

## Laboratory Report of Analysis

To: Kenai Watershed Forum  
44129 Sterling Highway  
Soldotna, AK 99669  
(907)260-5449

Report Number: **1184119**

Client Project: **Kenai River-Baseline (DNR/DEC)**

Dear Branden Bornemann,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,  
SGS North America Inc.

Justin Nelson  
Project Manager  
Justin.Nelson@sgs.com

\_\_\_\_\_  
Date

## Case Narrative

SGS Client: **Kenai Watershed Forum**  
 SGS Project: **1184119**  
 Project Name/Site: **Kenai River-Baseline (DNR/DEC)**  
 Project Contact: **Branden Bornemann**

Refer to sample receipt form for information on sample condition.

### **RM40-Bing's Landing (1184119001) PS**

Metals 200.7 - Ca, Mg, Fe were analyzed by ALS of Kelso, WA.

\*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 08/29/2018 12:23:30PM

## Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

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SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

## Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
RM40-Bing's Landing	1184119001	07/31/2018	07/31/2018	Water (Surface, Eff., Ground)
RM43-Upstream DOW Island	1184119002	07/31/2018	07/31/2018	Water (Surface, Eff., Ground)
RM44-Mouth of Kiley River	1184119003	07/31/2018	07/31/2018	Water (Surface, Eff., Ground)
RM50-Skilak Lake Outflow	1184119004	07/31/2018	07/31/2018	Water (Surface, Eff., Ground)
Trip Blank	1184119005	07/31/2018	07/31/2018	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
EPA 602/624	602 Aromatics by 624 (W)
SM21 4500NO3-F	Nitrate/Nitrite Flow injection Pres.
SM21 4500P-B,E	Total Phosphorus (W)

Print Date: 08/29/2018 12:23:32PM

## Detectable Results Summary

Client Sample ID: **RM40-Bing's Landing**

Lab Sample ID: 1184119001

**Waters Department**

Parameter

Total Nitrate/Nitrite-N

Result

0.197

Units

mg/L

Client Sample ID: **RM43-Upstream DOW Island**

Lab Sample ID: 1184119002

**Waters Department**

Parameter

Total Nitrate/Nitrite-N

Result

0.196

Units

mg/L

Client Sample ID: **RM44-Mouth of Kiley River**

Lab Sample ID: 1184119003

**Waters Department**

Parameter

Total Phosphorus

Result

0.0242

Units

mg/L

Client Sample ID: **RM50-Skilak Lake Outflow**

Lab Sample ID: 1184119004

**Waters Department**

Parameter

Total Nitrate/Nitrite-N

Result

0.221

Units

mg/L

## Results of RM40-Bing's Landing

Client Sample ID: **RM40-Bing's Landing**  
 Client Project ID: **Kenai River-Baseline (DNR/DEC)**  
 Lab Sample ID: 1184119001  
 Lab Project ID: 1184119

Collection Date: 07/31/18 11:15  
 Received Date: 07/31/18 16:00  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.400 U	0.400	0.120	ug/L	1		08/04/18 09:01
Ethylbenzene	1.00 U	1.00	0.310	ug/L	1		08/04/18 09:01
o-Xylene	1.00 U	1.00	0.310	ug/L	1		08/04/18 09:01
P & M -Xylene	2.00 U	2.00	0.620	ug/L	1		08/04/18 09:01
Toluene	1.00 U	1.00	0.310	ug/L	1		08/04/18 09:01
Xylenes (total)	3.00 U	3.00	1.00	ug/L	1		08/04/18 09:01
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		08/04/18 09:01
4-Bromofluorobenzene (surr)	102	85-114		%	1		08/04/18 09:01
Toluene-d8 (surr)	100	89-112		%	1		08/04/18 09:01

## Batch Information

Analytical Batch: VMS18119  
 Analytical Method: EPA 602/624  
 Analyst: FDR  
 Analytical Date/Time: 08/04/18 09:01  
 Container ID: 1184119001-C

Prep Batch: VXX32798  
 Prep Method: SW5030B  
 Prep Date/Time: 08/03/18 00:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL

Print Date: 08/29/2018 12:23:34PM

## Results of RM40-Bing's Landing

Client Sample ID: **RM40-Bing's Landing**  
 Client Project ID: **Kenai River-Baseline (DNR/DEC)**  
 Lab Sample ID: 1184119001  
 Lab Project ID: 1184119

Collection Date: 07/31/18 11:15  
 Received Date: 07/31/18 16:00  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Waters Department

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Total Nitrate/Nitrite-N	0.197	0.100	0.0250	mg/L	2		08/02/18 17:38

## Batch Information

Analytical Batch: WFI2732  
 Analytical Method: SM21 4500NO3-F  
 Analyst: AYC  
 Analytical Date/Time: 08/02/18 17:38  
 Container ID: 1184119001-A

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Total Phosphorus	0.0200 U	0.0200	0.00500	mg/L	1		08/07/18 13:58

## Batch Information

Analytical Batch: WDA4362  
 Analytical Method: SM21 4500P-B,E  
 Analyst: DMM  
 Analytical Date/Time: 08/07/18 13:58  
 Container ID: 1184119001-A

Prep Batch: WXX12463  
 Prep Method: SM21 4500P-B,E  
 Prep Date/Time: 08/06/18 12:14  
 Prep Initial Wt./Vol.: 25 mL  
 Prep Extract Vol: 25 mL

Print Date: 08/29/2018 12:23:34PM

## Results of RM43-Upstream DOW Island

Client Sample ID: **RM43-Upstream DOW Island**  
 Client Project ID: **Kenai River-Baseline (DNR/DEC)**  
 Lab Sample ID: 1184119002  
 Lab Project ID: 1184119

Collection Date: 07/31/18 10:40  
 Received Date: 07/31/18 16:00  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.400 U	0.400	0.120	ug/L	1		08/04/18 09:18
Ethylbenzene	1.00 U	1.00	0.310	ug/L	1		08/04/18 09:18
o-Xylene	1.00 U	1.00	0.310	ug/L	1		08/04/18 09:18
P & M -Xylene	2.00 U	2.00	0.620	ug/L	1		08/04/18 09:18
Toluene	1.00 U	1.00	0.310	ug/L	1		08/04/18 09:18
Xylenes (total)	3.00 U	3.00	1.00	ug/L	1		08/04/18 09:18
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/04/18 09:18
4-Bromofluorobenzene (surr)	102	85-114		%	1		08/04/18 09:18
Toluene-d8 (surr)	99.9	89-112		%	1		08/04/18 09:18

## Batch Information

Analytical Batch: VMS18119  
 Analytical Method: EPA 602/624  
 Analyst: FDR  
 Analytical Date/Time: 08/04/18 09:18  
 Container ID: 1184119002-C

Prep Batch: VXX32798  
 Prep Method: SW5030B  
 Prep Date/Time: 08/03/18 00:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL

Print Date: 08/29/2018 12:23:34PM



## Results of RM43-Upstream DOW Island

Client Sample ID: **RM43-Upstream DOW Island**  
 Client Project ID: **Kenai River-Baseline (DNR/DEC)**  
 Lab Sample ID: 1184119002  
 Lab Project ID: 1184119

Collection Date: 07/31/18 10:40  
 Received Date: 07/31/18 16:00  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Waters Department

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Total Nitrate/Nitrite-N	0.196	0.100	0.0250	mg/L	2		08/02/18 17:40

## Batch Information

Analytical Batch: WFI2732  
 Analytical Method: SM21 4500NO3-F  
 Analyst: AYC  
 Analytical Date/Time: 08/02/18 17:40  
 Container ID: 1184119002-A

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Total Phosphorus	0.0200 U	0.0200	0.00500	mg/L	1		08/07/18 14:01

## Batch Information

Analytical Batch: WDA4362  
 Analytical Method: SM21 4500P-B,E  
 Analyst: DMM  
 Analytical Date/Time: 08/07/18 14:01  
 Container ID: 1184119002-A

Prep Batch: WXX12463  
 Prep Method: SM21 4500P-B,E  
 Prep Date/Time: 08/06/18 12:14  
 Prep Initial Wt./Vol.: 25 mL  
 Prep Extract Vol: 25 mL

Print Date: 08/29/2018 12:23:34PM

## Results of RM44-Mouth of Kiley River

Client Sample ID: **RM44-Mouth of Kiley River**  
 Client Project ID: **Kenai River-Baseline (DNR/DEC)**  
 Lab Sample ID: 1184119003  
 Lab Project ID: 1184119

Collection Date: 07/31/18 10:15  
 Received Date: 07/31/18 16:00  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Waters Department

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Total Nitrate/Nitrite-N	0.100 U	0.100	0.0250	mg/L	2		08/02/18 17:42

## Batch Information

Analytical Batch: WFI2732  
 Analytical Method: SM21 4500NO3-F  
 Analyst: AYC  
 Analytical Date/Time: 08/02/18 17:42  
 Container ID: 1184119003-A

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Total Phosphorus	0.0242	0.0200	0.00500	mg/L	1		08/07/18 14:01

## Batch Information

Analytical Batch: WDA4362  
 Analytical Method: SM21 4500P-B,E  
 Analyst: DMM  
 Analytical Date/Time: 08/07/18 14:01  
 Container ID: 1184119003-A

Prep Batch: WXX12463  
 Prep Method: SM21 4500P-B,E  
 Prep Date/Time: 08/06/18 12:14  
 Prep Initial Wt./Vol.: 25 mL  
 Prep Extract Vol: 25 mL

Print Date: 08/29/2018 12:23:34PM

## Results of RM50-Skilak Lake Outflow

Client Sample ID: **RM50-Skilak Lake Outflow**  
 Client Project ID: **Kenai River-Baseline (DNR/DEC)**  
 Lab Sample ID: 1184119004  
 Lab Project ID: 1184119

Collection Date: 07/31/18 09:16  
 Received Date: 07/31/18 16:00  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Waters Department

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Total Nitrate/Nitrite-N	0.221	0.100	0.0250	mg/L	2		08/02/18 17:44

## Batch Information

Analytical Batch: WFI2732  
 Analytical Method: SM21 4500NO3-F  
 Analyst: AYC  
 Analytical Date/Time: 08/02/18 17:44  
 Container ID: 1184119004-A

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Total Phosphorus	0.0200 U	0.0200	0.00500	mg/L	1		08/07/18 14:02

## Batch Information

Analytical Batch: WDA4362  
 Analytical Method: SM21 4500P-B,E  
 Analyst: DMM  
 Analytical Date/Time: 08/07/18 14:02  
 Container ID: 1184119004-A

Prep Batch: WXX12463  
 Prep Method: SM21 4500P-B,E  
 Prep Date/Time: 08/06/18 12:14  
 Prep Initial Wt./Vol.: 25 mL  
 Prep Extract Vol: 25 mL

Print Date: 08/29/2018 12:23:34PM

## Results of Trip Blank

Client Sample ID: **Trip Blank**  
 Client Project ID: **Kenai River-Baseline (DNR/DEC)**  
 Lab Sample ID: 1184119005  
 Lab Project ID: 1184119

Collection Date: 07/31/18 09:16  
 Received Date: 07/31/18 16:00  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.400 U	0.400	0.120	ug/L	1		08/02/18 13:34
Ethylbenzene	1.00 U	1.00	0.310	ug/L	1		08/02/18 13:34
o-Xylene	1.00 U	1.00	0.310	ug/L	1		08/02/18 13:34
P & M -Xylene	2.00 U	2.00	0.620	ug/L	1		08/02/18 13:34
Toluene	1.00 U	1.00	0.310	ug/L	1		08/02/18 13:34
Xylenes (total)	3.00 U	3.00	1.00	ug/L	1		08/02/18 13:34
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/02/18 13:34
4-Bromofluorobenzene (surr)	98.5	85-114		%	1		08/02/18 13:34
Toluene-d8 (surr)	100	89-112		%	1		08/02/18 13:34

## Batch Information

Analytical Batch: VMS18114  
 Analytical Method: EPA 602/624  
 Analyst: FDR  
 Analytical Date/Time: 08/02/18 13:34  
 Container ID: 1184119005-A

Prep Batch: VXX32787  
 Prep Method: SW5030B  
 Prep Date/Time: 08/02/18 00:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL

Print Date: 08/29/2018 12:23:34PM

## Method Blank

Blank ID: MB for HBN 1783637 [VXX/32787]  
Blank Lab ID: 1464462

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1184119005

## Results by EPA 602/624

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	103	81-118		%
4-Bromofluorobenzene (surr)	98.1	85-114		%
Toluene-d8 (surr)	101	89-112		%

## Batch Information

Analytical Batch: VMS18114  
Analytical Method: EPA 602/624  
Instrument: Agilent 7890-75MS  
Analyst: FDR  
Analytical Date/Time: 8/2/2018 10:51:00AM

Prep Batch: VXX32787  
Prep Method: SW5030B  
Prep Date/Time: 8/2/2018 12:00:00AM  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 08/29/2018 12:23:36PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1184119 [VXX32787]  
 Blank Spike Lab ID: 1464463  
 Date Analyzed: 08/02/2018 11:07

Spike Duplicate ID: LCSD for HBN 1184119  
 [VXX32787]  
 Spike Duplicate Lab ID: 1464464  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1184119005

## Results by EPA 602/624

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	30.5	102	30	30.6	102	( 79-120 )	0.16	(< 20 )
Ethylbenzene	30	31.3	104	30	31.2	104	( 79-121 )	0.35	(< 20 )
o-Xylene	30	31.9	106	30	31.6	105	( 78-122 )	1.20	(< 20 )
P & M -Xylene	60	64.9	108	60	63.3	106	( 80-121 )	2.50	(< 20 )
Toluene	30	29.9	100	30	29.5	98	( 80-121 )	1.20	(< 20 )
Xylenes (total)	90	96.9	108	90	94.9	105	( 79-121 )	2.10	(< 20 )
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	30	96.3	96	30	95.6	96	( 81-118 )	0.76	
4-Bromofluorobenzene (surr)	30	96.4	96	30	98.4	98	( 85-114 )	2.10	
Toluene-d8 (surr)	30	101	101	30	102	102	( 89-112 )	0.33	

## Batch Information

Analytical Batch: VMS18114  
 Analytical Method: EPA 602/624  
 Instrument: Agilent 7890-75MS  
 Analyst: FDR

Prep Batch: VXX32787  
 Prep Method: SW5030B  
 Prep Date/Time: 08/02/2018 00:00  
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 08/29/2018 12:23:37PM

## Method Blank

Blank ID: MB for HBN 1783689 [VXX/32798]  
Blank Lab ID: 1464761

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1184119001, 1184119002

## Results by EPA 602/624

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	102	81-118		%
4-Bromofluorobenzene (surr)	99.4	85-114		%
Toluene-d8 (surr)	100	89-112		%

## Batch Information

Analytical Batch: VMS18119  
Analytical Method: EPA 602/624  
Instrument: VPA 780/5975 GC/MS  
Analyst: FDR  
Analytical Date/Time: 8/4/2018 2:41:00AM

Prep Batch: VXX32798  
Prep Method: SW5030B  
Prep Date/Time: 8/3/2018 12:00:00AM  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1184119 [VXX32798]  
 Blank Spike Lab ID: 1464762  
 Date Analyzed: 08/04/2018 02:58

Spike Duplicate ID: LCSD for HBN 1184119 [VXX32798]  
 Spike Duplicate Lab ID: 1464763  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1184119001, 1184119002

## Results by EPA 602/624

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	30.4	101	30	30.0	100	( 79-120 )	1.50	(< 20 )
Ethylbenzene	30	31.2	104	30	30.4	101	( 79-121 )	2.50	(< 20 )
o-Xylene	30	31.5	105	30	30.4	101	( 78-122 )	3.50	(< 20 )
P & M -Xylene	60	63.9	106	60	61.8	103	( 80-121 )	3.30	(< 20 )
Toluene	30	29.9	100	30	29.0	97	( 80-121 )	3.10	(< 20 )
Xylenes (total)	90	95.4	106	90	92.3	103	( 79-121 )	3.40	(< 20 )
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	30	98.1	98	30	97.8	98	( 81-118 )	0.24	
4-Bromofluorobenzene (surr)	30	98.5	99	30	98	98	( 85-114 )	0.48	
Toluene-d8 (surr)	30	100	100	30	99.6	100	( 89-112 )	0.63	

## Batch Information

Analytical Batch: VMS18119  
 Analytical Method: EPA 602/624  
 Instrument: VPA 780/5975 GC/MS  
 Analyst: FDR

Prep Batch: VXX32798  
 Prep Method: SW5030B  
 Prep Date/Time: 08/03/2018 00:00  
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 08/29/2018 12:23:39PM



## Method Blank

Blank ID: MB for HBN 1783641 (WFI/2732)  
Blank Lab ID: 1464490

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1184119001, 1184119002, 1184119003, 1184119004

## Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.0500U	0.100	0.0250	mg/L
Nitrite-N	0.0500U	0.100	0.0250	mg/L
Total Nitrate/Nitrite-N	0.0500U	0.100	0.0250	mg/L

## Batch Information

Analytical Batch: WFI2732  
Analytical Method: SM21 4500NO3-F  
Instrument: Astoria segmented flow  
Analyst: AYC  
Analytical Date/Time: 8/2/2018 5:26:35PM

Print Date: 08/29/2018 12:23:40PM

## Method Blank

Blank ID: MB for HBN 1783641 (WFI/2732)  
Blank Lab ID: 1464492

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1184119001, 1184119002, 1184119003, 1184119004

## Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.0500U	0.100	0.0250	mg/L
Nitrite-N	0.0500U	0.100	0.0250	mg/L
Total Nitrate/Nitrite-N	0.0500U	0.100	0.0250	mg/L

## Batch Information

Analytical Batch: WFI2732  
Analytical Method: SM21 4500NO3-F  
Instrument: Astoria segmented flow  
Analyst: AYC  
Analytical Date/Time: 8/2/2018 6:10:21PM

Print Date: 08/29/2018 12:23:40PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1184119 [WFI2732]

Blank Spike Lab ID: 1464480

Date Analyzed: 08/02/2018 17:24

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1184119001, 1184119002, 1184119003, 1184119004

## Results by SM21 4500NO3-F

### Blank Spike (mg/L)

Parameter	Spike	Result	Rec (%)	CL
Nitrate-N	2.5	2.73	109	( 70-130 )
Nitrite-N	2.5	2.66	106	( 90-110 )
Total Nitrate/Nitrite-N	5	5.39	108	( 90-110 )

## Batch Information

Analytical Batch: WFI2732

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: AYC

Print Date: 08/29/2018 12:23:41PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1184119 [WFI2732]

Blank Spike Lab ID: 1464491

Date Analyzed: 08/02/2018 18:08

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1184119001, 1184119002, 1184119003, 1184119004

## Results by SM21 4500NO3-F

Blank Spike (mg/L)

Parameter	Spike	Result	Rec (%)	CL
Nitrate-N	2.5	2.43	97	( 70-130 )
Nitrite-N	2.5	2.53	101	( 90-110 )
Total Nitrate/Nitrite-N	5	4.96	99	( 90-110 )

## Batch Information

Analytical Batch: WFI2732

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: AYC

Print Date: 08/29/2018 12:23:41PM

## Matrix Spike Summary

Original Sample ID: 1184120001  
MS Sample ID: 1464476 MS  
MSD Sample ID: 1464477 MSD

Analysis Date: 08/02/2018 17:51  
Analysis Date: 08/02/2018 17:52  
Analysis Date: 08/02/2018 17:54  
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1184119001, 1184119002, 1184119003, 1184119004

## Results by SM21 4500NO3-F

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Total Nitrate/Nitrite-N	0.100U	5.00	5.22	104	5.00	5.32	106	90-110	1.90	(< 25 )

## Batch Information

Analytical Batch: WFI2732  
Analytical Method: SM21 4500NO3-F  
Instrument: Astoria segmented flow  
Analyst: AYC  
Analytical Date/Time: 8/2/2018 5:52:51PM

Print Date: 08/29/2018 12:23:42PM

## Method Blank

Blank ID: MB for HBN 1783788 [WXX/12463]  
Blank Lab ID: 1465148

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1184119001, 1184119002, 1184119003, 1184119004

## Results by SM21 4500P-B,E

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Phosphorus	0.0100U	0.0200	0.00500	mg/L

## Batch Information

Analytical Batch: WDA4362  
Analytical Method: SM21 4500P-B,E  
Instrument: Discrete Analyzer 2  
Analyst: DMM  
Analytical Date/Time: 8/7/2018 1:49:23PM

Prep Batch: WXX12463  
Prep Method: SM21 4500P-B,E  
Prep Date/Time: 8/6/2018 12:14:00PM  
Prep Initial Wt./Vol.: 25 mL  
Prep Extract Vol: 25 mL

Print Date: 08/29/2018 12:23:42PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1184119 [WXX12463]  
 Blank Spike Lab ID: 1465149  
 Date Analyzed: 08/07/2018 13:50

Spike Duplicate ID: LCSD for HBN 1184119 [WXX12463]  
 Spike Duplicate Lab ID: 1465150  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1184119001, 1184119002, 1184119003, 1184119004

## Results by SM21 4500P-B,E

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Total Phosphorus	0.2	0.189	95	0.2	0.194	97	( 75-125 )	2.60	(< 25 )

## Batch Information

Analytical Batch: WDA4362  
 Analytical Method: SM21 4500P-B,E  
 Instrument: Discrete Analyzer 2  
 Analyst: DMM

Prep Batch: WXX12463  
 Prep Method: SM21 4500P-B,E  
 Prep Date/Time: 08/06/2018 12:14  
 Spike Init Wt./Vol.: 0.2 mg/L Extract Vol: 25 mL  
 Dupe Init Wt./Vol.: 0.2 mg/L Extract Vol: 25 mL

Print Date: 08/29/2018 12:23:44PM

## Matrix Spike Summary

Original Sample ID: 1184120001  
MS Sample ID: 1465151 MS  
MSD Sample ID: 1465152 MSD

Analysis Date: 08/07/2018 14:03  
Analysis Date: 08/07/2018 14:04  
Analysis Date: 08/07/2018 14:05  
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1184119001, 1184119002, 1184119003, 1184119004

## Results by SM21 4500P-B,E

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Total Phosphorus	0.0200U	0.200	.187	94	0.200	0.194	97	75-125	3.40	(< 25 )

## Batch Information

Analytical Batch: WDA4362  
Analytical Method: SM21 4500P-B,E  
Instrument: Discrete Analyzer 2  
Analyst: DMM  
Analytical Date/Time: 8/7/2018 2:04:16PM

Prep Batch: WXX12463  
Prep Method: Total Phosphorus (W) Ext.  
Prep Date/Time: 8/6/2018 12:14:00PM  
Prep Initial Wt./Vol.: 25.00mL  
Prep Extract Vol: 25.00mL

Print Date: 08/29/2018 12:23:44PM



[illegible]

AIRPORT OF DEPARTURE <b>VDZ</b>		<b>808 7702204</b>		<b>Frgt</b>								
SHIPPER'S NAME, ADDRESS & PHONE <b>ALYESKA JONATHAN GOOLD</b>		SHIPPER'S ACCOUNT NUMBER <b>A2561</b>		NOT AIR WAYBILL (AIR CONSIGNMENT NOTE) <b>Ravn</b> AIR GROUP 4700 Old International Airport Road Anchorage, Alaska 99502 (907)-243-2761								
VALDEZ AK		9078346282		It is agreed as not accepted MAY E SPEC SHIPP PLACI DRAV CARR higher <div style="font-size: 2em; font-weight: bold; text-align: center;">1184119</div>								
CONSIGNEE'S NAME, ADDRESS & PHONE <b>SGS LABS</b> <b>200 WEST POTTER RD</b> <b>ANCHORAGE AK 99518</b>		CONSIGNEE'S ACCOUNT NUMBER <b>9075622343</b>										
ISSUING CARRIER'S AGENT NAME, CITY & PHONE				Received in Good Order and Condition at _____ Place _____ Date/Time _____  Signature of Consignee or its agent: _____  Printed Name/Title: _____								
AGENT'S IATA CODE		ACCOUNT NO.		ALSO NOTIFY NAME & ADDRESS								
AIRPORT OF DEPARTURE <b>Valdez</b>		Declared Value \$ 0.00	Insured Amount \$ 0.00	ACCOUNTING INFORMATION 7382682 Acct#: A2561 ALYESKA PIPELINE SERVICE COMPANY  PO: 8450 JONATHAN GOOLD								
ROUTING AND DESTINATION				COMMENTS  <b>PROJECT NUMBER 8450</b>								
TO BY FIRST CARRIER TO BY TO BY AIRPORT OF DESTINATION <b>Anchorage</b>												
FOR CARRIER USE ONLY FLIGHT/DATE FLIGHT/DATE												
No. Of Pieces Rcp	Gross Weight	kg lb	Rate Class	Commodity Item No.	Chargeable Weight	Rate/Charge	Total	Nature and Quantity of Goods (Inclu. Dimensions or Volume)				
2	41	lb	F		1	\$29.18	\$29.18	WATER SAMPLES				
2	41						\$29.18					
PREPAID		WEIGHT CHARGE		COLLECT		OTHER CHARGES AND DESCRIPTION						
\$29.18						<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>AMOUNT</th> <th>DESCRIPTION</th> </tr> <tr> <td></td> <td></td> </tr> </table>			AMOUNT	DESCRIPTION		
AMOUNT	DESCRIPTION											
VALUATION CHARGE												
\$0.00												
FEDERAL EXCISE TAX												
\$1.82												
TOTAL OTHER CHARGES DUE AGENT						HAZMAT: No						
\$0.00						HAZMAT NO:						
TOTAL OTHER CHARGES DUE CARRIER												
\$0.00												
TOTAL PREPAID						SHIPPER'S CERTIFICATION:						
\$31.00						Shipper certifies that (i) the particulars on the face hereof are correct, (ii) insofar as any part of the consignment contains restricted articles, such part is described by name and is in proper condition for carriage by air according to applicable US government regulations and International Air Transport Association's Dangerous Goods Regulation, and (iii) in the event of an payment dispute between Shipper and Consignee, Shipper shall remit any unpaid freight charges within 48 hours of billing by the Carrier.						
TOTAL COLLECT						Signature of Shipper or its agent: _____  Printed Name/Title: _____						
						Executed on (date) _____ At (place) _____ Signature of Issuing Carrier or its Agent _____						
<div style="display: flex; justify-content: space-between;"> <div> <b>STATION NUMBERS</b>            ANCHORAGE - (907) 243-2761            ANIAK - (907) 675-4572            BARROW - (907) 852-5300            BETHEL - (907) 543-3825            DEADHORSE - (907) 659-9222            DILLINGHAM - (907) 842-2994            FAIRBANKS - (907) 450-7250            GALENA - (907) 656-1875         </div> <div>           HOMER - (907) 235-7565            KENAI - (907) 283-1911            KING SALMON - (907) 246-1120            KODIAK - (907) 487-2663            KOTZEBUE - (907) 442-3020            NOME - (907) 443-7595            ST. MARYS - (907) 438-2247            UNALAKLEET - (907) 624-3595         </div> </div>												

1184119

## AIRBILL 5484258

I hereby declare that the goods contained herein do not contain dangerous goods.

Signed.....Date.....

## Grant Aviation

4451 Aircraft Drive Anchorage, AK 99502

Phone: 1 (888) 359-4726

Freephone: 1 (888) 359-4726

Email: res@flygrant.com

Web: http://www.flygrant.com/



GRANT AVIATION

## FREIGHT DETAILS

FROM/TO: Kenai -&gt; Anchorage International

Flight Departs: Jul 31 18 2:25 PM

Receiver: SGS

Sender: Kenai Watershed Forum

Description & Comment	Quan.	Wgt.	Handle Fee	Danger Fee	Total
Standard Freight - water samples	2	97	-	-	\$54.81
Total Tax:					\$3.43
Total Payments made:					\$58.24
Total Unpaid:					\$0.00

Received in good condition by: .....

## CUSTOMER COPY

## AIRBILL 5484258

## Grant Aviation

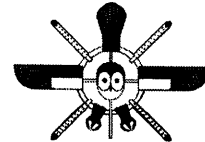
4451 Aircraft Drive Anchorage, AK 99502

Phone: 1 (888) 359-4726

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GRANT AVIATION

## FREIGHT DETAILS

FROM/TO: Kenai -&gt; Anchorage International

Flight Departs: Jul 31 18 2:25 PM

Receiver: SGS

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Description & Comment	Quan.	Wgt.	Handle Fee	Danger Fee	Total
Standard Freight - water samples	2	97	-	-	\$54.81
TAX: Federal Excise Tax					\$3.43
Total Payments made:					\$58.24
Total Unpaid:					\$0.00

## TERMS AND CONDITIONS

Consignemnt Note Text

**Alert Expeditors Inc.**

**#385996**

Citywide Delivery • 440-3351  
8421 Flamingo Drive • Anchorage, Alaska 99502

Date

From

To

Collect ☐

Prepay ☐  
Account ☐

Advance Charges ☐

Job #

PO#

Shipped Signature

Total Charge

Received By:



## e-Sample Receipt Form

SGS Workorder #:

1184119



1 1 8 4 1 1 9

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
<b>Chain of Custody / Temperature Requirements</b>		n/a Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	yes	2-Front
COC accompanied samples?	yes	
n/a **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	yes	Cooler ID: 1 @ 4.2 °C Therm. ID: D10
	n/a	Cooler ID: @ °C Therm. ID:
	n/a	Cooler ID: @ °C Therm. ID:
	n/a	Cooler ID: @ °C Therm. ID:
	n/a	Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	n/a	
If <0°C, were sample containers ice free?	n/a	
If samples received <u>without</u> a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "COOLER TEMP" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled".		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
<b>Holding Time / Documentation / Sample Condition Requirements</b>		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	yes	
Do samples <b>match COC**</b> (i.e., sample IDs, dates/times collected)?	yes	
**Note: If times differ <1hr, record details & login per COC.		
Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis)	yes	
Were proper containers (type/mass/volume/preservative***) used?	yes	***Exemption permitted for metals (e.g. 200.8/6020A).
<b>Volatile / LL-Hg Requirements</b>		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	n/a	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	n/a	
Were all soil VOAs field extracted with MeOH+BFB?	n/a	
<b>Note to Client:</b> Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		

## Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1184119001-A	H2SO4 to pH < 2	OK			
1184119001-B	HNO3 to pH < 2	OK			
1184119001-C	HCL to pH < 2	OK			
1184119001-D	HCL to pH < 2	OK			
1184119001-E	HCL to pH < 2	OK			
1184119002-A	H2SO4 to pH < 2	OK			
1184119002-B	HNO3 to pH < 2	OK			
1184119002-C	HCL to pH < 2	OK			
1184119002-D	HCL to pH < 2	OK			
1184119002-E	HCL to pH < 2	OK			
1184119003-A	H2SO4 to pH < 2	OK			
1184119003-B	HNO3 to pH < 2	OK			
1184119004-A	H2SO4 to pH < 2	OK			
1184119004-B	HNO3 to pH < 2	OK			

### Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.



August 24, 2018

Service Request No:K1807409

Julie Shumway  
SGS Environmental Services, Inc.  
200 West Potter Drive  
Anchorage, AK 99518

**Laboratory Results for: 1184119**

Dear Julie,

Enclosed are the results of the sample(s) submitted to our laboratory August 08, 2018  
For your reference, these analyses have been assigned our service request number **K1807409**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at [howard.holmes@alsglobal.com](mailto:howard.holmes@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

for

Howard Holmes  
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626  
PHONE +1 360 577 7222 | FAX +1 360 636 1068  
ALS Group USA, Corp.  
dba ALS Environmental



## Narrative Documents

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360) 577-7222 Fax (360) 425-9096  
[www.alsglobal.com](http://www.alsglobal.com)



**Client:** SGS Environmental Services, Inc.  
**Project:** 1184119  
**Sample Matrix:** Water

**Service Request:** K1807409  
**Date Received:** 08/08/2018

### CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

### Sample Receipt:

Four water samples were received for analysis at ALS Environmental on 08/08/2018. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

### Metals:

No significant anomalies were noted with this analysis.



Approved by \_\_\_\_\_

Date 08/24/2018

### SAMPLE DETECTION SUMMARY

CLIENT ID: RM40- Bing's Landing			Lab ID: K1807409-001			
Analyte	Results	Flag	MDL	MRL	Units	Method
Calcium	9.99		0.0009	0.021	mg/L	200.7
Iron	0.570		0.003	0.021	mg/L	200.7
Magnesium	1.01		0.0003	0.0053	mg/L	200.7

CLIENT ID: RM43-Upstream DOW Is.			Lab ID: K1807409-002			
Analyte	Results	Flag	MDL	MRL	Units	Method
Calcium	9.79		0.0009	0.021	mg/L	200.7
Iron	0.868		0.003	0.021	mg/L	200.7
Magnesium	1.10		0.0003	0.0053	mg/L	200.7

CLIENT ID: RM44-Mouth Kenai River			Lab ID: K1807409-003			
Analyte	Results	Flag	MDL	MRL	Units	Method
Calcium	8.05		0.0009	0.021	mg/L	200.7
Iron	1.27		0.003	0.021	mg/L	200.7
Magnesium	1.73		0.0003	0.0053	mg/L	200.7

CLIENT ID: RM50-Skilak Lake Outflow			Lab ID: K1807409-004			
Analyte	Results	Flag	MDL	MRL	Units	Method
Calcium	10.4		0.0009	0.021	mg/L	200.7
Iron	0.116		0.003	0.021	mg/L	200.7
Magnesium	0.861		0.0003	0.0053	mg/L	200.7



## Sample Receipt Information

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360) 577-7222 Fax (360) 425-9096  
[www.alsglobal.com](http://www.alsglobal.com)

**Client:** SGS Environmental Services, Inc.  
**Project:** 1184119

**Service Request:**K1807409

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
K1807409-001	RM40- Bing's Landing	7/31/2018	1115
K1807409-002	RM43-Upstream DOW Is.	7/31/2018	1040
K1807409-003	RM44-Mouth Kenai River	7/31/2018	1015
K1807409-004	RM50-Skilak Lake Outflow	7/31/2018	0916

**SGS North America Inc.**  
**CHAIN OF CUSTODY RECORD**



### Locations Nationwide

Alaska	Florida
New Jersey	Colorado
Texas	North Carolina
Virginia	Louisiana

[www.us.sgs.com](http://www.us.sgs.com)

CLIENT: SGS North America Inc. - Alaska Division					SGS Reference: <b>ALS - Kelso, WA</b>										Page 1 of 1			
CONTACT: Julie Shumway PHONE NO: (907) 562-2343					Additional Comments: All soils report out in dry weight unless otherwise requested.													
PROJECT NAME: 1184119 PWSID#: NPD#: E-MAIL: Julie.Shumway@sgs.com					CONTAINER	Preservative Used:	HNO3											
REPORTS TO: INVOICE TO: SGS - Alaska QUOTE #: P.O. #: 1184119						TYPE C = COMP G = GRAB Incremental Soils	Metals 200.7 - Ca, Mg, Fe											
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX														
	Rm40-Bing's Landing	7/31/2018	1115	water		1	GRAB	X										
	RM43-Upstream DOW Is.	7/31/2018	1040	water		1	GRAB	X										
	RM44-Mouth Kenai River	7/31/2018	1015	water	1	GRAB	X											
	RM50-Skilak Lake Outflow	7/31/2018	916	water	1	GRAB	X											
Relinquished By: (1) <i>[Signature]</i> Date 8/16/18 Time 1042 Received By: <i>[Signature]</i> ALS 8/18					DOD Project? NO Report to DL (J Flags)? NO Cooler ID:					Data Deliverable Requirements:								
Relinquished By: (2) <i>[Signature]</i> Date <i>[Blank]</i> Time <i>[Blank]</i> Received By: <i>[Blank]</i>					Requested Turnaround Time and-or Special Instructions:													
Relinquished By: (3) <i>[Blank]</i> Date <i>[Blank]</i> Time <i>[Blank]</i> Received By: <i>[Blank]</i>					STANDARD TAT Report all analyses for Soils/Waters in mg/L or mg/Kg, where possible													
Relinquished By: (4) <i>[Blank]</i> Date <i>[Blank]</i> Time <i>[Blank]</i> Received For Laboratory By: <i>[Blank]</i>					Temp Blank °C: <i>[Blank]</i> or Ambient [ ]					Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT								

[ X ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301

[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

[http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)

PC 12

## Cooler Receipt and Preservation Form

Client SGS Service Request K18 07/109  
 Received: 8/8/18 Opened: 8/8/18 By: Hm Unloaded: 8/8/18 By: K

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered  
 2. Samples were received in: (circle) Cooler Box Envelope Other + Styrofoam Cooler  
 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 Each Side  
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
23.2	23.0	N/A	0.2	N/A -0.2	322	1184119	810866848645		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves Cardboard  
 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N  
 6. Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed  
 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N  
 8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N  
 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N  
 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N  
 11. Were VOA vials received without headspace? Indicate in the table below. NA Y N  
 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, &amp; Resolutions:



## Miscellaneous Forms

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360) 577-7222 Fax (360) 425-9096  
[www.alsglobal.com](http://www.alsglobal.com)

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.



**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso**  
**State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L16-58-R4
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdwlabservice.htm">http://ndep.nv.gov/bsdwlabservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

**ALS Group USA, Corp.**

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## Analyst Summary report

**Client:** SGS Environmental Services, Inc.  
**Project:** 1184119

**Service Request:** K1807409

**Sample Name:** RM40- Bing's Landing  
**Lab Code:** K1807409-001  
**Sample Matrix:** Water

**Date Collected:** 07/31/18  
**Date Received:** 08/8/18

**Analysis Method**  
200.7

**Extracted/Digested By**

**Analyzed By**  
AMCKORNEY

**Sample Name:** RM43-Upstream DOW Is.  
**Lab Code:** K1807409-002  
**Sample Matrix:** Water

**Date Collected:** 07/31/18  
**Date Received:** 08/8/18

**Analysis Method**  
200.7

**Extracted/Digested By**

**Analyzed By**  
AMCKORNEY

**Sample Name:** RM44-Mouth Kenai River  
**Lab Code:** K1807409-003  
**Sample Matrix:** Water

**Date Collected:** 07/31/18  
**Date Received:** 08/8/18

**Analysis Method**  
200.7

**Extracted/Digested By**

**Analyzed By**  
AMCKORNEY

**Sample Name:** RM50-Skilak Lake Outflow  
**Lab Code:** K1807409-004  
**Sample Matrix:** Water

**Date Collected:** 07/31/18  
**Date Received:** 08/8/18

**Analysis Method**  
200.7

**Extracted/Digested By**

**Analyzed By**  
AMCKORNEY



## Sample Results

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## Metals

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dba ALS Environmental

Analytical Report

**Client:** SGS Environmental Services, Inc.  
**Project:** 1184119  
**Sample Matrix:** Water  
**Sample Name:** RM40- Bing's Landing  
**Lab Code:** K1807409-001

**Service Request:** K1807409  
**Date Collected:** 07/31/18 11:15  
**Date Received:** 08/08/18 10:10  
**Basis:** NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	9.99	mg/L	0.021	0.0009	1	08/14/18 18:15	08/13/18	
Iron	200.7	0.570	mg/L	0.021	0.003	1	08/14/18 18:15	08/13/18	
Magnesium	200.7	1.01	mg/L	0.0053	0.0003	1	08/14/18 18:15	08/13/18	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** SGS Environmental Services, Inc.  
**Project:** 1184119  
**Sample Matrix:** Water  
**Sample Name:** RM43-Upstream DOW Is.  
**Lab Code:** K1807409-002

**Service Request:** K1807409  
**Date Collected:** 07/31/18 10:40  
**Date Received:** 08/08/18 10:10  
**Basis:** NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	9.79	mg/L	0.021	0.0009	1	08/14/18 18:18	08/13/18	
Iron	200.7	0.868	mg/L	0.021	0.003	1	08/14/18 18:18	08/13/18	
Magnesium	200.7	1.10	mg/L	0.0053	0.0003	1	08/14/18 18:18	08/13/18	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** SGS Environmental Services, Inc.  
**Project:** 1184119  
**Sample Matrix:** Water  
**Sample Name:** RM44-Mouth Kenai River  
**Lab Code:** K1807409-003

**Service Request:** K1807409  
**Date Collected:** 07/31/18 10:15  
**Date Received:** 08/08/18 10:10  
**Basis:** NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	8.05	mg/L	0.021	0.0009	1	08/14/18 18:21	08/13/18	
Iron	200.7	1.27	mg/L	0.021	0.003	1	08/14/18 18:21	08/13/18	
Magnesium	200.7	1.73	mg/L	0.0053	0.0003	1	08/14/18 18:21	08/13/18	



ALS Group USA, Corp.  
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Analytical Report

**Client:** SGS Environmental Services, Inc.  
**Project:** 1184119  
**Sample Matrix:** Water  
**Sample Name:** RM50-Skilak Lake Outflow  
**Lab Code:** K1807409-004

**Service Request:** K1807409  
**Date Collected:** 07/31/18 09:16  
**Date Received:** 08/08/18 10:10  
**Basis:** NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	<b>10.4</b>	mg/L	0.021	0.0009	1	08/14/18 18:24	08/13/18	
Iron	200.7	<b>0.116</b>	mg/L	0.021	0.003	1	08/14/18 18:24	08/13/18	
Magnesium	200.7	<b>0.861</b>	mg/L	0.0053	0.0003	1	08/14/18 18:24	08/13/18	



## QC Summary Forms

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## Metals

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ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** SGS Environmental Services, Inc.  
**Project:** 1184119  
**Sample Matrix:** Water  
**Sample Name:** Method Blank  
**Lab Code:** KQ1810897-01

**Service Request:** K1807409  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	ND U	mg/L	0.021	0.0009	1	08/14/18 16:22	08/13/18	
Iron	200.7	ND U	mg/L	0.021	0.003	1	08/14/18 16:22	08/13/18	
Magnesium	200.7	ND U	mg/L	0.0053	0.0003	1	08/14/18 16:22	08/13/18	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** SGS Environmental Services, Inc.  
**Project:** 1184119  
**Sample Matrix:** Water

**Service Request:** K1807409  
**Date Analyzed:** 08/14/18

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/L  
**Basis:**NA

**Lab Control Sample**  
KQ1810897-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Calcium	200.7	10.9	12.5	87	85-115
Iron	200.7	2.18	2.50	87	85-115
Magnesium	200.7	11.1	12.5	89	85-115