD Reporting Spike Source % REC Analyte Result Units Dilution RPD Limit Limit Amount Result Limits Limit Notes Batch 23H0542 - EPA 5030C Water Blank (23H0542-BLK1) Prepared: 08/15/23 10:05 Analyzed: 08/15/23 18:15 ND 0.500 1,2-Dichloropropane ug/L ug/L ND 1.00 1 1,3-Dichloropropane 2,2-Dichloropropane ND 1.00 ug/L 1 1,1-Dichloropropene ND 1.00 ug/L 1 ND 1.00 cis-1,3-Dichloropropene ug/L 1 trans-1,3-Dichloropropene ND 1.00 ug/L 1 ND 0.500 ug/L 1

Ethylbenzene Hexachlorobutadiene ND 5.00 ug/L 1 10.0 2-Hexanone ND ug/L 1 Isopropylbenzene ND 1.00 ug/L 1 ND 4-Isopropyltoluene 1.00 ug/L 1 10.0 Methylene chloride ND ug/L 1 ND 10.0 4-Methyl-2-pentanone (MiBK) ug/L 1 ---Methyl tert-butyl ether (MTBE) ND 1.00 ug/L 1 Naphthalene ND 4.00 ug/L 1 n-Propylbenzene ND 0.500 ug/L 1 1.00 Styrene ND 1 ug/L 1,1,1,2-Tetrachloroethane ND 0.400 1 ug/L ND 1.1.2.2-Tetrachloroethane 0.500 --ug/L 1 ---------Tetrachloroethene (PCE) ND 0.400 ug/L 1 Toluene ND 1.00 ug/L 1 1,2,3-Trichlorobenzene ND 2.00 ug/L 1 1,2,4-Trichlorobenzene ND 2.00 ug/L 1 1,1,1-Trichloroethane ND 0.400 ug/L 1 ND 1,1,2-Trichloroethane 0.500 ug/L 1 ---Trichloroethene (TCE) ND 0.400 ug/L 1 Trichlorofluoromethane ND 2.00 ug/L 1 1,2,3-Trichloropropane ND 1.00 ug/L 1 1,2,4-Trimethylbenzene ND 1.00 1 ug/L ---1,3,5-Trimethylbenzene ND 1.00 ug/L 1 Vinyl chloride ND 0.200 ug/L 1 m,p-Xylene ND 1.00 ug/L 1 o-Xylene ND 0.500 ug/L 1

Surr: 1,4-Difluorobenzene (Surr) Recovery: 98 % Limits: 80-120 % Dilution: Ix

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Philip Nerenberg, Lab Director

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:[none]Portland, OR 97224Project Manager:Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23H0542 - EPA 5030C							Wa	iter				
Blank (23H0542-BLK1)			Prepared	1: 08/15/23	10:05 Ana	lyzed: 08/15	/23 18:15					
Surr: Toluene-d8 (Surr)		Reco	very: 102 %	Limits: 80	0-120 %	Dili	ution: 1x					
4-Bromofluorobenzene (Surr)			103 %	80	0-120 %		"					
LCS (23H0542-BS1)			Prepared	1: 08/15/23	10:05 Ana	lyzed: 08/15	7/23 17:30					
EPA 8260D												
Acetone	38.5		20.0	ug/L	1	40.0		96	80-120%			
Acrylonitrile	20.8		2.00	ug/L	1	20.0		104	80-120%			
Benzene	20.1		0.200	ug/L	1	20.0		100	80-120%			
Bromobenzene	20.9		0.500	ug/L	1	20.0		105	80-120%			
Bromochloromethane	20.7		1.00	ug/L	1	20.0		104	80-120%			
Bromodichloromethane	21.5		1.00	ug/L	1	20.0		108	80-120%			
Bromoform	23.8		1.00	ug/L	1	20.0		119	80-120%			
Bromomethane	27.7		5.00	ug/L	1	20.0		138	80-120%			Q-:
2-Butanone (MEK)	40.6		10.0	ug/L	1	40.0		102	80-120%			
n-Butylbenzene	23.1		1.00	ug/L	1	20.0		116	80-120%			
sec-Butylbenzene	22.7		1.00	ug/L	1	20.0		113	80-120%			
tert-Butylbenzene	22.2		1.00	ug/L	1	20.0		111	80-120%			
Carbon disulfide	20.8		10.0	ug/L	1	20.0		104	80-120%			
Carbon tetrachloride	22.2		1.00	ug/L	1	20.0		111	80-120%			
Chlorobenzene	21.4		0.500	ug/L	1	20.0		107	80-120%			
Chloroethane	20.3		5.00	ug/L	1	20.0		101	80-120%			
Chloroform	20.9		1.00	ug/L	1	20.0		104	80-120%			
Chloromethane	16.3		5.00	ug/L	1	20.0		81	80-120%			
2-Chlorotoluene	21.7		1.00	ug/L	1	20.0		108	80-120%			
4-Chlorotoluene	21.6		1.00	ug/L	1	20.0		108	80-120%			
Dibromochloromethane	22.8		1.00	ug/L	1	20.0		114	80-120%			
1,2-Dibromo-3-chloropropane	22.3		5.00	ug/L	1	20.0		111	80-120%			
1,2-Dibromoethane (EDB)	22.4		0.500	ug/L	1	20.0		112	80-120%			
Dibromomethane	20.9		1.00	ug/L	1	20.0		104	80-120%			
1,2-Dichlorobenzene	22.0		0.500	ug/L	1	20.0		110	80-120%			
1,3-Dichlorobenzene	21.7		0.500	ug/L	1	20.0		109	80-120%			
1,4-Dichlorobenzene	21.0		0.500	ug/L	1	20.0		105	80-120%			
Dichlorodifluoromethane	21.2		1.00	ug/L	1	20.0		106	80-120%			
1,1-Dichloroethane	21.0		0.400	ug/L	1	20.0		105	80-120%			

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:[none]Portland, OR 97224Project Manager:Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

# Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23H0542 - EPA 5030C							Wa	ter				
LCS (23H0542-BS1)			Prepared	: 08/15/23	10:05 Anal	yzed: 08/15/	/23 17:30					
1,2-Dichloroethane (EDC)	21.5		0.400	ug/L	1	20.0		107	80-120%			
1,1-Dichloroethene	20.2		0.400	ug/L	1	20.0		101	80-120%			
cis-1,2-Dichloroethene	20.5		0.400	ug/L	1	20.0		102	80-120%			
rans-1,2-Dichloroethene	20.9		0.400	ug/L	1	20.0		104	80-120%			
1,2-Dichloropropane	20.2		0.500	ug/L	1	20.0		101	80-120%			
1,3-Dichloropropane	21.3		1.00	ug/L	1	20.0		107	80-120%			
2,2-Dichloropropane	22.6		1.00	ug/L	1	20.0		113	80-120%			
,1-Dichloropropene	20.4		1.00	ug/L	1	20.0		102	80-120%			
cis-1,3-Dichloropropene	22.0		1.00	ug/L	1	20.0		110	80-120%			
rans-1,3-Dichloropropene	22.8		1.00	ug/L	1	20.0		114	80-120%			
Ethylbenzene	21.6		0.500	ug/L	1	20.0		108	80-120%			
Hexachlorobutadiene	22.4		5.00	ug/L	1	20.0		112	80-120%			
2-Hexanone	42.1		10.0	ug/L	1	40.0		105	80-120%			
sopropylbenzene	22.9		1.00	ug/L	1	20.0		115	80-120%			
l-Isopropyltoluene	23.1		1.00	ug/L	1	20.0		116	80-120%			
Methylene chloride	20.6		10.0	ug/L	1	20.0		103	80-120%			
1-Methyl-2-pentanone (MiBK)	43.5		10.0	ug/L	1	40.0		109	80-120%			
Methyl tert-butyl ether (MTBE)	21.1		1.00	ug/L	1	20.0		105	80-120%			
Naphthalene	22.5		4.00	ug/L	1	20.0		113	80-120%			
n-Propylbenzene	21.9		0.500	ug/L	1	20.0		110	80-120%			
Styrene	23.0		1.00	ug/L	1	20.0		115	80-120%			
,1,1,2-Tetrachloroethane	20.9		0.400	ug/L	1	20.0		104	80-120%			
1,1,2,2-Tetrachloroethane	20.7		0.500	ug/L	1	20.0		103	80-120%			
Tetrachloroethene (PCE)	22.3		0.400	ug/L	1	20.0		111	80-120%			
Foluene	20.9		1.00	ug/L	1	20.0		104	80-120%			
1,2,3-Trichlorobenzene	22.0		2.00	ug/L	1	20.0		110	80-120%			
1,2,4-Trichlorobenzene	22.3		2.00	ug/L	1	20.0		112	80-120%			
1.1.1-Trichloroethane	21.3		0.400	ug/L	1	20.0		106	80-120%			
,1,2-Trichloroethane	20.8		0.500	ug/L	1	20.0		104	80-120%			
Trichloroethene (TCE)	20.9		0.400	ug/L ug/L	1	20.0		104	80-120%			
Frichlorofluoromethane	22.0		2.00	ug/L ug/L	1	20.0		110	80-120%			
,2,3-Trichloropropane	21.4		1.00	ug/L ug/L	1	20.0		107	80-120%			
1,2,4-Trimethylbenzene	22.3		1.00	ug/L ug/L	1	20.0		112	80-120%			
1,3,5-Trimethylbenzene	22.4		1.00	ug/L ug/L	1	20.0		112	80-120%			

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Portland, OR 97224

# ANALYTICAL REPORT

# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

Report ID:

WSP USA Environment & Infrastructure Inc. Project: <u>ocs</u> 15862 SW 72nd Ave. Suite 150 Project Number: [none]

> Project Manager: Russ Bunker A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23H0542 - EPA 5030C							Wa	ter				
LCS (23H0542-BS1)			Prepared	1: 08/15/23	10:05 Ana	yzed: 08/15/	/23 17:30					
Vinyl chloride	19.8		0.200	ug/L	1	20.0		99	80-120%			
n,p-Xylene	44.8		1.00	ug/L	1	40.0		112	80-120%			
-Xylene	22.1		0.500	ug/L	1	20.0		111	80-120%			
urr: 1,4-Difluorobenzene (Surr)		Rec	overy: 98 %	Limits: 80	120 %	Dilı	tion: 1x					
Toluene-d8 (Surr)			100 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			99 %	80	-120 %		"					
Duplicate (23H0542-DUP1)			Prepared	1: 08/15/23	10:05 Anal	yzed: 08/16/	/23 02:09					
OC Source Sample: Non-SDG (A3	H1055-15)											
Acetone	ND		200	ug/L	10		ND				30%	
Acrylonitrile	ND		20.0	ug/L	10		ND				30%	
enzene	ND		2.00	ug/L	10		1.50			***	30%	
Fromobenzene	ND		5.00	ug/L	10		ND				30%	
Bromochloromethane	ND		10.0	ug/L	10		ND				30%	
romodichloromethane	ND		10.0	ug/L	10		ND				30%	
Bromoform	ND		10.0	ug/L	10		ND				30%	
Bromomethane	ND		50.0	ug/L	10		ND				30%	
-Butanone (MEK)	ND		100	ug/L	10		ND				30%	
-Butylbenzene	ND		10.0	ug/L	10		ND				30%	
ec-Butylbenzene	ND		10.0	ug/L	10		ND				30%	
ert-Butylbenzene	ND		10.0	ug/L	10		ND				30%	
Carbon disulfide	ND		100	ug/L	10		ND				30%	
Carbon tetrachloride	ND		10.0	ug/L	10		ND				30%	
Chlorobenzene	ND		5.00	ug/L	10		ND				30%	
Chloroethane	ND		50.0	ug/L	10		ND				30%	
Chloroform	ND		10.0	ug/L	10		ND				30%	
Chloromethane	ND		50.0	ug/L	10		ND				30%	
-Chlorotoluene	ND		10.0	ug/L	10		ND				30%	
-Chlorotoluene	ND		10.0	ug/L	10		ND				30%	
Dibromochloromethane	ND		10.0	ug/L	10		ND				30%	
,2-Dibromo-3-chloropropane	ND		50.0	ug/L	10		ND				30%	
,2-Dibromoethane (EDB)	ND		5.00	ug/L	10		ND				30%	
ibromomethane	ND		10.0	ug/L	10		ND				30%	
,2-Dichlorobenzene	ND		5.00	ug/L	10		ND				30%	

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Page 22 of 36 Philip Nerenberg, Lab Director



## Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

Project: OCS

15862 SW 72nd Ave. Suite 150

Project Number: [none]

Portland, OR 97224

Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D % REC RPD Detection Reporting Spike Source Analyte Result Units Dilution % REC RPD Limit Limit Amount Result Limits Limit Notes Batch 23H0542 - EPA 5030C Water Duplicate (23H0542-DUP1) Prepared: 08/15/23 10:05 Analyzed: 08/16/23 02:09 QC Source Sample: Non-SDG (A3H1055-15) 1,3-Dichlorobenzene ND 5.00 ug/L 10 ND 30% ND 1,4-Dichlorobenzene 5.00 ug/L 10 ND 30% ug/L Dichlorodifluoromethane ND 10.0 10 ND 30% 1,1-Dichloroethane ND 4.00 ug/L 10 ND 30% 1,2-Dichloroethane (EDC) ND 4.00 10 ND 30% ug/L ------1,1-Dichloroethene ND 4.00 ug/L 10 ND 30% cis-1,2-Dichloroethene ND 4.00 ug/L 10 ND 30% trans-1,2-Dichloroethene 30% ND 4.00 ug/L 10 ND 1,2-Dichloropropane ND 5.00 ug/L 10 ND 30% 1,3-Dichloropropane ND 10.0 ug/L 10 ND 30% 2,2-Dichloropropane ND 10.0 ug/L 10 ND 30% ND 10.0 30% 1,1-Dichloropropene ug/L 10 ND cis-1,3-Dichloropropene ND 10.0 ug/L 10 ND 30% ND 10.0 10 30% trans-1,3-Dichloropropene ug/L ND ug/L \*\*\* Ethylbenzene ND 5.00 10 4.60 30% Hexachlorobutadiene ND 50.0 ug/L 10 ND \_\_\_ 30% 2-Hexanone ND 100 ug/L 10 ND 30% ND 10.0 30% Isopropylbenzene 10 ND ug/L 4-Isopropyltoluene ND 10.0 ug/L 10 ND 30% 100 Methylene chloride ND 10 ND 30% ug/L 4-Methyl-2-pentanone (MiBK) ND 100 ug/L 10 ND 30% Methyl tert-butyl ether (MTBE) ND ---10.0 ug/L 10 ND ---30% Naphthalene ND 40.0 ug/L 10 ND 30% 30% n-Propylbenzene ND 5.00 10 ND ug/L ND 10.0 30% Styrene ug/L 10 ND ND 4.00 1,1,1,2-Tetrachloroethane 10 ND 30% ug/L 1,1,2,2-Tetrachloroethane ND 5.00 10 ND 30% ug/L Tetrachloroethene (PCE) ND 4.00 ug/L 10 ND ------30% ND 10.0 ug/L 10 ND 30% ND 20.0 10 30% 1,2,3-Trichlorobenzene ug/L ND ---1,2,4-Trichlorobenzene ND 20.0 ug/L 10 ND 30% 4.00 1,1,1-Trichloroethane ND 10 ND 30% ug/L ------

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1,1,2-Trichloroethane

ND

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30%

ND

Philip Nerenberg, Lab Director

Page 23 of 36

10

5.00

ug/L



# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:[none]Portland, OR 97224Project Manager:Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23H0542 - EPA 5030C							Wa	ter				
Duplicate (23H0542-DUP1)			Prepared	1: 08/15/23	10:05 Anal	lyzed: 08/16	/23 02:09					
QC Source Sample: Non-SDG (A3	H1055-15)											
Trichloroethene (TCE)	ND		4.00	ug/L	10		ND				30%	
Trichlorofluoromethane	ND		20.0	ug/L	10		ND				30%	
1,2,3-Trichloropropane	ND		10.0	ug/L	10		ND				30%	
1,2,4-Trimethylbenzene	ND		10.0	ug/L	10		ND				30%	
1,3,5-Trimethylbenzene	ND		10.0	ug/L	10		ND				30%	
Vinyl chloride	ND		2.00	ug/L	10		ND				30%	
m,p-Xylene	ND		10.0	ug/L	10		ND				30%	
o-Xylene	ND		5.00	ug/L	10		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 101 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			102 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			99 %	80	-120 %		"					
QC Source Sample: Non-SDG (A3			200	~	10						2007	
	ND		200		10		ND				30%	
Acetone Acrylonitrile	ND		20.0	ug/L ug/L	10		ND				30%	
Benzene	17.1		2.00	ug/L	10		16.2			5	30%	
Bromobenzene	ND		5.00	ug/L	10		ND				30%	
Bromochloromethane	ND		10.0	ug/L	10		ND				30%	
Bromodichloromethane	ND		10.0	ug/L	10		ND				30%	
Bromoform	ND		10.0	ug/L	10		ND				30%	
Bromomethane	ND		50.0	ug/L	10		ND				30%	
2-Butanone (MEK)	ND		100	ug/L	10		ND				30%	
n-Butylbenzene	25.0		10.0	ug/L	10		22.0			13	30%	M-
sec-Butylbenzene	26.2		10.0	ug/L	10		23.9			9	30%	
tert-Butylbenzene	ND		10.0	ug/L	10		ND				30%	
Carbon disulfide	ND		100	ug/L	10		ND				30%	
Carbon tetrachloride	ND		10.0	ug/L	10		ND				30%	
Chlorobenzene	ND		5.00	ug/L	10		ND				30%	
Chloroethane	ND		50.0	ug/L	10		ND				30%	
Chloroform	ND		10.0	ug/L	10		ND				30%	
Chloromethane	ND		50.0	ug/L	10		ND				30%	
2-Chlorotoluene	ND		10.0	ug/L	10		ND				30%	

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Philip Nevenberg

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## Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:[none]Portland, OR 97224Project Manager:Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D % REC RPD Detection Reporting Spike Source Analyte Result Units Dilution % REC RPD Limit Limit Amount Result Limits Limit Notes Batch 23H0542 - EPA 5030C Water Duplicate (23H0542-DUP2) Prepared: 08/15/23 10:05 Analyzed: 08/16/23 02:54 QC Source Sample: Non-SDG (A3H1055-21) 4-Chlorotoluene ND 10.0 ug/L 10 ND 30% ND 10.0 10 Dibromochloromethane ug/L ND 30% ug/L 1,2-Dibromo-3-chloropropane ND 50.0 10 ND 30% 1,2-Dibromoethane (EDB) ND 5.00 ug/L 10 ND 30% Dibromomethane ND 10.0 10 ND 30% ug/L ------ND 5.00 1,2-Dichlorobenzene ug/L 10 ND 30% 1,3-Dichlorobenzene ND 5.00 ug/L 10 ND 30% 30% 1,4-Dichlorobenzene ND 5.00 ug/L 10 ND Dichlorodifluoromethane ND 10.0 ug/L 10 ND 30% 1,1-Dichloroethane ND 4.00 ug/L 10 ND 30% 1,2-Dichloroethane (EDC) ND 4.00 ug/L 10 ND 30% 1,1-Dichloroethene ND 4.00 30% ug/L 10 ND cis-1,2-Dichloroethene ND 4.00 ug/L 10 ND 30% ND 4.00 10 30% trans-1,2-Dichloroethene ug/L ND ug/L 1,2-Dichloropropane ND 5.00 10 ND 30% 1,3-Dichloropropane ND 10.0 ug/L 10 ND \_\_\_ 30% 2,2-Dichloropropane ND 10.0 ug/L 10 ND 30% ND 10.0 30% 1,1-Dichloropropene 10 ND ug/L ND ND cis-1,3-Dichloropropene 10.0 ug/L 10 30% 10.0 trans-1,3-Dichloropropene ND 10 ND 30% ug/L 4 Ethylbenzene 42.8 5.00 ug/L 10 41.1 30% Hexachlorobutadiene ND ---50.0 ug/L 10 ND ---30% 2-Hexanone ND 100 ug/L 10 ND 30% 27.3 7 30% Isopropylbenzene 10.0 10 25.4 ug/L 15.2 10.0 30% M-02 4-Isopropyltoluene ug/L 10 13.3 13 ND 100 10 ND 30% Methylene chloride ug/L 4-Methyl-2-pentanone (MiBK) ND 100 10 ND 30% ug/L Methyl tert-butyl ether (MTBE) ND 10.0 ug/L 10 ND ------30% Naphthalene 181 40.0 ug/L 10 176 3 30% 43 1 5.00 10 41.2 30% n-Propylbenzene ug/L 5 Styrene ND 10.0 ug/L 10 ND 30% ND 4.00 10 ND 30% 1.1.1.2-Tetrachloroethane ug/L ------1,1,2,2-Tetrachloroethane ND 5.00 ug/L 10 ND 30%

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Portland, OR 97224

# ANALYTICAL REPORT

# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

 WSP USA Environment & Infrastructure Inc.
 Project:
 OCS

 15862 SW 72nd Ave. Suite 150
 Project Number:
 [none]

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

Project Manager: Russ Bunker

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23H0542 - EPA 5030C							Wa	ter				
Duplicate (23H0542-DUP2)			Prepared	: 08/15/23	10:05 Anal	lyzed: 08/16	/23 02:54					
QC Source Sample: Non-SDG (A3	H1055-21)											
Tetrachloroethene (PCE)	ND		4.00	ug/L	10		ND				30%	
Toluene	ND		10.0	ug/L	10		ND				30%	
1,2,3-Trichlorobenzene	ND		20.0	ug/L	10		ND				30%	
1,2,4-Trichlorobenzene	ND		20.0	ug/L	10		ND				30%	
1,1,1-Trichloroethane	ND		4.00	ug/L	10		ND				30%	
1,1,2-Trichloroethane	ND		5.00	ug/L	10		ND				30%	
Trichloroethene (TCE)	ND		4.00	ug/L	10		ND				30%	
Trichlorofluoromethane	ND		20.0	ug/L	10		ND				30%	
1,2,3-Trichloropropane	ND		10.0	ug/L	10		ND				30%	
1,2,4-Trimethylbenzene	193		10.0	ug/L	10		184			5	30%	
1,3,5-Trimethylbenzene	35.0		10.0	ug/L	10		32.0			9	30%	
Vinyl chloride	ND		2.00	ug/L	10		ND				30%	
n,p-Xylene	17.7		10.0	ug/L	10		17.1			3	30%	
o-Xylene	ND		5.00	ug/L	10		2.70			***	30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 106 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			103 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			99 %	80	)-120 %		"					
Matrix Spike (23H0542-MS1)			Prepared	: 08/15/23	10:05 Anal	yzed: 08/16	/23 04:25					
QC Source Sample: Non-SDG (A3	H1079-01)											
EPA 8260D												
Acetone	505		20.0	ug/L	1	40.0	338	418	39-160%			E, Q-
Acrylonitrile	22.6		2.00	ug/L	1	20.0	ND	113	63-135%			
Benzene	24.1		0.200	ug/L	1	20.0	ND	120	79-120%			
Bromobenzene	21.4		0.500	ug/L	1	20.0	ND	107	80-120%			
Bromochloromethane	23.2		1.00	ug/L	1	20.0	ND	116	78-123%			
Bromodichloromethane	21.4		1.00	ug/L	1	20.0	ND	107	79-125%			
Bromoform	19.9		1.00	ug/L	1	20.0	ND	99	66-130%			
Bromomethane	27.2		5.00	ug/L	1	20.0	ND	136	53-141%			Q-
2-Butanone (MEK)	30.5		10.0	ug/L	1	40.0	ND	76	56-143%			
n-Butylbenzene	23.4		1.00	ug/L	1	20.0	ND	117	75-128%			
sec-Butylbenzene	23.1		1.00	ug/L	1	20.0	ND	116	77-126%			
ert-Butylbenzene	21.7		1.00	ug/L	1	20.0	ND	109	78-124%			

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## Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:[none]Portland, OR 97224Project Manager:Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D % REC RPD Detection Reporting Spike Source Analyte Result Limit Units Dilution % REC RPD Limit Amount Result Limits Limit Notes Batch 23H0542 - EPA 5030C Water Matrix Spike (23H0542-MS1) Prepared: 08/15/23 10:05 Analyzed: 08/16/23 04:25 QC Source Sample: Non-SDG (A3H1079-01) Carbon disulfide 25.7 10.0 ug/L 1 20.0 ND 128 64-133% 22.2 1.00 20.0 Carbon tetrachloride ug/L 1 ND 111 72-136% ug/L Chlorobenzene 21.6 0.500 1 20.0 ND 108 80-120% Chloroethane 22.2 5.00 ug/L 1 20.0 ND 111 60-138% Chloroform 22.6 1.00 1 20.0 ND 113 79-124% ug/L 20.0 ND Chloromethane 17.3 5.00 ug/L 1 87 50-139% ug/L 2-Chlorotoluene 22.3 1.00 1 20.0 ND 111 79-122% 20.0 ND 107 4-Chlorotoluene 21.4 1.00 ug/L 1 78-122% Dibromochloromethane 20.0 1.00 ug/L 1 20.0 ND 100 74-126% 1,2-Dibromo-3-chloropropane 20.0 5.00 ug/L 1 20.0 ND 100 62-128% 1,2-Dibromoethane (EDB) 21.4 0.500 ug/L 1 20.0 ND 107 77-121% 22.2 1.00 20.0 ND 79-123% Dibromomethane ug/L 1 111 20.0 1,2-Dichlorobenzene 22.2 0.500 ug/L 1 ND 111 80-120% 20.0 22.1 0.500 ND 1,3-Dichlorobenzene ug/L 1 110 80-120% ug/L 1,4-Dichlorobenzene 21.1 0.500 1 20.0 ND 105 79-120% Dichlorodifluoromethane 23.2 1.00 ug/L 1 20.0 ND 116 32-152% \_\_\_ 1,1-Dichloroethane 24.2 0.400 ug/L 1 20.0 ND 121 77-125% 20.8 0.400 20.0 ND 104 1,2-Dichloroethane (EDC) 73-128% ug/L 1 20.0 71-131% 1,1-Dichloroethene 24.0 0.400ug/L 1 ND 120 cis-1,2-Dichloroethene 0.400 20.0 23.0 ND 78-123% ug/L 1 115 trans-1,2-Dichloroethene 0.400 20.0 ND 75-124% 24.2 ug/L 1 121 23.3 1,2-Dichloropropane ---0.500 ug/L 1 20.0 ND 117 78-122% 1,3-Dichloropropane 20.6 1.00 ug/L 1 20.0 ND 103 80-120% 20.0 98 60-139% 2,2-Dichloropropane 19.6 1.00 1 ND ug/L 23.8 1.00 20.0 79-125% 1,1-Dichloropropene ug/L 1 ND 119 20.7 20.0 1.00 ND 103 75-124% cis-1,3-Dichloropropene ug/L 1 trans-1,3-Dichloropropene 20.0 1.00 20.0 ND 100 73-127% ug/L 1 20.0 79-121% Ethylbenzene 22.1 0.500 ug/L 1 0.440 108 Hexachlorobutadiene 21.3 5.00 ug/L 1 20.0 ND 107 66-134% 2-Hexanone 23.5 10.0 1 40.0 ND 59 57-139% ug/L Isopropylbenzene 22.9 1.00 1 20.0 ND 114 72-131% ug/L 1.00 20.0 4-Isopropyltoluene 23.2 1 ND 116 77-127% ug/L ---Methylene chloride 23.7 10.0 ug/L 1 20.0 ND 119 74-124%

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## Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:[none]Portland, OR 97224Project Manager:Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D Detection % REC RPD Reporting Spike Source Analyte Result Units Dilution % REC RPD Limit Limit Amount Result Limits Limit Notes Batch 23H0542 - EPA 5030C Water Matrix Spike (23H0542-MS1) Prepared: 08/15/23 10:05 Analyzed: 08/16/23 04:25 QC Source Sample: Non-SDG (A3H1079-01) 4-Methyl-2-pentanone (MiBK) 36.6 10.0 ug/L 1 40.0 ND 92 67-130% Methyl tert-butyl ether (MTBE) 20.0 22.0 1.00 ug/L 1 ND 110 71-124% Naphthalene 22.8 4.00 ug/L 1 20.0 ND 114 61-128% n-Propylbenzene 22.3 0.500 ug/L 1 20.0 ND 112 76-126% 22.3 1.00 ug/L 1 20.0 ND 112 78-123% Styrene 1,1,1,2-Tetrachloroethane 19.1 0.400 20.0 ug/L 1 ND 96 78-124% 1,1,2,2-Tetrachloroethane 19.6 0.500 ug/L 1 20.0 ND 98 71-121% Tetrachloroethene (PCE) 23.1 0.400 20.0 74-129% ug/L 1 ND 116 20.0 Toluene 21.9 1.00 ug/L 1 ND 110 80-121% 1,2,3-Trichlorobenzene 21.6 2.00 ug/L 1 20.0 ND 108 69-129% 1,2,4-Trichlorobenzene 22.0 2.00 ug/L 1 20.0 ND 110 69-130% 1,1,1-Trichloroethane 22.0 0.400 20.0 ND 74-131% ug/L 1 110 0.500 20.0 1,1,2-Trichloroethane 20.7 ug/L 1 ND 104 80-120% 20.0 Trichloroethene (TCE) 24.2 0.400 ND 79-123% ug/L 1 121 Trichlorofluoromethane 23.1 2.00 ug/L 1 20.0 ND 115 65-141% 1,2,3-Trichloropropane 19.3 1.00 ug/L 1 20.0 ND 96 73-122% \_\_\_ 1,2,4-Trimethylbenzene 22.4 1.00 ug/L 1 20.0 ND 112 76-124% 1,3,5-Trimethylbenzene 22.4 20.0 75-124% 1.00 ND 112 ug/L 1 Vinyl chloride 25.3 0.200 20.0 ND 58-137% ug/L 1 126 1.00 40.0 m,p-Xylene 44.3 ND 80-121% ug/L 1 111 21.8 0.500 20.0 ND 109 78-122% o-Xylene ug/L Surr: 1,4-Difluorobenzene (Surr) Recovery: 110 % Limits: 80-120 % Dilution: 1x Toluene-d8 (Surr) 101 % 80-120 %

80-120 %

99 %

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4-Bromofluorobenzene (Surr)

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS
Project Number: [none]
Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

# QUALITY CONTROL (QC) SAMPLE RESULTS

Total (	Organio	Carbon (I	Non-Purgea	ıble) by F	Persulfate	Oxidatio	n by Sta	ndard Me	thod 531	0C		
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23H0505 - Method Prep: A	Αq						Wa	ter				
Blank (23H0505-BLK1)			Prepared	: 08/14/23	10:39 Anal	yzed: 08/14	/23 21:16					
SM 5310 C												
Total Organic Carbon	ND		1.00	mg/L	1							
LCS (23H0505-BS1)			Prepared	: 08/14/23	10:39 Anal	yzed: 08/14	/23 21:46					
SM 5310 C												
Total Organic Carbon	10.1		1.00	mg/L	1	10.0		101	90-114%			
Matrix Spike (23H0505-MS1)			Prepared	: 08/14/23	10:39 Anal	yzed: 08/15	/23 00:50					CON
QC Source Sample: Non-SDG (A3H	0688-58)											
SM 5310 C												
Total Organic Carbon	10.4		1.01	mg/L	1	10.0	ND	104	85-115%			
Matrix Spike (23H0505-MS2)			Prepared	: 08/14/23	10:39 Anal	yzed: 08/15	/23 09:00					CON
OC Source Sample: Non-SDG (A3H) SM 5310 C	0688-76)											
Total Organic Carbon	15.0		1.01	mg/L	1	10.0	4.75	103	85-115%			
Matrix Spike Dup (23H0505-MS	SD1)		Prepared	: 08/14/23	10:39 Anal	yzed: 08/15	/23 01:20					CON
QC Source Sample: Non-SDG (A3H	0688-58)											
Total Organic Carbon	10.3		1.01	mg/L	1	10.0	ND	103	85-115%	0.5	15%	
Matrix Spike Dup (23H0505-MS	5D2)		Prepared	: 08/14/23	10:39 Anal	lyzed: 08/15	/23 09:30					CON
OC Source Sample: Non-SDG (A3H	0688-76)											
Total Organic Carbon	15.1		1.01	mg/L	1	10.0	4.75	104	85-115%	0.4	15%	

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS
Project Number: [none]

Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

## SAMPLE PREPARATION INFORMATION

	Volatile Organic Compounds by EPA 8260D											
Prep: EPA 5030C	<b>X</b>	M. d. d.	0 11	<b>D</b>	Sample Initial/Final	Default Initial/Final	RL Prep					
Lab Number  Batch: 23H0542	Matrix	Method	Sampled	Prepared	mittal/T mai	mitta/Tillai	racioi					
A3H0991-01RE1	Water	EPA 8260D	08/09/23 11:30	08/15/23 17:30	5mL/5mL	5mL/5mL	1.00					
	Total Orgar	nic Carbon (Non-Pur	geable) by Persulfate	Oxidation by Stand	lard Method 5310	C						
Prep: Method Prep: Aq					Sample	Default	RL Prep					
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor					
Batch: 23H0505												
A3H0991-01	Water	SM 5310 C	08/09/23 11:30	08/14/23 10:39	40mL/40mL	40mL/40mL	1.00					

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# Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc. Project: **OCS** 15862 SW 72nd Ave. Suite 150 Project Number: [none]

Portland, OR 97224 Project Manager: Russ Bunker

**Report ID:** A3H0991 - 08 21 23 1709

# **QUALIFIER DEFINITIONS**

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

#### Apex

ex Laborato	ories
CONT	The Sample Container provided for this analysis was not provided by Apex Laboratories, and has not been verified as part of the Apex Quality System.
E	Estimated Value. The result is above the calibration range of the instrument.
ICV-01	Estimated Result. Initial Calibration Verification (ICV) failed high. There is no effect on non-detect results.
M-02	Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the $\pm -20\%$ criteria listed in EPA method 8260/8270 by $\pm 18\%$ . The results are reported as Estimated Values.
Q-54a	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +8%. The results are reported as Estimated Values.

Q-56 Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260

R-02 The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.

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

T-02 This Batch QC sample was analyzed outside of the method specified 12 hour analysis window. Results are estimated.

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## Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc. Project: OCS

15862 SW 72nd Ave. Suite 150 Project Number: [none]

15862 SW 72nd Ave. Suite 150Project Number: [none]Report ID:Portland, OR 97224Project Manager: Russ BunkerA3H0991 - 08 21 23 1709

#### 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.

#### **<u>Detection Limits:</u>** 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'.

Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

#### 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).

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Philip Nerenberg, Lab Director

Philip Nevenberg

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## Apex Laboratories, LLC

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

ORELAP ID: OR100062

Report ID:

WSP USA Environment & Infrastructure Inc. Project: OCS

15862 SW 72nd Ave. Suite 150 Project Number: [none]

Project Manager: Russ Bunker A3H0991 - 08 21 23 1709

## **REPORTING NOTES AND CONVENTIONS (Cont.):**

#### Blanks:

Portland, OR 97224

- 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.
- -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, if results are not reported to the MDL.

#### **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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Philip Nerenberg, Lab Director

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## Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

Project: OCS

15862 SW 72nd Ave. Suite 150

Project Number: [none]

Portland, OR 97224 Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

#### 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

Philip Manhera

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Philip Nerenberg, Lab Director

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## Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150

**OCS** Project:

Project Number: [none] Portland, OR 97224 Project Manager: Russ Bunker

**Report ID:** A3H0991 - 08 21 23 1709

CO 25%. DI russ busher ०१७ ह Z-0071 RECEIVED BY: 1500-COF2 Printed Nam ICLP Metals (8) Al, Sb, As, Ba, Be, Cd Ca, Cr, Co, Cu, Fe, Pb Hg, Mg, Mn, Mo, Ul, K Se, Ag, Ya, Tl, V, Zn Priority Metals (13) 000 RCRA Metals (8) SPECIAL INSTRUCTIONS: 8081 Chlor, Pest CHAIN OF CUSTODY 8087 PCBs RELINQUISHED BY: Project Name: いないという SHA9 MIS 0728 8760 VOCs 8700 Halo VOCs 8700 KBDW AOC BLEX NWTPH-Gx 12232 S.W. Garden Place, Tigard, OR 97223 Ph.: 503-718-2323 Fax:: 503-718-0333 xa-hatwn NWTPH-HCID Other: Project Mgr. Russ 72 HR # OF CONTAINERS I 3 MATRIX SAMPLES ARE HELD FOR 30 DAYS 5 DAY TIME DATE 2013 Normal Turn Around Time (TAT) = 7-10 Business Days 24 HR 4 DAY TVB ID # 5w 72nd Anson Generale TAT Requested (circle) Mw18-20130809 SAMPLE ID vddress: 15代记 Other: ampled by:

Apex Laboratories

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Philip Nerenberg, Lab Director

Philip Nevenberg

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150

Portland, OR 97224

Project: OCS

Project Number: [none]

Project Manager: Russ Bunker

Report ID: A3H0991 - 08 21 23 1709

	APEX LABS COOLER RECEIPT FORM
Client: NSP	Element WO#: A3 170991
Project/Project #: <u>665</u>	
Delivery Info:	
Date/time received: \$/9/2	3 @ 13:55 By: APW
Delivered by: ApexClient_	ESS_FedEx_UPS_Radio_MorganSDS_Evergreen_Other
Cooler Inspection Date/t	ime inspected: 8/9/23 @ 13:55 By: DW
Chain of Custody included?	Yes X No No
Signed/dated by client?	YesX No
9	Cooler #1 Cooler #2 Cooler #3 Cooler #4 Cooler #5 Cooler #6 Cooler #7
Temperature (°C)	1.3
Custody seals? (Y/N)	N
Received on ice? (Y/N)	<u>Y</u>
Temp. blanks? (Y/N)	Ų
Ice type: (Gel/Real/Other)	Sel
Condition (In/Out):	<u> </u>
Out of temperature samples for	me inspected: 8/11/23 @9:16 By: AAW
	aseQuit23
Bottle labels/COCs agree? You	es XNO (6) Comments: TO provided not on COC,
COC/container discrepancies	form initiated? Yes No X
	appropriate for analysis? Yes X No Comments:
Comments TB# 3389	eadspace? Yes X No NA PH appropriate? Yes No NA
Additional information:	3339
Additional information:	Witness: Cooler Inspected by: April Form Y-003 R-00

Apex Laboratories

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Philip Nevenberg



## Apex Laboratories, LLC

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

Monday, November 6, 2023
Russ Bunker
WSP USA Environment & Infrastructure Inc.
15862 SW 72nd Ave. Suite 150
Portland, OR 97224

RE: A3J1449 - OCS - 461M114811

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 A3J1449, which was received by the laboratory on 10/17/2023 at 2:52:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: <a href="mailto:pnerenberg@apex-labs.com">pnerenberg@apex-labs.com</a>, 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

Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.

(See Cooler Receipt Form for details)

Default Cooler 5.6 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

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Philip Nerenberg, Lab Director

Philip Nevenberg

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

# ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION									
Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received					
MW16-20231017	A3J1449-01	Water	10/17/23 12:25	10/17/23 14:52					
MW17-20231017	A3J1449-02	Water	10/17/23 11:50	10/17/23 14:52					
MW18-20231017	A3J1449-03	Water	10/17/23 11:05	10/17/23 14:52					
MW19-20231017	A3J1449-04	Water	10/17/23 13:20	10/17/23 14:52					
RW1-20231017	A3J1449-05	Water	10/17/23 12:55	10/17/23 14:52					
Trip Blank	A3J1449-06	Water	10/17/23 00:00	10/17/23 14:52					

Apex Laboratories

Philip Nevenberg

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3J1449 - 11 06 23 1317

# ANALYTICAL SAMPLE RESULTS

	V	olatile Organ	ic Compou	nds by EPA 826	0D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW16-20231017 (A3J1449-01)				Matrix: Wate	r	Batch: 2	23J0824	V-01
Acetone	1670		1000	ug/L	50	10/21/23 12:28	EPA 8260D	
2-Butanone (MEK)	3620		500	ug/L	50	10/21/23 12:28	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Reco	very: 96 %	Limits: 80-120 %	1	10/21/23 12:28	EPA 8260D	
Toluene-d8 (Surr)			101 %	80-120 %	1	10/21/23 12:28	EPA 8260D	
4-Bromofluorobenzene (Surr)			98 %	80-120 %	1	10/21/23 12:28	EPA 8260D	
MW16-20231017 (A3J1449-01RE1)				Matrix: Wate	r	Batch: 2	23J0862	V-01
Acrylonitrile	ND		20.0	ug/L	10	10/23/23 20:33	EPA 8260D	
Benzene	ND		2.00	ug/L	10	10/23/23 20:33	EPA 8260D	
Bromobenzene	ND		5.00	ug/L	10	10/23/23 20:33	EPA 8260D	
Bromochloromethane	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
Bromodichloromethane	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
Bromoform	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
Bromomethane	ND		50.0	ug/L	10	10/23/23 20:33	EPA 8260D	
n-Butylbenzene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
sec-Butylbenzene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
ert-Butylbenzene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
Carbon disulfide	ND		100	ug/L	10	10/23/23 20:33	EPA 8260D	
Carbon tetrachloride	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
Chlorobenzene	ND		5.00	ug/L	10	10/23/23 20:33	EPA 8260D	
Chloroethane	ND		50.0	ug/L	10	10/23/23 20:33	EPA 8260D	
Chloroform	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
Chloromethane	ND		50.0	ug/L	10	10/23/23 20:33	EPA 8260D	
2-Chlorotoluene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
1-Chlorotoluene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
Dibromochloromethane	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND		50.0	ug/L	10	10/23/23 20:33	EPA 8260D	
,2-Dibromoethane (EDB)	ND		5.00	ug/L	10	10/23/23 20:33	EPA 8260D	
Dibromomethane	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
1,2-Dichlorobenzene	ND		5.00	ug/L	10	10/23/23 20:33	EPA 8260D	
1,3-Dichlorobenzene	ND		5.00	ug/L	10	10/23/23 20:33	EPA 8260D	
1,4-Dichlorobenzene	ND		5.00	ug/L	10	10/23/23 20:33	EPA 8260D	
Dichlorodifluoromethane	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	

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Philip Nerenberg, Lab Director

Philip Nevenberg

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3J1449 - 11 06 23 1317

# ANALYTICAL SAMPLE RESULTS

	V	olatile Organi	ic Compound	ds by EPA 8.	260D			
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW16-20231017 (A3J1449-01RE1)				Matrix: Wa	ater	Batch:	Batch: 23J0862	
1,1-Dichloroethane	ND		4.00	ug/L	10	10/23/23 20:33	EPA 8260D	
1,2-Dichloroethane (EDC)	ND		4.00	ug/L	10	10/23/23 20:33	EPA 8260D	
1,1-Dichloroethene	ND		4.00	ug/L	10	10/23/23 20:33	EPA 8260D	
cis-1,2-Dichloroethene	ND		4.00	ug/L	10	10/23/23 20:33	EPA 8260D	
trans-1,2-Dichloroethene	6.30		4.00	ug/L	10	10/23/23 20:33	EPA 8260D	
1,2-Dichloropropane	ND		5.00	ug/L	10	10/23/23 20:33	EPA 8260D	
1,3-Dichloropropane	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
2,2-Dichloropropane	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
1,1-Dichloropropene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
cis-1,3-Dichloropropene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
trans-1,3-Dichloropropene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
Ethylbenzene	ND		5.00	ug/L	10	10/23/23 20:33	EPA 8260D	
Hexachlorobutadiene	ND		50.0	ug/L	10	10/23/23 20:33	EPA 8260D	
2-Hexanone	ND		100	ug/L	10	10/23/23 20:33	EPA 8260D	
Isopropylbenzene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
4-Isopropyltoluene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
Methylene chloride	ND		100	ug/L	10	10/23/23 20:33	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND		100	ug/L	10	10/23/23 20:33	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
Naphthalene	ND		50.0	ug/L	10	10/23/23 20:33	EPA 8260D	
n-Propylbenzene	ND		5.00	ug/L	10	10/23/23 20:33	EPA 8260D	
Styrene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND		4.00	ug/L	10	10/23/23 20:33	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND		5.00	ug/L	10	10/23/23 20:33	EPA 8260D	
Tetrachloroethene (PCE)	ND		4.00	ug/L	10	10/23/23 20:33	EPA 8260D	
Toluene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
1,2,3-Trichlorobenzene	ND		20.0	ug/L	10	10/23/23 20:33	EPA 8260D	
1,2,4-Trichlorobenzene	ND		20.0	ug/L	10	10/23/23 20:33	EPA 8260D	
1,1,1-Trichloroethane	ND		4.00	ug/L	10	10/23/23 20:33	EPA 8260D	
1,1,2-Trichloroethane	ND		5.00	ug/L	10	10/23/23 20:33	EPA 8260D	
Trichloroethene (TCE)	ND		4.00	ug/L	10	10/23/23 20:33	EPA 8260D	
Trichlorofluoromethane	ND		20.0	ug/L	10	10/23/23 20:33	EPA 8260D	
1,2,3-Trichloropropane	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	

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Philip Nerenberg, Lab Director

Philip Nevenberg

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3J1449 - 11 06 23 1317

# ANALYTICAL SAMPLE RESULTS

	V	olatile Organ	ic Compou	nds by EPA 826	0D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW16-20231017 (A3J1449-01RE1)				Matrix: Wate	r	Batch: 2	23J0862	V-01
1,2,4-Trimethylbenzene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
1,3,5-Trimethylbenzene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
Vinyl chloride	ND		2.00	ug/L	10	10/23/23 20:33	EPA 8260D	
m,p-Xylene	ND		10.0	ug/L	10	10/23/23 20:33	EPA 8260D	
o-Xylene	ND		5.00	ug/L	10	10/23/23 20:33	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Reco	very: 93 %	Limits: 80-120 %	1	10/23/23 20:33	EPA 8260D	
Toluene-d8 (Surr)			102 %	80-120 %	1	10/23/23 20:33	EPA 8260D	
4-Bromofluorobenzene (Surr)			105 %	80-120 %	1	10/23/23 20:33	EPA 8260D	
MW17-20231017 (A3J1449-02)				Matrix: Wate	r	Batch: 2	23J0824	
Acetone	ND		20.0	ug/L	1	10/21/23 07:28	EPA 8260D	
Acrylonitrile	ND		2.00	ug/L	1	10/21/23 07:28	EPA 8260D	
Benzene	ND		0.200	ug/L	1	10/21/23 07:28	EPA 8260D	
Bromobenzene	ND		0.500	ug/L	1	10/21/23 07:28	EPA 8260D	
Bromochloromethane	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
Bromodichloromethane	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
Bromoform	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
Bromomethane	ND		5.00	ug/L	1	10/21/23 07:28	EPA 8260D	
2-Butanone (MEK)	ND		10.0	ug/L	1	10/21/23 07:28	EPA 8260D	
n-Butylbenzene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
sec-Butylbenzene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
tert-Butylbenzene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
Carbon disulfide	ND		10.0	ug/L	1	10/21/23 07:28	EPA 8260D	
Carbon tetrachloride	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
Chlorobenzene	ND		0.500	ug/L	1	10/21/23 07:28	EPA 8260D	
Chloroethane	ND		5.00	ug/L	1	10/21/23 07:28	EPA 8260D	
Chloroform	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
Chloromethane	ND		5.00	ug/L	1	10/21/23 07:28	EPA 8260D	
2-Chlorotoluene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
l-Chlorotoluene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
Dibromochloromethane	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	10/21/23 07:28	EPA 8260D	
,2-Dibromoethane (EDB)	ND		0.500	ug/L	1	10/21/23 07:28	EPA 8260D	

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Philip Nerenberg, Lab Director

Philip Nevenberg

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# **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

# ANALYTICAL SAMPLE RESULTS

	V	olatile Organ	ic Compound	ds by EPA 8	260D			
	Sample	Detection	Reporting	**		Date	V 4 15 3	
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW17-20231017 (A3J1449-02)				Matrix: Wa	ater	Batch: 23J0824		
Dibromomethane	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
1,2-Dichlorobenzene	ND		0.500	ug/L	1	10/21/23 07:28	EPA 8260D	
1,3-Dichlorobenzene	ND		0.500	ug/L	1	10/21/23 07:28	EPA 8260D	
1,4-Dichlorobenzene	ND		0.500	ug/L	1	10/21/23 07:28	EPA 8260D	
Dichlorodifluoromethane	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
1,1-Dichloroethane	ND		0.400	ug/L	1	10/21/23 07:28	EPA 8260D	
1,2-Dichloroethane (EDC)	ND		0.400	ug/L	1	10/21/23 07:28	EPA 8260D	
1,1-Dichloroethene	0.450		0.400	ug/L	1	10/21/23 07:28	EPA 8260D	
cis-1,2-Dichloroethene	146		0.400	ug/L	1	10/21/23 07:28	EPA 8260D	
trans-1,2-Dichloroethene	7.03		0.400	ug/L	1	10/21/23 07:28	EPA 8260D	
1,2-Dichloropropane	ND		0.500	ug/L	1	10/21/23 07:28	EPA 8260D	
1,3-Dichloropropane	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
2,2-Dichloropropane	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
1,1-Dichloropropene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
cis-1,3-Dichloropropene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
trans-1,3-Dichloropropene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	10/21/23 07:28	EPA 8260D	
Hexachlorobutadiene	ND		5.00	ug/L	1	10/21/23 07:28	EPA 8260D	
2-Hexanone	ND		10.0	ug/L	1	10/21/23 07:28	EPA 8260D	
Isopropylbenzene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
4-Isopropyltoluene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
Methylene chloride	ND		10.0	ug/L	1	10/21/23 07:28	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1	10/21/23 07:28	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
Naphthalene	ND		5.00	ug/L	1	10/21/23 07:28	EPA 8260D	
n-Propylbenzene	ND		0.500	ug/L	1	10/21/23 07:28	EPA 8260D	
Styrene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND		0.400	ug/L	1	10/21/23 07:28	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1	10/21/23 07:28	EPA 8260D	
Tetrachloroethene (PCE)	ND		0.400	ug/L	1	10/21/23 07:28	EPA 8260D	
Toluene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1	10/21/23 07:28	EPA 8260D	
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1	10/21/23 07:28	EPA 8260D	
				-				

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### ANALYTICAL SAMPLE RESULTS

	V	olatile Organ	ic Compoui	nds by EPA 826	טט			
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW17-20231017 (A3J1449-02)				Matrix: Wate	r	Batch:	23J0824	
1,1,1-Trichloroethane	ND		0.400	ug/L	1	10/21/23 07:28	EPA 8260D	
1,1,2-Trichloroethane	ND		0.500	ug/L	1	10/21/23 07:28	EPA 8260D	
Trichloroethene (TCE)	14.0		0.400	ug/L	1	10/21/23 07:28	EPA 8260D	
Trichlorofluoromethane	ND		2.00	ug/L	1	10/21/23 07:28	EPA 8260D	
1,2,3-Trichloropropane	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
Vinyl chloride	1.81		0.200	ug/L	1	10/21/23 07:28	EPA 8260D	
m,p-Xylene	ND		1.00	ug/L	1	10/21/23 07:28	EPA 8260D	
o-Xylene	ND		0.500	ug/L	1	10/21/23 07:28	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ry: 103 %	Limits: 80-120 %	I	10/21/23 07:28	EPA 8260D	
Toluene-d8 (Surr)			101 %	80-120 %	1	10/21/23 07:28	EPA 8260D	
4-Bromofluorobenzene (Surr)			97 %	80-120 %	1	10/21/23 07:28	EPA 8260D	
MW18-20231017 (A3J1449-03RE1)				Matrix: Wate	r	Batch:	V-01, V-13	
Acetone	ND		40.0	ug/L	2	10/23/23 21:01	EPA 8260D	
Acrylonitrile	ND		4.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Benzene	ND		0.400	ug/L	2	10/23/23 21:01	EPA 8260D	
Bromobenzene	ND		1.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Bromochloromethane	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Bromodichloromethane	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Bromoform	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Bromomethane	ND		10.0	ug/L	2	10/23/23 21:01	EPA 8260D	
2-Butanone (MEK)	ND		20.0	ug/L	2	10/23/23 21:01	EPA 8260D	
n-Butylbenzene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
sec-Butylbenzene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
tert-Butylbenzene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Carbon disulfide	ND		20.0	ug/L	2	10/23/23 21:01	EPA 8260D	
Carbon tetrachloride	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Chlorobenzene	ND		1.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Chloroethane	ND		10.0	ug/L	2	10/23/23 21:01	EPA 8260D	
Chloroform	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### ANALYTICAL SAMPLE RESULTS

	Vo	olatile Organ	ic Compound	ds by EPA 8.	260D			
	Sample	Detection	Reporting		_ <del></del>	Date	<del></del>	_ <del></del>
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW18-20231017 (A3J1449-03RE1)				Matrix: Wa	ater	Batch:	23J0862	V-01, V-13
2-Chlorotoluene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
4-Chlorotoluene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Dibromochloromethane	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND		10.0	ug/L	2	10/23/23 21:01	EPA 8260D	
1,2-Dibromoethane (EDB)	ND		1.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Dibromomethane	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
1,2-Dichlorobenzene	ND		1.00	ug/L	2	10/23/23 21:01	EPA 8260D	
1,3-Dichlorobenzene	ND		1.00	ug/L	2	10/23/23 21:01	EPA 8260D	
1,4-Dichlorobenzene	ND		1.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Dichlorodifluoromethane	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
1,1-Dichloroethane	ND		0.800	ug/L	2	10/23/23 21:01	EPA 8260D	
1,2-Dichloroethane (EDC)	ND		0.800	ug/L	2	10/23/23 21:01	EPA 8260D	
1,1-Dichloroethene	ND		0.800	ug/L	2	10/23/23 21:01	EPA 8260D	
cis-1,2-Dichloroethene	6.40		0.800	ug/L	2	10/23/23 21:01	EPA 8260D	
trans-1,2-Dichloroethene	ND		0.800	ug/L	2	10/23/23 21:01	EPA 8260D	
1,2-Dichloropropane	ND		1.00	ug/L	2	10/23/23 21:01	EPA 8260D	
1,3-Dichloropropane	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
2,2-Dichloropropane	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
1,1-Dichloropropene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
cis-1,3-Dichloropropene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
trans-1,3-Dichloropropene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Ethylbenzene	ND		1.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Hexachlorobutadiene	ND		10.0	ug/L	2	10/23/23 21:01	EPA 8260D	
2-Hexanone	ND		20.0	ug/L	2	10/23/23 21:01	EPA 8260D	
Isopropylbenzene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
4-Isopropyltoluene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Methylene chloride	ND		20.0	ug/L	2	10/23/23 21:01	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND		20.0	ug/L	2	10/23/23 21:01	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Naphthalene	ND		10.0	ug/L	2	10/23/23 21:01	EPA 8260D	
n-Propylbenzene	ND		1.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Styrene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
1,1,1,2-Tetrachloroethane			-	J				

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Philip Nerenberg, Lab Director

Philip Nevenberg

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### ANALYTICAL SAMPLE RESULTS

	Sample	Detection	Reporting	** .	<b>5</b>	Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Note
MW18-20231017 (A3J1449-03RE1)				Matrix: Wate	er	Batch:	23J0862	V-01, V-13
1,1,2,2-Tetrachloroethane	ND		1.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Tetrachloroethene (PCE)	ND		0.800	ug/L	2	10/23/23 21:01	EPA 8260D	
Toluene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
1,2,3-Trichlorobenzene	ND		4.00	ug/L	2	10/23/23 21:01	EPA 8260D	
1,2,4-Trichlorobenzene	ND		4.00	ug/L	2	10/23/23 21:01	EPA 8260D	
1,1,1-Trichloroethane	ND		0.800	ug/L	2	10/23/23 21:01	EPA 8260D	
1,1,2-Trichloroethane	ND		1.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Trichloroethene (TCE)	ND		0.800	ug/L	2	10/23/23 21:01	EPA 8260D	
Trichlorofluoromethane	ND		4.00	ug/L	2	10/23/23 21:01	EPA 8260D	
1,2,3-Trichloropropane	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
1,2,4-Trimethylbenzene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
1,3,5-Trimethylbenzene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Vinyl chloride	1.64		0.400	ug/L	2	10/23/23 21:01	EPA 8260D	
m,p-Xylene	ND		2.00	ug/L	2	10/23/23 21:01	EPA 8260D	
o-Xylene	ND		1.00	ug/L	2	10/23/23 21:01	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ery: 103 %	Limits: 80-120 %	1	10/23/23 21:01	EPA 8260D	
Toluene-d8 (Surr)			102 %	80-120 %	1	10/23/23 21:01	EPA 8260D	
4-Bromofluorobenzene (Surr)			100 %	80-120 %	1	10/23/23 21:01	EPA 8260D	
MW19-20231017 (A3J1449-04RE1)				Matrix: Wate	er	Batch:	23J0862	
Acetone	ND		20.0	ug/L	1	10/23/23 16:28	EPA 8260D	
Acrylonitrile	ND		2.00	ug/L	1	10/23/23 16:28	EPA 8260D	
Benzene	ND		0.200	ug/L	1	10/23/23 16:28	EPA 8260D	
Bromobenzene	ND		0.500	ug/L	1	10/23/23 16:28	EPA 8260D	
Bromochloromethane	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
Bromodichloromethane	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
Bromoform	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
Bromomethane	ND		5.00	ug/L	1	10/23/23 16:28	EPA 8260D	
2-Butanone (MEK)	ND		10.0	ug/L	1	10/23/23 16:28	EPA 8260D	
n-Butylbenzene	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
sec-Butylbenzene	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
ert-Butylbenzene	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
•				<i>o</i> –	•			

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Philip Nerenberg, Lab Director

Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### ANALYTICAL SAMPLE RESULTS

			ic Compound	,				
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Note
MW19-20231017 (A3J1449-04RE1)				Matrix: Wa			23J0862	
Carbon tetrachloride	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
Carbon tetrachioride Chlorobenzene	ND ND		0.500	ug/L ug/L	1	10/23/23 16:28	EPA 8260D EPA 8260D	
Chloroethane	ND ND		5.00	_	1	10/23/23 16:28	EPA 8260D EPA 8260D	
Chloroform	ND ND		5.00 1.00	ug/L ug/L	1	10/23/23 16:28	EPA 8260D EPA 8260D	
Chloromethane	ND ND		5.00	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
Chloromethane  2-Chlorotoluene	ND ND		1.00	_	1	10/23/23 16:28	EPA 8260D EPA 8260D	
4-Chlorotoluene	ND ND		1.00	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
Chiorototuene Dibromochloromethane	ND ND		1.00	_	1	10/23/23 16:28	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND ND		5.00	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
1,2-Dibromo-3-chioropropane	ND ND		0.500	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
Dibromoethane (EDB)	ND ND		1.00	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
1,2-Dichlorobenzene	ND ND		0.500	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
1,3-Dichlorobenzene	ND ND		0.500	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
,,4-Dichlorobenzene	ND ND		0.500	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
Dichlorodifluoromethane	ND ND		1.00	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
,1-Dichloroethane	ND ND		0.400	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
1,2-Dichloroethane (EDC)	ND		0.400	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
1,1-Dichloroethene	ND		0.400	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
cis-1,2-Dichloroethene	ND		3.20	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	R-06
trans-1,2-Dichloroethene	ND		0.400	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
1,2-Dichloropropane	ND		0.500	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
1,3-Dichloropropane	ND		1.00	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
2,2-Dichloropropane	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
,1-Dichloropropene	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
cis-1,3-Dichloropropene	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
rans-1,3-Dichloropropene	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	10/23/23 16:28	EPA 8260D	
Hexachlorobutadiene	ND		5.00	ug/L	1	10/23/23 16:28	EPA 8260D	
-Hexanone	ND		10.0	ug/L	1	10/23/23 16:28	EPA 8260D	
sopropylbenzene	ND		1.00	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
-Isopropyltoluene	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
Methylene chloride	ND		10.0	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	
-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L ug/L	1	10/23/23 16:28	EPA 8260D	

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Philip Nerenberg, Lab Director

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### ANALYTICAL SAMPLE RESULTS

	V	olatile Organi	c Compour	nds by EPA 826	0D			
	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Note
MW19-20231017 (A3J1449-04RE1)				Matrix: Wate	r	Batch:	23J0862	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
Naphthalene	ND		5.00	ug/L	1	10/23/23 16:28	EPA 8260D	
n-Propylbenzene	ND		0.500	ug/L	1	10/23/23 16:28	EPA 8260D	
Styrene	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND		0.400	ug/L	1	10/23/23 16:28	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1	10/23/23 16:28	EPA 8260D	
Tetrachloroethene (PCE)	ND		0.400	ug/L	1	10/23/23 16:28	EPA 8260D	
Toluene	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1	10/23/23 16:28	EPA 8260D	
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1	10/23/23 16:28	EPA 8260D	
1,1,1-Trichloroethane	ND		0.400	ug/L	1	10/23/23 16:28	EPA 8260D	
1,1,2-Trichloroethane	ND		0.500	ug/L	1	10/23/23 16:28	EPA 8260D	
Trichloroethene (TCE)	ND		0.400	ug/L	1	10/23/23 16:28	EPA 8260D	
Trichlorofluoromethane	ND		2.00	ug/L	1	10/23/23 16:28	EPA 8260D	
1,2,3-Trichloropropane	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
Vinyl chloride	ND		0.200	ug/L	1	10/23/23 16:28	EPA 8260D	
m,p-Xylene	ND		1.00	ug/L	1	10/23/23 16:28	EPA 8260D	
o-Xylene	ND		0.500	ug/L	1	10/23/23 16:28	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ry: 104 %	Limits: 80-120 %	1	10/23/23 16:28	EPA 8260D	
Toluene-d8 (Surr)			100 %	80-120 %	1	10/23/23 16:28	EPA 8260D	
4-Bromofluorobenzene (Surr)			99 %	80-120 %	I	10/23/23 16:28	EPA 8260D	
RW1-20231017 (A3J1449-05)				Matrix: Wate	r	Batch:	23J0824	
Acetone	ND		20.0	ug/L	1	10/21/23 08:23	EPA 8260D	
Acrylonitrile	ND		2.00	ug/L	1	10/21/23 08:23	EPA 8260D	
Benzene	ND		0.200	ug/L	1	10/21/23 08:23	EPA 8260D	
Bromobenzene	ND		0.500	ug/L	1	10/21/23 08:23	EPA 8260D	
Bromochloromethane	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
Bromodichloromethane	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
Bromoform	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
Bromomethane	ND		5.00	ug/L	1	10/21/23 08:23	EPA 8260D	

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Philip Nerenberg, Lab Director

Philip Nevenberg

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#### **Apex Laboratories, LLC**

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### ANALYTICAL SAMPLE RESULTS

	V	olatile Organ	ic Compound	as by EPA 8	260D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
RW1-20231017 (A3J1449-05)				Matrix: Wa	ater	Batch:	23J0824	
2-Butanone (MEK)	ND		10.0	ug/L	1	10/21/23 08:23	EPA 8260D	
n-Butylbenzene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
sec-Butylbenzene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
tert-Butylbenzene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
Carbon disulfide	ND		10.0	ug/L	1	10/21/23 08:23	EPA 8260D	
Carbon tetrachloride	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
Chlorobenzene	ND		0.500	ug/L	1	10/21/23 08:23	EPA 8260D	
Chloroethane	ND		5.00	ug/L	1	10/21/23 08:23	EPA 8260D	
Chloroform	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
Chloromethane	ND		5.00	ug/L	1	10/21/23 08:23	EPA 8260D	
2-Chlorotoluene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
4-Chlorotoluene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
Dibromochloromethane	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	10/21/23 08:23	EPA 8260D	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1	10/21/23 08:23	EPA 8260D	
Dibromomethane	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
1,2-Dichlorobenzene	ND		0.500	ug/L	1	10/21/23 08:23	EPA 8260D	
1,3-Dichlorobenzene	ND		0.500	ug/L	1	10/21/23 08:23	EPA 8260D	
1,4-Dichlorobenzene	ND		0.500	ug/L	1	10/21/23 08:23	EPA 8260D	
Dichlorodifluoromethane	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
1,1-Dichloroethane	ND		0.400	ug/L	1	10/21/23 08:23	EPA 8260D	
1,2-Dichloroethane (EDC)	ND		0.400	ug/L	1	10/21/23 08:23	EPA 8260D	
1,1-Dichloroethene	ND		0.400	ug/L	1	10/21/23 08:23	EPA 8260D	
cis-1,2-Dichloroethene	17.8		0.400	ug/L	1	10/21/23 08:23	EPA 8260D	
trans-1,2-Dichloroethene	0.880		0.400	ug/L	1	10/21/23 08:23	EPA 8260D	
1,2-Dichloropropane	ND		0.500	ug/L	1	10/21/23 08:23	EPA 8260D	
1,3-Dichloropropane	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
2,2-Dichloropropane	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
1,1-Dichloropropene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
eis-1,3-Dichloropropene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
rans-1,3-Dichloropropene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D	
Ethylbenzene	ND		0.500	ug/L	1	10/21/23 08:23	EPA 8260D	
Hexachlorobutadiene	ND		5.00	ug/L	1	10/21/23 08:23	EPA 8260D	

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Philip Nerenberg, Lab Director

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### ANALYTICAL SAMPLE RESULTS

	Volatile Organic Compounds by EPA 8260D												
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes					
RW1-20231017 (A3J1449-05)				Matrix: Water	r	Batch: 2	23J0824						
2-Hexanone	ND		10.0	ug/L	1	10/21/23 08:23	EPA 8260D						
Isopropylbenzene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D						
4-Isopropyltoluene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D						
Methylene chloride	ND		10.0	ug/L	1	10/21/23 08:23	EPA 8260D						
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1	10/21/23 08:23	EPA 8260D						
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D						
Naphthalene	ND		5.00	ug/L	1	10/21/23 08:23	EPA 8260D						
n-Propylbenzene	ND		0.500	ug/L	1	10/21/23 08:23	EPA 8260D						
Styrene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D						
1,1,1,2-Tetrachloroethane	ND		0.400	ug/L	1	10/21/23 08:23	EPA 8260D						
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1	10/21/23 08:23	EPA 8260D						
Tetrachloroethene (PCE)	1.19		0.400	ug/L	1	10/21/23 08:23	EPA 8260D						
Toluene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D						
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1	10/21/23 08:23	EPA 8260D						
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1	10/21/23 08:23	EPA 8260D						
1,1,1-Trichloroethane	ND		0.400	ug/L	1	10/21/23 08:23	EPA 8260D						
1,1,2-Trichloroethane	ND		0.500	ug/L	1	10/21/23 08:23	EPA 8260D						
Trichloroethene (TCE)	25.5		0.400	ug/L	1	10/21/23 08:23	EPA 8260D						
Trichlorofluoromethane	ND		2.00	ug/L	1	10/21/23 08:23	EPA 8260D						
1,2,3-Trichloropropane	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D						
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D						
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D						
Vinyl chloride	0.250		0.200	ug/L	1	10/21/23 08:23	EPA 8260D						
m,p-Xylene	ND		1.00	ug/L	1	10/21/23 08:23	EPA 8260D						
o-Xylene	ND		0.500	ug/L	1	10/21/23 08:23	EPA 8260D						
Surrogate: 1,4-Difluorobenzene (Surr)		Recover	ry: 106 %	Limits: 80-120 %	1	10/21/23 08:23	EPA 8260D						
Toluene-d8 (Surr)			100 %	80-120 %	I	10/21/23 08:23	EPA 8260D						
4-Bromofluorobenzene (Surr)			97 %	80-120 %	1	10/21/23 08:23	EPA 8260D						

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### ANALYTICAL SAMPLE RESULTS

	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes
MW16-20231017 (A3J1449-01RE1)				Matrix: W	ater	Batch:	23J0785	PRES
Total Organic Carbon	989		100	mg/L	100	10/20/23 23:58	SM 5310 C	
MW17-20231017 (A3J1449-02)				Matrix: Wa	ater	Batch:	23J0785	
Total Organic Carbon	1.28		1.00	mg/L	1	10/20/23 09:44	SM 5310 C	
MW18-20231017 (A3J1449-03RE1)				Matrix: Wa	ater	Batch:	23K0138	
Total Organic Carbon	115		20.0	mg/L	20	11/03/23 14:56	SM 5310 C	
RW1-20231017 (A3J1449-05)				Matrix: Wa	ater	Batch:	23J0785	
Total Organic Carbon	1.27		1.00	mg/L	1	10/20/23 10:14	SM 5310 C	

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Philip Nerenberg, Lab Director

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WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3J1449 - 11 06 23 1317

# QUALITY CONTROL (QC) SAMPLE RESULTS Volatile Organic Compounds by EPA 8260D

## Detection Reporting Spike Source % REC RPD

Analyte	Result	Limit	Limit	Units	Dilution	Amount	Result	% REC	Limits	RPD	Limit	Notes
Batch 23J0824 - EPA 5030C							Wat	er				
Blank (23J0824-BLK1)			Prepared	: 10/20/23	14:15 Anal	yzed: 10/21/	/23 02:56					
EPA 8260D												
Acetone	ND		20.0	ug/L	1							
Acrylonitrile	ND		2.00	ug/L	1							
Benzene	ND		0.200	ug/L	1							
Bromobenzene	ND		0.500	ug/L	1							
Bromochloromethane	ND		1.00	ug/L	1							
Bromodichloromethane	ND		1.00	ug/L	1							
Bromoform	ND		1.00	ug/L	1							
Bromomethane	ND		5.00	ug/L	1							
2-Butanone (MEK)	ND		10.0	ug/L	1							
n-Butylbenzene	ND		1.00	ug/L	1							
sec-Butylbenzene	ND		1.00	ug/L	1							
tert-Butylbenzene	ND		1.00	ug/L	1							
Carbon disulfide	ND		10.0	ug/L	1							
Carbon tetrachloride	ND		1.00	ug/L	1							
Chlorobenzene	ND		0.500	ug/L	1							
Chloroethane	ND		5.00	ug/L	1							
Chloroform	ND		1.00	ug/L	1							
Chloromethane	ND		5.00	ug/L	1							
2-Chlorotoluene	ND		1.00	ug/L	1							
4-Chlorotoluene	ND		1.00	ug/L	1							
Dibromochloromethane	ND		1.00	ug/L	1							
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1							
Dibromomethane	ND		1.00	ug/L	1							
1,2-Dichlorobenzene	ND		0.500	ug/L	1							
1,3-Dichlorobenzene	ND		0.500	ug/L	1							
1,4-Dichlorobenzene	ND		0.500	ug/L	1							
Dichlorodifluoromethane	ND		1.00	ug/L	1							
1,1-Dichloroethane	ND		0.400	ug/L	1							
1,2-Dichloroethane (EDC)	ND		0.400	ug/L	1							
1,1-Dichloroethene	ND		0.400	ug/L	1							
cis-1,2-Dichloroethene	ND		0.400	ug/L	1							
trans-1,2-Dichloroethene	ND		0.400	ug/L	1							

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15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
atch 23J0824 - EPA 5030C							Wat	ter				
Blank (23J0824-BLK1)			Prepared	: 10/20/23	14:15 Anal	yzed: 10/21/	23 02:56					
1,2-Dichloropropane	ND		0.500	ug/L	1							
1,3-Dichloropropane	ND		1.00	ug/L	1							
2,2-Dichloropropane	ND		1.00	ug/L	1							
1,1-Dichloropropene	ND		1.00	ug/L	1							
cis-1,3-Dichloropropene	ND		1.00	ug/L	1							
trans-1,3-Dichloropropene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Hexachlorobutadiene	ND		5.00	ug/L	1							
2-Hexanone	ND		10.0	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
4-Isopropyltoluene	ND		1.00	ug/L	1							
Methylene chloride	ND		10.0	ug/L	1							
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		5.00	ug/L	1							
n-Propylbenzene	ND		0.500	ug/L	1							
Styrene	ND		1.00	ug/L	1							
1,1,1,2-Tetrachloroethane	ND		0.400	ug/L	1							
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1							
Tetrachloroethene (PCE)	ND		0.400	ug/L	1							
Toluene	ND		1.00	ug/L	1							
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1							
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1							
1,1,1-Trichloroethane	ND		0.400	ug/L	1							
1,1,2-Trichloroethane	ND		0.500	ug/L	1							
Trichloroethene (TCE)	ND		0.400	ug/L ug/L	1							
Trichlorofluoromethane	ND		2.00	ug/L ug/L	1							
1,2,3-Trichloropropane	ND		1.00	ug/L ug/L	1							
1,2,4-Trimethylbenzene	ND		1.00	ug/L ug/L	1							
1,3,5-Trimethylbenzene	ND		1.00	ug/L ug/L	1							
Vinyl chloride	ND		0.200	ug/L ug/L	1							
m,p-Xylene	ND		1.00	ug/L ug/L	1							
o-Xylene	ND ND		0.500	ug/L ug/L	1							

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23J0824 - EPA 5030C							Wa	ter				
Blank (23J0824-BLK1)			Prepared	1: 10/20/23	14:15 Ana	lyzed: 10/21	/23 02:56					
Surr: Toluene-d8 (Surr)		Reco	very: 101 %	Limits: 8	0-120 %	Dilı	ution: 1x					
4-Bromofluorobenzene (Surr)			97 %	80	0-120 %		"					
LCS (23J0824-BS1)			Prepared	1: 10/20/23	14:15 Ana	lyzed: 10/21	/23 02:01					
EPA 8260D						-						
Acetone	35.7		20.0	ug/L	1	40.0		89	80-120%			
Acrylonitrile	18.9		2.00	ug/L	1	20.0		94	80-120%			
Benzene	19.1		0.200	ug/L	1	20.0		95	80-120%			
Bromobenzene	18.2		0.500	ug/L	1	20.0		91	80-120%			
Bromochloromethane	18.9		1.00	ug/L	1	20.0		94	80-120%			
Bromodichloromethane	22.7		1.00	ug/L	1	20.0		114	80-120%			
Bromoform	20.7		1.00	ug/L	1	20.0		103	80-120%			
Bromomethane	22.5		5.00	ug/L	1	20.0		112	80-120%			
2-Butanone (MEK)	36.6		10.0	ug/L	1	40.0		91	80-120%			
n-Butylbenzene	18.0		1.00	ug/L	1	20.0		90	80-120%			
sec-Butylbenzene	19.0		1.00	ug/L	1	20.0		95	80-120%			
tert-Butylbenzene	19.8		1.00	ug/L	1	20.0		99	80-120%			
Carbon disulfide	23.5		10.0	ug/L	1	20.0		118	80-120%			
Carbon tetrachloride	23.3		1.00	ug/L	1	20.0		117	80-120%			
Chlorobenzene	18.9		0.500	ug/L	1	20.0		95	80-120%			
Chloroethane	28.2		5.00	ug/L	1	20.0		141	80-120%			(
Chloroform	20.4		1.00	ug/L	1	20.0		102	80-120%			
Chloromethane	15.8		5.00	ug/L	1	20.0		79	80-120%			(
2-Chlorotoluene	18.9		1.00	ug/L	1	20.0		95	80-120%			
4-Chlorotoluene	20.7		1.00	ug/L	1	20.0		103	80-120%			
Dibromochloromethane	19.4		1.00	ug/L	1	20.0		97	80-120%			
1,2-Dibromo-3-chloropropane	17.2		5.00	ug/L	1	20.0		86	80-120%			
1,2-Dibromoethane (EDB)	19.6		0.500	ug/L	1	20.0		98	80-120%			
Dibromomethane	19.6		1.00	ug/L	1	20.0		98	80-120%			
1,2-Dichlorobenzene	18.8		0.500	ug/L	1	20.0		94	80-120%			
1,3-Dichlorobenzene	20.1		0.500	ug/L	1	20.0		101	80-120%			
1,4-Dichlorobenzene	18.0		0.500	ug/L	1	20.0		90	80-120%			
Dichlorodifluoromethane	21.3		1.00	ug/L	1	20.0		107	80-120%			
1,1-Dichloroethane	19.6		0.400	ug/L	1	20.0		98	80-120%			

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23J0824 - EPA 5030C							Wa	ter				
LCS (23J0824-BS1)			Prepared	: 10/20/23	14:15 Ana	lyzed: 10/21	/23 02:01					
1,2-Dichloroethane (EDC)	21.0		0.400	ug/L	1	20.0		105	80-120%			
1,1-Dichloroethene	20.2		0.400	ug/L	1	20.0		101	80-120%			
cis-1,2-Dichloroethene	17.7		0.400	ug/L	1	20.0		88	80-120%			
trans-1,2-Dichloroethene	17.4		0.400	ug/L	1	20.0		87	80-120%			
1,2-Dichloropropane	17.7		0.500	ug/L	1	20.0		88	80-120%			
1,3-Dichloropropane	19.6		1.00	ug/L	1	20.0		98	80-120%			
2,2-Dichloropropane	20.1		1.00	ug/L	1	20.0		101	80-120%			
1,1-Dichloropropene	19.2		1.00	ug/L	1	20.0		96	80-120%			
cis-1,3-Dichloropropene	18.4		1.00	ug/L	1	20.0		92	80-120%			
trans-1,3-Dichloropropene	20.8		1.00	ug/L	1	20.0		104	80-120%			
Ethylbenzene	20.1		0.500	ug/L	1	20.0		100	80-120%			
Hexachlorobutadiene	15.5		5.00	ug/L	1	20.0		78	80-120%			Q-5
2-Hexanone	34.2		10.0	ug/L	1	40.0		86	80-120%			
Isopropylbenzene	17.7		1.00	ug/L	1	20.0		89	80-120%			
4-Isopropyltoluene	17.1		1.00	ug/L	1	20.0		85	80-120%			
Methylene chloride	20.0		10.0	ug/L	1	20.0		100	80-120%			
4-Methyl-2-pentanone (MiBK)	36.8		10.0	ug/L	1	40.0		92	80-120%			
Methyl tert-butyl ether (MTBE)	21.3		1.00	ug/L	1	20.0		106	80-120%			
Naphthalene	13.4		5.00	ug/L	1	20.0		67	80-120%			Q-5
n-Propylbenzene	19.8		0.500	ug/L	1	20.0		99	80-120%			
Styrene	18.8		1.00	ug/L	1	20.0		94	80-120%			
1,1,2-Tetrachloroethane	22.5		0.400	ug/L	1	20.0		113	80-120%			
1,1,2,2-Tetrachloroethane	20.0		0.500	ug/L	1	20.0		100	80-120%			
Tetrachloroethene (PCE)	18.6		0.400	ug/L	1	20.0		93	80-120%			
Toluene	17.8		1.00	ug/L	1	20.0		89	80-120%			
1,2,3-Trichlorobenzene	16.0		2.00	ug/L	1	20.0		80	80-120%			
1,2,4-Trichlorobenzene	14.0		2.00	ug/L	1	20.0		70	80-120%			Q-5
1,1,1-Trichloroethane	22.2		0.400	ug/L	1	20.0		111	80-120%			
1,1,2-Trichloroethane	19.8		0.500	ug/L	1	20.0		99	80-120%			
Trichloroethene (TCE)	17.2		0.400	ug/L	1	20.0		86	80-120%			
Trichlorofluoromethane	27.6		2.00	ug/L	1	20.0		138	80-120%			Q-5
1,2,3-Trichloropropane	21.5		1.00	ug/L	1	20.0		107	80-120%			
1,2,4-Trimethylbenzene	20.1		1.00	ug/L	1	20.0		101	80-120%			
1,3,5-Trimethylbenzene	20.1		1.00	ug/L	1	20.0		101	80-120%			

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Satch 23J0824 - EPA 5030C							Wa	ter				
CS (23J0824-BS1)			Prepared	: 10/20/23	14:15 Ana	yzed: 10/21	/23 02:01					
Vinyl chloride	18.7		0.200	ug/L	1	20.0		94	80-120%			
m,p-Xylene	40.0		1.00	ug/L	1	40.0		100	80-120%			
o-Xylene	17.5		0.500	ug/L	1	20.0		87	80-120%			
urr: 1,4-Difluorobenzene (Surr)		Rec	overy: 96 %	Limits: 80	-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			97 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			93 %	80	-120 %		"					
Ouplicate (23J0824-DUP1)			Prepared	: 10/20/23	14:15 Ana	lyzed: 10/21	/23 13:50					
OC Source Sample: Non-SDG (A3	J1324-01)		•			-						
Acetone	ND		2000	ug/L	100		ND				30%	
Acrylonitrile	ND		200	ug/L	100		ND				30%	
Benzene	ND		20.0	ug/L	100		ND				30%	
Bromobenzene	ND		50.0	ug/L	100		ND				30%	
Bromochloromethane	ND		100	ug/L	100		ND				30%	
Bromodichloromethane	ND		100	ug/L	100		ND				30%	
Bromoform	ND		100	ug/L	100		ND				30%	
Bromomethane	ND		500	ug/L	100		ND				30%	
2-Butanone (MEK)	ND		1000	ug/L	100		ND				30%	
n-Butylbenzene	ND		100	ug/L	100		ND				30%	
sec-Butylbenzene	ND		100	ug/L	100		ND				30%	
tert-Butylbenzene	ND		100	ug/L	100		ND				30%	
Carbon disulfide	ND		1000	ug/L	100		ND				30%	
Carbon tetrachloride	ND		100	ug/L	100		ND				30%	
Chlorobenzene	ND		50.0	ug/L	100		ND				30%	
Chloroethane	ND		500	ug/L	100		ND				30%	
Chloroform	ND		100	ug/L	100		ND				30%	
Chloromethane	ND		500	ug/L	100		ND				30%	
2-Chlorotoluene	ND		100	ug/L	100		ND				30%	
4-Chlorotoluene	ND		100	ug/L	100		ND				30%	
Dibromochloromethane	ND		100	ug/L	100		ND				30%	
1,2-Dibromo-3-chloropropane	ND		500	ug/L	100		ND				30%	
1,2-Dibromoethane (EDB)	ND		50.0	ug/L	100		ND				30%	
Dibromomethane	ND		100	ug/L ug/L	100		ND				30%	
1,2-Dichlorobenzene	ND		50.0	ug/L ug/L	100		ND				30%	

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23J0824 - EPA 5030C							Wa	ter				
Duplicate (23J0824-DUP1)			Prepared	: 10/20/23	14:15 Ana	lyzed: 10/21	/23 13:50					
QC Source Sample: Non-SDG (A3J	1324-01)											
1,3-Dichlorobenzene	ND		50.0	ug/L	100		ND				30%	
1,4-Dichlorobenzene	ND		50.0	ug/L	100		ND				30%	
Dichlorodifluoromethane	ND		100	ug/L	100		ND				30%	
1,1-Dichloroethane	ND		40.0	ug/L	100		ND				30%	
1,2-Dichloroethane (EDC)	ND		40.0	ug/L	100		ND				30%	
1,1-Dichloroethene	ND		40.0	ug/L	100		ND				30%	
cis-1,2-Dichloroethene	198		40.0	ug/L	100		184			7	30%	
trans-1,2-Dichloroethene	ND		40.0	ug/L	100		ND				30%	
1,2-Dichloropropane	ND		50.0	ug/L	100		ND				30%	
1,3-Dichloropropane	ND		100	ug/L	100		ND				30%	
2,2-Dichloropropane	ND		100	ug/L	100		ND				30%	
1,1-Dichloropropene	ND		100	ug/L	100		ND				30%	
cis-1,3-Dichloropropene	ND		100	ug/L	100		ND				30%	
trans-1,3-Dichloropropene	ND		100	ug/L	100		ND				30%	
Ethylbenzene	ND		50.0	ug/L	100		ND				30%	
Hexachlorobutadiene	ND		500	ug/L	100		ND				30%	
2-Hexanone	ND		1000	ug/L	100		ND				30%	
Isopropylbenzene	ND		100	ug/L	100		ND				30%	
4-Isopropyltoluene	ND		100	ug/L	100		ND				30%	
Methylene chloride	ND		1000	ug/L	100		ND				30%	
4-Methyl-2-pentanone (MiBK)	ND		1000	ug/L	100		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		100	ug/L	100		ND				30%	
Naphthalene	ND		500	ug/L	100		ND				30%	
n-Propylbenzene	ND		50.0	ug/L	100		ND				30%	
Styrene	ND		100	ug/L	100		ND				30%	
1,1,1,2-Tetrachloroethane	ND		40.0	ug/L	100		ND				30%	
1,1,2,2-Tetrachloroethane	ND		50.0	ug/L	100		ND				30%	
Tetrachloroethene (PCE)	11000		40.0	ug/L	100		11100			1	30%	
Toluene	ND		100	ug/L	100		ND				30%	
1,2,3-Trichlorobenzene	ND		200	ug/L	100		ND				30%	
1,2,4-Trichlorobenzene	ND		200	ug/L	100		ND				30%	
1,1,1-Trichloroethane	ND		40.0	ug/L	100		ND				30%	
1,1,2-Trichloroethane	ND		50.0	ug/L	100		ND				30%	

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Philip Nerenberg, Lab Director

Page 20 of 41



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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23J0824 - EPA 5030C							Wa	ter				
Duplicate (23J0824-DUP1)			Prepared	1: 10/20/23	14:15 Anal	lyzed: 10/21/	/23 13:50					
QC Source Sample: Non-SDG (A3	J1324-01)											
Trichloroethene (TCE)	297		40.0	ug/L	100		292			2	30%	
Trichlorofluoromethane	ND		200	ug/L	100		ND				30%	
1,2,3-Trichloropropane	ND		100	ug/L	100		ND				30%	
1,2,4-Trimethylbenzene	ND		100	ug/L	100		ND				30%	
1,3,5-Trimethylbenzene	ND		100	ug/L	100		ND				30%	
Vinyl chloride	ND		20.0	ug/L	100		ND				30%	
m,p-Xylene	ND		100	ug/L	100		ND				30%	
o-Xylene	ND		50.0	ug/L	100		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 105 %	Limits: 80	0-120 %	Dilı	ıtion: 1x					
Toluene-d8 (Surr)			99 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			98 %	80	-120 %		"					
QC Source Sample: Non-SDG (A3 EPA 8260D	J1412-01)											
Acetone	102		20.0	ug/L	1	40.0	80.6	54	39-160%			
Acrylonitrile	19.3		2.00	ug/L ug/L	1	20.0	ND	96	63-135%			
Benzene	19.3		0.200	ug/L ug/L	1	20.0	ND	99	79-120%			
Bromobenzene	19.9		0.500	ug/L ug/L	1	20.0	ND	77				
Bromochloromethane			VVV	119/17		20.0	ND	05				
Diomocinoromethane	10.2			_		20.0	ND ND	95 96	80-120%			
Bromodichloromethane	19.2		1.00	ug/L	1	20.0	ND	96	80-120% 78-123%			
Bromodichloromethane Bromoform	23.6		1.00 1.00	ug/L ug/L	1 1	20.0 20.0	ND ND	96 118	80-120% 78-123% 79-125%		 	
Bromoform	23.6 20.4		1.00 1.00 1.00	ug/L ug/L ug/L	1 1 1	20.0 20.0 20.0	ND ND ND	96 118 102	80-120% 78-123% 79-125% 66-130%			
Bromoform Bromomethane	23.6 20.4 22.7		1.00 1.00 1.00 5.00	ug/L ug/L ug/L ug/L	1 1 1 1	20.0 20.0 20.0 20.0	ND ND ND ND	96 118 102 113	80-120% 78-123% 79-125% 66-130% 53-141%		  	
Bromoform Bromomethane 2-Butanone (MEK)	23.6 20.4 22.7 43.7	  	1.00 1.00 1.00 5.00 10.0	ug/L ug/L ug/L ug/L ug/L	1 1 1 1	20.0 20.0 20.0 20.0 40.0	ND ND ND ND	96 118 102 113 109	80-120% 78-123% 79-125% 66-130% 53-141% 56-143%	  	  	
Bromoform Bromomethane 2-Butanone (MEK) n-Butylbenzene	23.6 20.4 22.7 43.7 20.1	 	1.00 1.00 1.00 5.00 10.0 1.00	ug/L ug/L ug/L ug/L ug/L ug/L	1 1 1 1 1	20.0 20.0 20.0 20.0 40.0 20.0	ND ND ND ND ND	96 118 102 113 109 100	80-120% 78-123% 79-125% 66-130% 53-141% 56-143% 75-128%	  	   	
Bromoform Bromomethane 2-Butanone (MEK) n-Butylbenzene sec-Butylbenzene	23.6 20.4 22.7 43.7 20.1 21.4	  	1.00 1.00 1.00 5.00 10.0 1.00	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	1 1 1 1 1 1	20.0 20.0 20.0 20.0 40.0 20.0 20.0	ND ND ND ND ND ND ND	96 118 102 113 109 100	80-120% 78-123% 79-125% 66-130% 53-141% 56-143% 75-128% 77-126%	   	   	
Bromoform Bromomethane 2-Butanone (MEK) n-Butylbenzene	23.6 20.4 22.7 43.7 20.1	   	1.00 1.00 1.00 5.00 10.0 1.00	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	1 1 1 1 1	20.0 20.0 20.0 20.0 40.0 20.0	ND ND ND ND ND	96 118 102 113 109 100	80-120% 78-123% 79-125% 66-130% 53-141% 56-143% 75-128%	   	    	
Bromoform Bromomethane 2-Butanone (MEK) n-Butylbenzene sec-Butylbenzene tert-Butylbenzene	23.6 20.4 22.7 43.7 20.1 21.4 22.6 26.6	   	1.00 1.00 1.00 5.00 10.0 1.00 1.00	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	1 1 1 1 1 1 1	20.0 20.0 20.0 20.0 40.0 20.0 20.0 20.0	ND	96 118 102 113 109 100 107 113	80-120% 78-123% 79-125% 66-130% 53-141% 56-143% 75-128% 77-126% 78-124%	   	    	
Bromoform Bromomethane 2-Butanone (MEK) n-Butylbenzene sec-Butylbenzene tert-Butylbenzene Carbon disulfide	23.6 20.4 22.7 43.7 20.1 21.4 22.6 26.6 26.7	    	1.00 1.00 1.00 5.00 10.0 1.00 1.00 1.00	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	1 1 1 1 1 1 1 1	20.0 20.0 20.0 20.0 40.0 20.0 20.0 20.0	ND N	96 118 102 113 109 100 107 113 133 134	80-120% 78-123% 79-125% 66-130% 53-141% 56-143% 75-128% 77-126% 64-133% 72-136%		     	
Bromoform Bromomethane 2-Butanone (MEK) n-Butylbenzene sec-Butylbenzene tert-Butylbenzene Carbon disulfide Carbon tetrachloride	23.6 20.4 22.7 43.7 20.1 21.4 22.6 26.6	    	1.00 1.00 1.00 5.00 10.0 1.00 1.00 1.00	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	1 1 1 1 1 1 1 1 1	20.0 20.0 20.0 20.0 40.0 20.0 20.0 20.0	ND	96 118 102 113 109 100 107 113 133	80-120% 78-123% 79-125% 66-130% 53-141% 56-143% 75-128% 77-126% 64-133% 72-136% 80-120%	    	      	
Bromoform Bromomethane 2-Butanone (MEK) n-Butylbenzene sec-Butylbenzene tert-Butylbenzene Carbon disulfide Carbon tetrachloride Chlorobenzene	23.6 20.4 22.7 43.7 20.1 21.4 22.6 26.6 26.7 19.5	    	1.00 1.00 1.00 5.00 10.0 1.00 1.00 1.00	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	1 1 1 1 1 1 1 1 1 1	20.0 20.0 20.0 20.0 40.0 20.0 20.0 20.0	ND N	96 118 102 113 109 100 107 113 133 134 98	80-120% 78-123% 79-125% 66-130% 53-141% 56-143% 75-128% 77-126% 64-133% 72-136%		      	

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WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

412-01) 20.0		Decreas 1									
		Draman- 1				Wa	ter				
		rrepared	: 10/20/23	14:15 Anal	yzed: 10/21	/23 06:34					
20.0											
20.0		1.00	ug/L	1	20.0	ND	100	79-122%			
21.6		1.00	ug/L	1	20.0	ND	108	78-122%			
19.5		1.00	ug/L	1	20.0	ND	98	74-126%			
17.7		5.00	ug/L	1	20.0	ND	88	62-128%			
19.7		0.500	ug/L	1	20.0	ND	98	77-121%			
19.3		1.00	ug/L	1	20.0	ND	97	79-123%			
18.9		0.500	ug/L	1	20.0	ND	94	80-120%			
20.6		0.500	ug/L	1	20.0	ND	103	80-120%			
18.3		0.500	ug/L	1	20.0	ND	92	79-120%			
26.5		1.00	-	1	20.0	ND	133	32-152%			
20.7		0.400	_	1	20.0	ND	103	77-125%			
21.2		0.400	_	1	20.0	ND	106				
22.3		0.400		1	20.0	ND	111	71-131%			
18.6		0.400	ug/L	1	20.0	ND	93	78-123%			
20.1		0.400	_	1	20.0	ND		75-124%			
18.4		0.500	_	1	20.0	ND		78-122%			
19.9		1.00	_	1	20.0	ND	100	80-120%			
20.0		1.00	_	1	20.0	ND	100	60-139%			
			_		20.0	ND					
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	19.5 17.7 19.3 18.9 20.6 18.3 26.5 20.7 21.2 22.3 18.6 20.1 18.4 19.9	21.6          19.5          17.7          19.7          19.3          18.9          20.6          18.3          26.5          20.7          21.2          22.3          18.6          20.1          18.4          19.9          20.0          22.0          15.8          20.4          21.3          16.4          38.3          19.3          18.8          21.1          38.9          21.8          17.4          19.5	21.6        1.00         19.5        1.00         17.7        5.00         19.7        0.500         19.3        1.00         18.9        0.500         20.6        0.500         18.3        0.500         20.5        1.00         20.7        0.400         21.2        0.400         22.3        0.400         22.3        0.400         18.6        0.400         20.1        0.400         18.4        0.500         19.9        1.00         22.0        1.00         22.0        1.00         25.8        1.00         21.3        0.500         16.4        5.00         38.3        1.00         18.8        1.00         21.1        10.0         38.9        1.00	21.6        1.00       ug/L         19.5        1.00       ug/L         17.7        5.00       ug/L         19.7        0.500       ug/L         19.3        1.00       ug/L         18.9        0.500       ug/L         20.6        0.500       ug/L         20.5        1.00       ug/L         20.7        0.400       ug/L         22.3        0.400       ug/L         20.4        0.400       ug/L         20.1        0.400       ug/L         20.0        1.00       ug/L         20.0        1.00       ug/L         21.8        1.00       ug/L         21.3        0.50	21.6        1.00       ug/L       1         19.5        1.00       ug/L       1         17.7        5.00       ug/L       1         19.7        0.500       ug/L       1         19.3        1.00       ug/L       1         18.9        0.500       ug/L       1         20.6        0.500       ug/L       1         20.7        0.400       ug/L       1         21.2        0.400       ug/L       1         20.1        0.400       ug/L       1         20.1        0.400 <td>21.6        1.00       ug/L       1       20.0         19.5        1.00       ug/L       1       20.0         17.7        5.00       ug/L       1       20.0         19.7        0.500       ug/L       1       20.0         19.3        1.00       ug/L       1       20.0         18.9        0.500       ug/L       1       20.0         20.6        0.500       ug/L       1       20.0         20.6        0.500       ug/L       1       20.0         26.5        0.500       ug/L       1       20.0         20.7        0.400       ug/L       1       20.0         20.7        0.400       ug/L       1       20.0         22.3        0.400       ug/L       1       20.0         22.3        0.400       ug/L       1       20.0         22.1        0.400       ug/L       1       20.0         18.4        0.400       ug/L       1       20.0     <td>21.6        1.00       ug/L       1       20.0       ND         19.5        1.00       ug/L       1       20.0       ND         17.7        5.00       ug/L       1       20.0       ND         19.7        0.500       ug/L       1       20.0       ND         19.3        1.00       ug/L       1       20.0       ND         18.9        0.500       ug/L       1       20.0       ND         20.6        0.500       ug/L       1       20.0       ND         20.6        0.500       ug/L       1       20.0       ND         18.3        0.500       ug/L       1       20.0       ND         26.5        1.00       ug/L       1       20.0       ND         20.7        0.400       ug/L       1       20.0       ND         21.2        0.400       ug/L       1       20.0       ND         18.6        0.400       ug/L       1       20.0       ND         19.9       <t< td=""><td>21.6          1.00         ug/L         1         20.0         ND         108           19.5          1.00         ug/L         1         20.0         ND         98           17.7          5.00         ug/L         1         20.0         ND         98           19.7          0.500         ug/L         1         20.0         ND         98           19.3          1.00         ug/L         1         20.0         ND         97           18.9          0.500         ug/L         1         20.0         ND         94           20.6          0.500         ug/L         1         20.0         ND         103           18.3          0.500         ug/L         1         20.0         ND         103           20.5          1.00         ug/L         1         20.0         ND         103           21.2          0.400         ug/L         1         20.0         ND         106           22.3          0.400         ug/L         1         20.0         ND&lt;</td><td>21.6          1.00         ug/L         1         20.0         ND         108         78-122%           19.5          1.00         ug/L         1         20.0         ND         98         74-126%           17.7          5.00         ug/L         1         20.0         ND         98         77-121%           19.7          0.500         ug/L         1         20.0         ND         98         77-121%           19.3          1.00         ug/L         1         20.0         ND         97         79-123%           18.9          0.500         ug/L         1         20.0         ND         94         80-120%           20.6          0.500         ug/L         1         20.0         ND         92         79-122%           20.6          0.500         ug/L         1         20.0         ND         103         80-120%           20.6          1.00         ug/L         1         20.0         ND         103         80-120%           20.7          0.400         ug/L         1         2</td><td>  21.6</td><td>21.6          1.00         ug/L         1         20.0         ND         108         78-122%           19.5          1.00         ug/L         1         20.0         ND         98         74-126%            117.7          5.00         ug/L         1         20.0         ND         98         77-121%           19.7          0.500         ug/L         1         20.0         ND         98         77-121%           11.00         ug/L         1         20.0         ND         97         79-123%           11.00         ug/L         1         20.0         ND         94         80-120%           11.89          0.500         ug/L         1         20.0         ND         94         80-120%           20.6          0.500         ug/L         1         20.0         ND         103         80-120%           20.6          10.00         ug/L         1         20.0         ND         103         32-120%        &lt;</td></t<></td></td>	21.6        1.00       ug/L       1       20.0         19.5        1.00       ug/L       1       20.0         17.7        5.00       ug/L       1       20.0         19.7        0.500       ug/L       1       20.0         19.3        1.00       ug/L       1       20.0         18.9        0.500       ug/L       1       20.0         20.6        0.500       ug/L       1       20.0         20.6        0.500       ug/L       1       20.0         26.5        0.500       ug/L       1       20.0         20.7        0.400       ug/L       1       20.0         20.7        0.400       ug/L       1       20.0         22.3        0.400       ug/L       1       20.0         22.3        0.400       ug/L       1       20.0         22.1        0.400       ug/L       1       20.0         18.4        0.400       ug/L       1       20.0 <td>21.6        1.00       ug/L       1       20.0       ND         19.5        1.00       ug/L       1       20.0       ND         17.7        5.00       ug/L       1       20.0       ND         19.7        0.500       ug/L       1       20.0       ND         19.3        1.00       ug/L       1       20.0       ND         18.9        0.500       ug/L       1       20.0       ND         20.6        0.500       ug/L       1       20.0       ND         20.6        0.500       ug/L       1       20.0       ND         18.3        0.500       ug/L       1       20.0       ND         26.5        1.00       ug/L       1       20.0       ND         20.7        0.400       ug/L       1       20.0       ND         21.2        0.400       ug/L       1       20.0       ND         18.6        0.400       ug/L       1       20.0       ND         19.9       <t< td=""><td>21.6          1.00         ug/L         1         20.0         ND         108           19.5          1.00         ug/L         1         20.0         ND         98           17.7          5.00         ug/L         1         20.0         ND         98           19.7          0.500         ug/L         1         20.0         ND         98           19.3          1.00         ug/L         1         20.0         ND         97           18.9          0.500         ug/L         1         20.0         ND         94           20.6          0.500         ug/L         1         20.0         ND         103           18.3          0.500         ug/L         1         20.0         ND         103           20.5          1.00         ug/L         1         20.0         ND         103           21.2          0.400         ug/L         1         20.0         ND         106           22.3          0.400         ug/L         1         20.0         ND&lt;</td><td>21.6          1.00         ug/L         1         20.0         ND         108         78-122%           19.5          1.00         ug/L         1         20.0         ND         98         74-126%           17.7          5.00         ug/L         1         20.0         ND         98         77-121%           19.7          0.500         ug/L         1         20.0         ND         98         77-121%           19.3          1.00         ug/L         1         20.0         ND         97         79-123%           18.9          0.500         ug/L         1         20.0         ND         94         80-120%           20.6          0.500         ug/L         1         20.0         ND         92         79-122%           20.6          0.500         ug/L         1         20.0         ND         103         80-120%           20.6          1.00         ug/L         1         20.0         ND         103         80-120%           20.7          0.400         ug/L         1         2</td><td>  21.6</td><td>21.6          1.00         ug/L         1         20.0         ND         108         78-122%           19.5          1.00         ug/L         1         20.0         ND         98         74-126%            117.7          5.00         ug/L         1         20.0         ND         98         77-121%           19.7          0.500         ug/L         1         20.0         ND         98         77-121%           11.00         ug/L         1         20.0         ND         97         79-123%           11.00         ug/L         1         20.0         ND         94         80-120%           11.89          0.500         ug/L         1         20.0         ND         94         80-120%           20.6          0.500         ug/L         1         20.0         ND         103         80-120%           20.6          10.00         ug/L         1         20.0         ND         103         32-120%        &lt;</td></t<></td>	21.6        1.00       ug/L       1       20.0       ND         19.5        1.00       ug/L       1       20.0       ND         17.7        5.00       ug/L       1       20.0       ND         19.7        0.500       ug/L       1       20.0       ND         19.3        1.00       ug/L       1       20.0       ND         18.9        0.500       ug/L       1       20.0       ND         20.6        0.500       ug/L       1       20.0       ND         20.6        0.500       ug/L       1       20.0       ND         18.3        0.500       ug/L       1       20.0       ND         26.5        1.00       ug/L       1       20.0       ND         20.7        0.400       ug/L       1       20.0       ND         21.2        0.400       ug/L       1       20.0       ND         18.6        0.400       ug/L       1       20.0       ND         19.9 <t< td=""><td>21.6          1.00         ug/L         1         20.0         ND         108           19.5          1.00         ug/L         1         20.0         ND         98           17.7          5.00         ug/L         1         20.0         ND         98           19.7          0.500         ug/L         1         20.0         ND         98           19.3          1.00         ug/L         1         20.0         ND         97           18.9          0.500         ug/L         1         20.0         ND         94           20.6          0.500         ug/L         1         20.0         ND         103           18.3          0.500         ug/L         1         20.0         ND         103           20.5          1.00         ug/L         1         20.0         ND         103           21.2          0.400         ug/L         1         20.0         ND         106           22.3          0.400         ug/L         1         20.0         ND&lt;</td><td>21.6          1.00         ug/L         1         20.0         ND         108         78-122%           19.5          1.00         ug/L         1         20.0         ND         98         74-126%           17.7          5.00         ug/L         1         20.0         ND         98         77-121%           19.7          0.500         ug/L         1         20.0         ND         98         77-121%           19.3          1.00         ug/L         1         20.0         ND         97         79-123%           18.9          0.500         ug/L         1         20.0         ND         94         80-120%           20.6          0.500         ug/L         1         20.0         ND         92         79-122%           20.6          0.500         ug/L         1         20.0         ND         103         80-120%           20.6          1.00         ug/L         1         20.0         ND         103         80-120%           20.7          0.400         ug/L         1         2</td><td>  21.6</td><td>21.6          1.00         ug/L         1         20.0         ND         108         78-122%           19.5          1.00         ug/L         1         20.0         ND         98         74-126%            117.7          5.00         ug/L         1         20.0         ND         98         77-121%           19.7          0.500         ug/L         1         20.0         ND         98         77-121%           11.00         ug/L         1         20.0         ND         97         79-123%           11.00         ug/L         1         20.0         ND         94         80-120%           11.89          0.500         ug/L         1         20.0         ND         94         80-120%           20.6          0.500         ug/L         1         20.0         ND         103         80-120%           20.6          10.00         ug/L         1         20.0         ND         103         32-120%        &lt;</td></t<>	21.6          1.00         ug/L         1         20.0         ND         108           19.5          1.00         ug/L         1         20.0         ND         98           17.7          5.00         ug/L         1         20.0         ND         98           19.7          0.500         ug/L         1         20.0         ND         98           19.3          1.00         ug/L         1         20.0         ND         97           18.9          0.500         ug/L         1         20.0         ND         94           20.6          0.500         ug/L         1         20.0         ND         103           18.3          0.500         ug/L         1         20.0         ND         103           20.5          1.00         ug/L         1         20.0         ND         103           21.2          0.400         ug/L         1         20.0         ND         106           22.3          0.400         ug/L         1         20.0         ND<	21.6          1.00         ug/L         1         20.0         ND         108         78-122%           19.5          1.00         ug/L         1         20.0         ND         98         74-126%           17.7          5.00         ug/L         1         20.0         ND         98         77-121%           19.7          0.500         ug/L         1         20.0         ND         98         77-121%           19.3          1.00         ug/L         1         20.0         ND         97         79-123%           18.9          0.500         ug/L         1         20.0         ND         94         80-120%           20.6          0.500         ug/L         1         20.0         ND         92         79-122%           20.6          0.500         ug/L         1         20.0         ND         103         80-120%           20.6          1.00         ug/L         1         20.0         ND         103         80-120%           20.7          0.400         ug/L         1         2	21.6	21.6          1.00         ug/L         1         20.0         ND         108         78-122%           19.5          1.00         ug/L         1         20.0         ND         98         74-126%            117.7          5.00         ug/L         1         20.0         ND         98         77-121%           19.7          0.500         ug/L         1         20.0         ND         98         77-121%           11.00         ug/L         1         20.0         ND         97         79-123%           11.00         ug/L         1         20.0         ND         94         80-120%           11.89          0.500         ug/L         1         20.0         ND         94         80-120%           20.6          0.500         ug/L         1         20.0         ND         103         80-120%           20.6          10.00         ug/L         1         20.0         ND         103         32-120%        <

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#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID:

A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D Detection % REC RPD Reporting Spike Source Analyte Result Limit Units Dilution % REC RPD Limit Amount Result Limits Limit Notes Batch 23J0824 - EPA 5030C Water Matrix Spike (23J0824-MS1) Prepared: 10/20/23 14:15 Analyzed: 10/21/23 06:34 QC Source Sample: Non-SDG (A3J1412-01) 20.0 1,1,2,2-Tetrachloroethane 20.0 0.500 ug/L 1 ND 100 71-121% Tetrachloroethene (PCE) 20.3 0.400 20.0 ug/L 1 ND 101 74-129% 20.0 80-121% Toluene 18.6 1.00 ug/L 1 ND 93 1,2,3-Trichlorobenzene 17.7 2.00 ug/L 1 20.0 ND 88 69-129% 1,2,4-Trichlorobenzene 16.8 2.00 ug/L 1 20.0 ND 84 69-130% 1,1,1-Trichloroethane 24.5 0.400 20.0 ND ug/L 1 123 74-131% 1,1,2-Trichloroethane 19.9 0.500 ug/L 1 20.0 ND 100 80-120% Trichloroethene (TCE) 17.8 0.400 20.0 ND 89 79-123% ug/L 1 20.0 Q-54a Trichlorofluoromethane 33.3 2.00 ug/L 1 ND 166 65-141% 1,2,3-Trichloropropane 21.1 1.00 ug/L 1 20.0 ND 105 73-122% 1,2,4-Trimethylbenzene 21.4 1.00 ug/L 1 20.0 ND 107 76-124% 1,3,5-Trimethylbenzene 21.8 1.00 20.0 ND 109 75-124% ug/L 1 Vinyl chloride 20.0 ND 23.2 0.200 ug/L 1 116 58-137% 40.0 m,p-Xylene 42.6 1.00 ND 106 80-121% ug/L 1 o-Xylene 0.500 93 78-122% 18.5 ug/L ND Surr: 1,4-Difluorobenzene (Surr) 95 % Limits: 80-120 % Dilution: 1x Recovery: Toluene-d8 (Surr) 96% 80-120 % 4-Bromofluorobenzene (Surr) 101 % 80-120 %

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Philip Nerenberg, Lab Director

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15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

# QUALITY CONTROL (QC) SAMPLE RESULTS Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23J0862 - EPA 5030C							Wa	ter				
Blank (23J0862-BLK1)			Prepared	: 10/23/23	08:55 Anal	yzed: 10/23	/23 12:22					
EPA 8260D												
Acetone	ND		20.0	ug/L	1							
Acrylonitrile	ND		2.00	ug/L	1							
Benzene	ND		0.200	ug/L	1							
Bromobenzene	ND		0.500	ug/L	1							
Bromochloromethane	ND		1.00	ug/L	1							
Bromodichloromethane	ND		1.00	ug/L	1							
Bromoform	ND		1.00	ug/L	1							
Bromomethane	ND		5.00	ug/L	1							
2-Butanone (MEK)	ND		10.0	ug/L	1							
n-Butylbenzene	ND		1.00	ug/L	1							
sec-Butylbenzene	ND		1.00	ug/L	1							
tert-Butylbenzene	ND		1.00	ug/L	1							
Carbon disulfide	ND		10.0	ug/L	1							
Carbon tetrachloride	ND		1.00	ug/L	1							
Chlorobenzene	ND		0.500	ug/L	1							
Chloroethane	ND		5.00	ug/L	1							
Chloroform	ND		1.00	ug/L	1							
Chloromethane	ND		5.00	ug/L	1							
2-Chlorotoluene	ND		1.00	ug/L	1							
4-Chlorotoluene	ND		1.00	ug/L	1							
Dibromochloromethane	ND		1.00	ug/L	1							
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1							
Dibromomethane	ND		1.00	ug/L	1							
1,2-Dichlorobenzene	ND		0.500	ug/L	1							
1,3-Dichlorobenzene	ND		0.500	ug/L	1							
1,4-Dichlorobenzene	ND		0.500	ug/L	1							
Dichlorodifluoromethane	ND		1.00	ug/L	1							
1,1-Dichloroethane	ND		0.400	ug/L	1							
1,2-Dichloroethane (EDC)	ND		0.400	ug/L	1							
1,1-Dichloroethene	ND		0.400	ug/L	1							
cis-1,2-Dichloroethene	ND		0.400	ug/L	1							
trans-1,2-Dichloroethene	ND		0.400	ug/L	1							

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WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
atch 23J0862 - EPA 5030C							Wat	ter				
lank (23J0862-BLK1)			Prepared	: 10/23/23	08:55 Anal	lyzed: 10/23/	23 12:22					
1,2-Dichloropropane	ND		0.500	ug/L	1							
1,3-Dichloropropane	ND		1.00	ug/L	1							
2,2-Dichloropropane	ND		1.00	ug/L	1							
1,1-Dichloropropene	ND		1.00	ug/L	1							
cis-1,3-Dichloropropene	ND		1.00	ug/L	1							
trans-1,3-Dichloropropene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Hexachlorobutadiene	ND		5.00	ug/L	1							
2-Hexanone	ND		10.0	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
4-Isopropyltoluene	ND		1.00	ug/L	1							
Methylene chloride	ND		10.0	ug/L	1							
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		5.00	ug/L	1							
n-Propylbenzene	ND		0.500	ug/L	1							
Styrene	ND		1.00	ug/L	1							
1,1,2-Tetrachloroethane	ND		0.400	ug/L	1							
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1							
Tetrachloroethene (PCE)	ND		0.400	ug/L	1							
Toluene	ND		1.00	ug/L	1							
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1							
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1							
1,1,1-Trichloroethane	ND		0.400	ug/L	1							
1,1,2-Trichloroethane	ND		0.500	ug/L	1							
Trichloroethene (TCE)	ND		0.400	ug/L	1							
Trichlorofluoromethane	ND		2.00	ug/L	1							
1,2,3-Trichloropropane	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							
Vinyl chloride	ND		0.200	ug/L	1							
m,p-Xylene	ND		1.00	ug/L	1							
o-Xylene	ND		0.500	ug/L ug/L	1							
trans-1,4-Dichloro-2-butene	ND		10.0	ug/L ug/L	1							

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15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23J0862 - EPA 5030C							Wa	ter				
Blank (23J0862-BLK1)			Prepared	: 10/23/23	08:55 Anal	yzed: 10/23	/23 12:22					
1,1,2-Trichloro-1,2,2-trifluoroet	hane (MD		2.00	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 103 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			101 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			99 %	80	0-120 %		"					
LCS (23J0862-BS1)			Prepared	: 10/23/23	08:55 Ana	lyzed: 10/23	/23 11:15					
EPA 8260D												
Acetone	44.2		20.0	ug/L	1	40.0		110	80-120%			
Acrylonitrile	17.6		2.00	ug/L	1	20.0		88	80-120%			
Benzene	18.7		0.200	ug/L	1	20.0		94	80-120%			
Bromobenzene	18.6		0.500	ug/L	1	20.0		93	80-120%			
Bromochloromethane	18.4		1.00	ug/L	1	20.0		92	80-120%			
Bromodichloromethane	22.6		1.00	ug/L	1	20.0		113	80-120%			
Bromoform	20.9		1.00	ug/L	1	20.0		104	80-120%			
Bromomethane	25.2		5.00	ug/L	1	20.0		126	80-120%			Q-5
2-Butanone (MEK)	39.6		10.0	ug/L	1	40.0		99	80-120%			
n-Butylbenzene	22.0		1.00	ug/L	1	20.0		110	80-120%			
sec-Butylbenzene	21.9		1.00	ug/L	1	20.0		110	80-120%			
tert-Butylbenzene	22.1		1.00	ug/L	1	20.0		111	80-120%			
Carbon disulfide	25.6		10.0	ug/L	1	20.0		128	80-120%			Q-5
Carbon tetrachloride	25.0		1.00	ug/L	1	20.0		125	80-120%			Q-5
Chlorobenzene	19.7		0.500	ug/L	1	20.0		98	80-120%			
Chloroethane	31.1		5.00	ug/L	1	20.0		155	80-120%			Q-5
Chloroform	20.4		1.00	ug/L	1	20.0		102	80-120%			
Chloromethane	16.8		5.00	ug/L	1	20.0		84	80-120%			
2-Chlorotoluene	20.2		1.00	ug/L	1	20.0		101	80-120%			
4-Chlorotoluene	22.0		1.00	ug/L	1	20.0		110	80-120%			
Dibromochloromethane	20.1		1.00	ug/L	1	20.0		101	80-120%			
1,2-Dibromo-3-chloropropane	16.7		5.00	ug/L	1	20.0		84	80-120%			
1,2-Dibromoethane (EDB)	20.0		0.500	ug/L	1	20.0		100	80-120%			
Dibromomethane	19.2		1.00	ug/L	1	20.0		96	80-120%			
1,2-Dichlorobenzene	19.8		0.500	ug/L	1	20.0		99	80-120%			
1,3-Dichlorobenzene	21.3		0.500	ug/L	1	20.0		106	80-120%			
1,4-Dichlorobenzene	19.2		0.500	ug/L	1	20.0		96	80-120%			

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23J0862 - EPA 5030C							Wa	ter				
LCS (23J0862-BS1)			Prepared	: 10/23/23	08:55 Ana	lyzed: 10/23	/23 11:15					
Dichlorodifluoromethane	22.8		1.00	ug/L	1	20.0		114	80-120%			
1,1-Dichloroethane	19.7		0.400	ug/L	1	20.0		99	80-120%			
1,2-Dichloroethane (EDC)	21.0		0.400	ug/L	1	20.0		105	80-120%			
1,1-Dichloroethene	21.7		0.400	ug/L	1	20.0		108	80-120%			
cis-1,2-Dichloroethene	18.5		0.400	ug/L	1	20.0		92	80-120%			
trans-1,2-Dichloroethene	18.4		0.400	ug/L	1	20.0		92	80-120%			
1,2-Dichloropropane	17.4		0.500	ug/L	1	20.0		87	80-120%			
1,3-Dichloropropane	20.0		1.00	ug/L	1	20.0		100	80-120%			
2,2-Dichloropropane	27.6		1.00	ug/L	1	20.0		138	80-120%			Q-56
1,1-Dichloropropene	21.0		1.00	ug/L	1	20.0		105	80-120%			
cis-1,3-Dichloropropene	20.1		1.00	ug/L	1	20.0		101	80-120%			
trans-1,3-Dichloropropene	22.1		1.00	ug/L	1	20.0		111	80-120%			
Ethylbenzene	21.1		0.500	ug/L	1	20.0		106	80-120%			
Hexachlorobutadiene	21.2		5.00	ug/L	1	20.0		106	80-120%			
2-Hexanone	33.6		10.0	ug/L	1	40.0		84	80-120%			
Isopropylbenzene	19.2		1.00	ug/L	1	20.0		96	80-120%			
4-Isopropyltoluene	19.8		1.00	ug/L	1	20.0		99	80-120%			
Methylene chloride	20.2		10.0	ug/L	1	20.0		101	80-120%			
4-Methyl-2-pentanone (MiBK)	34.9		10.0	ug/L	1	40.0		87	80-120%			
Methyl tert-butyl ether (MTBE)	22.0		1.00	ug/L	1	20.0		110	80-120%			
Naphthalene	14.5		5.00	ug/L	1	20.0		73	80-120%			Q-55
n-Propylbenzene	21.6		0.500	ug/L	1	20.0		108	80-120%			
Styrene	19.0		1.00	ug/L	1	20.0		95	80-120%			
1,1,1,2-Tetrachloroethane	23.7		0.400	ug/L	1	20.0		118	80-120%			
1,1,2,2-Tetrachloroethane	19.8		0.500	ug/L	1	20.0		99	80-120%			
Tetrachloroethene (PCE)	21.0		0.400	ug/L	1	20.0		105	80-120%			
Toluene	18.4		1.00	ug/L	1	20.0		92	80-120%			
1,2,3-Trichlorobenzene	18.4		2.00	ug/L	1	20.0		92	80-120%			
1,2,4-Trichlorobenzene	16.5		2.00	ug/L	1	20.0		83	80-120%			
1,1,1-Trichloroethane	23.9		0.400	ug/L	1	20.0		119	80-120%			
1,1,2-Trichloroethane	19.6		0.500	ug/L	1	20.0		98	80-120%			
Trichloroethene (TCE)	17.4		0.400	ug/L	1	20.0		87	80-120%			
Trichlorofluoromethane	30.0		2.00	ug/L	1	20.0		150	80-120%			Q-56
1,2,3-Trichloropropane	21.2		1.00	ug/L	1	20.0		106	80-120%			

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23J0862 - EPA 5030C							Wa	ter				
LCS (23J0862-BS1)			Prepared	1: 10/23/23	08:55 Ana	lyzed: 10/23	/23 11:15					
1,2,4-Trimethylbenzene	21.8		1.00	ug/L	1	20.0		109	80-120%			
1,3,5-Trimethylbenzene	22.0		1.00	ug/L	1	20.0		110	80-120%			
Vinyl chloride	20.1		0.200	ug/L	1	20.0		101	80-120%			
m,p-Xylene	42.0		1.00	ug/L	1	40.0		105	80-120%			
o-Xylene	18.2		0.500	ug/L	1	20.0		91	80-120%			
trans-1,4-Dichloro-2-butene	26.8		10.0	ug/L	1	20.0		134	80-120%			Q-5
1,1,2-Trichloro-1,2,2-trifluoroe	thane ØB.2		2.00	ug/L	1	20.0		116	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Rec	overy: 94 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			98 %		0-120 %		"					
4-Bromofluorobenzene (Surr)			94 %	80	0-120 %		"					
Duplicate (23J0862-DUP1)			Prepared	1: 10/23/23	08:55 Ana	lyzed: 10/23	/23 19:11					V-01
QC Source Sample: Non-SDG (A.	3J1296-09RF	E <u>1)</u>										
Acetone	768		400	ug/L	20		763			0.6	30%	
Acrylonitrile	ND		40.0	ug/L	20		ND				30%	
Benzene	ND		4.00	ug/L	20		ND				30%	
Bromobenzene	ND		10.0	ug/L	20		ND				30%	
Bromochloromethane	ND		20.0	ug/L	20		ND				30%	
Bromodichloromethane	ND		20.0	ug/L	20		ND				30%	
Bromoform	ND		20.0	ug/L	20		ND				30%	
Bromomethane	ND		100	ug/L	20		ND				30%	
2-Butanone (MEK)	608		200	ug/L	20		622			2	30%	
n-Butylbenzene	ND		20.0	ug/L	20		ND				30%	
sec-Butylbenzene	ND		20.0	ug/L	20		ND				30%	
tert-Butylbenzene	ND		20.0	ug/L	20		ND				30%	
Carbon disulfide	ND		200	ug/L	20		ND				30%	
Carbon tetrachloride	ND		20.0	ug/L	20		ND				30%	
Chlorobenzene	ND		10.0	ug/L	20		ND				30%	
Chloroethane	ND		100	ug/L	20		ND				30%	
Chloroform	ND		20.0	ug/L	20		ND				30%	
	ND		100	ug/L	20		ND				30%	
Chloromethane	1.2			_								
Chloromethane 2-Chlorotoluene	ND		20.0	ug/L	20		ND				30%	
			20.0 20.0	ug/L ug/L	20 20		ND ND				30% 30%	

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
atch 23J0862 - EPA 5030C							Wat	ter				
Ouplicate (23J0862-DUP1)			Prepared	: 10/23/23	08:55 Anal	yzed: 10/23	/23 19:11					V-0
QC Source Sample: Non-SDG (A3J	1296-09RI	E1)										
1,2-Dibromo-3-chloropropane	ND		100	ug/L	20		ND				30%	
1,2-Dibromoethane (EDB)	ND		10.0	ug/L	20		ND				30%	
Dibromomethane	ND		20.0	ug/L	20		ND				30%	
1,2-Dichlorobenzene	ND		10.0	ug/L	20		ND				30%	
1,3-Dichlorobenzene	ND		10.0	ug/L	20		ND				30%	
1,4-Dichlorobenzene	ND		10.0	ug/L	20		ND				30%	
Dichlorodifluoromethane	ND		20.0	ug/L	20		ND				30%	
1,1-Dichloroethane	ND		8.00	ug/L	20		ND				30%	
1,2-Dichloroethane (EDC)	ND		8.00	ug/L	20		ND				30%	
1,1-Dichloroethene	ND		8.00	ug/L	20		ND				30%	
cis-1,2-Dichloroethene	ND		8.00	ug/L	20		ND				30%	
trans-1,2-Dichloroethene	ND		8.00	ug/L	20		ND				30%	
1,2-Dichloropropane	ND		10.0	ug/L	20		ND				30%	
1,3-Dichloropropane	ND		20.0	ug/L	20		ND				30%	
2,2-Dichloropropane	ND		20.0	ug/L	20		ND				30%	
1,1-Dichloropropene	ND		20.0	ug/L	20		ND				30%	
cis-1,3-Dichloropropene	ND		20.0	ug/L	20		ND				30%	
trans-1,3-Dichloropropene	ND		20.0	ug/L	20		ND				30%	
Ethylbenzene	ND		10.0	ug/L	20		ND				30%	
Hexachlorobutadiene	ND		100	ug/L	20		ND				30%	
2-Hexanone	ND		200	ug/L	20		ND				30%	
Isopropylbenzene	ND		20.0	ug/L	20		ND				30%	
4-Isopropyltoluene	ND		20.0	ug/L	20		ND				30%	
Methylene chloride	ND		200	ug/L	20		ND				30%	
4-Methyl-2-pentanone (MiBK)	ND		200	ug/L	20		ND				30%	
Methyl tert-butyl ether (MTBE)	ND		20.0	ug/L	20		ND				30%	
Naphthalene	ND		100	ug/L	20		ND				30%	
n-Propylbenzene	ND		10.0	ug/L	20		ND				30%	
Styrene	ND		20.0	ug/L	20		ND				30%	
1,1,1,2-Tetrachloroethane	ND		8.00	ug/L	20		ND				30%	
1,1,2,2-Tetrachloroethane	ND		10.0	ug/L	20		ND				30%	
Tetrachloroethene (PCE)	ND		8.00	ug/L	20		ND				30%	
Toluene	ND		20.0	ug/L	20		ND				30%	

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23J0862 - EPA 5030C							Wa	ter				
Duplicate (23J0862-DUP1)			Prepared	: 10/23/23	08:55 Ana	lyzed: 10/23	/23 19:11					V-01
QC Source Sample: Non-SDG (A3	J1296-09RI	E <u>1)</u>										
1,2,3-Trichlorobenzene	ND		40.0	ug/L	20		ND				30%	
1,2,4-Trichlorobenzene	ND		40.0	ug/L	20		ND				30%	
1,1,1-Trichloroethane	ND		8.00	ug/L	20		ND				30%	
1,1,2-Trichloroethane	ND		10.0	ug/L	20		ND				30%	
Trichloroethene (TCE)	ND		8.00	ug/L	20		ND				30%	
Trichlorofluoromethane	ND		40.0	ug/L	20		ND				30%	
1,2,3-Trichloropropane	ND		20.0	ug/L	20		ND				30%	
1,2,4-Trimethylbenzene	ND		20.0	ug/L	20		ND				30%	
1,3,5-Trimethylbenzene	ND		20.0	ug/L	20		ND				30%	
Vinyl chloride	ND		4.00	ug/L	20		ND				30%	
m,p-Xylene	ND		20.0	ug/L	20		ND				30%	
o-Xylene	ND		10.0	ug/L	20		ND				30%	
trans-1,4-Dichloro-2-butene	ND		200	ug/L	20		ND				30%	
1,1,2-Trichloro-1,2,2-trifluoroetl	nane (MD		40.0	ug/L	20		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Rec	overy: 96 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			100 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			118 %	80	)-120 %		"					
Matrix Spike (23J0862-MS1)			Prepared	: 10/23/23	08:55 Anal	yzed: 10/23	/23 13:17					V-01
QC Source Sample: Non-SDG (A3	J1532-02)											
EPA 8260D												
Acetone	71.4		20.0	ug/L	1	40.0	ND	178	39-160%			Q-(
Acrylonitrile	17.9		2.00	ug/L	1	20.0	ND	90	63-135%			
Benzene	20.2		0.200	ug/L	1	20.0	ND	101	79-120%			
Bromobenzene	19.3		0.500	ug/L	1	20.0	ND	96	80-120%			
Bromochloromethane	19.2		1.00	ug/L	1	20.0	ND	96	78-123%			
Bromodichloromethane	24.0		1.00	ug/L	1	20.0	ND	120	79-125%			
Bromoform	21.5		1.00	ug/L	1	20.0	ND	108	66-130%			
Bromomethane	26.3		5.00	ug/L	1	20.0	ND	132	53-141%			Q-5
2-Butanone (MEK)	59.0		10.0	ug/L	1	40.0	ND	148	56-143%			Q-
n-Butylbenzene	21.9		1.00	ug/L	1	20.0	ND	109	75-128%			
sec-Butylbenzene	22.2		1.00	ug/L	1	20.0	ND	111	77-126%			
tert-Butylbenzene	22.7		1.00	ug/L	1	20.0	ND	113	78-124%			

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23J0862 - EPA 5030C							Wa	ter				
Matrix Spike (23J0862-MS1)			Prepared	: 10/23/23	08:55 Anal	yzed: 10/23	/23 13:17					V-01
QC Source Sample: Non-SDG (A3	J1532-02)											
Carbon disulfide	26.7		10.0	ug/L	1	20.0	ND	134	64-133%			Q-54g
Carbon tetrachloride	27.6		1.00	ug/L	1	20.0	ND	138	72-136%			Q-546
Chlorobenzene	20.0		0.500	ug/L	1	20.0	ND	100	80-120%			
Chloroethane	32.8		5.00	ug/L	1	20.0	ND	164	60-138%			Q-54c
Chloroform	21.6		1.00	ug/L	1	20.0	ND	108	79-124%			
Chloromethane	17.8		5.00	ug/L	1	20.0	ND	89	50-139%			
2-Chlorotoluene	20.8		1.00	ug/L	1	20.0	ND	104	79-122%			
4-Chlorotoluene	22.4		1.00	ug/L	1	20.0	ND	112	78-122%			
Dibromochloromethane	20.4		1.00	ug/L	1	20.0	ND	102	74-126%			
1,2-Dibromo-3-chloropropane	17.6		5.00	ug/L	1	20.0	ND	88	62-128%			
1,2-Dibromoethane (EDB)	20.7		0.500	ug/L	1	20.0	ND	103	77-121%			
Dibromomethane	19.7		1.00	ug/L	1	20.0	ND	99	79-123%			
1,2-Dichlorobenzene	20.1		0.500	ug/L	1	20.0	ND	100	80-120%			
1,3-Dichlorobenzene	21.4		0.500	ug/L	1	20.0	ND	107	80-120%			
1,4-Dichlorobenzene	19.2		0.500	ug/L	1	20.0	ND	96	79-120%			
Dichlorodifluoromethane	25.8		1.00	ug/L	1	20.0	ND	129	32-152%			
1,1-Dichloroethane	20.7		0.400	ug/L	1	20.0	ND	103	77-125%			
1,2-Dichloroethane (EDC)	22.0		0.400	ug/L	1	20.0	ND	110	73-128%			
1,1-Dichloroethene	24.1		0.400	ug/L	1	20.0	ND	121	71-131%			
cis-1,2-Dichloroethene	19.0		0.400	ug/L	1	20.0	ND	95	78-123%			
trans-1,2-Dichloroethene	19.5		0.400	ug/L	1	20.0	ND	97	75-124%			
1,2-Dichloropropane	18.3		0.500	ug/L	1	20.0	ND	92	78-122%			
1,3-Dichloropropane	20.3		1.00	ug/L	1	20.0	ND	101	80-120%			
2,2-Dichloropropane	29.1		1.00	ug/L	1	20.0	ND	146	60-139%			Q-54a
1,1-Dichloropropene	23.0		1.00	ug/L	1	20.0	ND	115	79-125%			
cis-1,3-Dichloropropene	20.4		1.00	ug/L	1	20.0	ND	102	75-124%			
trans-1,3-Dichloropropene	22.6		1.00	ug/L	1	20.0	ND	113	73-127%			
Ethylbenzene	21.8		0.500	ug/L	1	20.0	ND	109	79-121%			
Hexachlorobutadiene	20.1		5.00	ug/L	1	20.0	ND	101	66-134%			
2-Hexanone	46.8		10.0	ug/L	1	40.0	ND	117	57-139%			
Isopropylbenzene	19.9		1.00	ug/L	1	20.0	ND	99	72-131%			
4-Isopropyltoluene	19.8		1.00	ug/L	1	20.0	ND	99	77-127%			
Methylene chloride	19.7		10.0	ug/L	1	20.0	ND	99	74-124%			

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D Detection % REC RPD Reporting Spike Source % REC Analyte Result Units Dilution RPD Limit Limit Amount Result Limits Limit Notes Batch 23J0862 - EPA 5030C Water Matrix Spike (23J0862-MS1) Prepared: 10/23/23 08:55 Analyzed: 10/23/23 13:17 V-01 QC Source Sample: Non-SDG (A3J1532-02) 4-Methyl-2-pentanone (MiBK) 38.4 10.0 ug/L 1 40.0 ND 96 67-130% Methyl tert-butyl ether (MTBE) 22.5 20.0 1.00 ug/L 1 ND 113 71-124% ug/L Q-54k Naphthalene 14.8 5.00 1 20.0 ND 74 61-128% n-Propylbenzene 22.2 0.500 ug/L 1 20.0 ND 111 76-126% Styrene 19.4 1.00 1 20.0 ND 97 78-123% ug/L 24.4 20.0 1,1,1,2-Tetrachloroethane 0.400 ug/L 1 ND 122 78-124% 1,1,2,2-Tetrachloroethane 20.2 0.500 ug/L 1 20.0 ND 101 71-121% Tetrachloroethene (PCE) 21.7 20.0 109 74-129% 0.400 ug/L 1 ND Toluene 19.2 1.00 ug/L 1 20.0 ND 96 80-121% 1,2,3-Trichlorobenzene 18.2 2.00 ug/L 1 20.0 ND 91 69-129% 1,2,4-Trichlorobenzene 16.1 2.00 ug/L 1 20.0 ND 81 69-130% 1,1,1-Trichloroethane 26.0 0.400 20.0 ND 74-131% ug/L 1 130 20.0 1,1,2-Trichloroethane 20.4 0.500 ug/L 1 ND 102 80-120% 20.0 Trichloroethene (TCE) 18.6 0.400 ND 93 79-123% ug/L 1 Trichlorofluoromethane Q-54c 34.4 2.00 ug/L 1 20.0 ND 172 65-141% 1,2,3-Trichloropropane 21.3 1.00 ug/L 1 20.0 ND 106 73-122% 1,2,4-Trimethylbenzene 22.1 1.00 ug/L 1 20.0 ND 110 76-124% 1,3,5-Trimethylbenzene 22.4 20.0 75-124% 1.00 ND 112 ug/L 1 Vinyl chloride 22.0 20.0 58-137% 0.200 ug/L 1 ND 110 1.00 m,p-Xylene 43.0 40.0 ND 108 80-121% ug/L 1 0.500 20.0 ND 94 78-122% o-Xylene 18.8 ug/L 1 Q-54 trans-1,4-Dichloro-2-butene 27.6 ---10.0 ug/L 1 20.0 ND 138 43-140% ---1,1,2-Trichloro-1,2,2-trifluoroethane 25.5 2.00 ug/L ND 128 70-136% Surr: 1,4-Difluorobenzene (Surr) 95 % Limits: 80-120 % Dilution: 1x Recovery: Toluene-d8 (Surr) 97% 80-120 %

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4-Bromofluorobenzene (Surr)

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80-120 %

94%



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Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### QUALITY CONTROL (QC) SAMPLE RESULTS

To	tal Organio	c Carbon (I	Non-Purgea	ble) by F	Persulfate	Oxidatio	n by Sta	ndard Me	thod 531	0C		
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23J0785 - Method Pre	p: Aq						Wa	ter				
Blank (23J0785-BLK1)			Prepared	: 10/19/23	17:31 Anal	lyzed: 10/20	/23 00:11					
SM 5310 C												
Total Organic Carbon	ND		1.00	mg/L	1							
LCS (23J0785-BS1)			Prepared	: 10/19/23	17:31 Anal	yzed: 10/20	/23 00:41					
SM 5310 C												
Total Organic Carbon	10.2		1.00	mg/L	1	10.0		102	90-114%			
Matrix Spike (23J0785-MS1)	)		Prepared	: 10/19/23	17:31 Anal	yzed: 10/20	/23 01:41					
QC Source Sample: Non-SDG (	A3J1418-01)											
SM 5310 C												
Total Organic Carbon	13.4		1.01	mg/L	1	10.0	2.50	109	85-115%			
Matrix Spike (23J0785-MS2)	)		Prepared	: 10/19/23	17:31 Anal	lyzed: 10/20	/23 06:44					
OC Source Sample: Non-SDG (	A3J1418-07)											
Total Organic Carbon	12.9		1.01	mg/L	1	10.0	ND	129	85-115%			Q-0
Matrix Spike Dup (23J0785-	MSD1)		Prepared	: 10/19/23	17:31 Anal	lyzed: 10/20	/23 02:11					
QC Source Sample: Non-SDG (	A3J1418-01)					<u>-</u>						
Total Organic Carbon	12.9		1.01	mg/L	1	10.0	2.50	104	85-115%	4	15%	
Matrix Spike Dup (23J0785-	MSD2)		Prepared	: 10/19/23	17:31 Anal	yzed: 10/20	/23 07:14					
OC Source Sample: Non-SDG (	A3J1418-07)											
Total Organic Carbon	12.5		1.01	mg/L	1	10.0	ND	125	85-115%	3	15%	Q-0

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#### QUALITY CONTROL (QC) SAMPLE RESULTS

Total	Organio	Carbon (	Non-Purgea	ble) by F	Persulfate	Oxidatio	n by Sta	ndard Me	thod 531	0C		
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23K0138 - Method Prep:	Aq						Wat	ter				
Blank (23K0138-BLK1)			Prepared	: 11/03/23	08:13 Ana	lyzed: 11/03	/23 13:56					
SM 5310 C Total Organic Carbon	ND		1.00	mg/L	1							
LCS (23K0138-BS1)			Prepared	: 11/03/23	08:13 Ana	lyzed: 11/03	/23 14:25					
SM 5310 C Total Organic Carbon	10.3		1.00	mg/L	1	10.0		103	90-114%			
Matrix Spike (23K0138-MS1)			Prepared	: 11/03/23	08:13 Ana	lyzed: 11/03	/23 15:26					
QC Source Sample: MW18-202310 SM 5310 C	17 (A3J14	49-03RE1)										
Total Organic Carbon	322		20.2	mg/L	20	200	115	103	85-115%			
Matrix Spike Dup (23K0138-M	SD1)		Prepared	: 11/03/23	08:13 Ana	lyzed: 11/03	/23 15:55					
OC Source Sample: MW18-202310 SM 5310 C	17 (A3J14	49-03RE1)										
Total Organic Carbon	315		20.2	mg/L	20	200	115	100	85-115%	2	15%	

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Report ID: A3J1449 - 11 06 23 1317

#### SAMPLE PREPARATION INFORMATION

		Volatile	Organic Compounds	by EPA 8260D			
Prep: EPA 5030C					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 23J0824							
A3J1449-01	Water	EPA 8260D	10/17/23 12:25	10/20/23 14:15	5mL/5mL	5mL/5mL	1.00
A3J1449-02	Water	EPA 8260D	10/17/23 11:50	10/20/23 14:15	5mL/5mL	5mL/5mL	1.00
A3J1449-05	Water	EPA 8260D	10/17/23 12:55	10/20/23 14:15	5mL/5mL	5mL/5mL	1.00
Batch: 23J0862							
A3J1449-01RE1	Water	EPA 8260D	10/17/23 12:25	10/23/23 11:40	5mL/5mL	5mL/5mL	1.00
A3J1449-03RE1	Water	EPA 8260D	10/17/23 11:05	10/23/23 11:40	5mL/5mL	5mL/5mL	1.00
A3J1449-04RE1	Water	EPA 8260D	10/17/23 13:20	10/23/23 11:40	5mL/5mL	5mL/5mL	1.00

	Total Orgar	nic Carbon (Non-Pur	geable) by Persulfate	e Oxidation by Stand	dard Method 5310	)C	
Prep: Method Prep:	<u>Aq</u>				Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 23J0785							
A3J1449-01RE1	Water	SM 5310 C	10/17/23 12:25	10/19/23 17:31	40mL/40mL	40mL/40mL	1.00
A3J1449-02	Water	SM 5310 C	10/17/23 11:50	10/19/23 17:31	40mL/40mL	40mL/40mL	1.00
A3J1449-05	Water	SM 5310 C	10/17/23 12:55	10/19/23 17:31	40mL/40mL	40mL/40mL	1.00
Batch: 23K0138							
A3J1449-03RE1	Water	SM 5310 C	10/17/23 11:05	11/03/23 08:13	40mL/40mL	40mL/40mL	1.00

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Project Number: **461M114811**Project Manager: **Russ Bunker** 

Report ID: A3J1449 - 11 06 23 1317

#### **QUALIFIER DEFINITIONS**

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

#### **Apex Laboratories**

<u>ories</u>
Incomplete field preservation. Additional preservative was added to adjust the pH within the appropriate range for this analysis.
Spike recovery and/or RPD is outside acceptance limits.
Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +14%. The results are reported as Estimated Values.
Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +18%. The results are reported as Estimated Values.
Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +21%. The results are reported as Estimated Values.
Daily Continuing Calibration Verification recovery for this analyte failed the $\pm$ 20% criteria listed in EPA method 8260/8270 by $\pm$ 30%. The results are reported as Estimated Values.
Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +35%. The results are reported as Estimated Values.
Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +5%. The results are reported as Estimated Values.
Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +6%. The results are reported as Estimated Values.
Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +8%. The results are reported as Estimated Values.
Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -1%. The results are reported as Estimated Values.
Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -13%. The results are reported as Estimated Values.
Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -2%. The results are reported as Estimated Values.
Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -7%. The results are reported as Estimated Values.
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.
Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260
Reporting level raised due to possible carryover from a previous sample.
Sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
Reporting levels raised due to dilution necessary for analysis due to sample foaming in sparge vessel.

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Project Number: 461M114811
Project Manager: Russ Bunker

Report ID: A3J1449 - 11 06 23 1317

#### 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'.

Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

#### 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).

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Philip Nerenberg, Lab Director

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#### **REPORTING NOTES AND CONVENTIONS (Cont.):**

#### 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.
- -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, if results are not reported to the MDL.

#### **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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Philip Nerenberg, Lab Director

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Portland, OR 97224

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Project Manager: Russ Bunker

Report ID: A3J1449 - 11 06 23 1317

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F1015505 - 1mg	-5	175	-0							X											
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WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150

Portland, OR 97224

<u>oc</u>s Project:

Project Number: 461M114811

Project Manager: Russ Bunker

Report ID: A3J1449 - 11 06 23 1317

APEX LABS COOLER RECEIPT FORM Client: WSP Element WO#: A351449 Project/Project #: \_CCS / 46M114811 **Delivery Info:** Date/time received: 10/17/3 @ 1452 By: XAM Delivered by: Apex\_Client ESS\_FedEx\_UPS\_Radio\_Morgan\_SDS Evergreen\_Other Date/time inspected: 10/14/23 @ 14.52 By: AM Cooler Inspection Chain of Custody included? Yes X No\_ Signed/dated by client? Cooler #1 Cooler #2 Cooler #3 Cooler #4 Cooler #5 Cooler #6 Cooler #7 Temperature (°C) Custody seals? (Y/N) Received on ice? (Y/N) Temp. blanks? (Y/N) Ice type: (Gel/Real/Other) Condition (In/Out): Cooler out of temp? (Y/N) Possible reason why:\_ Green dots applied to out of temperature samples? Yes/No Out of temperature samples form initiated? Yes/No Sample Inspection: Date/time inspected: 10-20/12/ @ 10-06 By: 55 All samples intact? Yes X No Comments: Bottle labels/COCs agree? Yes No x Comments: Becamed a top block that wasn't listed COC/container discrepancies form initiated? Yes \_\_\_ No \_× Containers/volumes received appropriate for analysis? Yes \( \sum \) No \( \sum \) Comments: \( \sum \) Do VOA vials have visible headspace? Yes × No NA Comments MW16-20231017=3/3 HS. MW19-20231017=3/3 HS. Water samples: pH checked: Yes No NA pH appropriate? Yes No NA pH ID: A 23 x 172 Comments: MW16.20231017 = pH=7 Additional information: TB # 3415 Cooler Inspected by: Labeled by: awe for Form Y-003 R-01 DIS vam whates

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Philip Nerenberg, Lab Director

Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

Sunday, December 17, 2023 Russ Bunker WSP USA Environment & Infrastructure Inc. 15862 SW 72nd Ave. Suite 150 Portland, OR 97224

RE: A3L1059 - OCS - 361M1148

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 A3L1059, which was received by the laboratory on 12/7/2023 at 2:03:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: <a href="mailto:pnerenberg@apex-labs.com">pnerenberg@apex-labs.com</a>, 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

Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.

(See Cooler Receipt Form for details)

Default Cooler 4.1 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.





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Philip Nerenberg, Lab Director

Philip Nevenberg



#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **361M1148**Project Manager: **Russ Bunker** 

Report ID: A3L1059 - 12 17 23 2304

#### ANALYTICAL REPORT FOR SAMPLES

	SAMPLE INFORMAT	ON	
Client Sample ID	Laboratory ID Mat	rix Date Sampled	Date Received
MW19-20231207	A3L1059-01 Wat	er 12/07/23 12:55	12/07/23 14:03

Apex Laboratories

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Philip Nerenberg, Lab Director

Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **361M1148**Project Manager: **Russ Bunker** 

Report ID: A3L1059 - 12 17 23 2304

#### ANALYTICAL SAMPLE RESULTS

		olatile Organ	ic Compound	us by EPA 8.	700D			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW19-20231207 (A3L1059-01RE1)				Matrix: Wa	ater	Batch:	23L0632	
Acetone	ND		20.0	ug/L	1	12/16/23 13:12	EPA 8260D	
Acrylonitrile	ND		2.00	ug/L	1	12/16/23 13:12	EPA 8260D	
Benzene	ND		0.200	ug/L	1	12/16/23 13:12	EPA 8260D	
Bromobenzene	ND		0.500	ug/L	1	12/16/23 13:12	EPA 8260D	
Bromochloromethane	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D	
Bromodichloromethane	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D	
Bromoform	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D	
Bromomethane	ND		5.00	ug/L	1	12/16/23 13:12	EPA 8260D	
2-Butanone (MEK)	ND		10.0	ug/L	1	12/16/23 13:12	EPA 8260D	
n-Butylbenzene	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D	
sec-Butylbenzene	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D	
tert-Butylbenzene	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D	
Carbon disulfide	ND		10.0	ug/L	1	12/16/23 13:12	EPA 8260D	
Carbon tetrachloride	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D	
Chlorobenzene	ND		0.500	ug/L	1	12/16/23 13:12	EPA 8260D	
Chloroethane	ND		5.00	ug/L	1	12/16/23 13:12	EPA 8260D	
Chloroform	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D	
Chloromethane	ND		5.00	ug/L	1	12/16/23 13:12	EPA 8260D	
2-Chlorotoluene	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D	
4-Chlorotoluene	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D	
Dibromochloromethane	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	12/16/23 13:12	EPA 8260D	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1	12/16/23 13:12	EPA 8260D	
Dibromomethane	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D	
,2-Dichlorobenzene	ND		0.500	ug/L	1	12/16/23 13:12	EPA 8260D	
,3-Dichlorobenzene	ND		0.500	ug/L	1	12/16/23 13:12	EPA 8260D	
,4-Dichlorobenzene	ND		0.500	ug/L	1	12/16/23 13:12	EPA 8260D	
Dichlorodifluoromethane	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D	
,1-Dichloroethane	ND		0.400	ug/L	1	12/16/23 13:12	EPA 8260D	
,2-Dichloroethane (EDC)	ND		0.400	ug/L	1	12/16/23 13:12	EPA 8260D	
,1-Dichloroethene	ND		0.400	ug/L	1	12/16/23 13:12	EPA 8260D	
cis-1,2-Dichloroethene	3.31		0.400	ug/L	1	12/16/23 13:12	EPA 8260D	
rans-1,2-Dichloroethene	ND		0.400	ug/L	1	12/16/23 13:12	EPA 8260D	

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Philip Nerenberg, Lab Director

Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **361M1148**Project Manager: **Russ Bunker** 

Report ID: A3L1059 - 12 17 23 2304

#### ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D  Sample Detection Reporting Date													
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes					
MW19-20231207 (A3L1059-01RE1)				Matrix: Wa	ater	Batch:	23L0632						
1,2-Dichloropropane	ND		0.500	ug/L	1	12/16/23 13:12	EPA 8260D						
1,3-Dichloropropane	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D						
2,2-Dichloropropane	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D						
1,1-Dichloropropene	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D						
cis-1,3-Dichloropropene	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D						
trans-1,3-Dichloropropene	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D						
Ethylbenzene	ND		0.500	ug/L	1	12/16/23 13:12	EPA 8260D						
Hexachlorobutadiene	ND		5.00	ug/L	1	12/16/23 13:12	EPA 8260D						
2-Hexanone	ND		10.0	ug/L	1	12/16/23 13:12	EPA 8260D						
Isopropylbenzene	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D						
4-Isopropyltoluene	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D						
Methylene chloride	ND		10.0	ug/L	1	12/16/23 13:12	EPA 8260D						
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1	12/16/23 13:12	EPA 8260D						
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D						
Naphthalene	ND		5.00	ug/L	1	12/16/23 13:12	EPA 8260D						
n-Propylbenzene	ND		0.500	ug/L	1	12/16/23 13:12	EPA 8260D						
Styrene	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D						
1,1,2-Tetrachloroethane	ND		0.400	ug/L	1	12/16/23 13:12	EPA 8260D						
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1	12/16/23 13:12	EPA 8260D						
Tetrachloroethene (PCE)	ND		0.400	ug/L	1	12/16/23 13:12	EPA 8260D						
Toluene	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D						
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1	12/16/23 13:12	EPA 8260D						
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1	12/16/23 13:12	EPA 8260D						
1,1,1-Trichloroethane	ND		0.400	ug/L	1	12/16/23 13:12	EPA 8260D						
1,1,2-Trichloroethane	ND		0.500	ug/L	1	12/16/23 13:12	EPA 8260D						
Trichloroethene (TCE)	4.12		0.400	ug/L	1	12/16/23 13:12	EPA 8260D						
Frichlorofluoromethane	ND		2.00	ug/L ug/L	1	12/16/23 13:12	EPA 8260D						
,2,3-Trichloropropane	ND		1.00	ug/L	1	12/16/23 13:12	EPA 8260D						
,2,4-Trimethylbenzene	ND		1.00	ug/L ug/L	1	12/16/23 13:12	EPA 8260D						
,3,5-Trimethylbenzene	ND		1.00	ug/L ug/L	1	12/16/23 13:12	EPA 8260D						
/inyl chloride	ND		0.200	ug/L ug/L	1	12/16/23 13:12	EPA 8260D						
n,p-Xylene	ND		1.00	ug/L ug/L	1	12/16/23 13:12	EPA 8260D						
o-Xylene	ND ND		0.500	ug/L ug/L	1	12/16/23 13:12	EPA 8260D						

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: <u>OCS</u>

Project Number: **361M1148**Project Manager: **Russ Bunker** 

Report ID: A3L1059 - 12 17 23 2304

#### ANALYTICAL SAMPLE RESULTS

	V	olatile Organ	ic Compou	nds by	EPA 826	0D			
Analyte	Sample Result	Detection Limit	Reporting Limit	U	nits	Dilution	Date Analyzed	Method Ref.	Notes
MW19-20231207 (A3L1059-01RE1)				Mat	rix: Wate	er	Batch:	23L0632	
Surrogate: 1,4-Difluorobenzene (Surr)		Recove	ery: 105 %	Limits:	80-120 %	1	12/16/23 13:12	EPA 8260D	
Toluene-d8 (Surr)			99 %		80-120 %	1	12/16/23 13:12	EPA 8260D	
4-Bromofluorobenzene (Surr)			100 %		80-120 %	1	12/16/23 13:12	EPA 8260D	

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Philip Nerenberg, Lab Director

Philip Nevenberg

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS
Project Number: 361M1148
Project Manager: Russ Bunker

Report ID: A3L1059 - 12 17 23 2304

## QUALITY CONTROL (QC) SAMPLE RESULTS 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 23L0456 - EPA 5030C Water

Balcii 23L0430 - EFA 3030C						***	1101		
Blank (23L0456-BLK1)		Prepared:	12/13/23 09	9:36 Ana	lyzed: 12/13	/23 12:21			
EPA 8260D									
Acetone	ND	 20.0	ug/L	1				 	
Acrylonitrile	ND	 2.00	ug/L	1				 	
Benzene	ND	 0.200	ug/L	1				 	
Bromobenzene	ND	 0.500	ug/L	1				 	
Bromochloromethane	ND	 1.00	ug/L	1				 	
Bromodichloromethane	ND	 1.00	ug/L	1				 	
Bromoform	ND	 1.00	ug/L	1				 	
Bromomethane	ND	 5.00	ug/L	1				 	
2-Butanone (MEK)	ND	 10.0	ug/L	1				 	
n-Butylbenzene	ND	 1.00	ug/L	1				 	
sec-Butylbenzene	ND	 1.00	ug/L	1				 	
tert-Butylbenzene	ND	 1.00	ug/L	1				 	
Carbon disulfide	ND	 10.0	ug/L	1				 	
Carbon tetrachloride	ND	 1.00	ug/L	1				 	
Chlorobenzene	ND	 0.500	ug/L	1				 	
Chloroethane	ND	 5.00	ug/L	1				 	
Chloroform	ND	 1.00	ug/L	1				 	
Chloromethane	ND	 5.00	ug/L	1				 	
2-Chlorotoluene	ND	 1.00	ug/L	1				 	
4-Chlorotoluene	ND	 1.00	ug/L	1				 	
Dibromochloromethane	ND	 1.00	ug/L	1				 	
1,2-Dibromo-3-chloropropane	ND	 5.00	ug/L	1				 	
1,2-Dibromoethane (EDB)	ND	 0.500	ug/L	1				 	
Dibromomethane	ND	 1.00	ug/L	1				 	
1,2-Dichlorobenzene	ND	 0.500	ug/L	1				 	
1,3-Dichlorobenzene	ND	 0.500	ug/L	1				 	
1,4-Dichlorobenzene	ND	 0.500	ug/L	1				 	
Dichlorodifluoromethane	ND	 1.00	ug/L	1				 	
1,1-Dichloroethane	ND	 0.400	ug/L	1				 	
1,2-Dichloroethane (EDC)	ND	 0.400	ug/L	1				 	
1,1-Dichloroethene	ND	 0.400	ug/L	1				 	
cis-1,2-Dichloroethene	ND	 0.400	ug/L	1				 	
trans-1,2-Dichloroethene	ND	 0.400	ug/L	1				 	
			-						

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Philip Nerenberg, Lab Director

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Portland, OR 97224

#### ANALYTICAL REPORT

#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:361M1148

Report ID:
A3L1059 - 12 17 23 2304

#### QUALITY CONTROL (QC) SAMPLE RESULTS

Project Manager: Russ Bunker

#### **Volatile Organic Compounds by EPA 8260D**

Prepared:   Prepared:   Prepared:     Prepared:	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
1,2-Dichloropropane         ND          0.500           1,3-Dichloropropane         ND          1.00           2,2-Dichloropropane         ND          1.00           1,1-Dichloropropene         ND          1.00           cis-1,3-Dichloropropene         ND          1.00           trans-1,3-Dichloropropene         ND          0.500           Hexachlorobutadiene         ND          0.500           Hexachlorobutadiene         ND          1.00           Isopropylbenzene         ND          1.00           Isopropylbenzene         ND          1.00           4-Isopropylbenzene         ND          1.00           Methyl-2-pentanone (MiBK)         ND          1.00           Methyl-tert-butyl ether (MTBE)         ND          1.00           Naphthalene         ND          1.00           Naphthalene         ND          5.00           n-Propylbenzene         ND          5.00           retrachloroethene (PCE)         ND          0.500				Wat	er				
1,3-Dichloropropane         ND          1.00           2,2-Dichloropropane         ND          1.00           1,1-Dichloropropene         ND          1.00           cis-1,3-Dichloropropene         ND          1.00           trans-1,3-Dichloropropene         ND          1.00           Ethylbenzene         ND          5.00           2-Hexanone         ND          5.00           2-Hexanone         ND          1.00           Isopropylbenzene         ND          1.00           4-Isopropyltoluene         ND          1.00           Methylene chloride         ND          1.00           4-Methyl-2-pentanone (MiBK)         ND          1.00           Methyl tert-butyl ether (MTBE)         ND          1.00           Naphthalene         ND          1.00           Naphthalene         ND          1.00           NPopylbenzene         ND          0.500           Styrene         ND          0.500           Tetrachloroethene (PCE)	12/13/23	09:36 Anal	yzed: 12/13/	23 12:21					
2,2-Dichloropropane         ND          1.00           1,1-Dichloropropene         ND          1.00           cis-1,3-Dichloropropene         ND          1.00           trans-1,3-Dichloropropene         ND          0.500           Ethylbenzene         ND          0.500           Hexachlorobutadiene         ND          5.00           2-Hexanone         ND          10.0           Isopropylbenzene         ND          1.00           4-Isopropyltoluene         ND          1.00           Methylene chloride         ND          1.00           4-Methyl-2-pentanone (MiBK)         ND          10.0           4-Methyl-2-pentanone (MiBK)         ND          1.00           Methyl tert-butyl ether (MTBE)         ND          1.00           Naphthalene         ND          1.00           Naphthalene         ND          1.00           Naphthalene         ND          0.500           Styrene         ND          0.500           Styrene	ug/L	1							
1,1-Dichloropropene         ND          1.00           cis-1,3-Dichloropropene         ND          1.00           trans-1,3-Dichloropropene         ND          1.00           Ethylbenzene         ND          0.500           Hexachlorobutadiene         ND          5.00           2-Hexanone         ND          10.0           Isopropylbenzene         ND          1.00           4-Isopropyltoluene         ND          1.00           Methylene chloride         ND          1.00           Naphthalene         ND          1.00           Naphthalene	ug/L	1							
cis-1,3-Dichloropropene         ND          1.00           trans-1,3-Dichloropropene         ND          1.00           Ethylbenzene         ND          0.500           Hexachlorobutadiene         ND          5.00           2-Hexanone         ND          10.0           Isopropylbenzene         ND          1.00           4-Isopropyltoluene         ND          1.00           Methylene chloride         ND          10.0           Naphthalene         ND          10.0           Naphthalene         ND          10.0           Styrene         ND	ug/L	1							
trans-1,3-Dichloropropene         ND          1.00           Ethylbenzene         ND          0.500           Hexachlorobutadiene         ND          5.00           2-Hexanone         ND          10.0           Isopropylbenzene         ND          1.00           4-Isopropyltoluene         ND          1.00           Methylene chloride         ND          10.0           Methylene chloride         ND          10.0           4-Methyl-2-pentanone (MiBK)         ND          10.0           4-Methyl-2-pentanone (MiBK)         ND          10.0           Methyl tert-butyl ether (MTBE)         ND          10.0           Naphthalene         ND          10.0           Naphthalene         ND          10.0           Naphthalene         ND          10.0           Naphthalene         ND          0.500           Styrene         ND          0.500           Styrene         ND          0.500           Tetrachloroethene (PCE)	ug/L	1							
Ethylbenzene         ND          0.500           Hexachlorobutadiene         ND          5.00           2-Hexanone         ND          10.0           Isopropylbenzene         ND          1.00           4-Isopropyltoluene         ND          1.00           Methylene chloride         ND          10.0           Methylene chloride         ND          10.0           4-Methyl-2-pentanone (MiBK)         ND          10.0           Methyl tert-butyl ether (MTBE)         ND          1.00           Naphthalene         ND          1.00           Naphthalene         ND          1.00           N-Propylbenzene         ND          1.00           Npopylbenzene         ND          1.00           1,1,2-Tetrachloroethane         ND          0.400           1,1,2-Tetrachloroethane         ND          0.400           1,2,4-Trichloroethane         ND          0.400           1,1,2-Trichloroethane         ND          0.500           Trichloroflu	ug/L	1							
Hexachlorobutadiene         ND          5.00           2-Hexanone         ND          10.0           Isopropylbenzene         ND          1.00           4-Isopropyltoluene         ND          1.00           Methylene chloride         ND          10.0           4-Methyl-2-pentanone (MiBK)         ND          10.0           Methyl tert-butyl ether (MTBE)         ND          1.00           Naphthalene         ND          5.00           n-Propylbenzene         ND          5.00           n-Propylbenzene         ND          5.00           Styrene         ND          0.500           Styrene         ND          0.400           1,1,2-Tetrachloroethane         ND          0.500           Tetrachloroethene (PCE)         ND          0.200           Toluene         ND          1.00           1,2,3-Trichlorobenzene         ND          2.00           1,1,1-Trichloroethane         ND          0.500           Trichloroethene (TCE)	ug/L	1							
2-Hexanone         ND          10.0           Isopropylbenzene         ND          1.00           4-Isopropyltoluene         ND          1.00           Methylene chloride         ND          10.0           4-Methyl-2-pentanone (MiBK)         ND          10.0           Methyl tert-butyl ether (MTBE)         ND          1.00           Naphthalene         ND          5.00           n-Propylbenzene         ND          5.00           styrene         ND          0.500           Styrene         ND          0.400           1,1,2-Tetrachloroethane         ND          0.500           Tetrachloroethene (PCE)         ND          0.200           Toluene         ND          1.00           1,2,3-Trichlorobenzene         ND          2.00           1,2,4-Trichloroethane         ND          0.500           Trichlorofluoromethane         ND          0.200           Trichlorofluoromethane         ND          0.200           Trichloropropane<	ug/L	1							
Isopropylbenzene	ug/L	1							
4-Isopropyltoluene         ND          1.00           Methylene chloride         ND          10.0           4-Methyl-2-pentanone (MiBK)         ND          10.0           Methyl tert-butyl ether (MTBE)         ND          1.00           Naphthalene         ND          5.00           n-Propylbenzene         ND          0.500           Styrene         ND          0.400           1,1,2-Tetrachloroethane         ND          0.500           Tetrachloroethane (PCE)         ND          0.200           Toluene         ND          0.200           Toluene         ND          2.00           1,2,3-Trichlorobenzene         ND          2.00           1,2,4-Trichloroethane         ND          0.500           Trichloroethene (TCE)         ND          0.200           Trichlorofluoromethane         ND          0.200           Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1,3,5	ug/L	1							
Methylene chloride         ND          10.0           4-Methyl-2-pentanone (MiBK)         ND          10.0           Methyl tert-butyl ether (MTBE)         ND          1.00           Naphthalene         ND          5.00           n-Propylbenzene         ND          0.500           Styrene         ND          1.00           1,1,2-Tetrachloroethane         ND          0.400           1,1,2-Tetrachloroethane         ND          0.200           Toluene         ND          0.200           Toluene         ND          2.00           1,2,3-Trichlorobenzene         ND          2.00           1,1,1-Trichloroethane         ND          0.400           1,1,2-Trichloroethane         ND          0.500           Trichlorofluoromethane         ND          0.200           Trichlorofluoromethane         ND          0.200           Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1	ug/L	1							
4-Methyl-2-pentanone (MiBK)         ND          10.0           Methyl tert-butyl ether (MTBE)         ND          1.00           Naphthalene         ND          5.00           n-Propylbenzene         ND          0.500           Styrene         ND          1.00           1,1,2-Tetrachloroethane         ND          0.400           1,1,2-Tetrachloroethane         ND          0.500           Tetrachloroethene (PCE)         ND          0.200           Toluene         ND          0.200           1,2,3-Trichlorobenzene         ND          2.00           1,2,4-Trichloroethane         ND          0.500           Trichloroethene (TCE)         ND          0.200           Trichlorofluoromethane         ND          0.200           Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
Methyl tert-butyl ether (MTBE)         ND          1.00           Naphthalene         ND          5.00           n-Propylbenzene         ND          0.500           Styrene         ND          1.00           1,1,1,2-Tetrachloroethane         ND          0.400           1,1,2,2-Tetrachloroethane         ND          0.500           Tetrachloroethene (PCE)         ND          0.200           Toluene         ND          1.00           1,2,3-Trichlorobenzene         ND          2.00           1,2,4-Trichloroethane         ND          0.400           1,1,2-Trichloroethane         ND          0.500           Trichloroethene (TCE)         ND          0.200           Trichlorofluoromethane         ND          2.00           1,2,3-Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
Methyl tert-butyl ether (MTBE)         ND          1.00           Naphthalene         ND          5.00           n-Propylbenzene         ND          0.500           Styrene         ND          1.00           1,1,1,2-Tetrachloroethane         ND          0.400           1,1,2,2-Tetrachloroethane         ND          0.500           Tetrachloroethene (PCE)         ND          0.200           Toluene         ND          1.00           1,2,3-Trichlorobenzene         ND          2.00           1,2,4-Trichloroethane         ND          0.400           1,1,2-Trichloroethane         ND          0.500           Trichloroethene (TCE)         ND          0.200           Trichlorofluoromethane         ND          2.00           1,2,3-Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
Naphthalene         ND          5.00           n-Propylbenzene         ND          0.500           Styrene         ND          1.00           1,1,1,2-Tetrachloroethane         ND          0.400           1,1,2,2-Tetrachloroethane         ND          0.500           Tetrachloroethene (PCE)         ND          0.200           Toluene         ND          1.00           1,2,3-Trichlorobenzene         ND          2.00           1,2,4-Trichloroethane         ND          0.400           1,1,2-Trichloroethane         ND          0.500           Trichlorofluoromethane         ND          0.200           Trichlorofluoromethane         ND          2.00           1,2,3-Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
n-Propylbenzene         ND          0.500           Styrene         ND          1.00           1,1,1,2-Tetrachloroethane         ND          0.400           1,1,2,2-Tetrachloroethane         ND          0.500           Tetrachloroethene (PCE)         ND          0.200           Toluene         ND          1.00           1,2,3-Trichlorobenzene         ND          2.00           1,2,4-Trichlorobenzene         ND          0.400           1,1,2-Trichloroethane         ND          0.500           Trichloroethene (TCE)         ND          0.200           Trichlorofluoromethane         ND          2.00           1,2,3-Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
1,1,1,2-Tetrachloroethane         ND          0.400           1,1,2,2-Tetrachloroethane         ND          0.500           Tetrachloroethene (PCE)         ND          0.200           Toluene         ND          1.00           1,2,3-Trichlorobenzene         ND          2.00           1,2,4-Trichlorobenzene         ND          0.400           1,1,1-Trichloroethane         ND          0.500           Trichloroethane         ND          0.200           Trichlorofluoromethane         ND          0.200           Trichlorofluoromethane         ND          1.00           1,2,3-Trichloropropane         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
1,1,1,2-Tetrachloroethane         ND          0.400           1,1,2,2-Tetrachloroethane         ND          0.500           Tetrachloroethene (PCE)         ND          0.200           Toluene         ND          1.00           1,2,3-Trichlorobenzene         ND          2.00           1,2,4-Trichlorobenzene         ND          0.400           1,1,1-Trichloroethane         ND          0.500           Trichloroethane         ND          0.200           Trichlorofluoromethane         ND          0.200           Trichlorofluoromethane         ND          1.00           1,2,3-Trichloropropane         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
1,1,2,2-Tetrachloroethane         ND          0.500           Tetrachloroethene (PCE)         ND          0.200           Toluene         ND          1.00           1,2,3-Trichlorobenzene         ND          2.00           1,2,4-Trichlorobenzene         ND          2.00           1,1,1-Trichloroethane         ND          0.400           1,1,2-Trichloroethane         ND          0.500           Trichloroethene (TCE)         ND          0.200           Trichlorofluoromethane         ND          2.00           1,2,3-Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
Tetrachloroethene (PCE)         ND          0.200           Toluene         ND          1.00           1,2,3-Trichlorobenzene         ND          2.00           1,2,4-Trichlorobenzene         ND          0.400           1,1,1-Trichloroethane         ND          0.500           Trichloroethane (TCE)         ND          0.200           Trichlorofluoromethane         ND          2.00           1,2,3-Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
Toluene         ND          1.00           1,2,3-Trichlorobenzene         ND          2.00           1,2,4-Trichlorobenzene         ND          2.00           1,1,1-Trichloroethane         ND          0.400           1,1,2-Trichloroethane         ND          0.500           Trichloroethene (TCE)         ND          0.200           Trichlorofluoromethane         ND          2.00           1,2,3-Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
1,2,4-Trichlorobenzene         ND          2.00           1,1,1-Trichloroethane         ND          0.400           1,1,2-Trichloroethane         ND          0.500           Trichloroethene (TCE)         ND          0.200           Trichlorofluoromethane         ND          2.00           1,2,3-Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
1,2,4-Trichlorobenzene         ND          2.00           1,1,1-Trichloroethane         ND          0.400           1,1,2-Trichloroethane         ND          0.500           Trichloroethene (TCE)         ND          0.200           Trichlorofluoromethane         ND          2.00           1,2,3-Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
1,1,1-Trichloroethane         ND          0.400           1,1,2-Trichloroethane         ND          0.500           Trichloroethene (TCE)         ND          0.200           Trichlorofluoromethane         ND          2.00           1,2,3-Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
Trichloroethene (TCE)         ND          0.200           Trichlorofluoromethane         ND          2.00           1,2,3-Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
Trichloroethene (TCE)         ND          0.200           Trichlorofluoromethane         ND          2.00           1,2,3-Trichloropropane         ND          1.00           1,2,4-Trimethylbenzene         ND          1.00           1,3,5-Trimethylbenzene         ND          1.00	ug/L	1							
Trichlorofluoromethane ND 2.00 1,2,3-Trichloropropane ND 1.00 1,2,4-Trimethylbenzene ND 1.00 1,3,5-Trimethylbenzene ND 1.00	ug/L	1							
1,2,3-Trichloropropane       ND        1.00         1,2,4-Trimethylbenzene       ND        1.00         1,3,5-Trimethylbenzene       ND        1.00	ug/L	1							
1,2,4-Trimethylbenzene ND 1.00 1,3,5-Trimethylbenzene ND 1.00	ug/L	1							
1,3,5-Trimethylbenzene ND 1.00	ug/L	1							
	ug/L	1							
	ug/L	1							
m,p-Xylene ND 1.00	ug/L ug/L	1							
o-Xylene ND 0.500	ug/L ug/L	1							

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Dilution: 1x

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Surr: 1,4-Difluorobenzene (Surr)

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Philip Nerenberg, Lab Director

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Limits: 80-120 %

Recovery: 104 %



#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc. Project: OCS
15862 SW 72nd Ave. Suite 150 Project Number: 361M1148

Portland, OR 97224 Project Manager: Russ Bunker

Report ID: A3L1059 - 12 17 23 2304

## QUALITY CONTROL (QC) SAMPLE RESULTS

Detection Reporting Spike Source % REC RPD													
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 23L0456 - EPA 5030C							Wa	ter					
Blank (23L0456-BLK1)			Prepared	: 12/13/23	09:36 Ana	lyzed: 12/13	/23 12:21						
Surr: Toluene-d8 (Surr)		Reco	very: 100 %	Limits: 80	0-120 %	Dilı	ution: 1x						
4-Bromofluorobenzene (Surr)			99 %	80	)-120 %		"						
LCS (23L0456-BS1)			Prepared	: 12/13/23	09:36 Ana	lyzed: 12/13	/23 11:30						
EPA 8260D													
Acetone	35.2		20.0	ug/L	1	40.0		88	80-120%				
Acrylonitrile	18.3		2.00	ug/L	1	20.0		92	80-120%				
Benzene	20.1		0.200	ug/L	1	20.0		100	80-120%				
Bromobenzene	20.0		0.500	ug/L	1	20.0		100	80-120%				
Bromochloromethane	19.8		1.00	ug/L	1	20.0		99	80-120%				
Bromodichloromethane	21.4		1.00	ug/L	1	20.0		107	80-120%				
Bromoform	23.5		1.00	ug/L	1	20.0		117	80-120%				
Bromomethane	18.2		5.00	ug/L	1	20.0		91	80-120%				
2-Butanone (MEK)	38.5		10.0	ug/L	1	40.0		96	80-120%				
n-Butylbenzene	21.3		1.00	ug/L	1	20.0		106	80-120%				
sec-Butylbenzene	21.9		1.00	ug/L	1	20.0		110	80-120%				
tert-Butylbenzene	20.0		1.00	ug/L	1	20.0		100	80-120%				
Carbon disulfide	15.4		10.0	ug/L	1	20.0		77	80-120%			(	
Carbon tetrachloride	21.4		1.00	ug/L	1	20.0		107	80-120%				
Chlorobenzene	20.7		0.500	ug/L	1	20.0		103	80-120%				
Chloroethane	17.4		5.00	ug/L	1	20.0		87	80-120%				
Chloroform	21.2		1.00	ug/L	1	20.0		106	80-120%				
Chloromethane	17.7		5.00	ug/L	1	20.0		89	80-120%				
2-Chlorotoluene	20.4		1.00	ug/L	1	20.0		102	80-120%				
4-Chlorotoluene	21.3		1.00	ug/L	1	20.0		106	80-120%				
Dibromochloromethane	21.4		1.00	ug/L	1	20.0		107	80-120%				
1,2-Dibromo-3-chloropropane	18.8		5.00	ug/L	1	20.0		94	80-120%				
1,2-Dibromoethane (EDB)	20.7		0.500	ug/L	1	20.0		103	80-120%				
Dibromomethane	21.4		1.00	ug/L	1	20.0		107	80-120%				
1,2-Dichlorobenzene	20.9		0.500	ug/L ug/L	1	20.0		104	80-120%				
1,3-Dichlorobenzene	21.4		0.500	ug/L	1	20.0		107	80-120%				
1,4-Dichlorobenzene	19.9		0.500	ug/L	1	20.0		100	80-120%				
Dichlorodifluoromethane	18.8		1.00	ug/L ug/L	1	20.0		94	80-120%				
1,1-Dichloroethane	19.4		0.400	ug/L	1	20.0		97	80-120%				

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:361M1148Portland, OR 97224Project Manager:Russ Bunker

Report ID:
A3L1059 - 12 17 23 2304

# QUALITY CONTROL (QC) SAMPLE RESULTS Volatile Organic Compounds by EPA 8260D

## Detection Reporting Spike Source % REC RPD

Analyte	Result	Limit	Limit	Units	Dilution	Amount	Result	% REC	% REC Limits	RPD	Limit	Notes
3atch 23L0456 - EPA 5030C							Wa	ter				
CS (23L0456-BS1)			Prepared	: 12/13/23	09:36 Anal	yzed: 12/13/	/23 11:30					
1,2-Dichloroethane (EDC)	21.4		0.400	ug/L	1	20.0		107	80-120%			
1,1-Dichloroethene	17.3		0.400	ug/L	1	20.0		87	80-120%			
cis-1,2-Dichloroethene	18.5		0.400	ug/L	1	20.0		93	80-120%			
trans-1,2-Dichloroethene	17.1		0.400	ug/L	1	20.0		86	80-120%			
1,2-Dichloropropane	19.1		0.500	ug/L	1	20.0		96	80-120%			
1,3-Dichloropropane	19.4		1.00	ug/L	1	20.0		97	80-120%			
2,2-Dichloropropane	20.3		1.00	ug/L	1	20.0		102	80-120%			
1,1-Dichloropropene	19.2		1.00	ug/L	1	20.0		96	80-120%			
cis-1,3-Dichloropropene	19.7		1.00	ug/L	1	20.0		98	80-120%			
trans-1,3-Dichloropropene	21.0		1.00	ug/L	1	20.0		105	80-120%			
Ethylbenzene	21.1		0.500	ug/L	1	20.0		106	80-120%			
Hexachlorobutadiene	19.1		5.00	ug/L	1	20.0		96	80-120%			
2-Hexanone	33.8		10.0	ug/L	1	40.0		85	80-120%			
Isopropylbenzene	21.8		1.00	ug/L	1	20.0		109	80-120%			
4-Isopropyltoluene	20.6		1.00	ug/L	1	20.0		103	80-120%			
Methylene chloride	17.5		10.0	ug/L	1	20.0		88	80-120%			
4-Methyl-2-pentanone (MiBK)	35.7		10.0	ug/L	1	40.0		89	80-120%			
Methyl tert-butyl ether (MTBE)	17.6		1.00	ug/L	1	20.0		88	80-120%			
Naphthalene	16.5		5.00	ug/L	1	20.0		83	80-120%			
n-Propylbenzene	20.7		0.500	ug/L	1	20.0		103	80-120%			
Styrene	21.5		1.00	ug/L	1	20.0		107	80-120%			
1,1,1,2-Tetrachloroethane	20.5		0.400	ug/L	1	20.0		103	80-120%			
1,1,2,2-Tetrachloroethane	20.7		0.500	ug/L	1	20.0		103	80-120%			
Tetrachloroethene (PCE)	20.5		0.400	ug/L	1	20.0		102	80-120%			
Toluene	19.9		1.00	ug/L	1	20.0		100	80-120%			
1,2,3-Trichlorobenzene	20.6		2.00	ug/L	1	20.0		103	80-120%			
1,2,4-Trichlorobenzene	18.8		2.00	ug/L	1	20.0		94	80-120%			
1,1,1-Trichloroethane	20.7		0.400	ug/L	1	20.0		104	80-120%			
1,1,2-Trichloroethane	21.2		0.500	ug/L	1	20.0		106	80-120%			
Trichloroethene (TCE)	19.7		0.400	ug/L	1	20.0		99	80-120%			
Trichlorofluoromethane	21.2		2.00	ug/L	1	20.0		106	80-120%			
1,2,3-Trichloropropane	21.0		1.00	ug/L	1	20.0		105	80-120%			
1,2,4-Trimethylbenzene	22.6		1.00	ug/L	1	20.0		113	80-120%			
1,3,5-Trimethylbenzene	21.8		1.00	ug/L	1	20.0		109	80-120%			

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Philip Nerenberg, Lab Director

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Portland, OR 97224

#### ANALYTICAL REPORT

#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

Report ID:

A3L1059 - 12 17 23 2304

WSP USA Environment & Infrastructure Inc. Project: <u>ocs</u> 15862 SW 72nd Ave. Suite 150 Project Number: 361M1148

Project Manager: Russ Bunker

## QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
3atch 23L0456 - EPA 5030C							Wa	ter				
LCS (23L0456-BS1)			Prepared	: 12/13/23	09:36 Ana	yzed: 12/13	/23 11:30					
Vinyl chloride	16.9		0.200	ug/L	1	20.0		85	80-120%			
m,p-Xylene	45.6		1.00	ug/L	1	40.0		114	80-120%			
o-Xylene	20.3		0.500	ug/L	1	20.0		102	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 103 %	Limits: 80	120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			96 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			94 %	80	-120 %		"					
Duplicate (23L0456-DUP1)			Prepared	: 12/13/23	09:38 Anal	yzed: 12/13/	/23 19:08					
OC Source Sample: Non-SDG (A3)	L1036-02)											
Acetone	ND		10000	ug/L	500		ND				30%	
Acrylonitrile	ND		1000	ug/L	500		ND				30%	
Benzene	ND		100	ug/L	500		55.0			***	30%	
Bromobenzene	ND		250	ug/L	500		ND				30%	
Bromochloromethane	ND		500	ug/L	500		ND				30%	
Bromodichloromethane	ND		500	ug/L	500		ND				30%	
Bromoform	ND		500	ug/L	500		ND				30%	
Bromomethane	ND		2500	ug/L	500		ND				30%	
2-Butanone (MEK)	ND		5000	ug/L	500		ND				30%	
n-Butylbenzene	ND		500	ug/L	500		ND				30%	
sec-Butylbenzene	ND		500	ug/L	500		ND				30%	
tert-Butylbenzene	ND		500	ug/L	500		ND				30%	
Carbon disulfide	ND		5000	ug/L	500		ND				30%	
Carbon tetrachloride	ND		500	ug/L	500		ND				30%	
Chlorobenzene	ND		250	ug/L	500		ND				30%	
Chloroethane	ND		2500	ug/L	500		ND				30%	
Chloroform	ND		500	ug/L	500		ND				30%	
Chloromethane	ND		2500	ug/L	500		ND				30%	
2-Chlorotoluene	ND		500	ug/L	500		ND				30%	
4-Chlorotoluene	ND		500	ug/L	500		ND				30%	
Dibromochloromethane	ND		500	ug/L	500		ND				30%	
1,2-Dibromo-3-chloropropane	ND		2500	ug/L	500		ND				30%	
1,2-Dibromoethane (EDB)	ND		250	ug/L	500		ND				30%	
Dibromomethane	ND		500	ug/L	500		ND				30%	
1,2-Dichlorobenzene	ND		250	ug/L	500		ND				30%	

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Page 10 of 32 Philip Nerenberg, Lab Director



#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:361M1148Portland, OR 97224Project Manager:Russ Bunker

Report ID: A3L1059 - 12 17 23 2304

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D % REC RPD Detection Reporting Spike Source Analyte Result Units Dilution % REC RPD Limit Limit Amount Result Limits Limit Notes Batch 23L0456 - EPA 5030C Water Duplicate (23L0456-DUP1) Prepared: 12/13/23 09:38 Analyzed: 12/13/23 19:08 QC Source Sample: Non-SDG (A3L1036-02) 1,3-Dichlorobenzene ND 250 ug/L 500 ND 30% ND 250 500 1,4-Dichlorobenzene ug/L ND 30% ug/L Dichlorodifluoromethane ND 500 500 ND 30% 1,1-Dichloroethane ND 200 ug/L 500 ND 30% 1,2-Dichloroethane (EDC) ND 200 500 ND 30% ug/L ------ND 1,1-Dichloroethene 200 ug/L 500 ND 30% cis-1,2-Dichloroethene 2660 200 ug/L 500 2700 1 30% ND 200 30% trans-1,2-Dichloroethene ug/L 500 ND 1,2-Dichloropropane ND 250 ug/L 500 ND 30% 1,3-Dichloropropane ND 500 ug/L 500 ND 30% 2,2-Dichloropropane ND 500 ug/L 500 ND 30% 1,1-Dichloropropene ND 500 500 30% ug/L ND cis-1,3-Dichloropropene ND 500 ug/L 500 ND 30% trans-1,3-Dichloropropene ND 500 30% ug/L 500 ND ug/L Ethylbenzene ND 250 500 ND 30% Hexachlorobutadiene ND 2500 ug/L 500 ND \_\_\_ 30% 2-Hexanone ND 5000 ug/L 500 ND 30% ND 500 500 30% Isopropylbenzene ND ug/L 4-Isopropyltoluene ND 500 ug/L 500 ND 30% Methylene chloride ND 5000 500 ND 30% ug/L 4-Methyl-2-pentanone (MiBK) ND 5000 ug/L 500 ND 30% Methyl tert-butyl ether (MTBE) ND ---500 ug/L 500 ND ---30% Naphthalene ND 2500 ug/L 500 ND 30% ND 30% n-Propylbenzene 250 500 ND --ug/L Styrene ND 500 30% ug/L 500 ND ND 200 500 ND 30% 1.1.1.2-Tetrachloroethane ug/L 1,1,2,2-Tetrachloroethane ND 250 500 ND 30% ug/L Tetrachloroethene (PCE) ND 200 ug/L 500 ND ---30% Toluene ND 500 ug/L 500 ND 30% 1.2.3-Trichlorobenzene ND 1000 500 ND 30% ug/L ---1,2,4-Trichlorobenzene ND 1000 ug/L 500 ND 30% 1,1,1-Trichloroethane 200 ND 500 ND 30% ug/L ---1,1,2-Trichloroethane ND 250 ug/L 500 ND 30%

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Philip Nerenberg, Lab Director

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:361M1148Portland, OR 97224Project Manager:Russ Bunker

Report ID:
A3L1059 - 12 17 23 2304

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23L0456 - EPA 5030C							Wa	ter				
Duplicate (23L0456-DUP1)			Prepared	1: 12/13/23	09:38 Anal	yzed: 12/13/	/23 19:08					
QC Source Sample: Non-SDG (A3	L1036-02)											
Trichloroethene (TCE)	ND		200	ug/L	500		175			***	30%	
Trichlorofluoromethane	ND		1000	ug/L	500		ND				30%	
1,2,3-Trichloropropane	ND		500	ug/L	500		ND				30%	
1,2,4-Trimethylbenzene	ND		500	ug/L	500		ND				30%	
1,3,5-Trimethylbenzene	ND		500	ug/L	500		ND				30%	
Vinyl chloride	500		100	ug/L	500		510			2	30%	
m,p-Xylene	ND		500	ug/L	500		ND				30%	
o-Xylene	ND		250	ug/L	500		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 104 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			99 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			100 %	80	-120 %		"					
QC Source Sample: Non-SDG (A3 EPA 8260D	L1017-02)											
<u> </u>	40.0		20.0	/1	1	40.0	ND	100	39-160%			
Acetone Acrylonitrile	16.8		2.00	ug/L	1	20.0	ND ND	84	63-135%			
Benzene	19.8		0.200	ug/L ug/L	1	20.0	ND ND	99	79-120%			
				-			ND ND					
Bromobenzene Bromochloromethane	19.4		0.500 1.00	ug/L	1	20.0 20.0	ND ND	97 93	80-120% 78-123%			
Bromodichloromethane	18.7 20.9		1.00	ug/L	1 1	20.0	ND ND	93 104	78-125% 79-125%			
Bromoform	20.9		1.00	ug/L ug/L	1	20.0	ND ND	104	/9-125% 66-130%			
Bromomethane	18.4		5.00	ug/L ug/L	1	20.0	ND ND	92	53-141%			
2-Butanone (MEK)	35.3		10.0	ug/L ug/L	1	40.0	ND	92 88	56-143%			
n-Butylbenzene	21.5		1.00		1	20.0	ND ND	88 107	75-128%			
sec-Butylbenzene	22.5		1.00	ug/L	1	20.0	ND ND	113	75-128% 77-126%			
tert-Butylbenzene			1.00	ug/L				103	78-124%			
Carbon disulfide	20.6 16.7		1.00	ug/L	1 1	20.0 20.0	ND ND	103 84	/8-124% 64-133%			Ç
Carbon disumde  Carbon tetrachloride	24.1		1.00	ug/L	1	20.0	ND ND	84 121	72-136%			Ç
				ug/L								
Chlorobenzene	20.4		0.500	ug/L	1	20.0	ND	102	80-120%			
Chloroethane	18.2		5.00	ug/L	1	20.0	ND	91	60-138%			
Chloroform	21.1		1.00	ug/L	1	20.0	ND	106	79-124%			
Chloromethane	18.4		5.00	ug/L	1	20.0	ND	92	50-139%			

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Philip Nevenberg

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Portland, OR 97224

#### ANALYTICAL REPORT

#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:361M1148

Report ID: A3L1059 - 12 17 23 2304

#### QUALITY CONTROL (QC) SAMPLE RESULTS

Project Manager: Russ Bunker

#### Volatile Organic Compounds by EPA 8260D Detection % REC RPD Reporting Spike Source Analyte Result Limit Units Dilution % REC RPD Limit Amount Result Limits Limit Notes Batch 23L0456 - EPA 5030C Water Matrix Spike (23L0456-MS1) Prepared: 12/13/23 09:38 Analyzed: 12/13/23 21:23 QC Source Sample: Non-SDG (A3L1017-02) 2-Chlorotoluene 19.8 1.00 ug/L 1 20.0 ND 99 79-122% 4-Chlorotoluene 20.5 20.0 1.00 ug/L 1 ND 103 78-122% ug/L Dibromochloromethane 20.7 1.00 1 20.0 ND 104 74-126% 1,2-Dibromo-3-chloropropane 17.2 5.00 ug/L 1 20.0 ND 86 62-128% 1,2-Dibromoethane (EDB) 20.1 0.500 1 20.0 ND 100 77-121% ug/L 20.7 1.00 20.0 ND 79-123% Dibromomethane ug/L 1 104 1,2-Dichlorobenzene 22.1 0.500 ug/L 1 20.0 1.88 101 80-120% 0.500 20.0 0.360 104 1,3-Dichlorobenzene 21.2 ug/L 1 80-120% 1,4-Dichlorobenzene 20.7 0.500 ug/L 1 20.0 1.64 95 79-120% Dichlorodifluoromethane 23.7 1.00 ug/L 1 20.0 ND 118 32-152% 1,1-Dichloroethane 19.3 0.400 ug/L 1 20.0 ND 97 77-125% 1,2-Dichloroethane (EDC) 20.6 0.400 20.0 ND 103 73-128% ug/L 1 20.0 1,1-Dichloroethene 19.6 0.400 ug/L 1 ND 98 71-131% 20.0 cis-1,2-Dichloroethene 18.3 0.400 1 ND 91 78-123% ug/L trans-1,2-Dichloroethene 0.400 17.8 ug/L 1 20.0 ND 89 75-124% 1,2-Dichloropropane 18.5 0.500 ug/L 1 20.0 ND 92 78-122% \_\_\_ 1,3-Dichloropropane 18.6 1.00 ug/L 1 20.0 ND 93 80-120% 20.5 20.0 ND 102 60-139% 2,2-Dichloropropane 1.00 1 ug/L 20.8 20.0 79-125% 1,1-Dichloropropene 1.00 ug/L 1 ND 104 cis-1,3-Dichloropropene 1.00 20.0 15.5 ND 77 75-124% ug/L 1 trans-1,3-Dichloropropene 19.9 20.0 ND 99 73-127% 1.00 ug/L 1 Ethylbenzene 21.4 ---0.500 ug/L 1 20.0 ND 107 79-121% Hexachlorobutadiene 18.8 5.00 ug/L 1 20.0 ND 94 66-134% 30.4 10.0 40.0 ND 76 57-139% 2-Hexanone ug/L 1 ---Isopropylbenzene 22.7 1.00 20.0 ND 72-131% ug/L 1 113 20.8 20.0 4-Isopropyltoluene 1.00 ND 104 77-127% ug/L 1 Methylene chloride 10.0 20.0 ND 83 74-124% 16.6 ug/L 1 40.0 67-130% 4-Methyl-2-pentanone (MiBK) 32.3 10.0 ug/L 1 ND 81 Methyl tert-butyl ether (MTBE) 16.3 1.00 ug/L 1 20.0 ND 82 71-124% Naphthalene 14.5 5.00 1 20.0 ND 73 ug/L 61-128% n-Propylbenzene 20.8 0.500 1 20.0 ND 104 76-126% ug/L 1.00 20.0 ND Styrene 21.0 1 105 78-123% ug/L ------1,1,1,2-Tetrachloroethane 20.3 0.400 ug/L 1 20.0 ND 102 78-124%

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Portland, OR 97224

#### ANALYTICAL REPORT

#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc. <u>ocs</u> Project: 15862 SW 72nd Ave. Suite 150 Project Number: 361M1148

Report ID: Project Manager: Russ Bunker A3L1059 - 12 17 23 2304

#### QUALITY CONTROL (QC) SAMPLE RESULTS

	Volatile Organic Compounds by EPA 8260D  Detection Reporting Spike Source % REC RPD Source Result Limit Limit Units Dilution Amount Result % REC Limits RPD Limit Notes														
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC		RPD	RPD Limit	Notes			
Batch 23L0456 - EPA 5030C							Wa	ter							
Matrix Spike (23L0456-MS1)			Prepared	: 12/13/23	09:38 Ana	lyzed: 12/13	/23 21:23								
QC Source Sample: Non-SDG (A3	L1017-02)														
1,1,2,2-Tetrachloroethane	19.4		0.500	ug/L	1	20.0	ND	97	71-121%						
Tetrachloroethene (PCE)	24.3		0.400	ug/L	1	20.0	2.28	110	74-129%						
Toluene	20.1		1.00	ug/L	1	20.0	ND	100	80-121%						
1,2,3-Trichlorobenzene	19.0		2.00	ug/L	1	20.0	ND	95	69-129%						
1,2,4-Trichlorobenzene	17.2		2.00	ug/L	1	20.0	ND	86	69-130%						
1,1,1-Trichloroethane	22.4		0.400	ug/L	1	20.0	ND	112	74-131%						
1,1,2-Trichloroethane	20.6		0.500	ug/L	1	20.0	ND	103	80-120%						
Trichloroethene (TCE)	23.2		0.400	ug/L	1	20.0	2.73	102	79-123%						
Trichlorofluoromethane	25.5		2.00	ug/L	1	20.0	ND	128	65-141%						
1,2,3-Trichloropropane	19.6		1.00	ug/L	1	20.0	ND	98	73-122%						
1,2,4-Trimethylbenzene	22.0		1.00	ug/L	1	20.0	ND	110	76-124%						
1,3,5-Trimethylbenzene	21.8		1.00	ug/L	1	20.0	ND	109	75-124%						
Vinyl chloride	18.8		0.200	ug/L	1	20.0	ND	94	58-137%						
m,p-Xylene	46.5		1.00	ug/L	1	40.0	ND	116	80-121%						
o-Xylene	19.9		0.500	ug/L	1	20.0	ND	100	78-122%						
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 103 %	Limits: 80	0-120 %	Dilı	ution: 1x								
Toluene-d8 (Surr)			94 %	80	0-120 %		"								
4-Bromofluorobenzene (Surr)			93 %	80	0-120 %		"								
Matrix Spike Dup (23L0456-M			Prepared	: 12/13/23	09:38 Ana	lyzed: 12/13	/23 21:46								
Acetone	40.8		20.0	ug/L	1	40.0	ND	102	39-160%	2	30%				
Acrylonitrile	17.8		2.00	ug/L	1	20.0	ND	89	63-135%		30%				
Benzene	21.0		0.200	ug/L	1	20.0	ND	105	79-120%		30%				
Bromobenzene	21.1		0.500	ug/L	1	20.0	ND	106	80-120%		30%				
Bromochloromethane	19.5		1.00	ug/L	1	20.0	ND	97	78-123%		30%				
Bromodichloromethane	21.6		1.00	ug/L	1	20.0	ND	108	79-125%		30%				
Bromoform	23.9		1.00	ug/L	1	20.0	ND	120	66-130%		30%				
Bromomethane	18.2		5.00	ug/L ug/L	1	20.0	ND	91	53-141%		30%				
2-Butanone (MEK)	36.4		10.0	ug/L ug/L	1	40.0	ND	91	56-143%		30%				
n-Butylbenzene	23.4		1.00	ug/L ug/L	1	20.0	ND	117	75-128%		30%				
sec-Butylbenzene	24.5		1.00	ug/L ug/L	1	20.0	ND	123	77-126%		30%				
tert-Butylbenzene	24.3		1.00	ug/L ug/L	1	20.0	ND	112	77-126% 78-124%		30%				
tert-Butylbelizelle	22.3		1.00	ug/L	1	∠0.0	ND	114	/0-124%	0	3070				

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Page 14 of 32 Philip Nerenberg, Lab Director



#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **361M1148**Project Manager: **Russ Bunker** 

Report ID: A3L1059 - 12 17 23 2304

## QUALITY CONTROL (QC) SAMPLE RESULTS

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 23L0456 - EPA 5030C						Wa	ter				
Matrix Spike Dup (23L0456-MS	SD1)	Prepared:	12/13/23 09	:38 Ana	lyzed: 12/13	3/23 21:46					
QC Source Sample: Non-SDG (A3L	.1017-02)	 									
Carbon disulfide	17.6	 10.0	ug/L	1	20.0	ND	88	64-133%	5	30%	Q-54
Carbon tetrachloride	25.3	 1.00	ug/L	1	20.0	ND	126	72-136%	5	30%	
Chlorobenzene	21.7	 0.500	ug/L	1	20.0	ND	109	80-120%	6	30%	
Chloroethane	18.0	 5.00	ug/L	1	20.0	ND	90	60-138%	1	30%	
Chloroform	21.9	 1.00	ug/L	1	20.0	ND	109	79-124%	4	30%	
Chloromethane	19.4	 5.00	ug/L	1	20.0	ND	97	50-139%	5	30%	
2-Chlorotoluene	21.7	 1.00	ug/L	1	20.0	ND	109	79-122%	9	30%	
4-Chlorotoluene	22.3	 1.00	ug/L	1	20.0	ND	111	78-122%	8	30%	
Dibromochloromethane	22.1	 1.00	ug/L	1	20.0	ND	110	74-126%	6	30%	
1,2-Dibromo-3-chloropropane	18.7	 5.00	ug/L	1	20.0	ND	94	62-128%	8	30%	
1,2-Dibromoethane (EDB)	21.2	 0.500	ug/L	1	20.0	ND	106	77-121%	5	30%	
Dibromomethane	21.8	 1.00	ug/L	1	20.0	ND	109	79-123%	5	30%	
1,2-Dichlorobenzene	23.9	 0.500	ug/L	1	20.0	1.88	110	80-120%	8	30%	
1,3-Dichlorobenzene	22.9	 0.500	ug/L	1	20.0	0.360	113	80-120%	8	30%	
1,4-Dichlorobenzene	22.2	 0.500	ug/L	1	20.0	1.64	103	79-120%	7	30%	
Dichlorodifluoromethane	25.3	 1.00	ug/L	1	20.0	ND	127	32-152%	7	30%	
1,1-Dichloroethane	20.0	 0.400	ug/L	1	20.0	ND	100	77-125%	3	30%	
1,2-Dichloroethane (EDC)	21.5	 0.400	ug/L	1	20.0	ND	107	73-128%	4	30%	
1,1-Dichloroethene	20.5	 0.400	ug/L	1	20.0	ND	103	71-131%	5	30%	
cis-1,2-Dichloroethene	19.8	 0.400	ug/L	1	20.0	ND	99	78-123%	8	30%	
trans-1,2-Dichloroethene	18.5	 0.400	ug/L	1	20.0	ND	93	75-124%	4	30%	
1,2-Dichloropropane	19.3	 0.500	ug/L	1	20.0	ND	96	78-122%	4	30%	
1,3-Dichloropropane	19.6	 1.00	ug/L	1	20.0	ND	98	80-120%	6	30%	
2,2-Dichloropropane	21.4	 1.00	ug/L	1	20.0	ND	107	60-139%	4	30%	
1,1-Dichloropropene	22.1	 1.00	ug/L	1	20.0	ND	110	79-125%	6	30%	
cis-1,3-Dichloropropene	16.7	 1.00	ug/L	1	20.0	ND	84	75-124%	8	30%	
trans-1,3-Dichloropropene	21.1	 1.00	ug/L	1	20.0	ND	105	73-127%	6	30%	
Ethylbenzene	22.7	 0.500	ug/L	1	20.0	ND	114	79-121%	6	30%	
Hexachlorobutadiene	20.4	 5.00	ug/L	1	20.0	ND	102	66-134%	8	30%	
2-Hexanone	31.9	 10.0	ug/L	1	40.0	ND	80	57-139%	5	30%	
Isopropylbenzene	24.3	 1.00	ug/L	1	20.0	ND	122	72-131%	7	30%	
4-Isopropyltoluene	22.8	 1.00	ug/L	1	20.0	ND	114	77-127%	9	30%	
Methylene chloride	17.0	 10.0	ug/L	1	20.0	ND	85	74-124%	2	30%	

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

Project: OCS

15862 SW 72nd Ave. Suite 150

Project Number: 361M1148

Portland, OR 97224 Project Manager: Russ Bunker

Report ID: A3L1059 - 12 17 23 2304

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23L0456 - EPA 5030C							Wa	ter				
Matrix Spike Dup (23L0456-MS	D1)		Prepared	1: 12/13/23	09:38 Anal	lyzed: 12/13	/23 21:46					
QC Source Sample: Non-SDG (A3L	1017-02)											
4-Methyl-2-pentanone (MiBK)	34.4		10.0	ug/L	1	40.0	ND	86	67-130%	6	30%	
Methyl tert-butyl ether (MTBE)	17.1		1.00	ug/L	1	20.0	ND	85	71-124%	5	30%	
Naphthalene	16.6		5.00	ug/L	1	20.0	ND	83	61-128%	14	30%	
n-Propylbenzene	22.4		0.500	ug/L	1	20.0	ND	112	76-126%	7	30%	
Styrene	22.3		1.00	ug/L	1	20.0	ND	111	78-123%	6	30%	
1,1,1,2-Tetrachloroethane	21.8		0.400	ug/L	1	20.0	ND	109	78-124%	7	30%	
1,1,2,2-Tetrachloroethane	20.7		0.500	ug/L	1	20.0	ND	103	71-121%	6	30%	
Tetrachloroethene (PCE)	26.0		0.400	ug/L	1	20.0	2.28	119	74-129%	7	30%	
Toluene	21.4		1.00	ug/L	1	20.0	ND	107	80-121%	6	30%	
1,2,3-Trichlorobenzene	20.9		2.00	ug/L	1	20.0	ND	105	69-129%	9	30%	
1,2,4-Trichlorobenzene	19.3		2.00	ug/L	1	20.0	ND	96	69-130%	12	30%	
1,1,1-Trichloroethane	23.5		0.400	ug/L	1	20.0	ND	118	74-131%	5	30%	
1,1,2-Trichloroethane	21.5		0.500	ug/L	1	20.0	ND	107	80-120%	4	30%	
Trichloroethene (TCE)	24.4		0.400	ug/L	1	20.0	2.73	108	79-123%	5	30%	
Trichlorofluoromethane	26.4		2.00	ug/L	1	20.0	ND	132	65-141%	3	30%	
1,2,3-Trichloropropane	20.9		1.00	ug/L	1	20.0	ND	105	73-122%	6	30%	
1,2,4-Trimethylbenzene	23.7		1.00	ug/L	1	20.0	ND	119	76-124%	7	30%	
1,3,5-Trimethylbenzene	23.4		1.00	ug/L	1	20.0	ND	117	75-124%	7	30%	
Vinyl chloride	20.3		0.200	ug/L	1	20.0	ND	102	58-137%	8	30%	
m,p-Xylene	49.6		1.00	ug/L	1	40.0	ND	124	80-121%	7	30%	Q
o-Xylene	21.6		0.500	ug/L	1	20.0	ND	108	78-122%	8	30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 102 %	Limits: 80	0-120 %	Dilt	ution: 1x					_
Toluene-d8 (Surr)			94 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			95 %	80	)-120 %		"					

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 361M1148

Project Manager: Russ Bunker

Report ID: A3L1059 - 12 17 23 2304

## QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23L0632 - EPA 5030C							Wa	ter				
Blank (23L0632-BLK1)			Prepared	: 12/16/23	10:04 Anal	yzed: 12/16/	/23 12:27					
EPA 8260D												
Acetone	ND		20.0	ug/L	1							
Acrylonitrile	ND		2.00	ug/L	1							
Benzene	ND		0.200	ug/L	1							
Bromobenzene	ND		0.500	ug/L	1							
Bromochloromethane	ND		1.00	ug/L	1							
Bromodichloromethane	ND		1.00	ug/L	1							
Bromoform	ND		1.00	ug/L	1							
Bromomethane	ND		5.00	ug/L	1							
2-Butanone (MEK)	ND		10.0	ug/L	1							
n-Butylbenzene	ND		1.00	ug/L	1							
sec-Butylbenzene	ND		1.00	ug/L	1							
tert-Butylbenzene	ND		1.00	ug/L	1							
Carbon disulfide	ND		10.0	ug/L	1							
Carbon tetrachloride	ND		1.00	ug/L	1							
Chlorobenzene	ND		0.500	ug/L	1							
Chloroethane	ND		5.00	ug/L	1							
Chloroform	ND		1.00	ug/L	1							
Chloromethane	ND		5.00	ug/L	1							
2-Chlorotoluene	ND		1.00	ug/L	1							
4-Chlorotoluene	ND		1.00	ug/L	1							
Dibromochloromethane	ND		1.00	ug/L	1							
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND		0.500	ug/L ug/L	1							
Dibromomethane	ND		1.00	ug/L ug/L	1							
1,2-Dichlorobenzene	ND		0.500	ug/L ug/L	1							
1,3-Dichlorobenzene	ND		0.500	ug/L ug/L	1							
1,4-Dichlorobenzene	ND		0.500	ug/L ug/L	1							
Dichlorodifluoromethane	ND ND		1.00	ug/L ug/L	1							
1,1-Dichloroethane	ND ND		0.400	ug/L ug/L	1							
1,1-Dichloroethane (EDC)	ND ND		0.400	_	1							
1,1-Dichloroethene	ND ND			ug/L	1							
*			0.400	ug/L								
cis-1,2-Dichloroethene	ND		0.400	ug/L	1							
trans-1,2-Dichloroethene	ND		0.400	ug/L	1							

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc. Project: OCS
15862 SW 72nd Ave. Suite 150 Project Number: 361M1148

Portland, OR 97224 Project Manager: Russ Bunker

Report ID: A3L1059 - 12 17 23 2304

## QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Satch 23L0632 - EPA 5030C							Wat	er				
Blank (23L0632-BLK1)			Prepared	: 12/16/23	10:04 Anal	yzed: 12/16/	/23 12:27					
1,2-Dichloropropane	ND		0.500	ug/L	1							
1,3-Dichloropropane	ND		1.00	ug/L	1							
2,2-Dichloropropane	ND		1.00	ug/L	1							
1,1-Dichloropropene	ND		1.00	ug/L	1							
cis-1,3-Dichloropropene	ND		1.00	ug/L	1							
trans-1,3-Dichloropropene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Hexachlorobutadiene	ND		5.00	ug/L	1							
2-Hexanone	ND		10.0	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
4-Isopropyltoluene	ND		1.00	ug/L	1							
Methylene chloride	ND		10.0	ug/L	1							
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		5.00	ug/L	1							
n-Propylbenzene	ND		0.500	ug/L	1							
Styrene	ND		1.00	ug/L	1							
1,1,1,2-Tetrachloroethane	ND		0.400	ug/L	1							
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1							
Tetrachloroethene (PCE)	ND		0.400	ug/L	1							
Toluene	ND		1.00	ug/L	1							
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1							
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1							
1,1,1-Trichloroethane	ND		0.400	ug/L	1							
1,1,2-Trichloroethane	ND		0.500	ug/L	1							
Trichloroethene (TCE)	ND		0.400	ug/L	1							
Trichlorofluoromethane	ND		2.00	ug/L	1							
1,2,3-Trichloropropane	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							
Vinyl chloride	ND		0.200	ug/L	1							
m,p-Xylene	ND		1.00	ug/L	1							
o-Xylene	ND		0.500	ug/L	1							

Surr: 1,4-Difluorobenzene (Surr) Recovery: 101 % Limits: 80-120 % Dilution: Ix

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:361M1148Portland, OR 97224Project Manager:Russ Bunker

Report ID:
A3L1059 - 12 17 23 2304

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Org	ganic Co	mpounds	by EPA 8	3260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23L0632 - EPA 5030C							Wa	ter				
Blank (23L0632-BLK1)			Prepared	: 12/16/23	10:04 Ana	yzed: 12/16	/23 12:27					
Surr: Toluene-d8 (Surr)		Reco	very: 100 %	Limits: 80	0-120 %	Dilı	ution: 1x					
4-Bromofluorobenzene (Surr)			100 %	80	)-120 %		"					
LCS (23L0632-BS1)			Prepared	: 12/16/23	10:04 Ana	lyzed: 12/16	5/23 11:37					
EPA 8260D												
Acetone	42.1		20.0	ug/L	1	40.0		105	80-120%			
Acrylonitrile	18.7		2.00	ug/L	1	20.0		93	80-120%			
Benzene	20.1		0.200	ug/L	1	20.0		100	80-120%			
Bromobenzene	20.1		0.500	ug/L	1	20.0		101	80-120%			
Bromochloromethane	20.1		1.00	ug/L	1	20.0		100	80-120%			
Bromodichloromethane	21.1		1.00	ug/L	1	20.0		106	80-120%			
Bromoform	23.3		1.00	ug/L	1	20.0		116	80-120%			
Bromomethane	22.5		5.00	ug/L	1	20.0		113	80-120%			
2-Butanone (MEK)	39.0		10.0	ug/L	1	40.0		98	80-120%			
n-Butylbenzene	22.5		1.00	ug/L	1	20.0		112	80-120%			
sec-Butylbenzene	23.3		1.00	ug/L	1	20.0		116	80-120%			
tert-Butylbenzene	21.5		1.00	ug/L	1	20.0		108	80-120%			
Carbon disulfide	21.0		10.0	ug/L	1	20.0		105	80-120%			
Carbon tetrachloride	23.4		1.00	ug/L	1	20.0		117	80-120%			
Chlorobenzene	20.9		0.500	ug/L	1	20.0		105	80-120%			
Chloroethane	21.6		5.00	ug/L	1	20.0		108	80-120%			
Chloroform	21.6		1.00	ug/L	1	20.0		108	80-120%			
Chloromethane	18.4		5.00	ug/L	1	20.0		92	80-120%			
2-Chlorotoluene	20.3		1.00	ug/L	1	20.0		101	80-120%			
4-Chlorotoluene	21.8		1.00	ug/L	1	20.0		109	80-120%			
Dibromochloromethane	21.5		1.00	ug/L	1	20.0		107	80-120%			
1,2-Dibromo-3-chloropropane	17.4		5.00	ug/L	1	20.0		87	80-120%			
1,2-Dibromoethane (EDB)	20.7		0.500	ug/L	1	20.0		104	80-120%			
Dibromomethane	21.0		1.00	ug/L	1	20.0		105	80-120%			
1,2-Dichlorobenzene	20.6		0.500	ug/L	1	20.0		103	80-120%			
1,3-Dichlorobenzene	21.4		0.500	ug/L	1	20.0		107	80-120%			
1,4-Dichlorobenzene	20.3		0.500	ug/L	1	20.0		101	80-120%			
Dichlorodifluoromethane	21.4		1.00	ug/L	1	20.0		107	80-120%			
1,1-Dichloroethane	20.5		0.400	ug/L	1	20.0		103	80-120%			

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#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc. Project: OCS
15862 SW 72nd Ave. Suite 150 Project Number: 361M1148

Portland, OR 97224 Project Manager: Russ Bunker

Report ID: A3L1059 - 12 17 23 2304

## QUALITY CONTROL (QC) SAMPLE RESULTS Volatile Organic Compounds by EPA 8260D

#### % REC RPD Detection Reporting Spike Source Analyte Result Units Dilution % REC RPD Limit Limit Amount Result Limits Limit Notes Batch 23L0632 - EPA 5030C Water LCS (23L0632-BS1) Prepared: 12/16/23 10:04 Analyzed: 12/16/23 11:37 1,2-Dichloroethane (EDC) 21.5 0.400 20.0 107 ug/L 80-120% 1,1-Dichloroethene 23.2 0.400 ug/L 1 20.0 116 80-120% ---------20.0 cis-1,2-Dichloroethene 19.2 0.400 ug/L 1 96 80-120% trans-1,2-Dichloroethene 22.0 0.400ug/L 1 20.0 110 80-120% 20.0 97 1,2-Dichloropropane 19.3 0.500 80-120% ug/L 1 19.5 97 1,3-Dichloropropane 1.00 ug/L 1 20.0 80-120% 2,2-Dichloropropane 20.7 1.00 ug/L 1 20.0 103 80-120% 20.0 1,1-Dichloropropene 20.8 1.00 ug/L 1 104 80-120% 1.00 20.0 97 cis-1,3-Dichloropropene 19.4 ug/L 1 80-120% trans-1,3-Dichloropropene 21.1 1.00 ug/L 1 20.0 105 80-120% Ethylbenzene 22.0 0.500 20.0 110 80-120% ug/L 1 Hexachlorobutadiene 20.0 20.5 5.00 ug/L 1 102 80-120% 2-Hexanone 10.0 40.0 85 34.0 --ug/L 1 ---80-120% ---Isopropylbenzene 22.7 1.00 ug/L 1 20.0 114 80-120% 20.0 108 80-120% 4-Isopropyltoluene 21.6 1.00 ug/L 1 ---Methylene chloride 21.4 10.0 ug/L 1 20.0 107 80-120% 4-Methyl-2-pentanone (MiBK) 10.0 40.0 92 36.7 1 80-120% ug/L Methyl tert-butyl ether (MTBE) 19.7 1.00 1 20.0 99 80-120% ug/L Q-55 Naphthalene 5.00 20.0 80-120% 14.8 --ug/L 1 ---74 --n-Propylbenzene 21.8 0.500 ug/L 1 20.0 109 80-120% 21.3 1.00 20.0 106 80-120% Styrene ug/L 1 1,1,1,2-Tetrachloroethane 21.0 0.400 ug/L 1 20.0 105 80-120% 1,1,2,2-Tetrachloroethane 20.3 0.500 20.0 102 80-120% ug/L 1 Tetrachloroethene (PCE) 22.0 0.400 1 20.0 110 80-120% ug/L 20.8 1.00 20.0 104 Toluene ug/L 1 80-120% ---------1,2,3-Trichlorobenzene 19.9 2.00 ug/L 1 20.0 99 80-120%

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1.2.4-Trichlorobenzene

1,1,1-Trichloroethane

1,1,2-Trichloroethane

Trichloroethene (TCE)

Trichlorofluoromethane

1,2,3-Trichloropropane

1,2,4-Trimethylbenzene

1,3,5-Trimethylbenzene

Philip Merenberg

17.9

22.0

21.4

20.4

26.1

21.0

23.1

22.6

2.00

0.400

0.500

0.400

2.00

1.00

1.00

1.00

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ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

1

1

1

1

1

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1

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90

110

107

102

131

105

116

113

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80-120%

80-120%

80-120%

80-120%

80-120%

80-120%

80-120%

80-120%

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Q-56

Philip Nerenberg, Lab Director

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20.0

20.0

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20.0

20.0



#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc. Project: <u>ocs</u> 15862 SW 72nd Ave. Suite 150 Project Number: 361M1148 Portland, OR 97224 Project Manager: Russ Bunker

Report ID: A3L1059 - 12 17 23 2304

## QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23L0632 - EPA 5030C							Wa	ter				
LCS (23L0632-BS1)			Prepared	1: 12/16/23	10:04 Ana	lyzed: 12/16	/23 11:37					
Vinyl chloride	19.6		0.200	ug/L	1	20.0		98	80-120%			
m,p-Xylene	48.0		1.00	ug/L	1	40.0		120	80-120%			
o-Xylene	20.5		0.500	ug/L	1	20.0		103	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 100 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			96 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			95 %	80	-120 %		"					
Duplicate (23L0632-DUP1)			Prepared	l: 12/16/23	10:04 Anal	lyzed: 12/16	/23 19:34					
OC Source Sample: Non-SDG (A3	L1036-13RI	E <u>1)</u>										
Acetone	ND		400	ug/L	20		ND				30%	
Acrylonitrile	ND		40.0	ug/L	20		ND				30%	
Benzene	ND		4.00	ug/L	20		ND				30%	
Bromobenzene	ND		10.0	ug/L	20		ND				30%	
Bromochloromethane	ND		20.0	ug/L	20		ND				30%	
Bromodichloromethane	ND		20.0	ug/L	20		ND				30%	
Bromoform	ND		20.0	ug/L	20		ND				30%	
Bromomethane	ND		100	ug/L	20		ND				30%	
2-Butanone (MEK)	ND		200	ug/L	20		ND				30%	
n-Butylbenzene	ND		20.0	ug/L	20		ND				30%	
sec-Butylbenzene	ND		20.0	ug/L	20		ND				30%	
tert-Butylbenzene	ND		20.0	ug/L	20		ND				30%	
Carbon disulfide	ND		200	ug/L	20		ND				30%	
Carbon tetrachloride	ND		20.0	ug/L	20		ND				30%	
Chlorobenzene	ND		10.0	ug/L	20		ND				30%	
Chloroethane	ND		100	ug/L	20		ND				30%	
Chloroform	ND		20.0	ug/L	20		ND				30%	
Chloromethane	ND		100	ug/L	20		ND				30%	
2-Chlorotoluene	ND		20.0	ug/L	20		ND				30%	
4-Chlorotoluene	ND		20.0	ug/L	20		ND				30%	
Dibromochloromethane	ND		20.0	ug/L	20		ND				30%	
1,2-Dibromo-3-chloropropane	ND		100	ug/L	20		ND				30%	
1,2-Dibromoethane (EDB)	ND		10.0	ug/L	20		ND				30%	
Dibromomethane	ND		20.0	ug/L	20		ND				30%	
1,2-Dichlorobenzene	ND		10.0	ug/L	20		ND				30%	

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#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:361M1148Portland, OR 97224Project Manager:Russ Bunker

Report ID: A3L1059 - 12 17 23 2304

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### Volatile Organic Compounds by EPA 8260D % REC RPD Detection Reporting Spike Source % REC Analyte Result Units Dilution RPD Limit Limit Amount Result Limits Limit Notes Batch 23L0632 - EPA 5030C Water Duplicate (23L0632-DUP1) Prepared: 12/16/23 10:04 Analyzed: 12/16/23 19:34 QC Source Sample: Non-SDG (A3L1036-13RE1) 1,3-Dichlorobenzene ND 10.0 ug/L 20 ND 30% ND 10.0 1,4-Dichlorobenzene ug/L 20 ND 30% ug/L Dichlorodifluoromethane ND 20.0 20 ND 30% 1,1-Dichloroethane ND 8.00 ug/L 20 ND 30% 1,2-Dichloroethane (EDC) ND 8.00 20 ND 30% ug/L ---1,1-Dichloroethene ND 8.00 ug/L 20 5.60 30% cis-1,2-Dichloroethene 1770 8.00 ug/L 20 1690 4 30% ND 30% trans-1,2-Dichloroethene 8.00 ug/L 20 6.60 1,2-Dichloropropane ND 10.0 ug/L 20 ND 30% 1,3-Dichloropropane ND 20.0 ug/L 20 ND 30% 2,2-Dichloropropane ND 20.0 ug/L 20 ND 30% 1,1-Dichloropropene ND 20.0 20 30% ug/L ND cis-1,3-Dichloropropene ND 20.0 ug/L 20 ND 30% trans-1,3-Dichloropropene ND 20.0 30% ug/L 20 ND Ethylbenzene ND 10.0 ug/L 20 ND 30% Hexachlorobutadiene ND 100 ug/L 20 ND \_\_\_ 30% 2-Hexanone ND 200 ug/L 20 ND 30% ND 20.0 30% Isopropylbenzene 20 ND ug/L 4-Isopropyltoluene ND 20.0 ug/L 20 ND 30% Methylene chloride ND 200 20 ND 30% ug/L 4-Methyl-2-pentanone (MiBK) ND 200 ug/L 20 ND 30% Methyl tert-butyl ether (MTBE) ND ---20.0 ug/L 20 ND ---30% Naphthalene ND 100 ug/L 20 ND 30% ND 30% n-Propylbenzene 10.0 20 ND --ug/L Styrene ND 20.0 30% ug/L 20 ND ND 8.00 20 ND 30% 1.1.1.2-Tetrachloroethane ug/L 1,1,2,2-Tetrachloroethane ND 10.0 20 ND 30% ug/L Tetrachloroethene (PCE) ND 8.00 ug/L 20 ND ---30% Toluene ND 20.0 ug/L 20 ND 30% 1.2.3-Trichlorobenzene ND 40.0 ND 30% ug/L 20 ---1,2,4-Trichlorobenzene ND 40.0 ug/L 20 ND 30% 1,1,1-Trichloroethane 8.00 ND 20 ND 30% ug/L ---1,1,2-Trichloroethane ND 10.0 ug/L 20 ND 30%

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:361M1148Portland, OR 97224Project Manager:Russ Bunker

Report ID:
A3L1059 - 12 17 23 2304

#### QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Or	ganic Co	mpounds	by EPA 8	260D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23L0632 - EPA 5030C							Wa	ter				
Duplicate (23L0632-DUP1)			Prepared	1: 12/16/23	10:04 Anal	yzed: 12/16/	/23 19:34					
QC Source Sample: Non-SDG (A3)	L1036-13RI	E1)										
Trichloroethene (TCE)	9.40		8.00	ug/L	20		8.80			7	30%	
Trichlorofluoromethane	ND		40.0	ug/L	20		ND				30%	
1,2,3-Trichloropropane	ND		20.0	ug/L	20		ND				30%	
1,2,4-Trimethylbenzene	ND		20.0	ug/L	20		ND				30%	
1,3,5-Trimethylbenzene	ND		20.0	ug/L	20		ND				30%	
Vinyl chloride	2320		4.00	ug/L	20		2230			4	30%	
m,p-Xylene	ND		20.0	ug/L	20		ND				30%	
o-Xylene	ND		10.0	ug/L	20		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 102 %	Limits: 80	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			100 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			100 %	80	-120 %		"					
QC Source Sample: Non-SDG (A3)	L1198-02)											
EPA 8260D	46.0		20.0	/*	,	40.0	ND	11.6	20.1600/			
Acetone	46.2		20.0	ug/L	1	40.0	ND	116	39-160%			
Acrylonitrile Benzene	19.3		2.00	ug/L	1	20.0	ND	96	63-135%			
	20.8		0.200	ug/L	1	20.0	ND	104	79-120%			
Bromobenzene	20.3		0.500	ug/L	1	20.0	ND	102	80-120%			
Bromochloromethane	20.5		1.00	ug/L	1	20.0	ND	102	78-123%			
Bromodichloromethane Bromoform	21.4 23.6		1.00 1.00	ug/L	1 1	20.0 20.0	ND ND	107	79-125% 66-130%			
Bromotorm	23.6 18.1		5.00	ug/L	1	20.0	ND ND	118 91	53-141%			
	39.9		10.0	ug/L	1	40.0	ND ND	100	56-143%			
2-Butanone (MEK) n-Butylbenzene	23.2		1.00	ug/L		20.0	ND ND		75-128%			
n-Butylbenzene sec-Butylbenzene	23.2		1.00	ug/L ug/L	1 1	20.0	ND ND	116 120	75-128% 77-126%			
tert-Butylbenzene	22.0		1.00	·	1	20.0	ND ND	110	78-124%			
Carbon disulfide	21.8		1.00	ug/L ug/L	1	20.0	ND ND	109	/8-124% 64-133%			
	25.0		1.00	Č	1	20.0	ND ND	109	72-136%			
Carbon tetrachlerida			1.00	ug/L	1	∠0.0	ND	143	12-130%			
Carbon tetrachloride				110/T	1	20.0	ND	106	90 1200/			
Chlorobenzene	21.3		0.500	ug/L	1	20.0	ND ND	106	80-120% 60-138%			
				ug/L ug/L ug/L	1 1 1	20.0 20.0 20.0	ND ND ND	106 113 111	80-120% 60-138% 79-124%			

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Portland, OR 97224

#### ANALYTICAL REPORT

#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

Report ID:

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:361M1148

Project Manager: Russ Bunker A3L1059 - 12 17 23 2304

#### QUALITY CONTROL (QC) SAMPLE RESULTS

#### **Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23L0632 - EPA 5030C							Wa	ter				
Matrix Spike (23L0632-MS1)			Prepared	: 12/16/23	10:04 Anal	lyzed: 12/16	/23 15:27					CONT
QC Source Sample: Non-SDG (A3I	<u> 1198-02)</u>											
2-Chlorotoluene	20.8		1.00	ug/L	1	20.0	ND	104	79-122%			
4-Chlorotoluene	21.9		1.00	ug/L	1	20.0	ND	109	78-122%			
Dibromochloromethane	21.6		1.00	ug/L	1	20.0	ND	108	74-126%			
1,2-Dibromo-3-chloropropane	18.9		5.00	ug/L	1	20.0	ND	95	62-128%			
1,2-Dibromoethane (EDB)	21.1		0.500	ug/L	1	20.0	ND	106	77-121%			
Dibromomethane	21.7		1.00	ug/L	1	20.0	ND	108	79-123%			
1,2-Dichlorobenzene	21.0		0.500	ug/L	1	20.0	ND	105	80-120%			
1,3-Dichlorobenzene	21.7		0.500	ug/L	1	20.0	ND	109	80-120%			
1,4-Dichlorobenzene	20.3		0.500	ug/L	1	20.0	ND	102	79-120%			
Dichlorodifluoromethane	24.1		1.00	ug/L	1	20.0	ND	120	32-152%			
1,1-Dichloroethane	21.1		0.400	ug/L	1	20.0	ND	105	77-125%			
1,2-Dichloroethane (EDC)	21.7		0.400	ug/L	1	20.0	ND	108	73-128%			
1,1-Dichloroethene	24.5		0.400	ug/L	1	20.0	ND	122	71-131%			
cis-1,2-Dichloroethene	19.5		0.400	ug/L	1	20.0	ND	98	78-123%			
trans-1,2-Dichloroethene	22.6		0.400	ug/L	1	20.0	ND	113	75-124%			
1,2-Dichloropropane	19.2		0.500	ug/L	1	20.0	ND	96	78-122%			
1,3-Dichloropropane	19.7		1.00	ug/L	1	20.0	ND	99	80-120%			
2,2-Dichloropropane	22.2		1.00	ug/L	1	20.0	ND	111	60-139%			
1,1-Dichloropropene	21.9		1.00	ug/L	1	20.0	ND	110	79-125%			
cis-1,3-Dichloropropene	15.6		1.00	ug/L	1	20.0	ND	78	75-124%			
trans-1,3-Dichloropropene	21.1		1.00	ug/L	1	20.0	ND	105	73-127%			
Ethylbenzene	22.5		0.500	ug/L	1	20.0	ND	112	79-121%			
Hexachlorobutadiene	21.3		5.00	ug/L	1	20.0	ND	107	66-134%			
2-Hexanone	35.1		10.0	ug/L	1	40.0	ND	88	57-139%			
Isopropylbenzene	23.2		1.00	ug/L	1	20.0	ND	116	72-131%			
4-Isopropyltoluene	22.0		1.00	ug/L	1	20.0	ND	110	77-127%			
Methylene chloride	21.6		10.0	ug/L	1	20.0	ND	108	74-124%			
4-Methyl-2-pentanone (MiBK)	37.8		10.0	ug/L	1	40.0	ND	95	67-130%			
Methyl tert-butyl ether (MTBE)	20.3		1.00	ug/L	1	20.0	ND	102	71-124%			
Naphthalene	15.7		5.00	ug/L	1	20.0	ND	79	61-128%			Q-
n-Propylbenzene	22.2		0.500	ug/L	1	20.0	ND	111	76-126%			`
Styrene	20.3		1.00	ug/L	1	20.0	ND	101	78-123%			
1,1,1,2-Tetrachloroethane	21.2		0.400	ug/L	1	20.0	ND	106	78-124%			

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 361M1148

Project Manager: Russ Bunker

Report ID:

A3L1059 - 12 17 23 2304

## QUALITY CONTROL (QC) SAMPLE RESULTS Volatile Organic Compounds by EPA 8260D

#### Detection Reporting Spike Source % REC **RPD** % REC Dilution Analyte Result Ĺimit Units Amount Result Limits RPD Limit Notes Limit Batch 23L0632 - EPA 5030C Water

Matrix Spike (23L0632-MS1)			Prepared	1: 12/16/23 10	):04 Ana	alyzed: 12/16	/23 15:27				CONT
QC Source Sample: Non-SDG (A3	L1198-02)										
1,1,2,2-Tetrachloroethane	21.2		0.500	ug/L	1	20.0	ND	106	71-121%	 	
Tetrachloroethene (PCE)	23.1		0.400	ug/L	1	20.0	ND	115	74-129%	 	
Toluene	21.3		1.00	ug/L	1	20.0	ND	106	80-121%	 	
1,2,3-Trichlorobenzene	20.4		2.00	ug/L	1	20.0	ND	102	69-129%	 	
1,2,4-Trichlorobenzene	18.3		2.00	ug/L	1	20.0	ND	91	69-130%	 	
1,1,1-Trichloroethane	23.2		0.400	ug/L	1	20.0	ND	116	74-131%	 	
1,1,2-Trichloroethane	21.9		0.500	ug/L	1	20.0	ND	110	80-120%	 	
Trichloroethene (TCE)	20.5		0.400	ug/L	1	20.0	ND	103	79-123%	 	
Trichlorofluoromethane	28.5		2.00	ug/L	1	20.0	ND	143	65-141%	 	Q-54
1,2,3-Trichloropropane	21.8		1.00	ug/L	1	20.0	ND	109	73-122%	 	
1,2,4-Trimethylbenzene	23.2		1.00	ug/L	1	20.0	ND	116	76-124%	 	
1,3,5-Trimethylbenzene	23.0		1.00	ug/L	1	20.0	ND	115	75-124%	 	
Vinyl chloride	20.4		0.200	ug/L	1	20.0	ND	102	58-137%	 	
m,p-Xylene	48.6		1.00	ug/L	1	40.0	ND	121	80-121%	 	
o-Xylene	20.6		0.500	ug/L	1	20.0	ND	103	78-122%	 	
Surr: 1,4-Difluorobenzene (Surr)		Recover	ry: 101 %	Limits: 80-1	120 %	Dilt	ution: 1x				
Toluene-d8 (Surr)			94 %	80-1	20 %		"				

80-120 %

94 %

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4-Bromofluorobenzene (Surr)

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#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

 $\underline{WSP\ USA\ Environment\ \&\ Infrastructure\ Inc.}$ 

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **361M1148**Project Manager: **Russ Bunker** 

Report ID: A3L1059 - 12 17 23 2304

#### SAMPLE PREPARATION INFORMATION

		Volatile	Organic Compounds	by EPA 8260D			
Prep: EPA 5030C					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 23L0632							
A3L1059-01RE1	Water	EPA 8260D	12/07/23 12:55	12/16/23 11:48	5mL/5mL	5mL/5mL	1.00

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Philip Nerenberg, Lab Director

Philip Nevenberg

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#### Apex Laboratories, LLC

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ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: **361M1148**Project Manager: **Russ Bunker** 

Report ID: A3L1059 - 12 17 23 2304

#### **QUALIFIER DEFINITIONS**

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

#### **Apex Laboratories**

- **CONT** The Sample Container provided for this analysis was not provided by Apex Laboratories, and has not been verified as part of the Apex Quality System.
- Q-01 Spike recovery and/or RPD is outside acceptance limits.
- Q-54 Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +11%. The results are reported as Estimated Values.
- Q-54a Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -3%. The results are reported as Estimated Values.
- Q-54b Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -6%. The results are reported as Estimated Values.
- 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.
- Q-56 Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260

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Philip Nerenberg, Lab Director

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#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc. Project: OCS

 15862 SW 72nd Ave. Suite 150
 Project Number: 361M1148
 Report ID:

 Portland, OR 97224
 Project Manager: Russ Bunker
 A3L1059 - 12 17 23 2304

#### 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'.

Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

#### 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).

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Philip Nerenberg, Lab Director

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#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.Project:OCS15862 SW 72nd Ave. Suite 150Project Number:361M1148Portland, OR 97224Project Manager:Russ Bunker

Report ID: A3L1059 - 12 17 23 2304

#### **REPORTING NOTES AND CONVENTIONS (Cont.):**

#### 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.
- -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, if results are not reported to the MDL.

#### **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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Philip Nerenberg, Lab Director

Philip Nevenberg

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Portland, OR 97224

#### ANALYTICAL REPORT

#### Apex Laboratories, LLC

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

Project: OCS

15862 SW 72nd Ave. Suite 150

Project Number: 361M1148

Project Manager: Russ Bunker

Report ID: A3L1059 - 12 17 23 2304

#### 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

Philip Nevenberg

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Philip Nerenberg, Lab Director

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#### **Apex Laboratories, LLC**

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

ORELAP ID: OR100062

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150

Portland, OR 97224

Project Number: **361M1148**Project Manager: **Russ Bunker** 

<u>ocs</u>

Project:

Report ID:
A3L1059 - 12 17 23 2304

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Philip Nerenberg, Lab Director

Philip Merenberg

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#### **Apex Laboratories, LLC**

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

WSP USA Environment & Infrastructure Inc.

15862 SW 72nd Ave. Suite 150 Portland, OR 97224 Project: OCS

Project Number: 361M1148

Project Manager: Russ Bunker

Report ID: A3L1059 - 12 17 23 2304

Client: WSP	Element WO#: A3
Project/Project #:	
Delivery Info:	
( <u></u>	17/23 @ 14:03 By: APL)
	Client ESS FedEx UPS Radio Morgan SDS Evergreen Other Date/time inspected: \2 7/2 @ \U-O3 By: ADD
Chain of Custody inclu	
Signed/dated by client?	
	Cooler #1 Cooler #2 Cooler #3 Cooler #4 Cooler #5 Cooler #6 Cooler #7
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Ice type: (Gel/Real/Oth	er) <u>Rocl</u>
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Philip Nerenberg, Lab Director

Philip Nevenberg

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