ARS Aleut Analytical, LLC
3710 Woodland Dr. Suite 900
Anchorage, AK 99517
Phone: 907-258-2155
Fax: 907-258-6634

8/24/2017

Kenai Watershed Forum
44129 Sterling Highway
Soldotna, AK 99669
Attn: Jeff Sires

Work Order #: A1707344
Date: 8/24/2017
Work ID: KWF Baseline Monitoring July 2017
Date Received: 7/25/2017
Proj #: KWF Baseline Monitoring July 2017

Sample Identification

Lab Sample Number	Client Description	Lab Sample Number	Client Description
A1707344-01	RM19 -Slikok Creek	A1707344-02	RM21 -Soldotna Bridge
A1707344-03	RM22 -Soldotna Creek	A1707344-04	RM23 -SwiftWater Park

Enclosed are the analytical results for the submitted sample(s). Please review the CASE NARRATIVE for a discussion of any data and/or quality control issues. Listings of data qualifiers, analytical codes, key dates, and QC relationships are provided at the end of the report.

Sincerely,

Mary Curry

Mary Curry
Project Manager

"The Science of Analysis, The Art of Service"

Case Narrative

ARS Aleut Analytical, LLC
Work Order: A1707344

Samples were prepared and analyzed according to EPA or equivalent methods outlined in the following references:

Methods for the Determination of Metals in Environmental Samples, EPA/600/R-94/111, May 1994.

Standard Methods for the Examination of Water and Wastewater, 22nd Edition, 2012.

SAMPLE RECEIPT:
Four (4) samples were received on 7/25/2017 11:20:00 AM at a temperature of 3.1°C at AAA - Anchorage. The samples were received in good condition and in order per chain of custody.

REVIEW FOR COMPLIANCE WITH AAA QA PLAN
A summary of our review is shown below.

All analytical results contained in this report have been reviewed under AAA's internal quality assurance and quality control program. Any deviations in quality control parameters for specific analyses are noted in the following text. A complete quality assurance report, including laboratory control, matrix spike, and sample duplicate recoveries, is kept on file in our office and is available upon request.

All method specifications were met for the following tests, unless otherwise noted:

Test Method: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - nitrate+nitrite pres f - Aqueous

Test Method: SM4500-PE - Total Phos HACH 8190 - Aqueous

The following are subcontracted tests and have been represented to us as having met criteria, unless otherwise noted:

Test Method: 200. 7 - Metals by ICP - 200.7 metals - Aqueous

Test Method: 200.8 - Metals by ICP/MS - Dissolved 200.8 Metals - Aqueous
COMMENT:
Zinc was recovered outside of the upper control limits in the MSD of sample A1707344-02. All other QC met method criteria.

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

Report Section: Client Sample Report

Client Sample Name: **RM19 -Slikok Creek**

Matrix: Aqueous Collection Date: 7/25/2017 8:40:00AM

The following test was conducted by: TestAmerica - Denver

Lab Sample Number: A1707344-01C
Prep Date: 08-23-2017 07:08
Analytical Method ID: 200.8 - Metals by ICP/MS - Dissolved 200.8 Metals
Prep Method ID:
Prep Batch Number: R1708241307-40
Report Basis: As Received
Sample prep wt./vol:
pH on receipt: < 2.00

Analysis Date: 8/23/2017 2:55:00PM
Instrument:
File Name:
Dilution Factor: 1
Analyst Initials: LMT
Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Arsenic	7440-38-2	**ND**		ug/L	5.0	0.50	1
Cadmium	7440-43-9	**ND**		ug/L	1.0	0.040	
Chromium	7440-47-3	**ND**		ug/L	3.0	0.88	
Copper	7440-50-8	**ND**		ug/L	2.0	0.20	
Lead	7439-92-1	**ND**		ug/L	1.0	0.10	
Zinc	7440-66-6	**55.0**		ug/L	10	2.0	

The following test was conducted by: (ARS) American Radiation Service

Lab Sample Number: A1707344-01B
Prep Date: 08-02-2017
Analytical Method ID: 200. 7 - Metals by ICP - 200.7 metals
Prep Method ID:
Prep Batch Number: R1708240855-8
Report Basis: As Received
Sample prep wt./vol:

Analysis Date: 8/2/2017 3:35:00PM
Instrument:
File Name:
Dilution Factor: 1
Analyst Initials: CBAILEY
Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Calcium	7440-70-2	**16,100**		ug/L	300	100	1
Iron	7439-89-6	**1,390**		ug/L	60	20	
Magnesium	7439-96-4	**4,890**		ug/L	60	20	

The following test was conducted by: ARS Aleut Analytical,LLC

Lab Sample Number: A1707344-01D
Prep Date: 08-02-2017 14:08
Analytical Method ID: SM4500-PE - Total Phos HACH 8190
Prep Method ID: 4500-PE
Prep Batch Number: F170802005
Report Basis: As Received
Sample prep wt./vol: 5.00 ml
pH on receipt: < 2.00

Analysis Date: 8/2/2017 2:05:00PM
Instrument: Spectrophoto
File Name:
Dilution Factor: 1
Analyst Initials: SA
Prep Extract Vol: 5.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Phosphorous, Total		**ND**		mg/L	0.10	0.025	1

The following test was conducted by: ARS Aleut Analytical,LLC

Detailed Analytical Report

ARS Aleut Analytical, LLC

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

Report Section: **Client Sample Report**

Client Sample Name: **RM19 -Slikok Creek**

Matrix: Aqueous

Collection Date: 7/25/2017 8:40:00AM

Lab Sample Number: A1707344-01A

Analysis Date: 8/3/2017 12:54:00PM

Prep Date: 08-03-2017 12:08

Instrument: Spectrophoto

Analytical Method ID: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - n

File Name:

Prep Method ID:

Dilution Factor: 1

Prep Batch Number: F170803007

Report Basis: As Received

Analyst Initials: SC

Sample prep wt./vol: 25.00 ml

Prep Extract Vol: 25.00 ml

pH on receipt: < 2.00

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Nitrate-Nitrite as Nitrogen		**0.166**		mg/L	0.10	0.015	1

Detailed Analytical Report

ARS Aleut Analytical, LLC

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

Report Section: Client Sample Report

Client Sample Name: **RM21 -Soldotna Bridge**

Matrix: Waste Water Collection Date: 7/25/2017 9:30:00AM

The following test was conducted by: TestAmerica - Denver

Lab Sample Number: A1707344-02C
Prep Date: 08-23-2017 07:08
Analytical Method ID: 200.8 - Metals by ICP/MS - Dissolved 200.8 Metals
Prep Method ID:
Prep Batch Number: R1708241307-40
Report Basis: As Received
Sample prep wt./vol:
pH on receipt: < 2.00

Analysis Date: 8/23/2017 2:59:00PM
Instrument:
File Name:
Dilution Factor: 1
Analyst Initials: LMT
Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Arsenic	7440-38-2	**ND**		ug/L	5.0	0.50	1
Cadmium	7440-43-9	**ND**		ug/L	1.0	0.040	
Chromium	7440-47-3	**ND**		ug/L	3.0	0.88	
Copper	7440-50-8	**ND**		ug/L	2.0	0.20	
Lead	7439-92-1	**ND**		ug/L	1.0	0.10	
Zinc	7440-66-6	**46.0**		ug/L	10	2.0	

The following test was conducted by: (ARS) American Radiation Service

Lab Sample Number: A1707344-02B
Prep Date: 08-02-2017
Analytical Method ID: 200. 7 - Metals by ICP - 200.7 metals
Prep Method ID:
Prep Batch Number: R1708240855-8
Report Basis: As Received
Sample prep wt./vol:

Analysis Date: 8/2/2017 3:46:00PM
Instrument:
File Name:
Dilution Factor: 1
Analyst Initials: CBAILEY
Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Calcium	7440-70-2	**10,800**		ug/L	300	100	1
Iron	7439-89-6	**170**		ug/L	60	20	
Magnesium	7439-96-4	**978**		ug/L	60	20	

The following test was conducted by: ARS Aleut Analytical,LLC

Lab Sample Number: A1707344-02D
Prep Date: 08-02-2017 14:08
Analytical Method ID: SM4500-PE - Total Phos HACH 8190
Prep Method ID: 4500-PE
Prep Batch Number: F170802005
Report Basis: As Received
Sample prep wt./vol: 5.00 ml
pH on receipt: < 2.00

Analysis Date: 8/2/2017 2:05:00PM
Instrument: Spectrophoto
File Name:
Dilution Factor: 1
Analyst Initials: SA
Prep Extract Vol: 5.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Phosphorous, Total		**ND**		mg/L	0.10	0.025	1

The following test was conducted by: ARS Aleut Analytical,LLC

Detailed Analytical Report

ARS Aleut Analytical, LLC

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

Report Section: **Client Sample Report**

Client Sample Name: **RM21 -Soldotna Bridge**

Matrix: Waste Water

Collection Date: 7/25/2017 9:30:00AM

Lab Sample Number: A1707344-02A

Analysis Date: 8/3/2017 12:54:00PM

Prep Date: 08-03-2017 12:08

Instrument: Spectrophoto

Analytical Method ID: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - n

File Name:

Prep Method ID:

Dilution Factor: 1

Prep Batch Number: F170803007

Report Basis: As Received

Analyst Initials: SC

Sample prep wt./vol: 25.00 ml

Prep Extract Vol: 25.00 ml

pH on receipt: < 2.00

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Nitrate-Nitrite as Nitrogen		**0.216**		mg/L	0.10	0.015	1

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

Report Section: Client Sample Report

Client Sample Name: **RM22 -Soldotna Creek**

Matrix: Waste Water Collection Date: 7/25/2017 10:00:00AM

The following test was conducted by: TestAmerica - Denver

Lab Sample Number: A1707344-03C
Prep Date: 08-23-2017 07:08
Analytical Method ID: 200.8 - Metals by ICP/MS - Dissolved 200.8 Metals
Prep Method ID:
Prep Batch Number: R1708241307-40
Report Basis: As Received
Sample prep wt./vol:
pH on receipt: < 2.00

Analysis Date: 8/23/2017 3:10:00PM
Instrument:
File Name:
Dilution Factor: 1
Analyst Initials: LMT
Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Arsenic	7440-38-2	**8.2**		ug/L	5.0	0.50	1
Cadmium	7440-43-9	**ND**		ug/L	1.0	0.040	
Chromium	7440-47-3	**ND**		ug/L	3.0	0.88	
Copper	7440-50-8	**ND**		ug/L	2.0	0.20	
Lead	7439-92-1	**ND**		ug/L	1.0	0.10	
Zinc	7440-66-6	**30.0**		ug/L	10	2.0	

The following test was conducted by: (ARS) American Radiation Service

Lab Sample Number: A1707344-03B
Prep Date: 08-02-2017
Analytical Method ID: 200. 7 - Metals by ICP - 200.7 metals
Prep Method ID:
Prep Batch Number: R1708240855-8
Report Basis: As Received
Sample prep wt./vol:

Analysis Date: 8/2/2017 3:49:00PM
Instrument:
File Name:
Dilution Factor: 1
Analyst Initials: CBAILEY
Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Calcium	7440-70-2	**17,300**		ug/L	300	100	1
Iron	7439-89-6	**603**		ug/L	60	20	
Magnesium	7439-96-4	**5,060**		ug/L	60	20	

The following test was conducted by: ARS Aleut Analytical,LLC

Lab Sample Number: A1707344-03D
Prep Date: 08-02-2017 14:08
Analytical Method ID: SM4500-PE - Total Phos HACH 8190
Prep Method ID: 4500-PE
Prep Batch Number: F170802005
Report Basis: As Received
Sample prep wt./vol: 5.00 ml
pH on receipt: < 2.00

Analysis Date: 8/2/2017 2:05:00PM
Instrument: Spectrophoto
File Name:
Dilution Factor: 1
Analyst Initials: SA
Prep Extract Vol: 5.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Phosphorous, Total		**0.12**		mg/L	0.10	0.025	1

The following test was conducted by: ARS Aleut Analytical,LLC

Detailed Analytical Report

ARS Aleut Analytical, LLC

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

Report Section: **Client Sample Report**

Client Sample Name: **RM22 -Soldotna Creek**

Matrix: Waste Water

Collection Date: 7/25/2017 10:00:00AM

Lab Sample Number:	A1707344-03A	Analysis Date:	8/3/2017 12:54:00PM
Prep Date:	08-03-2017 12:08	Instrument:	Spectrophoto
Analytical Method ID:	SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - n	File Name:	
Prep Method ID:		Dilution Factor:	1
Prep Batch Number:	F170803007		
Report Basis:	As Received	Analyst Initials:	SC
Sample prep wt./vol:	25.00 ml	Prep Extract Vol:	25.00 ml
pH on receipt:	< 2.00		

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Nitrate-Nitrite as Nitrogen		**ND**		mg/L	0.10	0.015	1

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

Report Section: Client Sample Report

Client Sample Name: **RM23 -SwiftWater Park**

Matrix: Waste Water Collection Date: 7/25/2017 10:40:00AM

The following test was conducted by: TestAmerica - Denver

Lab Sample Number: A1707344-04C
Prep Date: 08-23-2017 07:08
Analytical Method ID: 200.8 - Metals by ICP/MS - Dissolved 200.8 Metals
Prep Method ID:
Prep Batch Number: R1708241307-40
Report Basis: As Received
Sample prep wt./vol:
pH on receipt: < 2.00

Analysis Date: 8/23/2017 3:29:00PM
Instrument:
File Name:
Dilution Factor: 1
Analyst Initials: LMT
Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Arsenic	7440-38-2	**ND**		ug/L	5.0	0.50	1
Cadmium	7440-43-9	**ND**		ug/L	1.0	0.040	
Chromium	7440-47-3	**ND**		ug/L	3.0	0.88	
Copper	7440-50-8	**ND**		ug/L	2.0	0.20	
Lead	7439-92-1	**ND**		ug/L	1.0	0.10	
Zinc	7440-66-6	**30.0**		ug/L	10	2.0	

The following test was conducted by: (ARS) American Radiation Service

Lab Sample Number: A1707344-04B
Prep Date: 08-02-2017
Analytical Method ID: 200. 7 - Metals by ICP - 200.7 metals
Prep Method ID:
Prep Batch Number: R1708240855-8
Report Basis: As Received
Sample prep wt./vol:

Analysis Date: 8/2/2017 3:52:00PM
Instrument:
File Name:
Dilution Factor: 1
Analyst Initials: CBAILEY
Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Calcium	7440-70-2	**10,600**		ug/L	300	100	1
Iron	7439-89-6	**174**		ug/L	60	20	
Magnesium	7439-96-4	**941**		ug/L	60	20	

The following test was conducted by: ARS Aleut Analytical,LLC

Lab Sample Number: A1707344-04D
Prep Date: 08-02-2017 14:08
Analytical Method ID: SM4500-PE - Total Phos HACH 8190
Prep Method ID: 4500-PE
Prep Batch Number: F170802005
Report Basis: As Received
Sample prep wt./vol: 5.00 ml
pH on receipt: < 2.00

Analysis Date: 8/2/2017 2:05:00PM
Instrument: Spectrophoto
File Name:
Dilution Factor: 1
Analyst Initials: SA
Prep Extract Vol: 5.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Phosphorous, Total		**ND**		mg/L	0.10	0.025	1

The following test was conducted by: ARS Aleut Analytical,LLC

Detailed Analytical Report

ARS Aleut Analytical, LLC

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

Report Section: **Client Sample Report**

Client Sample Name: **RM23 -SwiftWater Park**

Matrix: Waste Water

Collection Date: 7/25/2017 10:40:00AM

Lab Sample Number: A1707344-04A

Analysis Date: 8/3/2017 12:54:00PM

Prep Date: 08-03-2017 12:08

Instrument: Spectrophoto

Analytical Method ID: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - n

File Name:

Prep Method ID:

Dilution Factor: 1

Prep Batch Number: F170803007

Report Basis: As Received

Analyst Initials: SC

Sample prep wt./vol: 25.00 ml

Prep Extract Vol: 25.00 ml

pH on receipt: < 2.00

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Nitrate-Nitrite as Nitrogen		**0.125**		mg/L	0.10	0.015	1

Detailed Analytical Report

ARS Aleut Analytical, LLC

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

Report Section: Method Blank Report

Client Sample Name:

Matrix: Collection Date: 8/2/2017 3:21:00PM

The following test was conducted by: (ARS) American Radiation Service

Lab Sample Number: ARS1-B17-01617-03 Analysis Date: 8/2/2017 3:21:00PM
Prep Date: 08-02-2017 Instrument:
Analytical Method ID: 200. 7 - Metals by ICP - 200.7 metals File Name:
Prep Method ID: Dilution Factor: 1
Prep Batch Number: R1708240855-8
Report Basis: As Received Analyst Initials: CBAILEY
Sample prep wt./vol: Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Calcium	7440-70-2	ND		ug/L	300	100	1
Iron	7439-89-6	ND		ug/L	60	20	
Magnesium	7439-96-4	ND		ug/L	60	20	

The following test was conducted by: ARS Aleut Analytical,LLC

Lab Sample Number: F170802005-MB Analysis Date: 8/2/2017 2:05:00PM
Prep Date: 08-02-2017 14:08 Instrument: Spectrophoto
Analytical Method ID: SM4500-PE - Total Phos HACH 8190 File Name:
Prep Method ID: 4500-PE Dilution Factor: 1
Prep Batch Number: F170802005
Report Basis: As Received Analyst Initials: SA
Sample prep wt./vol: 5.00 ml Prep Extract Vol: 5.00 ml
pH on receipt: 0.00

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Phosphorous, Total		ND		mg/L	0.10	0.025	1

The following test was conducted by: ARS Aleut Analytical,LLC

Lab Sample Number: F170803007-MB Analysis Date: 8/3/2017 12:54:00PM
Prep Date: 08-03-2017 12:08 Instrument: Spectrophoto
Analytical Method ID: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - n File Name:
Prep Method ID: Dilution Factor: 1
Prep Batch Number: F170803007
Report Basis: As Received Analyst Initials: SC
Sample prep wt./vol: 25.00 ml Prep Extract Vol: 25.00 ml
pH on receipt: 0.00

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Nitrate-Nitrite as Nitrogen		ND		mg/L	0.10	0.015	1

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

Tests Run at: TestAmerica - Denver
Workorder (SDG): A1707344
Project: KWF Baseline Monitoring July 2017
Project Number:

QUALITY CONTROL REPORT

Prep Batch: **R1708241307-40**

MS/MSD REPORT

Analysis: 200.8 - Metals by ICP/MS - Dissolved 200.8 Metals
Parent: A1707344-02C
Prep Date: 8/23/2017
Samp. Anal. Date: 8/23/2017 2:59:00PM
Units: ug/L
MS Anal. Date: 8/23/2017 3:03:00PM MSD Anal. Date: 8/23/2017 3:06:00PM
Matrix: Waste Water

Analyte Name	SampResult	MSRes.	MSDRes	SPLev	SPDLev	Recov.	MSD Rec.	RPD	Recov Lim	RPDLim	Flag	
Arsenic	ND	37.7	40.0	41.0	40.8	92.0	98.0	5.9	79 - 120	0		*RPD*
Lead	ND	40.7	41.0	39.9	40.2	102.0	102.0	0.7	88 - 115	0		*RPD*
Copper	ND	39.6	40.6	41.7	41.4	95.0	98.0	2.5	90 - 115	0		*RPD*
Cadmium	ND	39.7	40.5	40.1	40.1	99.0	101.0	2.0	89 - 111	0		*RPD*
Zinc	46.0	91.5	92.5	39.6	39.7	115.0	117.0	1.1	88 - 115	0	*highMSD*	*RPD*
Chromium	ND	40.5	40.7	40.1	39.9	101.0	102.0	0.5	86 - 115	0		*RPD*

Analysis: 200.8 - Metals by ICP/MS - Dissolved 200.8 Metals
Parent: A1707344-03C
Prep Date: 8/23/2017
Samp. Anal. Date: 8/23/2017 3:10:00PM
Units: ug/L
MS Anal. Date: 8/23/2017 3:14:00PM MSD Anal. Date: 8/23/2017 3:18:00PM
Matrix: Waste Water

Analyte Name	SampResult	MSRes.	MSDRes	SPLev	SPDLev	Recov.	MSD Rec.	RPD	Recov Lim	RPDLim	Flag	
Arsenic	8.20	47.1	47.7	40.1	39.9	97.0	99.0	1.3	79 - 120	0		*RPD*
Lead	ND	41.6	41.3	40.0	40.1	104.0	103.0	0.7	88 - 115	0		*RPD*
Copper	ND	41.0	40.6	40.2	40.2	102.0	101.0	1.0	90 - 115	0		*RPD*
Cadmium	ND	39.3	40.5	40.1	40.1	98.0	101.0	3.0	89 - 111	0		*RPD*
Zinc	30.0	72.0	74.5	40.0	40.1	105.0	111.0	3.4	88 - 115	0		*RPD*
Chromium	ND	41.5	40.5	39.9	40.1	104.0	101.0	2.4	86 - 115	0		*RPD*

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

FOOTNOTES TO QC REPORT

Note 1: Results are shown to three significant figures to avoid rounding errors in calculations.

Note 2: If the sample concentration is greater than 4 times the spike level, a recovery is not meaningful, and the result should be used as a replicate. In such cases the spike is not as high as expected random measurement variability of the sample result itself.

Note 3: For sample duplicates, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample and duplicate results are not five times the PQL or greater, then the RPD is not expected to fall within the window shown and the comparison should be made on the basis of the absolute difference. Analytica uses the criterion that the absolute difference should be less than the PQL for water or less than 2XPQL for other matrices.

Note 4: For serial dilutions, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample result is not 50 times the MDL or greater, then the fact that the RPD does not meet the 10% criterion has little signifcance. Otherwise it indicates that a matrix bias may exist at the analytical step.

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

Tests Run at:

Workorder (SDG): A1707344

Project: KWF Baseline Monitoring July 2017

Project Number:

QUALITY CONTROL REPORT

Prep Batch: **F170803007**

LCS REPORT

Analysis: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - MB: F170803007-MB

Prep Date: 8/3/2017

MB Anal. Date: 8/3/2017 12:54:00PM Units: mg/L

LCS Anal. Date: 8/3/2017 12:54:00PM Matrix: Aqueous

Analyte Name	SampResult	LCSRes.	SPLev	Recov.	Recov Lim	RPDLim	Flag
Nitrate-Nitrite as Nitrogen	ND	0.332	0.328	101.2	90 - 110		

Prep Batch: **F170802005**

LCS REPORT

Analysis: SM4500-PE - Total Phos HACH 8190 MB: F170802005-MB

Prep Date: 8/2/2017

MB Anal. Date: 8/2/2017 2:05:00PM Units: mg/L

LCS Anal. Date: 8/2/2017 2:05:00PM Matrix: Aqueous

Analyte Name	SampResult	LCSRes.	SPLev	Recov.	Recov Lim	RPDLim	Flag
Phosphorous, Total	ND	0.290	0.320	90.7	90 - 110		

FOOTNOTES TO QC REPORT

Note 1: Results are shown to three significant figures to avoid rounding errors in calculations.

Note 2: If the sample concentration is greater than 4 times the spike level, a recovery is not meaningful, and the result should be used as a replicate. In such cases the spike is not as high as expected random measurement variability of the sample result itself.

Note 3: For sample duplicates, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample and duplicate results are not five times the PQL or greater, then the RPD is not expected to fall within the window shown and the comparison should be made on the basis of the absolute difference. Analytica uses the criterion that the absolute difference should be less than the PQL for water or less than 2XPQL for other matrices.

Note 4: For serial dilutions, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample result is not 50 times the MDL or greater, then the fact that the RPD does not meet the 10% criterion has little signifcance. Otherwise it indicates that a matrix bias may exist at the analytical step.

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

QC BATCH ASSOCIATIONS - BY METHOD BLANK

Lab Project ID: **188,878** **Lab Project Number:** **A1707344**

Prep Date: 8/2/2017

Lab Method Blank Id: F170802005-MB
Prep Batch ID: F170802005
Method: SM4500-PE - Total Phos HACH 8190

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

SampleNum	ClientSampleName	DataFile	AnalysisDate
A1707329-01D	Batch QC		8/2/2017 2:05:00PM
A1707344-01D	RM19 -Slikok Creek		8/2/2017 2:05:00PM
A1707344-02D	RM21 -Soldotna Bridge		8/2/2017 2:05:00PM
A1707344-03D	RM22 -Soldotna Creek		8/2/2017 2:05:00PM
A1707344-04D	RM23 -SwiftWater Park		8/2/2017 2:05:00PM
F170802005-LCS	LCS		8/2/2017 2:05:00PM
A1707329-01D-DUP	DUP		8/2/2017 2:05:00PM
A1707329-01D-MS	MS		8/2/2017 2:05:00PM
A1707329-01D-MSD	MSD		8/2/2017 2:05:00PM

Prep Date: 8/3/2017

Lab Method Blank Id: F170803007-MB
Prep Batch ID: F170803007
Method: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method -

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

SampleNum	ClientSampleName	DataFile	AnalysisDate
A1707329-05A	Batch QC		8/3/2017 12:54:00PM
A1707344-01A	RM19 -Slikok Creek		8/3/2017 12:54:00PM
A1707344-02A	RM21 -Soldotna Bridge		8/3/2017 12:54:00PM
A1707344-03A	RM22 -Soldotna Creek		8/3/2017 12:54:00PM
A1707344-04A	RM23 -SwiftWater Park		8/3/2017 12:54:00PM
F170803007-LCS	LCS		8/3/2017 12:54:00PM
A1707329-05A-DUP	DUP		8/3/2017 12:54:00PM
A1707329-05A-MS	MS		8/3/2017 12:54:00PM

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

QC BATCH ASSOCIATIONS - BY METHOD BLANK

Lab Project ID: **188,878** **Lab Project Number:** **A1707344**

Prep Date: 8/2/2017

Lab Method Blank Id: ARS1-B17-01617-03

Prep Batch ID: R1708240855-8

Method: 200. 7 - Metals by ICP - 200.7 metals

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

SampleNum	ClientSampleName	DataFile	AnalysisDate
A1707344-01B	RM19 -Slikok Creek		8/2/2017 3:35:00PM
A1707344-02B	RM21 -Soldotna Bridge		8/2/2017 3:46:00PM
A1707344-03B	RM22 -Soldotna Creek		8/2/2017 3:49:00PM
A1707344-04B	RM23 -SwiftWater Park		8/2/2017 3:52:00PM

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

DATA FLAGS AND DEFINITIONS

The PQL is the Method Quantitation Limit as defined by USACE.
Reporting Limit: Limit below which results are shown as "ND". This may be the PQL, MDL, or a value between. See the report conventions below.

Result Field:

ND = Not Detected at or above the Reporting Limit
NA = Analyte not applicable (see Case Narrative for discussion)

Qualifier Fields:

LOW = Recovery is below Lower Control Limit
HIGH = Recovery , RPD, or other parameter is above Upper Control Limit
E = Reported concentration is above the instrument calibration upper range

Organic Analysis Flags:

B = Analyte was detected in the laboratory method blank
J = Analyte was detected above MDL or Reporting Limit but below the Quant Limit (PQL)

Inorganic Analysis Flags:

J = Analyte was detected above the Reporting Limit but below the Quant Limit (PQL)
W = Post digestion spike did not meet criteria
S = Reported value determined by the Method of Standard Additions (MSA)

Several ways of defining the limit of detection and quantitation are prevalent in the laboratory industry and may appear in Analytica reports. These include the following:

MRL = "minimum reporting level", from the EPA Safe Drinking Water program (SDW)
PQL = "practical quantitation limit", from SW-846
EQL = "estimated quantitation limit", from SW-846
LOQ = "limit of quantitation", from a number of authoritative sources

In Analytica's work, all of these terms have the same meaning, equivalent to the EPA definition of the MRL. This reporting level is supported by a satisfactory calibration data point which is at that level or lower, and also is supported by a method detection limit (MDL) determined by the procedure in 40CFR. The MDL is lower than the MRL and represents an estimate of the level where positive detections have a 99% probability of being real, but where quantitation accuracy is unknown.

The MRL as defined by Analytica is the lowest demonstrated point of known quantitation accuracy.
The MRL should not be confused with the MCL, which is the EPA-defined "maximum contaminant level" allowed for certain regulated targets under specific regulations, such as the National Primary Drinking Water Regulations. Normally, the MRL is set at a level which is much lower than the MCL in order to ensure that levels are well below those limits. Not all target analytes have MCL levels established.

Other Flags may be applied. See Case Narrative for Description

Workorder (SDG): A1707344

Project: **KWF Baseline Monitoring July 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring July 2017**

REPORTING CONVENTIONS FOR THIS REPORT

A1707344

TestPkgName	Basis	# Sig Figs	Reporting Limit
200.7 (Aqueous) - 200.7 metals	As Received	3	Report to MDL, J qual below PQL
200.8 (Aqueous) - Dissolved 200.8 Metals	As Received	2	Report to PQL
4500-NO3E (Aqueous) - nitrate+nitrite pres f	As Received	3	Report to PQL
4500-PE/4500-PE (Aqueous) - Total Phos HACH 8190	As Received	2	Report to PQL

AAA Chain of Custody

Custody form MUST be signed
Please provide as much information as possible

ARS Aleut Analytical
formerly Analytica Group

Anchorage Laboratory
3710 Woodland Dr. Suite 900
Anchorage, AK 99517
907.258.2155 907.258.6634 fax

Mat-Su Service Center
701 East Parks Highway #206
Wasilla, AK 99654
907.373.5440

Fairbanks Laboratory
475 Hall Street
Fairbanks, AK 99701
907.456.3116
907.456.3125 fax

ARS Corporate Office
2609 North River Road
Port Allen, LA 70767
225.381.2991
225.381.2996 fax

Sampling Event ID:

Client/Company Name & Address:
Kenai Watershed Forum
44129 Sterling Hwy
Soldotna, AK 99669

Contact Person: Jeff Sires
Phone No: 907-260-5449 c:953-9635
Fax No: 907-260-5412
E-mail: jeff@kenaiwatershed.org

TEAM ID: ADF&G Habitat Division
Project Name: Kenai River Baseline Project -July 2017

Turnaround Time (TAT) for Results
☐ Standard ☐ **Expedited** (prior authorization required for < 10 days)
please specify due date below; additional charges may apply
Requested Date for Results:
Results to STATE: ☐ Yes ☐ No ☐ Routine ☐ Non-Routine

Section To Be Completed by AAA
Quote Number: A17040002
LGN: A17 07344
Account #: Check Credit
Invoice Contact Name & Address & Phone:

Special Instructions/Requirements:

PO/Contract No.:

Kit Preparation/Shipping Charge:

Requested Analysis/Method

	Client Sample Identification (Name, Designation, Location, etc.)	Date Sampled	Time Sampled	Matrix (Aqueous, DW-Drinking Water, WW-Waste Water, Soil/Solid, Other)	No. of Containers	Nitrate SM4500-N03E Preservative H2S04 Lot# 04422	200.7 Total Metals Preservative @LAB Lot#	200.8 Dissolved Metals Preservative HN03 Lot# 04422	Total Phos SM4500 Preservative H2S04 Lot# 04422	Preservative Lot#	Preservative Lot#	Field Preserved	Field Filtered	Use for MS/MSD	Comments
1	RM 19 -Slikok Creek	07/25/17	0840	Aq	4	X	X	X	X						
2	RM 21 -Soldotna Bridge	07/25/17	0930	Aq	4	X	X	X	X						
3	RM 22 -Soldotna Creek	07/25/17	1000	Aq	4	X	X	X	X						
4	RM 23 -Swiftwater Park	07/25/17	1040	Aq	4	X	X	X	X						
5															
6															
7															
8															
9															
10															

Relinquished by:	Date	Time	Received by:	Date	Time
Luke Violette	07/25/17	1120		7/25/17	1120
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Name of Sampler: (printed)	Luke Violette				

Section To Be Completed by AAA
Condition of Custody Seal: Intact Broken (Absent) Soldotna
Receiving location: Soldotna #87225
Temperature on arrival: 3.1 °C ____ °C
Thermometer ID # _____ Measurement method: (Temp Blank) Other
Shipping method/Tracking number: