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30 August 2018

Mr. Ken Thiessen
Oregon Department of Environmental Quality
Northwest Region Portland Office
2010 SE 4th Avenue, Suite 400
Portland, Oregon 97201

Subject: TSA SVE Well Drilling – No-Longer Contains Determination Request
Cascade Troutdale Sandstone Aquifer Remedy (ECSI No. 1479)
Fairview, Oregon

Dear Ken:

Geosyntec Consultants, Inc. (Geosyntec) has prepared this letter on behalf of Cascade Corporation (Cascade) to request a "No-Longer Contains Determination" for investigation derived waste (IDW) generated at the Cascade manufacturing facility located at 2201 NE 201st Ave in Fairview, Oregon. The IDW was generated as part of soil vapor extraction (SVE) well drilling activities for the Cascade Troutdale Sandstone Aquifer (TSA) remedy Site, located at 2201 and 2525 NE 201st Ave, Fairview, Oregon (referred to as the Site collectively).

SITE HISTORY AND BACKGROUND

Following remedial investigations conducted from 1988 to 1994, contaminants of concern (COCs) identified at the Site included volatile organic compounds (VOCs) in soil and groundwater, total petroleum hydrocarbons (TPH) in soil, chromium in soil and groundwater, and manganese in groundwater. Active and passive soil and groundwater remediation began in 1989 and was successful in treating the onsite and offisite areas of contamination. Contamination in the TSA is comprised of VOCs including trichloroethene (TCE), tetrachloroethene (PCE), and cis-1,2-dichloroethene (cis-1,2-DCE).

An SVE system was installed as an additional corrective measure that was implemented in the mound area where groundwater VOC concentrations have been slow to respond to treatment. The 2017 TSA Annual Report (Geosyntec, Landau, and SSPA, 2017) presented the most recent groundwater and vapor monitoring data, which showed VOC concentrations both above and below cleanup goals throughout the Site. In the Upper TSA, TCE concentrations remain above the maximum contaminant limit (MCL) in the mound area (located in Remedy Zone C).

INVESTIGATION DERIVED WASTE

In November and December of 2016, the SVE system was expanded with the addition of four new extraction wells, VMW-A, VMW-B, VMW-C, and VMW-D. The wells were drilled in the Upper TSA located in Remedy Zone C. IDW generated during the drilling process consisted of soil cores there were then placed in wooden core boxes. The cores were stored at the time of drilling for further review in the future. The IDW was placed into a lined and covered 10 cubic yard soil bin. Three multi-part composite samples were obtained from the soil bin on 10 August 2018 and analyzed for VOCs by U.S. Environmental Protection Agency (EPA) Method 8260.

IDW TESTING RESULTS

VOCs were not detected in the three soil samples collected from the soil cuttings. A copy of the analytical report is provided in Attachment A.

DISCUSSION

Potentially applicable waste codes that could apply to this waste would be F001 or F002, for waste related to historical parts degreasing using TCE at the Cascade facility.

Based on the analytical results, VOCs including TCE were not detected in the IDW. This is expected since core from the SVE wells is predominantly from the TSA, where soil was not directly contaminated by VOCs historically. Rather, groundwater contaminated with VOCs migrated to the TSA.

Based on the analytical results for the soil IDW samples, we request that DEQ make a "No-longer Contains Determination" for the soil IDW. Following DEQ's review and approval, the soil bin will be transported to an off-site, permitted facility for disposal of the IDW (e.g. Hillsboro).

CLOSURE

Please contact us at (503) 222-9518 with any questions regarding this No Longer Contains Determination request letter, or if you need additional information to support this request.

Sincerely,

Geosyntec Consultants, Inc.

Cindy Bartlett, R.G.
Geologist/Project Manager

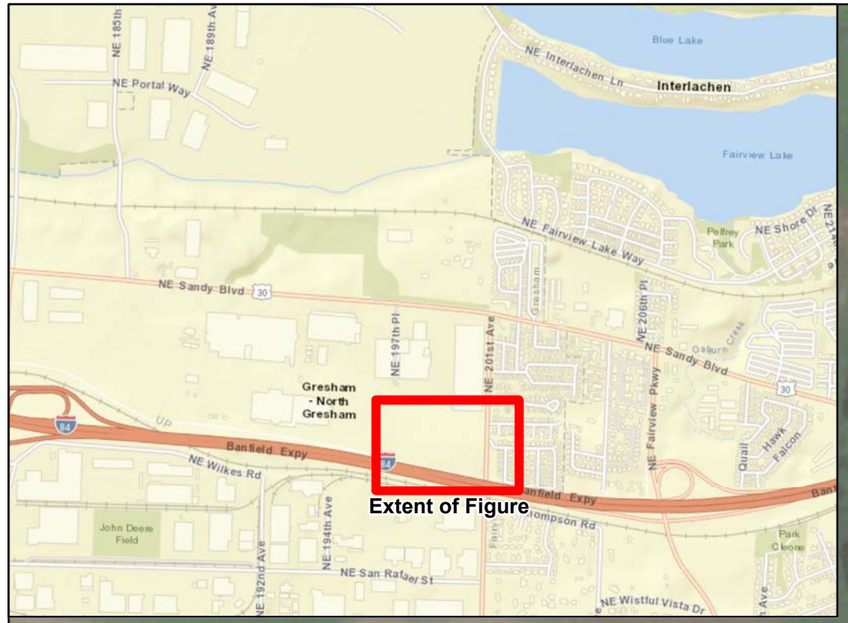
ATTACHEMENTS:

Figure 1	TSA SVE Well Locations
Attachment A	Analytical Laboratory Report

REFERENCES

Geosyntec Consultants, Landau Associates, S.S. Papadopulos & Associates, Inc., 2017. Troutdale Sandstone Aquifer, 2017 Annual Performance Report, Cascade Corporation, Fairview, Oregon. 3 April 2018.

Geosyntec Consultants, 2016. Work Plan for Soil Vapor Extraction System Expansion, East Multnomah County Troutdale Sandstone Aquifer Remediation, Fairview, Oregon. 9 September 2016.



Legend

- Soil Vapor Extraction Well
- Lower TSA Extraction Well
- Approximate Soil Vapor Extraction Trench, Active

Soil Vapor Extraction Monitoring Well Locations

East Multnomah County

Geosyntec consultants

PNG0564S16 | August 2018

Figure 1

ATTACHMENT A

Analytical Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

August 20, 2018

Cascade Corporation- Fairview, OR

Sample Delivery Group:	L1016953
Samples Received:	08/11/2018
Project Number:	
Description:	Cascade TSA

Report To: Cindy Bartlett
2201 NE 201st Avenue
Fairview, OR 97024-9718

Entire Report Reviewed By:

Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

RBE-081018 L1016953-01 Solid

Collected by	Collected date/time	Received date/time
Pat Yadon	08/10/18 11:42	08/11/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1153020	1	08/17/18 09:36	08/17/18 09:46	KDW
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1152857	1	08/11/18 23:54	08/16/18 03:14	ACG

RBC-081018 L1016953-03 Solid

Collected by	Collected date/time	Received date/time
Pat Yadon	08/10/18 11:55	08/11/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1153020	1	08/17/18 09:36	08/17/18 09:46	KDW
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1152857	1.3	08/11/18 23:54	08/16/18 03:35	ACG

TRIP BLANK L1016953-04 GW

Collected by	Collected date/time	Received date/time
Pat Yadon	08/10/18 11:30	08/11/18 08:45

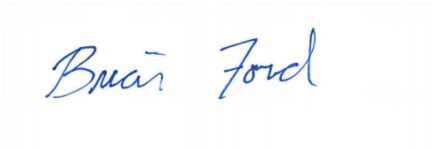
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1151151	1	08/12/18 04:07	08/12/18 04:07	TJJ

RBW-081018 L1016953-06 Solid

Collected by	Collected date/time	Received date/time
Pat Yadon	08/10/18 12:18	08/11/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1153020	1	08/17/18 09:36	08/17/18 09:46	KDW
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1152857	1.32	08/11/18 23:54	08/16/18 03:56	ACG

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



Brian Ford
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	87.7		1	08/17/2018 09:46	WG1153020

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

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0285	1	08/16/2018 03:14	WG1152857
Acrylonitrile	ND		0.0142	1	08/16/2018 03:14	WG1152857
Benzene	ND		0.00114	1	08/16/2018 03:14	WG1152857
Bromobenzene	ND		0.0142	1	08/16/2018 03:14	WG1152857
Bromodichloromethane	ND		0.00285	1	08/16/2018 03:14	WG1152857
Bromoform	ND		0.0285	1	08/16/2018 03:14	WG1152857
Bromomethane	ND		0.0142	1	08/16/2018 03:14	WG1152857
n-Butylbenzene	ND		0.0142	1	08/16/2018 03:14	WG1152857
sec-Butylbenzene	ND		0.0142	1	08/16/2018 03:14	WG1152857
tert-Butylbenzene	ND		0.00570	1	08/16/2018 03:14	WG1152857
Carbon tetrachloride	ND		0.00570	1	08/16/2018 03:14	WG1152857
Chlorobenzene	ND		0.00285	1	08/16/2018 03:14	WG1152857
Chlorodibromomethane	ND		0.00285	1	08/16/2018 03:14	WG1152857
Chloroethane	ND		0.00570	1	08/16/2018 03:14	WG1152857
Chloroform	ND		0.00285	1	08/16/2018 03:14	WG1152857
Chloromethane	ND		0.0142	1	08/16/2018 03:14	WG1152857
2-Chlorotoluene	ND		0.00285	1	08/16/2018 03:14	WG1152857
4-Chlorotoluene	ND		0.00570	1	08/16/2018 03:14	WG1152857
1,2-Dibromo-3-Chloropropane	ND		0.0285	1	08/16/2018 03:14	WG1152857
1,2-Dibromoethane	ND		0.00285	1	08/16/2018 03:14	WG1152857
Dibromomethane	ND		0.00570	1	08/16/2018 03:14	WG1152857
1,2-Dichlorobenzene	ND		0.00570	1	08/16/2018 03:14	WG1152857
1,3-Dichlorobenzene	ND		0.00570	1	08/16/2018 03:14	WG1152857
1,4-Dichlorobenzene	ND		0.00570	1	08/16/2018 03:14	WG1152857
Dichlorodifluoromethane	ND		0.00285	1	08/16/2018 03:14	WG1152857
1,1-Dichloroethane	ND		0.00285	1	08/16/2018 03:14	WG1152857
1,2-Dichloroethane	ND		0.00285	1	08/16/2018 03:14	WG1152857
1,1-Dichloroethene	ND		0.00285	1	08/16/2018 03:14	WG1152857
cis-1,2-Dichloroethene	ND		0.00285	1	08/16/2018 03:14	WG1152857
trans-1,2-Dichloroethene	ND		0.00570	1	08/16/2018 03:14	WG1152857
1,2-Dichloropropane	ND		0.00570	1	08/16/2018 03:14	WG1152857
1,1-Dichloropropene	ND		0.00285	1	08/16/2018 03:14	WG1152857
1,3-Dichloropropane	ND		0.00570	1	08/16/2018 03:14	WG1152857
cis-1,3-Dichloropropene	ND		0.00285	1	08/16/2018 03:14	WG1152857
trans-1,3-Dichloropropene	ND		0.00570	1	08/16/2018 03:14	WG1152857
2,2-Dichloropropane	ND		0.00285	1	08/16/2018 03:14	WG1152857
Di-isopropyl ether	ND		0.00114	1	08/16/2018 03:14	WG1152857
Ethylbenzene	ND		0.00285	1	08/16/2018 03:14	WG1152857
Hexachloro-1,3-butadiene	ND		0.0285	1	08/16/2018 03:14	WG1152857
Isopropylbenzene	ND		0.00285	1	08/16/2018 03:14	WG1152857
p-Isopropyltoluene	ND		0.00570	1	08/16/2018 03:14	WG1152857
2-Butanone (MEK)	ND		0.0285	1	08/16/2018 03:14	WG1152857
Methylene Chloride	ND		0.0285	1	08/16/2018 03:14	WG1152857
4-Methyl-2-pentanone (MIBK)	ND		0.0285	1	08/16/2018 03:14	WG1152857
Methyl tert-butyl ether	ND		0.00114	1	08/16/2018 03:14	WG1152857
Naphthalene	ND		0.0142	1	08/16/2018 03:14	WG1152857
n-Propylbenzene	ND		0.00570	1	08/16/2018 03:14	WG1152857
Styrene	ND		0.0142	1	08/16/2018 03:14	WG1152857
1,1,1,2-Tetrachloroethane	ND		0.00285	1	08/16/2018 03:14	WG1152857
1,1,2,2-Tetrachloroethane	ND		0.00285	1	08/16/2018 03:14	WG1152857

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

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

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	ND		0.00285	1	08/16/2018 03:14	WG1152857
Tetrachloroethene	ND		0.00285	1	08/16/2018 03:14	WG1152857
Toluene	ND		0.00570	1	08/16/2018 03:14	WG1152857
1,2,3-Trichlorobenzene	ND		0.00285	1	08/16/2018 03:14	WG1152857
1,2,4-Trichlorobenzene	ND		0.0142	1	08/16/2018 03:14	WG1152857
1,1,1-Trichloroethane	ND		0.00285	1	08/16/2018 03:14	WG1152857
1,1,2-Trichloroethane	ND		0.00285	1	08/16/2018 03:14	WG1152857
Trichloroethene	ND		0.00114	1	08/16/2018 03:14	WG1152857
Trichlorofluoromethane	ND		0.00285	1	08/16/2018 03:14	WG1152857
1,2,3-Trichloropropane	ND		0.0142	1	08/16/2018 03:14	WG1152857
1,2,4-Trimethylbenzene	ND		0.00570	1	08/16/2018 03:14	WG1152857
1,2,3-Trimethylbenzene	ND		0.00570	1	08/16/2018 03:14	WG1152857
1,3,5-Trimethylbenzene	ND		0.00570	1	08/16/2018 03:14	WG1152857
Vinyl chloride	ND		0.00285	1	08/16/2018 03:14	WG1152857
Xylenes, Total	ND		0.00741	1	08/16/2018 03:14	WG1152857
(S) Toluene-d8	*119*		*80.0-120*		*08/16/2018 03:14*	WG1152857
(S) Dibromofluoromethane	*90.5*		*74.0-131*		*08/16/2018 03:14*	WG1152857
(S) 4-Bromofluorobenzene	*101*		*64.0-132*		*08/16/2018 03:14*	WG1152857

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.5		1	08/17/2018 09:46	WG1153020

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

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0351	1.3	08/16/2018 03:35	WG1152857
Acrylonitrile	ND		0.0176	1.3	08/16/2018 03:35	WG1152857
Benzene	ND		0.00141	1.3	08/16/2018 03:35	WG1152857
Bromobenzene	ND		0.0176	1.3	08/16/2018 03:35	WG1152857
Bromodichloromethane	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
Bromoform	ND		0.0351	1.3	08/16/2018 03:35	WG1152857
Bromomethane	ND		0.0176	1.3	08/16/2018 03:35	WG1152857
n-Butylbenzene	ND		0.0176	1.3	08/16/2018 03:35	WG1152857
sec-Butylbenzene	ND		0.0176	1.3	08/16/2018 03:35	WG1152857
tert-Butylbenzene	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
Carbon tetrachloride	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
Chlorobenzene	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
Chlorodibromomethane	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
Chloroethane	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
Chloroform	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
Chloromethane	ND		0.0176	1.3	08/16/2018 03:35	WG1152857
2-Chlorotoluene	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
4-Chlorotoluene	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
1,2-Dibromo-3-Chloropropane	ND		0.0351	1.3	08/16/2018 03:35	WG1152857
1,2-Dibromoethane	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
Dibromomethane	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
1,2-Dichlorobenzene	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
1,3-Dichlorobenzene	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
1,4-Dichlorobenzene	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
Dichlorodifluoromethane	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
1,1-Dichloroethane	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
1,2-Dichloroethane	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
1,1-Dichloroethene	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
cis-1,2-Dichloroethene	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
trans-1,2-Dichloroethene	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
1,2-Dichloropropane	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
1,1-Dichloropropene	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
1,3-Dichloropropane	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
cis-1,3-Dichloropropene	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
trans-1,3-Dichloropropene	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
2,2-Dichloropropane	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
Di-isopropyl ether	ND		0.00141	1.3	08/16/2018 03:35	WG1152857
Ethylbenzene	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
Hexachloro-1,3-butadiene	ND		0.0351	1.3	08/16/2018 03:35	WG1152857
Isopropylbenzene	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
p-Isopropyltoluene	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
2-Butanone (MEK)	ND		0.0351	1.3	08/16/2018 03:35	WG1152857
Methylene Chloride	ND		0.0351	1.3	08/16/2018 03:35	WG1152857
4-Methyl-2-pentanone (MIBK)	ND		0.0351	1.3	08/16/2018 03:35	WG1152857
Methyl tert-butyl ether	ND		0.00141	1.3	08/16/2018 03:35	WG1152857
Naphthalene	ND		0.0176	1.3	08/16/2018 03:35	WG1152857
n-Propylbenzene	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
Styrene	ND		0.0176	1.3	08/16/2018 03:35	WG1152857
1,1,1,2-Tetrachloroethane	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
1,1,2,2-Tetrachloroethane	ND		0.00351	1.3	08/16/2018 03:35	WG1152857

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

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
Tetrachloroethene	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
Toluene	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
1,2,3-Trichlorobenzene	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
1,2,4-Trichlorobenzene	ND		0.0176	1.3	08/16/2018 03:35	WG1152857
1,1,1-Trichloroethane	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
1,1,2-Trichloroethane	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
Trichloroethene	ND		0.00141	1.3	08/16/2018 03:35	WG1152857
Trichlorofluoromethane	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
1,2,3-Trichloropropane	ND		0.0176	1.3	08/16/2018 03:35	WG1152857
1,2,4-Trimethylbenzene	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
1,2,3-Trimethylbenzene	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
1,3,5-Trimethylbenzene	ND		0.00703	1.3	08/16/2018 03:35	WG1152857
Vinyl chloride	ND		0.00351	1.3	08/16/2018 03:35	WG1152857
Xylenes, Total	ND		0.00913	1.3	08/16/2018 03:35	WG1152857
(S) Toluene-d8	*113*		*80.0-120*		*08/16/2018 03:35*	WG1152857
(S) Dibromofluoromethane	*93.1*		*74.0-131*		*08/16/2018 03:35*	WG1152857
(S) 4-Bromofluorobenzene	*101*		*64.0-132*		*08/16/2018 03:35*	WG1152857

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		50.0	1	08/12/2018 04:07	WG1151151
Acrolein	ND		50.0	1	08/12/2018 04:07	WG1151151
Acrylonitrile	ND		10.0	1	08/12/2018 04:07	WG1151151
Benzene	ND		1.00	1	08/12/2018 04:07	WG1151151
Bromobenzene	ND		1.00	1	08/12/2018 04:07	WG1151151
Bromodichloromethane	ND		1.00	1	08/12/2018 04:07	WG1151151
Bromoform	ND		1.00	1	08/12/2018 04:07	WG1151151
Bromomethane	ND		5.00	1	08/12/2018 04:07	WG1151151
n-Butylbenzene	ND		1.00	1	08/12/2018 04:07	WG1151151
sec-Butylbenzene	ND		1.00	1	08/12/2018 04:07	WG1151151
tert-Butylbenzene	ND		1.00	1	08/12/2018 04:07	WG1151151
Carbon disulfide	ND		1.00	1	08/12/2018 04:07	WG1151151
Carbon tetrachloride	ND		1.00	1	08/12/2018 04:07	WG1151151
Chlorobenzene	ND		1.00	1	08/12/2018 04:07	WG1151151
Chlorodibromomethane	ND		1.00	1	08/12/2018 04:07	WG1151151
Chloroethane	ND		5.00	1	08/12/2018 04:07	WG1151151
Chloroform	ND		5.00	1	08/12/2018 04:07	WG1151151
Chloromethane	ND		2.50	1	08/12/2018 04:07	WG1151151
2-Chlorotoluene	ND		1.00	1	08/12/2018 04:07	WG1151151
4-Chlorotoluene	ND		1.00	1	08/12/2018 04:07	WG1151151
1,2-Dibromo-3-Chloropropane	ND		5.00	1	08/12/2018 04:07	WG1151151
1,2-Dibromoethane	ND		1.00	1	08/12/2018 04:07	WG1151151
Dibromomethane	ND		1.00	1	08/12/2018 04:07	WG1151151
1,2-Dichlorobenzene	ND	J4	1.00	1	08/12/2018 04:07	WG1151151
1,3-Dichlorobenzene	ND		1.00	1	08/12/2018 04:07	WG1151151
1,4-Dichlorobenzene	ND		1.00	1	08/12/2018 04:07	WG1151151
Dichlorodifluoromethane	ND		5.00	1	08/12/2018 04:07	WG1151151
1,1-Dichloroethane	ND		1.00	1	08/12/2018 04:07	WG1151151
1,2-Dichloroethane	ND		1.00	1	08/12/2018 04:07	WG1151151
1,1-Dichloroethene	ND		1.00	1	08/12/2018 04:07	WG1151151
cis-1,2-Dichloroethene	ND		1.00	1	08/12/2018 04:07	WG1151151
trans-1,2-Dichloroethene	ND		1.00	1	08/12/2018 04:07	WG1151151
1,2-Dichloropropane	ND		1.00	1	08/12/2018 04:07	WG1151151
1,1-Dichloropropene	ND		1.00	1	08/12/2018 04:07	WG1151151
1,3-Dichloropropane	ND		1.00	1	08/12/2018 04:07	WG1151151
cis-1,3-Dichloropropene	ND		1.00	1	08/12/2018 04:07	WG1151151
trans-1,3-Dichloropropene	ND		1.00	1	08/12/2018 04:07	WG1151151
2,2-Dichloropropane	ND		1.00	1	08/12/2018 04:07	WG1151151
Di-isopropyl ether	ND		1.00	1	08/12/2018 04:07	WG1151151
Ethylbenzene	ND		1.00	1	08/12/2018 04:07	WG1151151
Hexachloro-1,3-butadiene	ND		1.00	1	08/12/2018 04:07	WG1151151
Isopropylbenzene	ND		1.00	1	08/12/2018 04:07	WG1151151
p-Isopropyltoluene	ND		1.00	1	08/12/2018 04:07	WG1151151
2-Butanone (MEK)	ND		10.0	1	08/12/2018 04:07	WG1151151
Methylene Chloride	ND		5.00	1	08/12/2018 04:07	WG1151151
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	08/12/2018 04:07	WG1151151
Methyl tert-butyl ether	ND		1.00	1	08/12/2018 04:07	WG1151151
Naphthalene	ND		5.00	1	08/12/2018 04:07	WG1151151
n-Propylbenzene	ND		1.00	1	08/12/2018 04:07	WG1151151
Styrene	ND		1.00	1	08/12/2018 04:07	WG1151151
1,1,1,2-Tetrachloroethane	ND		1.00	1	08/12/2018 04:07	WG1151151
1,1,2,2-Tetrachloroethane	ND		1.00	1	08/12/2018 04:07	WG1151151
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	08/12/2018 04:07	WG1151151
Tetrachloroethene	ND		1.00	1	08/12/2018 04:07	WG1151151
Toluene	ND		1.00	1	08/12/2018 04:07	WG1151151
1,2,3-Trichlorobenzene	ND		1.00	1	08/12/2018 04:07	WG1151151

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,2,4-Trichlorobenzene	ND		1.00	1	08/12/2018 04:07	WG1151151
1,1,1-Trichloroethane	ND		1.00	1	08/12/2018 04:07	WG1151151
1,1,2-Trichloroethane	ND		1.00	1	08/12/2018 04:07	WG1151151
Trichloroethene	ND		1.00	1	08/12/2018 04:07	WG1151151
Trichlorofluoromethane	ND		5.00	1	08/12/2018 04:07	WG1151151
1,2,3-Trichloropropane	ND		2.50	1	08/12/2018 04:07	WG1151151
1,2,4-Trimethylbenzene	ND		1.00	1	08/12/2018 04:07	WG1151151
1,2,3-Trimethylbenzene	ND		1.00	1	08/12/2018 04:07	WG1151151
1,3,5-Trimethylbenzene	ND		1.00	1	08/12/2018 04:07	WG1151151
Vinyl chloride	ND		1.00	1	08/12/2018 04:07	WG1151151
Xylenes, Total	ND		3.00	1	08/12/2018 04:07	WG1151151
(S) Toluene-d8	*103*		*80.0-120*		*08/12/2018 04:07*	WG1151151
(S) Dibromofluoromethane	*98.6*		*76.0-123*		*08/12/2018 04:07*	WG1151151
(S) 4-Bromofluorobenzene	*99.2*		*80.0-120*		*08/12/2018 04:07*	WG1151151

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	90.2		1	08/17/2018 09:46	WG1153020

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

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0366	1.32	08/16/2018 03:56	WG1152857
Acrylonitrile	ND		0.0183	1.32	08/16/2018 03:56	WG1152857
Benzene	ND		0.00146	1.32	08/16/2018 03:56	WG1152857
Bromobenzene	ND		0.0183	1.32	08/16/2018 03:56	WG1152857
Bromodichloromethane	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
Bromoform	ND		0.0366	1.32	08/16/2018 03:56	WG1152857
Bromomethane	ND		0.0183	1.32	08/16/2018 03:56	WG1152857
n-Butylbenzene	ND		0.0183	1.32	08/16/2018 03:56	WG1152857
sec-Butylbenzene	ND		0.0183	1.32	08/16/2018 03:56	WG1152857
tert-Butylbenzene	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
Carbon tetrachloride	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
Chlorobenzene	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
Chlorodibromomethane	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
Chloroethane	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
Chloroform	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
Chloromethane	ND		0.0183	1.32	08/16/2018 03:56	WG1152857
2-Chlorotoluene	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
4-Chlorotoluene	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
1,2-Dibromo-3-Chloropropane	ND		0.0366	1.32	08/16/2018 03:56	WG1152857
1,2-Dibromoethane	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
Dibromomethane	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
1,2-Dichlorobenzene	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
1,3-Dichlorobenzene	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
1,4-Dichlorobenzene	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
Dichlorodifluoromethane	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
1,1-Dichloroethane	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
1,2-Dichloroethane	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
1,1-Dichloroethene	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
cis-1,2-Dichloroethene	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
trans-1,2-Dichloroethene	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
1,2-Dichloropropane	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
1,1-Dichloropropene	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
1,3-Dichloropropane	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
cis-1,3-Dichloropropene	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
trans-1,3-Dichloropropene	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
2,2-Dichloropropane	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
Di-isopropyl ether	ND		0.00146	1.32	08/16/2018 03:56	WG1152857
Ethylbenzene	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
Hexachloro-1,3-butadiene	ND		0.0366	1.32	08/16/2018 03:56	WG1152857
Isopropylbenzene	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
p-Isopropyltoluene	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
2-Butanone (MEK)	ND		0.0366	1.32	08/16/2018 03:56	WG1152857
Methylene Chloride	ND		0.0366	1.32	08/16/2018 03:56	WG1152857
4-Methyl-2-pentanone (MIBK)	ND		0.0366	1.32	08/16/2018 03:56	WG1152857
Methyl tert-butyl ether	ND		0.00146	1.32	08/16/2018 03:56	WG1152857
Naphthalene	ND		0.0183	1.32	08/16/2018 03:56	WG1152857
n-Propylbenzene	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
Styrene	ND		0.0183	1.32	08/16/2018 03:56	WG1152857
1,1,1,2-Tetrachloroethane	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
1,1,2,2-Tetrachloroethane	ND		0.00366	1.32	08/16/2018 03:56	WG1152857

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

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
Tetrachloroethene	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
Toluene	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
1,2,3-Trichlorobenzene	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
1,2,4-Trichlorobenzene	ND		0.0183	1.32	08/16/2018 03:56	WG1152857
1,1,1-Trichloroethane	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
1,1,2-Trichloroethane	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
Trichloroethene	ND		0.00146	1.32	08/16/2018 03:56	WG1152857
Trichlorofluoromethane	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
1,2,3-Trichloropropane	ND		0.0183	1.32	08/16/2018 03:56	WG1152857
1,2,4-Trimethylbenzene	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
1,2,3-Trimethylbenzene	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
1,3,5-Trimethylbenzene	ND		0.00732	1.32	08/16/2018 03:56	WG1152857
Vinyl chloride	ND		0.00366	1.32	08/16/2018 03:56	WG1152857
Xylenes, Total	ND		0.00951	1.32	08/16/2018 03:56	WG1152857
(S) Toluene-d8	*115*		*80.0-120*		*08/16/2018 03:56*	WG1152857
(S) Dibromofluoromethane	*92.9*		*74.0-131*		*08/16/2018 03:56*	WG1152857
(S) 4-Bromofluorobenzene	*101*		*64.0-132*		*08/16/2018 03:56*	WG1152857

Method Blank (MB)

(MB) R3334818-1 08/17/18 09:46

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

L1016952-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1016952-02 08/17/18 09:46 • (DUP) R3334818-3 08/17/18 09:46

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	88.1	84.6	1	4.04		10

Laboratory Control Sample (LCS)

(LCS) R3334818-2 08/17/18 09:46

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

Method Blank (MB)

(MB) R3333115-3 08/12/18 03:47

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		10.0	50.0
Acrolein	U		8.87	50.0
Acrylonitrile	U		1.87	10.0
Benzene	U		0.331	1.00
Bromobenzene	U		0.352	1.00
Bromodichloromethane	U		0.380	1.00
Bromoform	U		0.469	1.00
Bromomethane	U		0.866	5.00
n-Butylbenzene	U		0.361	1.00
sec-Butylbenzene	U		0.365	1.00
tert-Butylbenzene	U		0.399	1.00
Carbon disulfide	U		0.275	1.00
Carbon tetrachloride	U		0.379	1.00
Chlorobenzene	U		0.348	1.00
Chlorodibromomethane	U		0.327	1.00
Chloroethane	U		0.453	5.00
Chloroform	U		0.324	5.00
Chloromethane	U		0.276	2.50
2-Chlorotoluene	U		0.375	1.00
4-Chlorotoluene	U		0.351	1.00
1,2-Dibromo-3-Chloropropane	U		1.33	5.00
1,2-Dibromoethane	U		0.381	1.00
Dibromomethane	U		0.346	1.00
1,2-Dichlorobenzene	U		0.349	1.00
1,3-Dichlorobenzene	U		0.220	1.00
1,4-Dichlorobenzene	U		0.274	1.00
Dichlorodifluoromethane	U		0.551	5.00
1,1-Dichloroethane	U		0.259	1.00
1,2-Dichloroethane	U		0.361	1.00
1,1-Dichloroethene	U		0.398	1.00
cis-1,2-Dichloroethene	U		0.260	1.00
trans-1,2-Dichloroethene	U		0.396	1.00
1,2-Dichloropropane	U		0.306	1.00
1,1-Dichloropropene	U		0.352	1.00
1,3-Dichloropropane	U		0.366	1.00
cis-1,3-Dichloropropene	U		0.418	1.00
trans-1,3-Dichloropropene	U		0.419	1.00
2,2-Dichloropropane	U		0.321	1.00
Di-isopropyl ether	U		0.320	1.00
Ethylbenzene	U		0.384	1.00

Method Blank (MB)

(MB) R3333115-3 08/12/18 03:47

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.256	1.00
Isopropylbenzene	U		0.326	1.00
p-Isopropyltoluene	U		0.350	1.00
2-Butanone (MEK)	U		3.93	10.0
Methylene Chloride	U		1.00	5.00
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.349	1.00
Styrene	U		0.307	1.00
1,1,1,2-Tetrachloroethane	U		0.385	1.00
1,1,2,2-Tetrachloroethane	U		0.130	1.00
Tetrachloroethene	U		0.372	1.00
Toluene	U		0.412	1.00
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00
1,2,3-Trichlorobenzene	U		0.230	1.00
1,2,4-Trichlorobenzene	U		0.355	1.00
1,1,1-Trichloroethane	U		0.319	1.00
1,1,2-Trichloroethane	U		0.383	1.00
Trichloroethene	U		0.398	1.00
Trichlorofluoromethane	U		1.20	5.00
1,2,3-Trichloropropane	U		0.807	2.50
1,2,3-Trimethylbenzene	U		0.321	1.00
1,2,4-Trimethylbenzene	U		0.373	1.00
1,3,5-Trimethylbenzene	U		0.387	1.00
Vinyl chloride	U		0.259	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*105*			*80.0-120*
(S) Dibromofluoromethane	*98.0*			*76.0-123*
(S) 4-Bromofluorobenzene	*98.3*			*80.0-120*

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

(LCS) R3333115-1 08/12/18 02:49 • (LCSD) R3333115-2 08/12/18 03:09

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	125	132	132	106	105	10.0-160			0.116	23
Acrolein	125	161	160	129	128	10.0-160			0.445	20
Acrylonitrile	125	142	141	113	113	60.0-142			0.164	20

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

(LCS) R3333115-1 08/12/18 02:49 • (LCSD) R3333115-2 08/12/18 03:09

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	25.0	25.2	26.1	101	104	69.0-123			3.47	20
Bromobenzene	25.0	24.7	25.8	98.8	103	79.0-120			4.51	20
Bromodichloromethane	25.0	24.7	25.3	98.6	101	76.0-120			2.54	20
Bromoform	25.0	24.4	25.2	97.7	101	67.0-132			2.98	20
Bromomethane	25.0	13.2	14.8	52.9	59.1	18.0-160			11.0	20
n-Butylbenzene	25.0	25.3	27.5	101	110	72.0-126			8.19	20
sec-Butylbenzene	25.0	25.8	27.7	103	111	74.0-121			7.23	20
tert-Butylbenzene	25.0	26.4	27.7	106	111	75.0-122			4.77	20
Carbon disulfide	25.0	23.6	24.7	94.4	98.8	55.0-127			4.56	20
Carbon tetrachloride	25.0	25.4	26.4	102	105	63.0-122			3.66	20
Chlorobenzene	25.0	28.8	29.2	115	117	79.0-121			1.37	20
Chlorodibromomethane	25.0	26.2	26.4	105	106	75.0-125			0.885	20
Chloroethane	25.0	23.7	25.1	94.9	100	47.0-152			5.58	20
Chloroform	25.0	24.4	25.7	97.8	103	72.0-121			4.93	20
Chloromethane	25.0	23.4	24.7	93.7	99.0	48.0-139			5.52	20
2-Chlorotoluene	25.0	25.7	27.3	103	109	74.0-122			6.08	20
4-Chlorotoluene	25.0	25.1	26.5	100	106	79.0-120			5.37	20
1,2-Dibromo-3-Chloropropane	25.0	23.8	23.9	95.3	95.4	64.0-127			0.171	20
1,2-Dibromoethane	25.0	28.0	27.9	112	112	77.0-123			0.314	20
Dibromomethane	25.0	26.7	27.4	107	110	78.0-120			2.65	20
1,2-Dichlorobenzene	25.0	29.2	30.2	117	121	80.0-120		J4	3.44	20
1,3-Dichlorobenzene	25.0	27.1	28.4	108	113	72.0-123			4.60	20
1,4-Dichlorobenzene	25.0	26.8	28.3	107	113	77.0-120			5.34	20
Dichlorodifluoromethane	25.0	27.5	29.3	110	117	49.0-155			6.11	20
1,1-Dichloroethane	25.0	26.5	28.0	106	112	70.0-126			5.26	20
1,2-Dichloroethane	25.0	25.3	26.4	101	106	67.0-126			4.11	20
1,1-Dichloroethene	25.0	26.1	27.3	104	109	64.0-129			4.60	20
cis-1,2-Dichloroethene	25.0	24.7	25.6	98.6	102	73.0-120			3.78	20
trans-1,2-Dichloroethene	25.0	24.5	25.6	98.0	102	71.0-121			4.49	20
1,2-Dichloropropane	25.0	27.9	29.4	112	118	75.0-125			5.30	20
1,1-Dichloropropene	25.0	24.9	26.5	99.5	106	71.0-129			6.33	20
1,3-Dichloropropane	25.0	27.3	27.5	109	110	80.0-121			0.697	20
cis-1,3-Dichloropropene	25.0	26.7	27.4	107	109	79.0-123			2.43	20
trans-1,3-Dichloropropene	25.0	27.3	27.9	109	112	74.0-127			2.35	20
2,2-Dichloropropane	25.0	23.2	23.9	92.8	95.6	60.0-125			3.05	20
Di-isopropyl ether	25.0	27.3	28.0	109	112	59.0-133			2.55	20
Ethylbenzene	25.0	27.4	27.8	110	111	77.0-120			1.36	20
Hexachloro-1,3-butadiene	25.0	29.6	31.5	118	126	64.0-131			6.37	20
Isopropylbenzene	25.0	25.3	27.0	101	108	75.0-120			6.66	20
p-Isopropyltoluene	25.0	26.6	28.2	106	113	74.0-126			5.93	20

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

(LCS) R3333115-1 08/12/18 02:49 • (LCSD) R3333115-2 08/12/18 03:09

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
2-Butanone (MEK)	125	134	132	107	106	37.0-158			1.48	20
Methylene Chloride	25.0	23.5	24.2	94.1	96.8	66.0-121			2.91	20
4-Methyl-2-pentanone (MIBK)	125	136	134	109	107	59.0-143			1.36	20
Methyl tert-butyl ether	25.0	24.3	24.6	97.3	98.3	64.0-123			1.02	20
Naphthalene	25.0	25.8	26.4	103	106	62.0-128			2.40	20
n-Propylbenzene	25.0	25.3	26.8	101	107	79.0-120			5.70	20
Styrene	25.0	27.2	28.9	109	116	78.0-124			6.15	20
1,1,1,2-Tetrachloroethane	25.0	26.9	26.3	108	105	75.0-122			2.58	20
1,1,2,2-Tetrachloroethane	25.0	23.9	24.0	95.6	96.1	71.0-122			0.455	20
Tetrachloroethene	25.0	29.8	31.0	119	124	70.0-127			4.04	20
Toluene	25.0	26.1	27.0	104	108	77.0-120			3.27	20
1,1,2-Trichlorotrifluoroethane	25.0	28.5	29.8	114	119	61.0-136			4.54	20
1,2,3-Trichlorobenzene	25.0	31.7	33.3	127	133	61.0-133			5.05	20
1,2,4-Trichlorobenzene	25.0	28.9	30.8	116	123	69.0-129			6.38	20
1,1,1-Trichloroethane	25.0	25.4	26.2	101	105	68.0-122			3.09	20
1,1,2-Trichloroethane	25.0	26.2	26.4	105	106	78.0-120			0.580	20
Trichloroethene	25.0	27.7	29.0	111	116	78.0-120			4.61	20
Trichlorofluoromethane	25.0	26.2	28.1	105	112	56.0-137			7.08	20
1,2,3-Trichloropropane	25.0	24.5	24.8	98.2	99.0	72.0-124			0.840	20
1,2,3-Trimethylbenzene	25.0	24.5	25.7	98.2	103	75.0-120			4.48	20
1,2,4-Trimethylbenzene	25.0	24.8	26.0	99.0	104	75.0-120			4.95	20
1,3,5-Trimethylbenzene	25.0	25.8	27.4	103	110	75.0-120			5.91	20
Vinyl chloride	25.0	26.1	27.7	104	111	64.0-133			6.10	20
Xylenes, Total	75.0	79.2	80.7	106	108	77.0-120			1.88	20
(S) Toluene-d8				*105*	*103*	*80.0-120*				
(S) Dibromofluoromethane				*99.4*	*96.7*	*76.0-123*				
(S) 4-Bromofluorobenzene				*98.1*	*99.1*	*80.0-120*				

Method Blank (MB)

(MB) R3334105-2 08/15/18 21:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0137	0.0250
Acrylonitrile	U		0.00190	0.0125
Benzene	U		0.000400	0.00100
Bromobenzene	U		0.00105	0.0125
Bromodichloromethane	U		0.000788	0.00250
Bromoform	U		0.00598	0.0250
Bromomethane	U		0.00370	0.0125
n-Butylbenzene	U		0.00384	0.0125
sec-Butylbenzene	U		0.00253	0.0125
tert-Butylbenzene	U		0.00155	0.00500
Carbon tetrachloride	U		0.00108	0.00500
Chlorobenzene	U		0.000573	0.00250
Chlorodibromomethane	U		0.000450	0.00250
Chloroethane	U		0.00108	0.00500
Chloroform	U		0.000415	0.00250
Chloromethane	U		0.00139	0.0125
2-Chlorotoluene	U		0.000920	0.00250
4-Chlorotoluene	U		0.00113	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00510	0.0250
1,2-Dibromoethane	U		0.000525	0.00250
Dibromomethane	U		0.00100	0.00500
1,2-Dichlorobenzene	U		0.00145	0.00500
1,3-Dichlorobenzene	U		0.00170	0.00500
1,4-Dichlorobenzene	U		0.00197	0.00500
Dichlorodifluoromethane	U		0.000818	0.00250
1,1-Dichloroethane	U		0.000575	0.00250
1,2-Dichloroethane	U		0.000475	0.00250
1,1-Dichloroethene	U		0.000500	0.00250
cis-1,2-Dichloroethene	U		0.000690	0.00250
trans-1,2-Dichloroethene	U		0.00143	0.00500
1,2-Dichloropropane	U		0.00127	0.00500
1,1-Dichloropropene	U		0.000700	0.00250
1,3-Dichloropropane	U		0.00175	0.00500
cis-1,3-Dichloropropene	U		0.000678	0.00250
trans-1,3-Dichloropropene	U		0.00153	0.00500
2,2-Dichloropropane	U		0.000793	0.00250
Di-isopropyl ether	U		0.000350	0.00100
Ethylbenzene	U		0.000530	0.00250
Hexachloro-1,3-butadiene	U		0.0127	0.0250
Isopropylbenzene	U		0.000863	0.00250

Method Blank (MB)

(MB) R3334105-2 08/15/18 21:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00233	0.00500
2-Butanone (MEK)	U		0.0125	0.0250
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.0100	0.0250
Methyl tert-butyl ether	U		0.000295	0.00100
Naphthalene	U		0.00312	0.0125
n-Propylbenzene	U		0.00118	0.00500
Styrene	U		0.00273	0.0125
1,1,1,2-Tetrachloroethane	U		0.000500	0.00250
1,1,2,2-Tetrachloroethane	U		0.000390	0.00250
Tetrachloroethene	U		0.000700	0.00250
Toluene	U		0.00125	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000675	0.00250
1,2,3-Trichlorobenzene	U		0.000625	0.00250
1,2,4-Trichlorobenzene	U		0.00482	0.0125
1,1,1-Trichloroethane	U		0.000275	0.00250
1,1,2-Trichloroethane	U		0.000883	0.00250
Trichloroethene	U		0.000400	0.00100
Trichlorofluoromethane	U		0.000500	0.00250
1,2,3-Trichloropropane	U		0.00510	0.0125
1,2,3-Trimethylbenzene	U		0.00115	0.00500
1,2,4-Trimethylbenzene	U		0.00116	0.00500
1,3,5-Trimethylbenzene	U		0.00108	0.00500
Vinyl chloride	U		0.000683	0.00250
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*112*			*80.0-120*
(S) Dibromofluoromethane	*96.0*			*74.0-131*
(S) 4-Bromofluorobenzene	*98.7*			*64.0-132*

Laboratory Control Sample (LCS)

(LCS) R3334105-1 08/15/18 20:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.625	0.665	106	11.0-160	
Acrylonitrile	0.625	0.620	99.2	61.0-143	
Benzene	0.125	0.112	89.3	71.0-124	
Bromobenzene	0.125	0.122	97.3	78.0-120	
Bromodichloromethane	0.125	0.145	116	75.0-120	

Laboratory Control Sample (LCS)

(LCS) R3334105-1 08/15/18 20:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromoform	0.125	0.112	90.0	65.0-133	
Bromomethane	0.125	0.121	96.9	26.0-160	
n-Butylbenzene	0.125	0.118	94.3	73.0-126	
sec-Butylbenzene	0.125	0.126	100	75.0-121	
tert-Butylbenzene	0.125	0.122	97.6	74.0-122	
Carbon tetrachloride	0.125	0.116	92.8	66.0-123	
Chlorobenzene	0.125	0.124	99.0	79.0-121	
Chlorodibromomethane	0.125	0.108	86.3	74.0-128	
Chloroethane	0.125	0.118	94.3	51.0-147	
Chloroform	0.125	0.122	97.9	73.0-123	
Chloromethane	0.125	0.116	93.0	51.0-138	
2-Chlorotoluene	0.125	0.127	102	72.0-124	
4-Chlorotoluene	0.125	0.125	100	78.0-120	
1,2-Dibromo-3-Chloropropane	0.125	0.128	103	65.0-126	
1,2-Dibromoethane	0.125	0.129	103	78.0-122	
Dibromomethane	0.125	0.128	103	79.0-120	
1,2-Dichlorobenzene	0.125	0.117	93.8	80.0-120	
1,3-Dichlorobenzene	0.125	0.119	95.1	72.0-123	
1,4-Dichlorobenzene	0.125	0.117	93.6	77.0-120	
Dichlorodifluoromethane	0.125	0.105	83.9	49.0-155	
1,1-Dichloroethane	0.125	0.130	104	70.0-128	
1,2-Dichloroethane	0.125	0.124	99.4	69.0-128	
1,1-Dichloroethene	0.125	0.109	87.3	63.0-131	
cis-1,2-Dichloroethene	0.125	0.113	90.4	74.0-123	
trans-1,2-Dichloroethene	0.125	0.120	96.2	72.0-122	
1,2-Dichloropropane	0.125	0.104	83.1	75.0-126	
1,1-Dichloropropene	0.125	0.114	90.9	72.0-130	
1,3-Dichloropropane	0.125	0.147	118	80.0-121	
cis-1,3-Dichloropropene	0.125	0.127	102	80.0-125	
trans-1,3-Dichloropropene	0.125	0.136	109	75.0-129	
2,2-Dichloropropane	0.125	0.0839	67.1	60.0-129	
Di-isopropyl ether	0.125	0.104	83.1	62.0-133	
Ethylbenzene	0.125	0.122	97.9	77.0-120	
Hexachloro-1,3-butadiene	0.125	0.120	95.7	68.0-128	
Isopropylbenzene	0.125	0.0974	77.9	75.0-120	
p-Isopropyltoluene	0.125	0.117	93.8	74.0-125	
2-Butanone (MEK)	0.625	0.610	97.6	37.0-159	
Methylene Chloride	0.125	0.119	95.0	67.0-123	
4-Methyl-2-pentanone (MIBK)	0.625	0.687	110	60.0-144	
Methyl tert-butyl ether	0.125	0.122	97.8	66.0-125	

Laboratory Control Sample (LCS)

(LCS) R3334105-1 08/15/18 20:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Naphthalene	0.125	0.123	98.5	64.0-125	
n-Propylbenzene	0.125	0.110	88.1	78.0-120	
Styrene	0.125	0.128	103	78.0-124	
1,1,1,2-Tetrachloroethane	0.125	0.117	93.3	74.0-124	
1,1,2,2-Tetrachloroethane	0.125	0.135	108	73.0-120	
Tetrachloroethene	0.125	0.113	90.5	70.0-127	
Toluene	0.125	0.121	97.1	70.0-120	
1,1,2-Trichlorotrifluoroethane	0.125	0.116	93.1	64.0-135	
1,2,3-Trichlorobenzene	0.125	0.127	101	68.0-126	
1,2,4-Trichlorobenzene	0.125	0.116	93.0	70.0-127	
1,1,1-Trichloroethane	0.125	0.124	98.9	69.0-125	
1,1,2-Trichloroethane	0.125	0.146	117	78.0-120	
Trichloroethene	0.125	0.119	95.5	79.0-120	
Trichlorofluoromethane	0.125	0.109	86.9	59.0-136	
1,2,3-Trichloropropane	0.125	0.127	101	73.0-124	
1,2,3-Trimethylbenzene	0.125	0.126	101	76.0-120	
1,2,4-Trimethylbenzene	0.125	0.122	97.4	75.0-120	
1,3,5-Trimethylbenzene	0.125	0.123	98.1	75.0-120	
Vinyl chloride	0.125	0.109	87.6	63.0-134	
Xylenes, Total	0.375	0.366	97.6	77.0-120	
(S) Toluene-d8			*111*	*80.0-120*	
(S) Dibromofluoromethane			*104*	*74.0-131*	
(S) 4-Bromofluorobenzene			*104*	*64.0-132*	

L1017010-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1017010-07 08/16/18 07:02 • (MS) R3334105-3 08/16/18 07:23 • (MSD) R3334105-4 08/16/18 07:44

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.767	U	4.36	4.23	142	138	4	10.0-160			3.13	36
Acrylonitrile	0.767	U	2.91	2.91	95.0	95.0	4	14.0-160			0.000502	33
Benzene	0.153	U	0.688	0.651	112	106	4	13.0-146			5.49	27
Bromobenzene	0.153	U	0.620	0.606	101	98.8	4	10.0-149			2.21	33
Bromodichloromethane	0.153	U	0.772	0.745	126	122	4	15.0-142			3.47	28
Bromoform	0.153	U	0.573	0.564	93.4	91.9	4	10.0-147			1.56	31
Bromomethane	0.153	U	0.638	0.597	104	97.2	4	10.0-160			6.66	32
n-Butylbenzene	0.153	U	0.709	0.712	116	116	4	10.0-154			0.380	37
sec-Butylbenzene	0.153	U	0.752	0.754	123	123	4	10.0-151			0.295	36
tert-Butylbenzene	0.153	U	0.683	0.692	111	113	4	10.0-152			1.22	35

L1017010-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1017010-07 08/16/18 07:02 • (MS) R3334105-3 08/16/18 07:23 • (MSD) R3334105-4 08/16/18 07:44

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Carbon tetrachloride	0.153	U	0.697	0.665	114	108	4	13.0-140			4.71	30
Chlorobenzene	0.153	U	0.679	0.684	111	112	4	10.0-149			0.743	31
Chlorodibromomethane	0.153	U	0.535	0.515	87.2	84.0	4	12.0-147			3.79	29
Chloroethane	0.153	U	0.647	0.622	105	101	4	10.0-159			3.85	33
Chloroform	0.153	U	0.705	0.678	115	111	4	18.0-148			3.85	28
Chloromethane	0.153	U	0.684	0.650	111	106	4	10.0-146			5.04	29
2-Chlorotoluene	0.153	U	0.675	0.683	110	111	4	10.0-151			1.26	35
4-Chlorotoluene	0.153	U	0.660	0.661	108	108	4	10.0-150			0.0654	35
1,2-Dibromo-3-Chloropropane	0.153	U	0.594	0.541	96.8	88.2	4	10.0-149			9.24	34
1,2-Dibromoethane	0.153	U	0.610	0.628	99.5	102	4	14.0-145			2.89	28
Dibromomethane	0.153	U	0.658	0.621	107	101	4	18.0-144			5.77	27
1,2-Dichlorobenzene	0.153	U	0.624	0.638	102	104	4	10.0-153			2.32	34
1,3-Dichlorobenzene	0.153	U	0.638	0.653	104	107	4	10.0-150			2.44	35
1,4-Dichlorobenzene	0.153	U	0.605	0.619	98.6	101	4	10.0-148			2.28	34
Dichlorodifluoromethane	0.153	U	0.986	0.912	161	149	4	10.0-162			7.73	30
1,1-Dichloroethane	0.153	U	0.751	0.708	122	115	4	19.0-148			5.80	28
1,2-Dichloroethane	0.153	U	0.657	0.631	107	103	4	17.0-147			4.01	27
1,1-Dichloroethene	0.153	U	0.715	0.680	117	111	4	10.0-150			4.99	31
cis-1,2-Dichloroethene	0.153	U	0.702	0.656	115	107	4	16.0-145			6.78	28
trans-1,2-Dichloroethene	0.153	U	0.734	0.674	120	110	4	11.0-142			8.49	29
1,2-Dichloropropane	0.153	U	0.619	0.681	101	111	4	17.0-148			9.57	28
1,1-Dichloropropene	0.153	U	0.708	0.597	115	97.3	4	10.0-150			17.0	30
1,3-Dichloropropane	0.153	U	0.706	0.721	115	118	4	16.0-148			2.11	27
cis-1,3-Dichloropropene	0.153	U	0.601	0.612	98.0	99.7	4	13.0-150			1.74	28
trans-1,3-Dichloropropene	0.153	U	0.597	0.616	97.2	100	4	10.0-152			3.19	29
2,2-Dichloropropane	0.153	U	0.607	0.608	99.0	99.2	4	16.0-143			0.170	30
Di-isopropyl ether	0.153	U	0.599	0.588	97.6	95.9	4	16.0-149			1.81	28
Ethylbenzene	0.153	0.0221	0.728	0.750	115	119	4	10.0-147			2.98	31
Hexachloro-1,3-butadiene	0.153	U	0.833	0.881	136	144	4	10.0-154			5.60	40
Isopropylbenzene	0.153	U	0.574	0.571	93.6	93.1	4	10.0-147			0.475	33
p-Isopropyltoluene	0.153	U	0.681	0.685	111	112	4	10.0-156			0.613	37
2-Butanone (MEK)	0.767	U	3.38	3.30	110	107	4	10.0-160			2.65	33
Methylene Chloride	0.153	U	0.648	0.669	106	109	4	16.0-139			3.23	29
4-Methyl-2-pentanone (MIBK)	0.767	U	3.23	2.69	105	87.7	4	12.0-160			18.2	32
Methyl tert-butyl ether	0.153	U	0.682	0.688	111	112	4	21.0-145			0.943	29
Naphthalene	0.153	0.0281	0.704	0.733	110	115	4	10.0-153			4.09	36
n-Propylbenzene	0.153	U	0.641	0.644	104	105	4	10.0-151			0.588	34
Styrene	0.153	U	0.728	0.698	119	114	4	10.0-155			4.22	34
1,1,1,2-Tetrachloroethane	0.153	U	0.577	0.599	94.0	97.6	4	10.0-147			3.81	30

L1017010-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1017010-07 08/16/18 07:02 • (MS) R3334105-3 08/16/18 07:23 • (MSD) R3334105-4 08/16/18 07:44

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,1,2,2-Tetrachloroethane	0.153	U	0.700	0.684	114	112	4	10.0-155			2.26	31
Tetrachloroethene	0.153	U	0.581	0.616	94.8	100	4	10.0-144			5.79	32
Toluene	0.153	U	0.666	0.689	109	112	4	10.0-144			3.50	28
1,1,2-Trichlorotrifluoroethane	0.153	U	0.752	0.699	123	114	4	10.0-153			7.31	33
1,2,3-Trichlorobenzene	0.153	U	0.676	0.680	110	111	4	10.0-153			0.548	40
1,2,4-Trichlorobenzene	0.153	U	0.612	0.635	99.8	104	4	10.0-156			3.63	40
1,1,1-Trichloroethane	0.153	U	0.757	0.742	123	121	4	18.0-145			1.95	29
1,1,2-Trichloroethane	0.153	U	0.686	0.689	112	112	4	12.0-151			0.373	28
Trichloroethene	0.153	U	0.694	0.696	113	113	4	11.0-148			0.259	29
Trichlorofluoromethane	0.153	U	0.678	0.637	111	104	4	10.0-157			6.20	34
1,2,3-Trichloropropane	0.153	U	0.672	0.616	110	100	4	10.0-154			8.70	32
1,2,3-Trimethylbenzene	0.153	0.00875	0.645	0.651	104	105	4	10.0-150			0.939	33
1,2,4-Trimethylbenzene	0.153	0.0212	0.726	0.689	115	109	4	10.0-151			5.35	34
1,3,5-Trimethylbenzene	0.153	0.0108	0.709	0.712	114	114	4	10.0-150			0.387	33
Vinyl chloride	0.153	U	0.624	0.591	102	96.3	4	10.0-150			5.51	29
Xylenes, Total	0.460	0.0454	2.05	2.09	109	111	4	10.0-150			1.78	31
(S) Toluene-d8					*105*	*109*		*80.0-120*				
(S) Dibromofluoromethane					*103*	*101*		*74.0-131*				
(S) 4-Bromofluorobenzene					*104*	*103*		*64.0-132*				

Sample Narrative:

OS: Non-target compounds too high to run at a lower dilution.

Guide to Reading and Understanding Your Laboratory Report

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

Abbreviations and Definitions

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

Qualifier	Description
J4	The associated batch QC was outside the established quality control range for accuracy.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

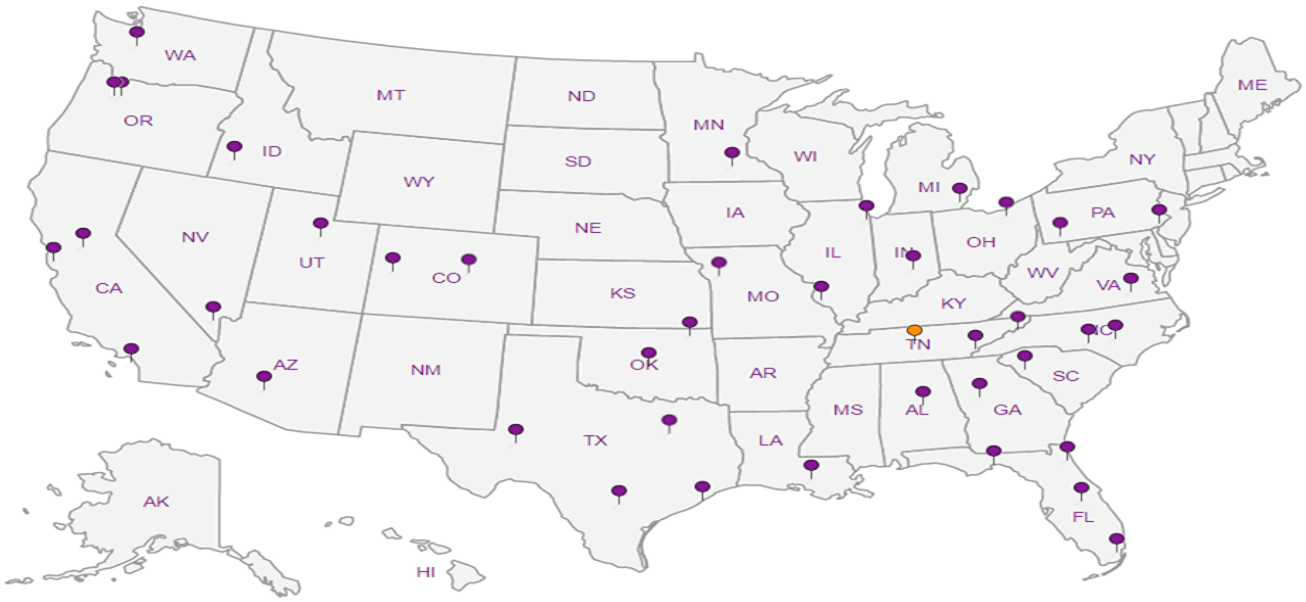
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Cascade Corporation- Fairview, OR

2201 NE 201st Avenue
Fairview, OR 97024-9718

Billing Information:
Accounts Payable
P.O. Box 20187
Portland, OR 97294-0187

Pres Chk

Report to: Cindy Bartlett

Email To: CBartlett@Geosyntec.com

Project Description: Cascade TSA

City/State Collected: Fairview OR.

Phone: 503-669-6286
Fax:

Client Project #

Lab Project # CASCORFOR-PNG0564

Collected by (print): PAT YADON

Site/Facility ID #

P.O. #

Collected by (signature): Patrick E Yodon

Immediately Packed on Ice N ___ Y X

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

Date Results Needed

Quote #

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOCs V8260 40mlAmb/MeOH5ml/Syr	dry weight 2ozClr-NoPres	trip blk VOCs V8260 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
RBE-081018-1		SS		8/10/18	11:40	2	X				01
RBE-081018-2		SS			11:42			X			02
RBC-081018-1		SS			11:50		X				03
TRIP BLANK		GW			11:30				X		04
RBC-081018-2		SS			11:55			X			05
RBW-081018-1		SS			12:10		X				06
RBW-081018-2		SS			12:18			X			07

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 1016953
G250

Acctnum: CASCORFOR
Template: T139344
Prelogin: P666693
TSR: 110 - Brian Ford
PB:
Shipped Via:

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

Remarks: *

pH ____ Temp ____
Flow ____ Other ____

Samples returned via:
__ UPS __ FedEx __ Courier

Tracking # 4361 6932 4562

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
10.5 MR 10R

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Patrick Yodon	8-10-18	13:15	FED EX	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.0 °C Bottles Received: 6
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 8/11/18 Time: 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

Login #:1016953	Client:CASCORFOR	Date:08/11/18	Evaluated by:Matthew Lockhart

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time		Login Clarification Needed		**If Broken Container:**
	Improper temperature		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	Improper preservation		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Courie
X	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments:No bulk containewas sent for RBE-08108-1, RBC-08108-1, and RBW-08108-1

Client informed by:		Call		Email X		Voice Mail		Date:08/13/18	Time:1000
TSR Initials:bjf		Client Contact: PMs							

Login Instructions:

RBE-081018-1 and RBE-081018-2 are the same sample. Log all analyses to -01 with sample ID RBE-081018.
RBC-081018-1 and RBC-081018-2 are the same sample. Log all analyses to -03 with sample ID RBC-081018.
RBW-081018-1 and RBW-081018-2 are the same sample. Log all analyses to -06 with sample ID RBW-081018.