

Analytical Sampling Report Delta Western Haines, AK

August 2013

1.0 INTRODUCTION

This report presents a summary of the field activities and the methods and procedures followed during the collection and analysis of groundwater samples.

This report was prepared in accordance with State of Alaska ADEC 18 AAC 75 Article 3 (October 2008), and the ADEC Draft Field Sampling Guidance) May 2010. All field-sampling protocols were documented and data is considered scientifically valid.

2.0 SITE DESCRIPTION/HISTORY

In the summer of 2012, ChemTrack installed a bioswale treatment system with a groundwater collection system at the Tesoro Station in Haines. This system allows for the surface water and groundwater to have separate migration pathways. The surface water flows into the bioswale system while the groundwater is directed into a 6-Ft diameter groundwater manhole that collects and treats the groundwater. A temporary groundwater treatment system was installed in the groundwater manhole in the fall of 2012 pending the final design of the groundwater treatment system. A Sampling and Analysis Plan including the Groundwater Treatment Plan was approved by the ADEC in April of 2013.

On April 28, 2013 ChemTrack installed the approved groundwater treatment system and collected samples to ensure that the system was functioning properly. Sample results from the April sampling event indicated that elevated levels of benzene were still present in the final discharge. On June 19, 2013 ChemTrack mobilized to Haines to inspect the system, install two additional GAC units in the groundwater manhole and to re-collect groundwater samples.

3.0 PROJECT PERSONNEL

Installation of additional GAC units was completed by Imre Manyoky and Georgia Doerr and sampling activities were conducted by Georgia Doerr.

4.0 **PROJECT LOCATION**

The Tesoro Station is located at 900 Main St Haines, AK 99827.

5.0 PROJECT SCOPE AND OBJECTIVES

- Inspect system and install additional GAC units in groundwater treatment manhole
- Collect laboratory samples before and after the treatment system to provide adequate data for how the system is functioning.

6.0 **INSPECTION and ALTERATION OF TREATMENT SYSTEM**

The groundwater treatment system in the groundwater manhole was inspected upon arrival. The sump pump was broken and a backup pump was being used with an above ground hose discharging to the sewer clean out. The water level in the ground was backed up to approximately three ft below the manhole ring and corresponding flow into the manhole was 0.29 GPM. The 20 gallon GAC units were caked with approximately one inch of oxidized iron that was restricting the flow of the water through the GAC unit. Upon further inspection, it was determined that one GAC unit had a mesh bag holding the carbon. This mesh bag was providing a channel for the water to pass through the drum allowing a percentage of water to bypass the bulk of the carbon. This observed channeling provides some insight as to why the samples collected in April 2013 showed elevated levels of hydrocarbons in the clean discharge.

The two original GAC units were cleaned and reinstalled in the manhole in conjunction with an additional two carbon GAC units. The treatment system now consists of one 20 gallon pre-filter unit, and four 20 gallon GAC units connected in parallel and in series (see attached figure GW3 for treatment unit orientation). The 20-gallon pre-filter acts as a sacrificial drum and is lined with a mesh bag in an attempt to contain some of the oxidized iron and prevent it from passing through to the GAC units and restricting flow. Delta Western personnel were trained on the system and asked to periodically clean the mesh bag inside the sacrificial drum and monitor if additional iron begins to form a layer on any of the carbon GAC units. Delta Western personnel were also instructed to continue shocking the system once a day with 1 cup of bleach. The sump pump was replaced with a ½ HP cast iron sump pump, the pump was hard wired in with a direct float switch.

7.0 SAMPLE ANALYTICAL METHODS, CONTAINERS, and HOLDING TIMES

Samples were analyzed by TestAmerica – Anchorage, a State of Alaska ADEC-approved laboratory using ADEC required analytical methods. The following table presents a summary of analytes, analytical methods, method detection limits, and Practical Quantitation Limit.

Table 1:	Groundwater A	nalytes, Me	ethods, MDL/F	PQL, Containers, Ho	lding Times	
Analyte	Analytical Method	MDL* ug/Kg	PQL** ug/Kg	Container	Holding Times	
DRO/RRO	AK 102/103	80	800	Two 350 ml Amber Glass TLC	HCL to pH <2 4° +	
GRO	EDA 9260	10	100	Three 40 ml VOA,	2°C 14 days to	
BTEX	EFA 0200	0.7	5	TLS	extract	
РАН	EPA 8270	1	10	1 Liter Amber Glass TLS	$4^{\circ} \pm 2^{\circ}$ C, Ascorbic acid, dark, 7 days to extract	
*Method D	etection Limit	**Practica	Quantitation I	Limit Volatile Organ	nic Analysis(VOA)	

8.0 <u>SAMPLE RESULTS</u>

A total of three samples were collected from the groundwater treatment system. A pre sample (**MW-A**) was collected before the water passed through the groundwater treatment system, a mid sample (**MW-B**) was collected from the groundwater after it had passed through one set of the GAC units, and a post sample (**MW-C**) was collected after groundwater had passed through both GAC units. These samples were analyzed for Gasoline Range Organics (GRO), Diesel Range Organics (DRO), Residual Range Organics (RRO), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) and Polynuclear Aromatic Hydrocarbons (PAH). The monitoring wells on site were inspected for the presence of water. A limited amount of water was present in monitoring well 13 and was bailed out and submitted to the laboratory for analysis of DRO, RRO, GRO and BTEX. There was not enough water in monitoring well 13 to analyze for PAH.

Sample **MW-A** represents the groundwater prior to treatment. Sample **MW-Ca** is a duplicate sample of **MW-A**. Sample **MW-B** represents the groundwater after it had passed through the first GAC unit in the series and sample **MW-C** is representative of the clean discharge after the water had passed through both GAC units in series. Sample **MW-13** represents water collected from monitoring well 13. At the time of sampling, the groundwater flow rate into the system was 0.29 GPM; the sampling points have a 4 hour retention time between them.

The sample results for the water after it had passed through the GAC units meets the most stringent ADEC cleanup level for marine water uses listed in 18 AAC 70. These results indicate that the groundwater treatment system that has been installed in the groundwater manhole is functioning properly and is successfully removing any residual hydrocarbons present in the groundwater.

	Tab	ole 2: Analyti	cal Data fror	n Groundw	ater Treatm	ent System	1
Analytes	Sample MW-A (mg/L)	Sample MW-Ca ^{Duplicate of} MW-A (mg/L)	Sample MW-B (mg/L)	Sample MW-C (mg/L)	Sample MW-13 (mg/L)	Trip Blank	ADEC Cleanup Level for Marine Water Uses
DRO	0.666	ND	ND	ND	4.79	NA	NL
RRO	ND	ND	ND	ND	1.03	NA	NL
GRO	1.5	1.1		ND	0.24	ND	NL
ТАН	0.750	0.580	0.0011	ND	0.100	NA	
Benzene	0.140	0.110	ND	ND	0.100	ND	
Ethylbenzene	0.037	0.027	ND	ND	ND	ND	.010
Toluene	0.250	0.180	0.0011	ND	ND	ND	
Total Xylenes	0.320	0.260	ND	ND	ND	ND	
TAqH	0.750	0.580	NA	ND	NA	NA	
Acenaphthene	ND	ND	NA	ND	NA	NA	
Acenaphthylene			NA	ND	NA	NA	
anthracene	ND	ND	NA	ND	NA	NA	
Benzo-a- anthracene	ND	ND	NA	ND	NA	NA	
Benzo-a-pyrene	ND	ND	NA	ND	NA	NA	
Benzo-b- fluroanthene	ND	ND	NA	ND	NA	NA	
Benzo-k- fluroanthene	ND	ND	NA	ND	NA	NA	
Benzo-g-h-i- fluroanthene	ND	ND	NA	ND	NA	NA	
Chrysene	ND	ND	NA	ND	NA	NA	
Dibenzo-a-h- anthracene	ND	ND	NA	ND	NA	NA	0.015
Fluoranthene		ND	NA	ND	NA	NA	0.015
Fluorene	ND	ND	NA	ND	NA	NA	
Ideno-123-cd- pyrene	ND	ND	NA	ND	NA	NA	
2-methyl naphthalene	0.00058	0.00062	NA	ND	NA	NA	
1-methyl naphthalene	0.00042	0.00046	NA	ND	NA	NA	
Naphthalene	0.0039	0.0043	NA	ND	NA	NA	
Phenanthrene	ND	ND	NA	ND	NA	NA	
Pyrene	ND	ND	NA	ND	NA	NA	
Benzene	0.140	0.110	ND	ND	0.100	ND	
Ethylbenzene	0.037	0.027	ND	ND	ND	ND	
Toluene	0.250	0.180	0.0011	ND	ND	ND	
Total Xylenes	0.320	0.260	ND	ND	ND	ND	
ND=	Not Detect TAH= Tot	ed at Labora al Aromatic	tory Detection Hydrocarbor	on Limit NA ns TAqH= 1	A= Not Anal Γotal Aqueo	yzed Ni Jus Hydroca	_= Not Listed arbons

9.0 SEWER DISCHARGE

The cleanup levels for discharge into the local sewer system have not been established. The water from the sewer cleanout drains into a pump station, then is pumped into a manhole and gravity feeds into two other manholes and then into the sewer treatment plant. The total distance between the discharge point at the Tesoro station and the treatment plant is approximately 1300 LNFT. The sewer water flows into a 55,000 gallon clarifying unit, and then flows into the Chilkoot Inlet, the discharge into the inlet is set at a 65 ft depth and 1800 LNFT from the shoreline. Daily discharge flow rates of the sewer plant fluctuate between 200,000-1,000,000 GPD. The corresponding seasonal flow rates of groundwater discharged into the sewer line at the Tesoro Station are 500-2500 GPD, which would allow for an approximate dilution factor of 400 at the Chilkoot Inlet discharge.

Table 3:	Analytical Data for Groundwater	Mineral Content
Analytes	Pre-treatment (MW-A) (mg/L)	Post-treatment (MW-C) (mg/L)
Suspended Iron	4.06	0.418
Dissolved Iron	1.10	ND
Total Iron	5.16	0.418
Suspended Manganese	0.22	0.10
Dissolved Manganese	2.68	1.72
Total Manganese	2.90	1.82

10.0 IRON and MANGANESE CONTENT IN GROUNDWATER

Samples were also collected from the groundwater system and submitted to the laboratory for iron and manganese analysis. Sample results indicate that both iron and manganese are present at elevated levels in the water. Samples were collected before and after the treatment system and analyzed for total and dissolved iron and manganese in the water.

Results indicate that the primary mineral deposit is a suspended iron compound (4.06 mg/L) which suggests that the bacteria is in the pipes and is causing some of the iron to oxidize prior to reaching the manhole. However, the groundwater also contains dissolved iron (1.10 mg/L) and manganese (0.96 mg/L) which appears to be oxidizing and precipitating out inside the treatment units. It is the combination of the suspended iron that forms large slimy deposits that can get lodged in the units upon entry into the manhole, and the ability of the dissolved minerals to oxidize inside the units that causes the system to clog and backup. The addition of bleach to the system will help reduce the amount of mineral oxidation by killing the bacteria. Unfortunately, any bacteria that are up gradient of the manhole will not come into contact with the bleach and will continue to migrate into the manhole providing a constant supply of iron bacteria to the treatment manhole. (see attached photos).

11.0 DATA VALIDATION AND LABORATORY QUALITY CONTROL DOCUMENTATION

11.1 Laboratory Reports and Data Quality

A review of the laboratory data indicates that all samples arrived intact and property labeled. Samples were properly preserved, extracted and analyzed within the required holding times.

11.2 Laboratory Review Checklist

See attached Laboratory Data Review Checklist.

12.0 DISCUSSION of RESULTS

Sample results indicate that the treatment system is functioning as it should by removing the residual hydrocarbons that are present in the groundwater.

The Iron and Manganese compounds in the groundwater in conjunction with the prolific bacteria are proving to have some adverse effects on the treatment system. The oxidized precipitants have a tendency to collect at the surface of the GAC filtration units which requires the units to be maintenance every two weeks. The dissolved minerals that are oxidizing inside the GAC units may cause the GAC to become less effective over time. Frequently monitoring the system and removal of built up are necessary for this system to continue to function.



P

Appendix A

Site Figures



FIGURE NO.	hole B	Grou Tre Syst	SHEET CON	CLIENT: Delta	anhole	on Pipe Delta Tesor Hai	PROJECT:	PROJECT NC	PLOT SCALE	CHECKED BY	DRAWN BY:	 11711 SC ANCHORAG (907	Cher
GW1		roundwater Treatment ystem Plan	CONTENTS:	Ita Western, Inc.		elta Western soro Station, ^J aines, AK	OT:	ST NO: 6083	CALE: BARSCALE	ED BY: GRD	IBY: ISM	11 SOUTH GAMBELL ORAGE, ALASKA 9951 (907) 349-2511	emTrack





Note: Max Granular Activated Carbon (GAC) units will provide 18 gallons of filter media each which will yield 14.4 gallons of retention volume (80% pore volume), two in parallel will provide 58 gallons of retention volume. Recorded flow rates have been established at 0.3 to 1.75 GPM. GAC units will be gravity feed, operating head pressure will vary with the supplied flow rate; approximately 1" head pressure at 0.8 GPM and 10" of head pressure at 5.5 GPM.

3/8" DIA tubing plumbed to each unit at the high point to prevent units from creating an airlock.

Connections between units were made with schedule 40 PVC pipe with fittings and 1.5" DIA rigid tubing with barb adaptors and camlock quick connect fittings.

Elevation 0.0" is approximately 8'

below the top of the



Appendix B

Analytical Sample Results

Lab Data Review Checklist



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Anchorage 2000 West International Airport Road Suite A10 Anchorage, AK 99502-1119 Tel: (907) 563-9200

TestAmerica Job ID: AWF0034

Client Project/Site: 6083 Client Project Description: Haines Groundwater treatment system

For:

ChemTrack 11711 S. Gambell Anchorage, AK 99515

Attn: Georgia Doerr

Johanna Dreher

Authorized for release by: 7/19/2013 4:56:13 PM

Johanna L Dreher, Client Services Manager johanna.dreher@testamericainc.com

LINKS Review your project results through TOTOL ACCESS Have a Question? Ask

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Visit us at: www.testamericainc.com

The

Expert

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	6
Client Sample Results	8
Surrogate Summary	14
QC Sample Results	16
QC Association Summary	24
Lab Chronicle	27
Certification Summary	29
Method Summary	30
Sample Summary	31
Chain of Custody	32

3

Qualifiers

GC/MS VOA Qualifier **Qualifier Description** 5 E Result exceeded calibration range. Х Surrogate is outside control limits **GC/MS Semi VOA** Qualifier **Qualifier Description** LCS or LCSD exceeds the control limits **Fuels** Qualifier **Qualifier Description** В Analyte was detected in the associated Method Blank. P2 Sample received without chemical preservation, but preserved by laboratory. BQC Reported for batch QC purposes only. See re-analysis (RE) for final result. Q11 Detected hydrocarbons in the diesel range do not have a distinct diesel pattern and may be due to heavily weathered diesel. Q4 The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CNF	Contains no Free Liquid	
DER	Duplicate error ratio (normalized absolute difference)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision level concentration	
MDA	Minimum detectable activity	
EDL	Estimated Detection Limit	
MDC	Minimum detectable concentration	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEO	Toxicity Equivalent Quotient (Dioxin)	

Job ID: AWF0034

Laboratory: TestAmerica Anchorage

Narrative

Receipt

Samples were received on 06/24/2013 at 16:05 PM; the samples arrived in good condition, properly preserved and, where required, on ice.

The temperature of the cooler at receipt was 2.7° C.

Subcontracted

GRO by AK101, BTEX by 8260, and PAH SIM by 8270 samples were subcontracted to TestAmerica Seattle from TestAmerica Anchorage.

Laboratory: TestAmerica Seattle

Narrative

Receipt

The samples were received on 6/25/2013 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3° C.

Except:

The following samples were received with headspace >1/4" in the sample vial: AWF0034-02 (580-39073-2C), AWF0034-03 (580-39073-3E), AWF0034-04 (580-39073-4E), AWF0034-05 (580-39073-5B).

GC/MS VOA - Method 8260B

The following samples AWF0034-01 (580-39073-1) and AWF0034-04 (580-39073-4) was received with headspace in the sample vial.

The following sample AWF0034-01 (580-39073-1) was diluted to bring the concentration of target analytes within the calibration range. Elevated reporting limits (RLs) are provided.

Sample AWF0034-01 (580-39073-1) in analysis batch 138966 had a hit above the RL for Benzene, whereas the dilution run in analysis batch 139107 was ND. The original run sample had headspace, therefore it may be expected that these values would be lower than those taken from the dilution vial which did not have headspace. The Benzene hit in the original run could be indicitive of contamination or a possible sample switch.

Trifluorotoluene surrogate was inadvertently omitted during the analysis process for sample AWF0034-01 (580-39073-1). There was insufficient sample remaining to perform re-extraction and/or re-analysis; therefore, the data have been reported and qualified. Dilution results correspond to original analysis results. The data have been qualified "X" and reported.

The following analyte Toluene was above the calibration range for sample AWF0034-01 (580-39073-1). This analyte is an estimated value. The data have been qualified "E" and reported.

Sample AWF0034-02 (580-39073-2) was re-analyzed for possible Toluene carryover.

The following sample AWF0034-04 (580-39073-4) was analyzed outside of analytical holding time due to instrument malfunction. The data has been qualified "H" and reported.

The following sample AWF0034-04 (580-39073-4) recovered low for the surrogate Toluene d-8. The data have been qualified "X" and reported. Sample data may be biased low and has been reported per client request.

The following samples AWF0034-03 (580-39073-3), AWF0034-04 (580-39073-4), & AWF0034-05 (580-39073-5) fell outside the tune window for analysis batch 69956. There was insufficient sample for samples AWF0034-03 (580-39073-3) and AWF0034-05 (580-39073-5), therefore data have been reported per client approval.

No other analytical or quality issues were noted.

Job ID: AWF0034 (Continued)

Laboratory: TestAmerica Seattle (Continued)

GC/MS Semi VOA - Method 8270C

A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for one (1) analytes to recover outside criteria for this method when a PAH spike list is utilized. The LCS/LCSD associated with prep batch 138690 had Acenaphthylene below the lower control limits; therefore, re-extraction/re-analysis was not performed. These results have been qualified "*" and reported.

No other analytical or quality issues were noted.

Organic Prep

No analytical or quality issues were noted.

RL

1.0

1.0

2.0

1.0

1.0

1.0

1.0

0.025

0.019

0.019

0.019

0.385

0.385

0.385

0.050

Result Qualifier

140

37

210

110

750

750

0.58

0.42

3.9

4.5

1.5

2.74 B BQC

4.12 B BQC

0.666 Q11 P2

250 E

MDL Unit

ug/L

mg/l

mg/l

mg/l

mg/L

Analyte

Benzene

o-Xylene

Toluene

TAH

TAqH

TPAH

-C6-C10

Ethylbenzene

m-Xylene & p-Xylene

2-Methylnaphthalene

1-Methylnaphthalene

Diesel Range Organics

Residual Range Organics

Diesel Range Organics - RE1

Gasoline Range Organics (GRO)

Client Sample ID: MW-B

Naphthalene

Client Sample ID: MW-A

Prep Type

Total/NA

Total

Total

Total

Total/NA

Lab Sample ID: AWF0034-01

Dil Fac D

1

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1.00

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1.00

1

Method

8260B

8260B

8260B

8260B

8260B

8260B

TAqH

8270C SIM

8270C SIM

8270C SIM

8270C SIM

AK102/103

AK102/103

AK102/103

AK101

Lab	Sample	ID:	AWF	0034-02

Lab Sample ID: AWF0034-03

Lab Sample ID: AWF0034-04

Lab Sample ID: AWF0034-05

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	1.1		1.0		ug/L	1	_	8260B	Total/NA

Client Sample ID: MW-Ca

Analyte	Result Qualifier	RL	MDL Un	nit	Dil Fac	D	Method	Prep Type
Benzene	110	1.0	ug	g/L	1	_	8260B	Total/NA
Ethylbenzene	27	1.0	ug	g/L	1		8260B	Total/NA
m-Xylene & p-Xylene	170	2.0	ug	g/L	1		8260B	Total/NA
o-Xylene	90	1.0	ug	g/L	1		8260B	Total/NA
Toluene	180	1.0	ug	g/L	1		8260B	Total/NA
ТАН	580	1.0	ug	g/L	1		8260B	Total/NA
TAqH	580	1.0	ug	g/L	1		TAqH	Total/NA
2-Methylnaphthalene	0.62	0.025	ug	g/L	1		8270C SIM	Total/NA
1-Methylnaphthalene	0.46	0.019	ug	g/L	1		8270C SIM	Total/NA
Naphthalene	4.2	0.019	ug	g/L	1		8270C SIM	Total/NA
ТРАН	4.8	0.019	ug	g/L	1		8270C SIM	Total/NA
Gasoline Range Organics (GRO) -C6-C10	1.1	0.050	mg	ıg/L	1		AK101	Total/NA

Client Sample ID: MW-C

No Detections.

Client Sample ID: MW-13

Analyte	Result	Qualifier	RL	MDL Un	nit	Dil Fac	D	Method	Prep Type
Benzene	100		1.0	ug	J/L	1	_	8260B	Total/NA
Diesel Range Organics - RE1	4.79	Q4	0.385	mg	g/l	1.00		AK102/103	Total
Residual Range Organics - RE1	1.03	Q4	0.385	mg	g/l	1.00		AK102/103	Total
Gasoline Range Organics (GRO) -C6-C10	0.24		0.050	mg	g/L	1		AK101	Total/NA

This Detection Summary does not include radiochemical test results.

Client: ChemTrack Project/Site: 6083

Client Sample ID: tripblank

No Detections.

Lab Sample ID: AWF0034-06

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-A

Date Collected: 06/23/13 10:20

Date Received: 06/24/13 16:05

TestAmerica Job ID: AWF0034

Analyzed

Analyzed

Analyzed

07/18/13 16:14

Analyzed

07/01/13 20:01

07/01/13 20:01

07/01/13 20:01

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07/01/13 20:01

Analyzed

07/01/13 20:01

Analyzed

06/26/13 13:58

Lab Sample ID: AWF0034-01

6

Dil Fac 07/01/13 21:00 1 07/01/13 21:00 1 07/01/13 21:00 1 07/01/13 21:00 1 07/01/13 21:00 1 07/01/13 21:00 1 Dil Fac 07/01/13 21:00 1 07/01/13 21:00 1 07/01/13 21:00 1 07/01/13 21:00 1 07/01/13 21:00 1

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Dil Fac

Dil Fac

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Matrix: Water

Method: 8260B - Volatile Orga	anic Compounds ((GC/MS)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared
Benzene	140		1.0		ug/L		
Ethylbenzene	37		1.0		ug/L		
m-Xylene & p-Xylene	210		2.0		ug/L		
o-Xylene	110		1.0		ug/L		
Toluene	250	E	1.0		ug/L		
ТАН	750		1.0		ug/L		
Surrogate	%Recovery	Qualifier	Limits				Prepared
4-Bromofluorobenzene (Surr)	97		75 - 120				
Ethylbenzene-d10	103		80 - 120				
Fluorobenzene (Surr)	99		80 - 120				
Toluene-d8 (Surr)	100		85 - 120				
Trifluorotoluene (Surr)	105		80 - 120				
- Method: TAqH - Total Aqueou Analyte	IS Hydrocarbons	Qualifier	RI	МП	Unit	п	Prenared
	750	Quaimer	10			_	
	750		1.0		ug/L		
Method: 8270C SIM - Semivol	atile Organic Con	pounds (G	C/MS SIM)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared
Acenaphthene	ND		0.019		ug/L		06/26/13 14:51
Acenaphthylene	ND	*	0.019		ug/L		06/26/13 14:51
Anthracene	ND		0.019		ug/L		06/26/13 14:51
Benzo[a]anthracene	ND		0.019		ug/L		06/26/13 14:51
Benzo[a]pyrene	ND		0.019		ug/L		06/26/13 14:51
Benzo[b]fluoranthene	ND		0.019		ug/L		06/26/13 14:51
Benzo[g,h,i]perylene	ND		0.019		ug/L		06/26/13 14:51
Benzo[k]fluoranthene	ND		0.019		ug/L		06/26/13 14:51
Chrysene	ND		0.019		ug/L		06/26/13 14:51
Dibenz(a,h)anthracene	ND		0.019		ua/L		06/26/13 14:51
Fluoranthene	ND		0.019		ua/L		06/26/13 14:51
Fluorene	ND		0.019		ug/L		06/26/13 14:51
Indeno[1.2.3-cd]pyrene	ND		0.019		ua/L		06/26/13 14:51
2-Methylnaphthalene	0.58		0.025		ua/L		06/26/13 14:51
1-Methylnaphthalene	0.42		0.019		ua/l		06/26/13 14:51
Nanhthalene	3.9		0.019		ug/l		06/26/13 14:51
Phenanthrene	ND		0.019		ua/l		06/26/13 14:51
Pyrene	ND		0.019		ug/l		06/26/13 14:51
ТРАН	4.5		0.019		ug/L		06/26/13 14:51
Surrogate	%Recovery	Qualifier	l imite				Prepared
Ternbenyl-d14	100	duumer	20 150				06/26/13 14:51
	100		20 - 150				50/20/15 14.51
Method: AK102/103 - Diesel R	Range Organics (C	10-C25) an	d Residual Ran	ge Orgai	nics (C25	5-C36) pe	er AK102/RRO
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared
Diesel Range Organics	2.74	B BQC	0.385		mg/l		06/26/13 08:30
Residual Range Organics	4.12	B BQC	0.385		mg/l		06/26/13 08:30

Residual Range Organics	4.12	B BQC	0.385	mg/l	06/26/13 08:30	06/26/13 13:58	1.00
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	106		50 - 150		06/26/13 08:30	06/26/13 13:58	1.00
Triacontane	108		50 - 150		06/26/13 08:30	06/26/13 13:58	1.00

TestAmerica Job ID: AWF0034

Client Sample ID: MW-A Date Collected: 06/23/13 10:20

Lab Sample ID: AWF0034-01 Matrix: Water

Lab Sample ID: AWF0034-02

Matrix: Water

Date Received: 06/24/13 16:05

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	0.666	Q11 P2	0.385		mg/l		06/28/13 08:20	06/28/13 13:13	1.00
Residual Range Organics	ND	P2	0.385		mg/l		06/28/13 08:20	06/28/13 13:13	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	109		50 _ 150				06/28/13 08:20	06/28/13 13:13	1.00
Triacontane	107		50 - 150				06/28/13 08:20	06/28/13 13:13	1.00
 Method: AK101 - Alaska - Gaso	line Range Orga	anics (GC)							
 Method: AK101 - Alaska - Gaso Analyte	l <mark>ine Range Orga</mark> Result	a <mark>nics (GC)</mark> Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Method: AK101 - Alaska - Gaso Analyte Gasoline Range Organics (GRO)	line Range Orga Result 1.5	Qualifier		MDL	Unit mg/L	<u>D</u>	Prepared	Analyzed	Dil Fac
Method: AK101 - Alaska - Gaso Analyte Gasoline Range Organics (GRO) -C6-C10	line Range Orga Result 1.5	anics (GC) Qualifier	RL	MDL	Unit mg/L	<u>D</u>	Prepared	Analyzed 06/29/13 16:18	Dil Fac
Method: AK101 - Alaska - Gaso Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate	line Range Orga Result 1.5	anics (GC) Qualifier Qualifier	RL 0.050	MDL	Unit mg/L	<u>D</u>	Prepared	Analyzed 06/29/13 16:18 Analyzed	Dil Fac 1 Dil Fac
Method: AK101 - Alaska - Gaso Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate Trifluorotoluene (Surr)	line Range Orga Result 1.5 %Recovery 108	Qualifier	RL 0.050 Limits 50 - 150	MDL	Unit mg/L	<u>D</u>	Prepared Prepared	Analyzed 06/29/13 16:18 Analyzed 06/29/13 16:18	Dil Fac 1 Dil Fac 1

Client Sample ID: MW-B

Date Collected: 06/23/13 10:35

Date Received: 06/24/13 16:05

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			07/02/13 18:04	1
Ethylbenzene	ND		1.0		ug/L			07/02/13 18:04	1
m-Xylene & p-Xylene	ND		2.0		ug/L			07/02/13 18:04	1
o-Xylene	ND		1.0		ug/L			07/02/13 18:04	1
Toluene	1.1		1.0		ug/L			07/02/13 18:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		75 - 120		07/02/13 18:04	1
Ethylbenzene-d10	102		80 - 120		07/02/13 18:04	1
Fluorobenzene (Surr)	100		80 - 120		07/02/13 18:04	1
Toluene-d8 (Surr)	98		85 - 120		07/02/13 18:04	1
Trifluorotoluene (Surr)	103		80 - 120		07/02/13 18:04	1

Mothod: AK102/103 -	Diesel Range Organics	(C10-C25) and Residual Range	Organics (C25-C36) per AK1	02/RRO - RE1
MC1100. ATT102 100 - 1	Dieser Runge Organies	(010-020) and Residual Range	organics (020-000) per Aiti	

Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ND		0.385		mg/l		06/28/13 08:20	06/28/13 13:13	1.00
ND		0.385		mg/l		06/28/13 08:20	06/28/13 13:13	1.00
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
111		50 - 150				06/28/13 08:20	06/28/13 13:13	1.00
106		50 - 150				06/28/13 08:20	06/28/13 13:13	1.00
	Result ND ND %Recovery 111 106	Result Qualifier ND ND %Recovery Qualifier 111 106	Result Qualifier RL ND 0.385 0.385 ND 0.385 0.385 %Recovery Qualifier Limits 111 50 - 150 50 - 150	Result Qualifier RL MDL ND 0.385 0.385 ND 0.385 %Recovery Qualifier Limits 111 50 - 150 106 50 - 150	Result Qualifier RL MDL Unit ND 0.385 mg/l ND 0.385 mg/l %Recovery Qualifier Limits 111 50 - 150 106 50 - 150	$\frac{\text{Result}}{\text{ND}} \frac{\text{Qualifier}}{\text{ND}} = \frac{\text{RL}}{0.385} = \frac{\text{MDL}}{\text{mg/l}} = \frac{\text{Unit}}{\text{mg/l}}$ $\frac{\text{%Recovery}}{111} \frac{\text{Qualifier}}{106} = \frac{\text{Limits}}{50 - 150}$	Result Qualifier RL MDL Unit D Prepared ND 0.385 mg/l 06/28/13 08:20 06/28/13 08:20 06/28/13 08:20 ND 0.385 mg/l 06/28/13 08:20 06/28/13 08:20 06/28/13 08:20 %Recovery Qualifier Limits Prepared 06/28/13 08:20 06/28/13 08:20 111 50 - 150 50 - 150 06/28/13 08:20 06/28/13 08:20	Result Qualifier RL MDL Unit D Prepared Analyzed ND 0.385 mg/l 06/28/13 08:20 06/28/13 13:13 06/28/13 13:13 ND 0.385 mg/l 06/28/13 08:20 06/28/13 13:13 %Recovery Qualifier Limits Prepared Analyzed 111 50 - 150 06/28/13 08:20 06/28/13 13:13 06/28/13 08:20 06/28/13 13:13 06/28/13 08:20 06/28/13 13:13

Method: AK101 - Alaska - Gasoline Range Organics (GC)										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO) -C6-C10	ND		0.050		mg/L			06/29/13 16:40	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
Trifluorotoluene (Surr)	109		50 - 150			-		06/29/13 16:40	1	
4-Bromofluorobenzene (Surr)	100		50 _ 150					06/29/13 16:40	1	

TestAmerica Job ID: AWF0034

Client: ChemTrack Project/Site: 6083

Client Sample ID: MW-Ca

Lab Sample ID: AWF0034-03 Matrix: Water

> 5 6

Date Collected: 06/23/13 10:25 Date Received: 06/24/13 16:05

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene			1.0		ug/L			07/01/13 21:46	1
Ethylbenzene	27		1.0		ug/L			07/01/13 21:46	1
m-Xylene & p-Xylene	170		2.0		ug/L			07/01/13 21:46	1
o-Xylene	90		1.0		ug/L			07/01/13 21:46	1
Toluene	180		1.0		ug/L			07/01/13 21:46	1
ТАН	580		1.0		ug/L			07/01/13 21:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		75 - 120					07/01/13 21:46	1
Ethylbenzene-d10	103		80 - 120					07/01/13 21:46	1
Fluorobenzene (Surr)	98		80 - 120					07/01/13 21:46	1
Toluene-d8 (Surr)	102		85 - 120					07/01/13 21:46	1
Trifluorotoluene (Surr)	98		80 - 120					07/01/13 21:46	1
- Method: TAqH - Total Aqueous	s Hydrocarbons								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ТАqН	580		1.0		ug/L			07/18/13 16:14	1
- Method: 8270C SIM - Semivola	tile Organic Con	ipounds (G	C/MS SIM)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Acenaphthylene	ND	*	0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Anthracene	ND		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Benzo[a]anthracene	ND		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Benzo[a]pyrene	ND		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Benzo[b]fluoranthene	ND		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Benzo[k]fluoranthene	ND		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Chrysene	ND		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Fluoranthene	ND		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Fluorene	ND		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
2-Methylnaphthalene	0.62		0.025		ug/L		06/26/13 14:51	07/01/13 20:25	1
1-Methylnaphthalene	0.46		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Naphthalene	4.2		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Phenanthrene	ND		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Pyrene	ND		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
ТРАН	4.8		0.019		ug/L		06/26/13 14:51	07/01/13 20:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

Method: AK102/103 - Diesel F	Range Organics (O	:10-C25) an	d Residual Ran	ge Organ	nics (C25	5-C36) p	er AK102/RRO	- RE1	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	ND		0.385		mg/l		06/28/13 08:20	06/28/13 14:16	1.00
Residual Range Organics	ND		0.385		mg/l		06/28/13 08:20	06/28/13 14:16	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	114		50 - 150				06/28/13 08:20	06/28/13 14:16	1.00
Triacontane	107		50 - 150				06/28/13 08:20	06/28/13 14:16	1.00

Client: ChemTrack

TestAmerica Job ID: AWF0034

Project/Site: 6083									
Client Sample ID: MW-Ca							Lab Sam	ole ID: AWF0	034-03
Date Collected: 06/23/13 10:25								Matrix	x: Water
Date Received: 06/24/13 16:05									
Mothod: AK101 Alaska Gasoli	no Pongo Org	nice (CC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	1.1		0.050		mg/L			06/29/13 17:03	1
-08-010									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	109		50 - 150					06/29/13 17:03	1
4-Bromofluorobenzene (Surr)	101		50 - 150					06/29/13 17:03	1
Client Sample ID: MW-C							Lab Sam	ole ID: AWF0	034-04
Date Collected: 06/23/13 10:45								Matrix	x: Water
Date Received: 06/24/13 16:05									
Method: 8260B - Volatile Organi	Compounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	<u>.</u>	ug/L			07/01/13 22:09	1
Ethylbenzene	ND		1.0		ug/L			07/01/13 22:09	1
m-Xylene & p-Xylene	ND		2.0		ug/L			07/01/13 22:09	1
o-Xylene	ND		1.0		ug/L			07/01/13 22:09	1
Toluene	ND		1.0		ua/L			07/01/13 22:09	1
ТАН	ND		1.0		ug/L			07/01/13 22:09	1
Surrogate	%Recoverv	Qualifier	Limits				Prepared	Analvzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		75 - 120					07/01/13 22:09	1
Ethylbenzene-d10	99		80 - 120					07/01/13 22:09	1
Eluorobenzene (Surr)	101		80 - 120					07/01/13 22:09	1
Toluene-d8 (Surr)	97		85 120					07/01/13 22:00	1
Trifluorotoluene (Surr)	103		80 - 120					07/01/13 22:09	1
Method: TAGH - Total Aqueous F Analyte	Aydrocarbons Result	Qualifier	RI	мы	Unit	р	Prepared	Analyzed	Dil Fac
TAgH	ND		1.0		uq/L			07/18/13 16:14	1
					-9-				
Method: 8270C SIM - Semivolatil	e Organic Con	npounds (GC	C/MS SIM)	МП	Unit	п	Prepared	Analyzod	Dil Fac
Acenanhthene			0.019			_	06/26/13 14:51	07/03/13 09:27	1
Acenanhthylene		*	0.019		ug/L		06/26/13 14:51	07/03/13 09:27	1
Anthracene			0.019		ug/L		06/26/13 14:51	07/03/13 09:27	1
Benzolalanthracene	ND		0.019		ug/L		06/26/13 14:51	07/03/13 09:27	1
Benzolajovrene			0.019		ug/L		06/26/13 14:51	07/03/13 09:27	1
Benzo[h]fluoranthene			0.010		ug/L		06/26/13 14:51	07/03/13 09:27	1
Benzola h ilpondono			0.019		ug/L		06/26/13 14:51	07/03/13 00:27	
Benzo[k]fluoranthana			0.019		ug/L		06/26/13 14:51	07/03/13 00:27	1
Chrysone			0.019		ug/L		06/26/13 14:51	07/03/13 00:27	1
Dihanz(a h)anthracana			0.019		ug/L		06/26/12 14:51	07/03/13 09:27	1
			0.019		ug/L		06/26/12 14.51	07/02/12 00:27	ا م
Eluorono			0.019		ug/L		06/26/13 14.51	07/02/12 00:27	1
	ND		0.019		uy/L		06/26/13 14:51	07/02/12 00:27	ا ۸
	ND		0.019		ug/L		00/20/13 14:51	07/03/13 09:27	1
	ND		0.025		ug/L		06/26/13 14:51	07/03/13 09:27	1
Nanhthalana	ND ND		0.019		ug/L		06/26/13 14:51	07/03/13 09:27	,
Naphthalene	ND		0.019		ug/L		00/20/13 14:51	07/03/13 09:27	1
Prieranthrene	ND		0.019		ug/L		00/20/13 14:51	07/03/13 09:27	1
ryrene	ND		0.019		ug/L		06/26/13 14:51	07/03/13 09:27	1

TestAmerica Job ID: AWF0034

5

6

Client: ChemTrack Project/Site: 6083

Client Sample ID: MW-C Date Collected: 06/23/13 10:45

Date Received: 06/24/13 16:05

Lab Sample ID: AWF0034-04
Matrix: Water

Lab Sample ID: AWF0034-05

Matrix: Water

Method: 8270C SIM - Se	mivolatile Organic Con	npounds (G	C/MS SIM) (Cor	ntinued)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ТРАН	ND		0.019		ug/L		06/26/13 14:51	07/03/13 09:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	88		20 - 150				06/26/13 14:51	07/03/13 09:27	1

Method: AK102/103 - Diesel	Range Organics (O	C10-C25) an	d Residual Ran	ige Orgai	nics (C25	-C36) p	er AK102/RRO	- RE1	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	ND		0.385		mg/l		06/28/13 08:20	06/28/13 14:48	1.00
Residual Range Organics	ND		0.385		mg/l		06/28/13 08:20	06/28/13 14:48	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	114		50 _ 150				06/28/13 08:20	06/28/13 14:48	1.00
Triacontane	108		50 - 150				06/28/13 08:20	06/28/13 14:48	1.00

Method: AK101 - Alaska - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.050		mg/L			06/29/13 17:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	108		50 - 150			-		06/29/13 17:25	1
4-Bromofluorobenzene (Surr)	101		50 - 150					06/29/13 17:25	1

Client Sample ID: MW-13

Date Collected: 06/23/13 02:50

Date Received: 06/24/13 16:05	5
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Method: 8260B - Volatile Organi	c Compounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	100		1.0		ug/L			07/01/13 22:32	1
Ethylbenzene	ND		1.0		ug/L			07/01/13 22:32	1
m-Xylene & p-Xylene	ND		2.0		ug/L			07/01/13 22:32	1
o-Xylene	ND		1.0		ug/L			07/01/13 22:32	1
Toluene	ND		1.0		ug/L			07/01/13 22:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		75 - 120			-		07/01/13 22:32	1
Ethylbenzene-d10	100		80 - 120					07/01/13 22:32	1
Fluorobenzene (Surr)	97		80 - 120					07/01/13 22:32	1
Toluene-d8 (Surr)	99		85 - 120					07/01/13 22:32	1
Trifluorotoluene (Surr)	103		80 - 120					07/01/13 22:32	1

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	4.79	Q4	0.385		mg/l		06/28/13 08:20	06/28/13 15:53	1.00
Residual Range Organics	1.03	Q 4	0.385		mg/l		06/28/13 08:20	06/28/13 15:53	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	96.0		50 - 150				06/28/13 08:20	06/28/13 15:53	1.00
Triacontane	99.4		50 - 150				06/28/13 08:20	06/28/13 15:53	1 00

		Client	: Sample R	esults	5				
Client: ChemTrack Project/Site: 6083							TestAr	nerica Job ID: A\	WF0034
Client Sample ID: MW-13 Date Collected: 06/23/13 02:50							Lab Sam	ple ID: AWF0 Matrix	034-05 : Water
Date Received: 06/24/13 16:05									
Method: AK101 - Alaska - Gasolin	e Range Orga	anics (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	0.24		0.050		mg/L			06/29/13 17:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	111		50 - 150				-	06/29/13 17:47	1
4-Bromofluorobenzene (Surr)	100		50 - 150					06/29/13 17:47	1
Client Sample ID: tripblank							Lah Sam		024.06
Date Collected: 06/23/13 00:00 Date Received: 06/24/13 16:05								Matrix	: Water
Method: 8260B - Volatile Organic	Compounds Result	(GC/MS) Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			07/02/13 17:41	1
Ethylbenzene	ND		1.0		ug/L			07/02/13 17:41	1
m-Xylene & p-Xylene	ND		2.0		ua/L				
o-Xvlene								07/02/13 17:41	1
	ND		1.0		ug/L			07/02/13 17:41 07/02/13 17:41	1
Toluene	ND ND		1.0 1.0		ug/L ug/L			07/02/13 17:41 07/02/13 17:41 07/02/13 17:41	1 1 1
Toluene Surrogate	ND ND %Recovery	Qualifier	1.0 1.0 <i>Limits</i>		ug/L ug/L		Prepared	07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 <i>Analyzed</i>	1 1 1 Dil Fac
Toluene Surrogate 4-Bromofluorobenzene (Surr)	ND ND %Recovery 97	Qualifier	1.0 1.0 <u>Limits</u> 75 - 120		ug/L ug/L		Prepared	07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 Analyzed 07/02/13 17:41	1 1 1 <u>Dil Fac</u> 1
Toluene Surrogate 4-Bromofluorobenzene (Surr) Ethylbenzene-d10	ND ND %Recovery 97 99	Qualifier	1.0 1.0 <u>Limits</u> 75 - 120 80 - 120		ug/L ug/L		Prepared	07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 Analyzed 07/02/13 17:41 07/02/13 17:41	1 1 1 Dil Fac 1 1
Toluene Surrogate 4-Bromofluorobenzene (Surr) Ethylbenzene-d10 Fluorobenzene (Surr)	ND ND %Recovery 97 99 99	Qualifier	1.0 1.0 <u>Limits</u> 75 - 120 80 - 120 80 - 120		ug/L ug/L	······	Prepared	07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 Analyzed 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41	1 1 1 Dil Fac 1 1 1
Toluene Surrogate 4-Bromofluorobenzene (Surr) Ethylbenzene-d10 Fluorobenzene (Surr) Toluene-d8 (Surr)	ND ND %Recovery 97 99 99 98	Qualifier	1.0 1.0 Limits 75 - 120 80 - 120 80 - 120 85 - 120		ug/L ug/L		Prepared	07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 Analyzed 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41	1 1 1 1 1 1 1 1 1 1
Toluene Surrogate 4-Bromofiuorobenzene (Surr) Ethylbenzene-d10 Fluorobenzene (Surr) Toluene-d8 (Surr) Trifluorotoluene (Surr)	ND ND %Recovery 97 99 99 98 100	Qualifier	1.0 1.0 Limits 75 - 120 80 - 120 80 - 120 85 - 120 80 - 120		ug/L ug/L		Prepared	07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 Analyzed 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41	1 1 1 1 1 1 1 1 1 1
Toluene Surrogate 4-Bromofluorobenzene (Surr) Ethylbenzene-d10 Fluorobenzene (Surr) Toluene-d8 (Surr) Trifluorotoluene (Surr) Method: AK101 - Alaska - Gasolin	ND ND %Recovery 97 99 99 98 100 e Range Orga	Qualifier	1.0 1.0 Limits 75 - 120 80 - 120 80 - 120 85 - 120 80 - 120		ug/L ug/L		Prepared	07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 Analyzed 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41	1 1 1 1 1 1 1 1 1 1
Toluene Surrogate 4-Bromofluorobenzene (Surr) Ethylbenzene-d10 Fluorobenzene (Surr) Toluene-d8 (Surr) Trifluorotoluene (Surr) Method: AK101 - Alaska - Gasolin Analyte	ND ND %Recovery 97 99 98 100 e Range Orga Result	Qualifier anics (GC) Qualifier	1.0 1.0 Limits 75 - 120 80 - 120 85 - 120 85 - 120 80 - 120 RL	MDL	ug/L ug/L	D	Prepared	07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 <i>Analyzed</i> 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 <i>Analyzed</i>	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Toluene Surrogate 4-Bromofluorobenzene (Surr) Ethylbenzene-d10 Fluorobenzene (Surr) Toluene-d8 (Surr) Trifluorotoluene (Surr) Method: AK101 - Alaska - Gasolin Analyte Gasoline Range Organics (GRO) -C6-C10	ND ND %Recovery 97 99 98 100 e Range Orga Result ND	Qualifier anics (GC) Qualifier	1.0 1.0 1.0 Limits 75 - 120 80 - 120 85 - 120 80 - 120 80 - 120 RL 0.050	MDL	ug/L ug/L <u>Unit</u> mg/L	<u>D</u> .	Prepared	07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 <i>Analyzed</i> 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Toluene Surrogate 4-Bromofluorobenzene (Surr) Ethylbenzene-d10 Fluorobenzene (Surr) Toluene-d8 (Surr) Trifluorotoluene (Surr) Method: AK101 - Alaska - Gasolin Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate	ND ND %Recovery 97 99 98 100 e Range Orga Result ND %Recovery	Qualifier anics (GC) Qualifier Qualifier	1.0 1.0 Limits 75 - 120 80 - 120 85 - 120 85 - 120 80 - 120 RL 0.050 Limits	MDL	ug/L ug/L <u>Unit</u> mg/L	<u>D</u>	Prepared Prepared Prepared	07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 <i>Analyzed</i> 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 <i>Analyzed</i> 06/29/13 14:49	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Toluene Surrogate 4-Bromofluorobenzene (Surr) Ethylbenzene-d10 Fluorobenzene (Surr) Toluene-d8 (Surr) Trifluorotoluene (Surr) Method: AK101 - Alaska - Gasolin Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate Trifluorotoluene (Surr)	ND ND %Recovery 97 99 98 100 e Range Orga Result ND %Recovery 114	Qualifier anics (GC) Qualifier Qualifier	1.0 1.0 1.0 <i>Limits</i> 75 - 120 80 - 120 85 - 120 80 - 120 80 - 120 RL 0.050 <i>Limits</i> 50 - 150	MDL	ug/L ug/L <u>Unit</u> mg/L	<u>D</u> .	Prepared Prepared Prepared	07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 <i>Analyzed</i> 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 17:41 07/02/13 14:49	1 1 1 1 1 1 1 1 1 1 1 1 1 1

1 2 3 4 5 6 7 8 9 10 11 12 13

Prep Type: Total/NA

Method: 8260B - Volatile Organic Compounds (GC/MS)

Mat	rix:	W	ater

				Percent Su	rrogate Reco	very (Acceptance
		BFB	EBD10	FB	TOL	TFT
Lab Sample ID	Client Sample ID	(75-120)	(80-120)	(80-120)	(85-120)	(80-120)
AWF0034-01	MW-A	97	103	99	100	105
AWF0034-01	MW-A	99	99	100	98	2 X
AWF0034-02	MW-B	98	102	100	98	103
AWF0034-03	MW-Ca	99	103	98	102	98
AWF0034-04	MW-C	97	99	101	97	103
AWF0034-04	MW-C	97	99	101	99	101
AWF0034-05	MW-13	95	100	97	99	103
AWF0034-06	tripblank	97	99	99	98	100
LCS 580-139107/6	Lab Control Sample	99	104	99	100	104
LCS 580-139435/19	Lab Control Sample	103	84	103	83 X	99
LCSD 580-138966/7	Lab Control Sample Dup	98	99	99	98	103
LCSD 580-139107/25	Lab Control Sample Dup	98	102	98	101	105
LCSD 580-139435/20	Lab Control Sample Dup	100	90	104	96	106
MB 580-138966/5	Method Blank	95	99	98	97	103
MB 580-139107/5	Method Blank	98	99	98	96	98
MB 580-139435/18	Method Blank	98	81	103	92	106
Surrogate Legend						
BFB = 4-Bromofluorober	izene (Surr)					
EBD10 = Ethylbenzene-	110					
EB = Eluorobenzene (Su	rr)					

TOL = Toluene-d8 (Surr)

TFT = Trifluorotoluene (Surr)

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM) Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		ТРН					
Lab Sample ID	Client Sample ID	(20-150)					
AWF0034-01	MW-A	100					
AWF0034-03	MW-Ca	95					
AWF0034-04	MW-C	88					
LCS 580-138690/2-A	Lab Control Sample	95					
LCSD 580-138690/3-A	Lab Control Sample Dup	101					
MB 580-138690/1-A	Method Blank	96					
Surrogate Legend							
TPH = Terphenvl-d14							

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Matrix: Water

Prep Type: Total

		Percent Surrogate Recovery (Acceptance Limits)						
		1COD	тс					
Lab Sample ID	Client Sample ID	(50-150)	(50-150)					
13F0064-BLK1	Method Blank	109	104					
13F0064-DUP1	MW-A	102	103					
13F0074-BLK1	Method Blank	111	107					

Prep Type: Total

Prep Type: Total/NA

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO (Continued) Matrix: Water

Matrix: Water				Prep Type: Total	
				Percent Surrogate Recovery (Acceptance Limits)	
		1COD	тс		
Lab Sample ID	Client Sample ID	(50-150)	(50-150)		
13F0074-DUP1	MW-A	112	110		
AWF0034-01	MW-A	106	108		
AWF0034-01 - RE1	MW-A	109	107		
AWF0034-02 - RE1	MW-B	111	106		
AWF0034-03 - RE1	MW-Ca	114	107		
AWF0034-04 - RE1	MW-C	114	108		
AWF0034-05 - RE1	MW-13	96.0	99.4		
Surrogate Legend					
1COD = 1-Chlorooctade	ecane				
TC = Triacontane					

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Matrix: Water

		1COD	тс
Lab Sample ID	Client Sample ID	(60-120)	(60-120)
13F0064-BS1	Lab Control Sample	104	90.3
13F0064-BSD1	Lab Control Sample Dup	73.4	68.3
13F0074-BS1	Lab Control Sample	111	111
13F0074-BSD1	Lab Control Sample Dup	114	113

Surrogate Legend

1COD = 1-Chlorooctadecane

TC = Triacontane

Method: AK101 - Alaska - Gasoline Range Organics (GC) Matrix: Water

Percent Surrogate Recovery (Acceptance Limits) BFB1 TFT1 Lab Sample ID **Client Sample ID** (50-150) (50-150) AWF0034-01 MW-A 108 101 AWF0034-02 MW-B 109 100 AWF0034-03 MW-Ca 109 101 MW-C AWF0034-04 108 101 AWF0034-05 MW-13 111 100 AWF0034-06 tripblank 114 100 LCS 580-138911/6 Lab Control Sample 94 103 LCSD 580-138911/7 Lab Control Sample Dup 106 103 MB 580-138911/5 100 Method Blank 109

Surrogate Legend

TFT = Trifluorotoluene (Surr)

BFB = 4-Bromofluorobenzene (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-138966/5

Matrix: Water Analysis Batch: 138966

	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			07/01/13 11:07	1
Ethylbenzene	ND		1.0		ug/L			07/01/13 11:07	1
m-Xylene & p-Xylene	ND		2.0		ug/L			07/01/13 11:07	1
o-Xylene	ND		1.0		ug/L			07/01/13 11:07	1
Toluene	ND		1.0		ug/L			07/01/13 11:07	1
ТАН	ND		1.0		ug/L			07/01/13 11:07	1
	МВ	МВ							

Surrogate	%Recovery	Qualifier Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95	75 - 120		07/01/13 11:07	1
Ethylbenzene-d10	99	80 - 120		07/01/13 11:07	1
Fluorobenzene (Surr)	98	80 - 120		07/01/13 11:07	1
Toluene-d8 (Surr)	97	85 _ 120		07/01/13 11:07	1
Trifluorotoluene (Surr)	103	80 - 120		07/01/13 11:07	1

Lab Sample ID: LCSD 580-138966/7 Matrix: Water

Analysis Batch: 138966

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene		20.6		ug/L		103	80 - 120	2	30
Ethylbenzene	20.0	21.7		ug/L		108	75 - 125	1	30
m-Xylene & p-Xylene	40.2	43.4		ug/L		108	75 - 130	1	30
o-Xylene	20.1	21.2		ug/L		106	80 - 120	0	30
Toluene	20.1	21.0		ug/L		104	75 - 120	1	30
ТАН	120	128		ua/L		106		NaN	

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		75 - 120
Ethylbenzene-d10	99		80 - 120
Fluorobenzene (Surr)	99		80 - 120
Toluene-d8 (Surr)	98		85 - 120
Trifluorotoluene (Surr)	103		80 - 120

MR MR

Lab Sample ID: MB 580-139107/5 Matrix: Water

Analysis Batch: 139107

		me							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			07/02/13 13:48	1
Ethylbenzene	ND		1.0		ug/L			07/02/13 13:48	1
m-Xylene & p-Xylene	ND		2.0		ug/L			07/02/13 13:48	1
o-Xylene	ND		1.0		ug/L			07/02/13 13:48	1
Toluene	ND		1.0		ug/L			07/02/13 13:48	1
ТАН	ND		1.0		ug/L			07/02/13 13:48	1
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		75 - 120			-		07/02/13 13:48	1

Prep Type: Total/NA

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Client Sample ID: Method Blank Prep Type: Total/NA

TestAmerica Anchorage

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Type: Total/NA

Dil Fac

1

1

1

1

8

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-139107/5

Matrix: Water Analysis Batch: 139107

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Ethylbenzene-d10 99 80 - 120 07/02/13 13:48 Fluorobenzene (Surr) 98 80 - 120 07/02/13 13:48 Toluene-d8 (Surr) 85 - 120 07/02/13 13:48 96 Trifluorotoluene (Surr) 98 80 - 120 07/02/13 13:48

Lab Sample ID: LCS 580-139107/6

Matrix: Water Analysis Batch: 139107

Analysis Daten. 155107								
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	20.0	20.0		ug/L		100	80 - 120	
Ethylbenzene	20.0	20.8		ug/L		104	75 ₋ 125	
m-Xylene & p-Xylene	40.2	41.8		ug/L		104	75 - 130	
o-Xylene	20.1	20.8		ug/L		103	80 - 120	
Toluene	20.1	20.9		ug/L		104	75 - 120	
ТАН	120	124		ug/L		103		

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		75 - 120
Ethylbenzene-d10	104		80 - 120
Fluorobenzene (Surr)	99		80 - 120
Toluene-d8 (Surr)	100		85 - 120
Trifluorotoluene (Surr)	104		80 - 120

Lab Sample ID: LCSD 580-139107/25 Matrix: Water

Analysis Batch: 139107

-	Spike	LCSD	LCSD			%Rec.		RPD	
Analyte	Added	Result	Qualifier Unit	D	%Rec	Limits	RPD	Limit	
Benzene		20.4	ug/L		102	80 - 120	2	30	
Ethylbenzene	20.0	21.0	ug/L		105	75 - 125	1	30	
m-Xylene & p-Xylene	40.2	43.2	ug/L		108	75 - 130	3	30	
o-Xylene	20.1	21.3	ug/L		106	80 - 120	3	30	
Toluene	20.1	21.0	ug/L		105	75 - 120	1	30	
ТАН	120	127	ua/l		105		2		

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		75 - 120
Ethylbenzene-d10	102		80 - 120
Fluorobenzene (Surr)	98		80 - 120
Toluene-d8 (Surr)	101		85 - 120
Trifluorotoluene (Surr)	105		80 - 120

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Matrix: Water

Analyte

Benzene

o-Xylene

Toluene

Surrogate

Ethylbenzene-d10

Toluene-d8 (Surr)

Fluorobenzene (Surr)

Trifluorotoluene (Surr)

ТАН

Ethylbenzene

m-Xylene & p-Xylene

4-Bromofluorobenzene (Surr)

Lab Sample ID: LCS 580-139435/19

Analysis Batch: 139435

Lab Sample ID: MB 580-139435/18

Client Sample ID: Method Blank

Analyzed

07/08/13 20:05

07/08/13 20:05

07/08/13 20:05

07/08/13 20:05

07/08/13 20:05

07/08/13 20:05

Analyzed

07/08/13 20:05

07/08/13 20:05

07/08/13 20:05

07/08/13 20:05

Prep Type: Total/NA

Dil Fac

1

1

1

1

1

1

1

1

1

1

Dil Fac

5

8

07/08/13 20:05 1 **Client Sample ID: Lab Control Sample**

Client Sample ID: Lab Control Sample Dup

Matrix: Water							Prep Typ	e: Total/N
Analysis Batch: 139435								
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	20.0	21.7		ug/L		108	80 - 120	
Ethylbenzene	20.0	23.1		ug/L		115	75 ₋ 125	
m-Xylene & p-Xylene	40.2	45.2		ug/L		113	75 - 130	
o-Xylene	20.1	22.1		ug/L		110	80 - 120	
Toluene	20.1	17.8		ug/L		89	75 - 120	
ТАН	120	130		ug/L		108		

LCS	LCS	
%Recovery	Qualifier	Limits
103		75 - 120
84		80 - 120
103		80 - 120
83	X	85 - 120
99		80 - 120
	LCS %Recovery 103 84 103 83 99	LCSLCS%RecoveryQualifier103841038383X9999

Lab Sample ID: LCSD 580-139435/20 Matrix: Water Analysis Batch: 139435

-			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene			20.0	22.4		ug/L		112	80 - 120	3	30
Ethylbenzene			20.0	25.1		ug/L		125	75 - 125	8	30
m-Xylene & p-Xylene			40.2	49.2		ug/L		123	75 - 130	8	30
o-Xylene			20.1	22.8		ug/L		114	80 - 120	3	30
Toluene			20.1	20.6		ug/L		103	75 - 120	15	30
ТАН			120	140		ug/L		116		8	
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	100		75 - 120								

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Prep Type: Total/NA

RL

1.0

1.0

2.0

1.0

1.0

1.0

Limits

75 - 120

80 - 120

80 - 120

85 - 120

80 - 120

MDL Unit

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

D

Prepared

Prepared

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

MB MB Result Qualifier

ND

ND

ND

ND

ND

ND

98

81

103

92

106

%Recovery

MB MB Qualifier

2 3 4 5 6 7 8 9

Lab Sample ID: LCSD 580-139435/20 **Client Sample ID: Lab Control Sample Dup** Matrix: Water Prep Type: Total/NA Analysis Batch: 139435 LCSD LCSD Surrogate %Recovery Qualifier Limits Ethylbenzene-d10 90 80 - 120 Fluorobenzene (Surr) 104 80 - 120 Toluene-d8 (Surr) 85 - 120 96 Trifluorotoluene (Surr) 106 80 - 120

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

ab Sample ID: MB 580-138690/1-A					Client Sample ID: Method Blank							
Matrix: Water								Prep Type: T	otal/NA			
Analysis Batch: 138936								Prep Batch:	138690			
	MB	МВ										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
Acenaphthene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Acenaphthylene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Anthracene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Benzo[a]anthracene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Benzo[a]pyrene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Benzo[b]fluoranthene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Benzo[g,h,i]perylene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Benzo[k]fluoranthene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Chrysene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Dibenz(a,h)anthracene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Fluoranthene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Fluorene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Indeno[1,2,3-cd]pyrene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
2-Methylnaphthalene	ND		0.026		ug/L		06/26/13 14:51	07/01/13 18:31	1			
1-Methylnaphthalene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Naphthalene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Phenanthrene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
Pyrene	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			
ТРАН	ND		0.020		ug/L		06/26/13 14:51	07/01/13 18:31	1			

	MB	МВ				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	96		20 - 150	06/26/13 14:51	07/01/13 18:31	1

Lab Sample ID: LCS 580-138690/2-A Matrix: Water Analysis Batch: 138936

Analysis Batch: 138936							Prep B	atch: 138690
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acenaphthene	2.00	1.35		ug/L		68	65 _ 125	
Acenaphthylene	2.00	1.05	*	ug/L		52	65 _ 125	
Anthracene	2.00	1.16		ug/L		58	50 _ 125	
Benzo[a]anthracene	2.00	1.73		ug/L		86	65 ₋ 125	
Benzo[a]pyrene	2.00	1.20		ug/L		60	45 _ 125	
Benzo[b]fluoranthene	2.00	1.85		ug/L		92	70 - 125	
Benzo[g,h,i]perylene	2.00	1.79		ug/L		90	75 ₋ 125	

TestAmerica Anchorage

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

3 4 5

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 580-138690/2-A Matrix: Water					Client	Sample	ID: Lab Control Sample Prep Type: Total/NA
Analysis Batch: 138936	Snike	LCS	LCS				Prep Batch: 138690
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzo[k]fluoranthene	2.00	1.67		ug/L		84	70 - 125
Chrysene	1.93	1.77		ug/L		92	70 - 125
Dibenz(a,h)anthracene	2.00	1.85		ug/L		92	75 - 130
Fluoranthene	2.00	1.78		ug/L		89	70 - 125
Fluorene	2.02	1.58		ug/L		78	70 - 125
Indeno[1,2,3-cd]pyrene	2.01	2.04		ug/L		101	75 - 125
2-Methylnaphthalene	2.00	1.28		ug/L		64	60 - 125
1-Methylnaphthalene	2.01	1.38		ug/L		68	60 - 125
Naphthalene	2.01	1.35		ug/L		67	60 - 125
Phenanthrene	2.01	1.63		ug/L		81	75 - 125
Pyrene	2.00	1.71		ug/L		86	70 - 125
ТРАН	34.0	26.8		ug/L		79	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Terphenyl-d14	95		20 - 150

Lab Sample ID: LCSD 580-138690/3-A Matrix: Water

Analysis Batch: 138936

Analysis Batch: 138936									Prep	Batch: 1	38 <mark>69</mark> 0
			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Acenaphthene			2.00	1.52		ug/L		76	65 _ 125	12	20
Acenaphthylene			2.00	1.10	*	ug/L		55	65 - 125	5	20
Anthracene			2.00	1.12		ug/L		56	50 _ 125	4	20
Benzo[a]anthracene			2.00	1.85		ug/L		92	65 - 125	7	20
Benzo[a]pyrene			2.00	1.10		ug/L		55	45 _ 125	9	20
Benzo[b]fluoranthene			2.00	2.05		ug/L		103	70 - 125	11	20
Benzo[g,h,i]perylene			2.00	1.98		ug/L		99	75 - 125	10	20
Benzo[k]fluoranthene			2.00	1.78		ug/L		89	70 - 125	6	20
Chrysene			1.93	1.93		ug/L		100	70 - 125	9	20
Dibenz(a,h)anthracene			2.00	2.07		ug/L		103	75 _ 130	11	20
Fluoranthene			2.00	1.95		ug/L		98	70 - 125	9	20
Fluorene			2.02	1.78		ug/L		88	70 - 125	12	20
Indeno[1,2,3-cd]pyrene			2.01	2.14		ug/L		106	75 _ 125	5	20
2-Methylnaphthalene			2.00	1.44		ug/L		72	60 _ 125	11	20
1-Methylnaphthalene			2.01	1.54		ug/L		76	60 _ 125	11	20
Naphthalene			2.01	1.52		ug/L		75	60 _ 125	12	20
Phenanthrene			2.01	1.82		ug/L		90	75 - 125	11	20
Pyrene			2.00	1.86		ug/L		93	70 - 125	8	20
ТРАН			34.0	29.0		ug/L		85		NaN	
	LCSD	LCSD									
Surrogate	%Recoverv	Qualifier	Limits								

20 - 150

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36)

Blank Blank

per AK102/RRO

Matrix: Water

Lab Sample ID: 13F0064-BLK1

Analysis Batch: W000325

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 13F0064_P

Analyte	R	esult	Qualifier	RL	-	MDL	Unit		D	Р	repared	Analyz	∋d	Dil Fac
Diesel Range Organics		2.88	В	0.500)		mg/l			06/2	6/13 08:30	06/26/13 1	3:58	1.00
Residual Range Organics		5.42	В	0.500)		mg/l			06/2	6/13 08:30	06/26/13 1	3:58	1.00
	B	Blank	Blank											
Surrogate	%Reco	very	Qualifier	Limits						P	repared	Analyz	ed	Dil Fac
1-Chlorooctadecane		109		50 - 150	-					06/2	6/13 08:30	06/26/13	3:58	1.00
Triacontane		104		50 - 150						06/2	6/13 08:30	06/26/13	3:58	1.00
Lab Sample ID: 13F0064-BS1									С	lient	Sample	ID: Lab Co	ontrol S	ample
Matrix: Water												Pre	р Туре	: Total
Analysis Batch: W000325												Prep Batc	h: 13F0	064_P
				Spike	LCS	LCS						%Rec.		
Analyte				Added	Result	Qua	lifier	Unit		D	%Rec	Limits		
Diesel Range Organics				10.1	11.7			mg/l			116	75 - 125		
Residual Range Organics				10.2	11.5			mg/l			113	60 - 120		
	LCS	LCS	;											
Surrogate	%Recovery	Qua	lifier	Limits										
1-Chlorooctadecane	104			60 - 120										
Triacontane	90.3			60 - 120										
Lab Sample ID: 13F0064-BSD1								с	lient	Sam	nole ID: L	ab Contro	Samp	le Dup
Matrix: Water												Pre	p Type	: Total
Analysis Batch: W000325												Pren Batc	h 13F0	064 P
				Spike	LCS Dup	LCS	Dup					%Rec.		RPD
Analyte				Added	Result	Qua	lifier	Unit		D	%Rec	Limits	RPD	Limit
Diesel Range Organics				10.1	11.3			mg/l			112	75 - 125	3.66	20
Residual Range Organics				10.2	11.2			mg/l			110	60 _ 120	2.77	20
	LCS Dup	LCS	Dup											
Surrogate	%Recovery	Qua	lifier	Limits										
1-Chlorooctadecane	73.4			60 - 120										
Triacontane	68.3			60 - 120										
Lab Sample ID: 13F0064-DUP1												Client Sam	ple ID:	MW-A
Matrix: Water												Pre	p Type	: Total
Analysis Batch: W000324												Prep Batc	h: 13F0	064 P
• • • • • • • • • • • • • •	Sample	Sam	ple		Duplicate	Dup	licate							RPD
Analyte	Result	Qua	lifier		Result	Qua	lifier	Unit		D			RPD	Limit

	Spike	LCS Dup	LCS Dup				%Rec.		RP
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Lim
Diesel Range Organics	 10.1	11.3		mg/l		112	75 - 125	3.66	2
Residual Range Organics	10.2	11.2		mg/l		110	60 - 120	2.77	2
	CS Dun								

	LCS Dup	LCS Dup	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctadecane	73.4		60 - 120
Triacontane	68.3		60 - 120

Analysis Batch: W000324								Prep Batch: 13F0	064_P
	Sample	Sample		Duplicate	Duplicate				RPD
Analyte	Result	Qualifier		Result	Qualifier	Unit	D	RPD	Limit
Diesel Range Organics	2.74	B BQC		2.37		mg/l		14.7	20
Residual Range Organics	4.12	B BQC		3.39		mg/l		19.5	20
	Duplicate	Duplicate							
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctadecane	102		50 - 150						
Triacontane	103		50 - 150						

RL

0.500

0.500

Limits

50 - 150

50 - 150

Spike

Added

10.1

10.2

Limits

60 - 120

60 - 120

MDL Unit

LCS LCS

Duplicate Duplicate

0.717 P2

0.255 P2

Result Qualifier

Unit

mg/l

mg/l

D

Qualifier

Unit

mg/l

mg/l

Result

9.97

9.62

mg/l

mg/l

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36)

Blank Blank

Blank Blank

Qualifier

Qualifier

Result

ND

ND

111

107

%Recovery

LCS LCS

%Recovery Qualifier

111

111

Matrix: Water

Diesel Range Organics

Residual Range Organics

Analyte

Surrogate 1-Chlorooctadecane

Triacontane

Analyte

Surrogate

Triacontane

Matrix: Water

Diesel Range Organics

1-Chlorooctadecane

Residual Range Organics

per AK102/RRO (Continued)

Lab Sample ID: 13F0074-BLK1

Analysis Batch: W000327

Lab Sample ID: 13F0074-BS1

Analysis Batch: W000327

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 13F0074_P

8

D Prepared Analyzed Dil Fac 06/28/13 08:20 06/28/13 08:55 1.00 06/28/13 08:20 06/28/13 08:55 1.00 Prepared Analyzed Dil Fac 06/28/13 08:20 06/28/13 08:55 1.00 06/28/13 08:20 06/28/13 08:55 1.00 **Client Sample ID: Lab Control Sample Prep Type: Total** Prep Batch: 13F0074_P %Rec. D %Rec Limits 98.7 75 - 125 94.3 60 - 120

Client Sample ID: Lab Control Sample Dup

Prep Type: Total

Lab Sample ID: 13F0074-BSD1	
Matrix: Water	

Analysis Batch: W000327							Prep Bate	ch: 13F0)74_P
	Spike	LCS Dup	LCS Dup				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Diesel Range Organics	10.1	10.2		mg/l		101	75 - 125	2.61	20
Residual Range Organics	10.2	9.61		mg/l		94.2	60 - 120	0.157	20

	LCS Dup	LCS Dup	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctadecane	114		60 - 120
Triacontane	113		60 - 120

Lab Sample ID: 13F0074-DUP1		
Matrix: Water		
Analysis Batch: W000328		
	Sample	Sample
Analyte	Result	Qualifier
Diesel Range Organics	0.666	Q11 P2
Residual Range Organics	0.293	P2

	Duplicate	Duplicate	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctadecane	112		50 - 150
Triacontane	110		50 - 150

RPD

7.30

13.8

Client Sample ID: MW-A Prep Type: Total Prep Batch: 13F0074_P

RPD

Limit

20

Method: AK101 - Alaska - Gasoline Range Organics (GC)

Lab Sample ID: MB 580-138911/5 Matrix: Water Analysis Batch: 138911												Client S	ample ID: I Prep T	Method ype: To	Blank tal/NA
		MB	MB												
Analyte	Re	sult	Qualifier		RL		MDL	Unit		D	Pr	repared	Analyz	ed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10		ND			0.050			mg/L					06/29/13	13:20	1
		ΜВ	МВ												
Surrogate	%Reco	very	Qualifier	Lim	its						Pı	repared	Analyz	ed	Dil Fac
Trifluorotoluene (Surr)		109		50 -	150							•	06/29/13	13:20	1
4-Bromofluorobenzene (Surr)		100		50 -	150								06/29/13	13:20	1
Lab Sample ID: LCS 580-138911/6										Clie	nt	Sample	ID: Lab Co	ontrol S	ample
Matrix: Water													Prep T	уре: То	tal/NA
Analysis Batch: 138911													~ -		
• • •				Spike		LCS	LCS				_	~ -	%Rec.		
Analyte				Added		Result	Qua	ifier	Unit		D	%Rec	Limits		
Gasoline Range Organics (GRO) -C6-C10				1.00		0.800			mg/L			80	60 - 120		
	LCS	LCS													
Surrogate %R	Recovery	Qual	ifier	Limits											
Trifluorotoluene (Surr)	94			50 - 150	-										
4-Bromofluorobenzene (Surr)	103			50 - 150											
Lab Sample ID: LCSD 580-138911/7									CI	ient Sa	am	ple ID: L	_ab Contro	I Sampl	le Dup
Matrix: Water													Prep T	ype: To	tal/NA
Analysis Batch: 138911															
				Spike		LCSD	LCS	D					%Rec.		RPD
Analyte				Added		Result	Qua	ifier	Unit	I	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)				1.00		0.873			mg/L			87	60 - 120	9	20
-C6-C10															
	LCSD	LCSI	D												
Surrogate %R	Recovery	Qual	ifier	Limits											
Trifluorotoluene (Surr)	106			50 - 150	-										
4-Bromofluorobenzene (Surr)	103			50 - 150											

GC/MS VOA

Analysis Batch: 138966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
AWF0034-01	MW-A	Total/NA	Water	8260B	
AWF0034-03	MW-Ca	Total/NA	Water	8260B	
AWF0034-04	MW-C	Total/NA	Water	8260B	
AWF0034-05	MW-13	Total/NA	Water	8260B	
LCSD 580-138966/7	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 580-138966/5	Method Blank	Total/NA	Water	8260B	
Analysis Batch: 13910	7				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
AWF0034-01	MW-A	Total/NA	Water	8260B	
AWF0034-02	MW-B	Total/NA	Water	8260B	
AWF0034-06	tripblank	Total/NA	Water	8260B	
LCS 580-139107/6	Lab Control Sample	Total/NA	Water	8260B	
LCSD 580-139107/25	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 580-139107/5	Method Blank	Total/NA	Water	8260B	
Analysis Batch: 13943	5				
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
AWF0034-04	MW-C	Total/NA	Water	8260B	
LCS 580-139435/19	Lab Control Sample	Total/NA	Water	8260B	
LCSD 580-139435/20	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 580-139435/18	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 140360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
AWF0034-01	MW-A	Total/NA	Water	TAqH	
AWF0034-03	MW-Ca	Total/NA	Water	TAqH	
AWF0034-04	MW-C	Total/NA	Water	TAqH	

GC/MS Semi VOA

Prep Batch: 138690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
AWF0034-01	MW-A	Total/NA	Water	3520C	
AWF0034-03	MW-Ca	Total/NA	Water	3520C	
AWF0034-04	MW-C	Total/NA	Water	3520C	
LCS 580-138690/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 580-138690/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 580-138690/1-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 138936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
AWF0034-01	MW-A	Total/NA	Water	8270C SIM	138690
AWF0034-03	MW-Ca	Total/NA	Water	8270C SIM	138690
LCS 580-138690/2-A	Lab Control Sample	Total/NA	Water	8270C SIM	138690
LCSD 580-138690/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM	138690
MB 580-138690/1-A	Method Blank	Total/NA	Water	8270C SIM	138690

GC/MS Semi VOA (Continued)

Analysis Batch: 139153

Analysis Batch: 139	1153				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
AWF0034-04	MW-C	Total/NA	Water	8270C SIM	138690
Fuels					
Analysis Batch: W0	00324				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13F0064-DUP1	MW-A	Total	Water	AK102/103	13F0064_P
AWF0034-01	MW-A	Total	Water	AK102/103	13F0064_P
Analysis Batch: W0	00325				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13F0064-BLK1	Method Blank	Total	Water	AK102/103	13F0064_P
13F0064-BS1	Lab Control Sample	Total	Water	AK102/103	13F0064_P
13F0064-BSD1	Lab Control Sample Dup	Total	Water	AK102/103	13F0064_P
Analysis Batch: W0	00327				

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13F0074-BLK1	Method Blank	Total	Water	AK102/103	13F0074_P
13F0074-BS1	Lab Control Sample	Total	Water	AK102/103	13F0074_P
13F0074-BSD1	Lab Control Sample Dup	Total	Water	AK102/103	13F0074_P
AWF0034-02 - RE1	MW-B	Total	Water	AK102/103	13F0074_P
AWF0034-03 - RE1	MW-Ca	Total	Water	AK102/103	13F0074_P
AWF0034-04 - RE1	MW-C	Total	Water	AK102/103	13F0074_P
AWF0034-05 - RE1	MW-13	Total	Water	AK102/103	13F0074_P

Analysis Batch: W000328

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
13F0074-DUP1	MW-A	Total	Water	AK102/103	13F0074_P
AWF0034-01 - RE1	MW-A	Total	Water	AK102/103	13F0074_P

Prep Batch: 13F0064_P

I ab Sample ID	Client Sample ID	Pren Tyne	Matrix	Method Pren Bate
13E0064-BLK1	Method Blank	- Total	Water	EPA 3510
1250064 DC1		Total	Water	
13F0004-BS1			vvaler	EPA 3510
13F0064-BSD1	Lab Control Sample Dup	lotal	Water	EPA 3510
13F0064-DUP1	MW-A	Total	Water	EPA 3510
AWF0034-01	MW-A	Total	Water	EPA 3510

Prep Batch: 13F0074_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13F0074-BLK1	Method Blank	Total	Water	EPA 3510	
13F0074-BS1	Lab Control Sample	Total	Water	EPA 3510	
13F0074-BSD1	Lab Control Sample Dup	Total	Water	EPA 3510	
13F0074-DUP1	MW-A	Total	Water	EPA 3510	
AWF0034-01 - RE1	MW-A	Total	Water	EPA 3510	
AWF0034-02 - RE1	MW-B	Total	Water	EPA 3510	
AWF0034-03 - RE1	MW-Ca	Total	Water	EPA 3510	
AWF0034-04 - RE1	MW-C	Total	Water	EPA 3510	
AWF0034-05 - RE1	MW-13	Total	Water	EPA 3510	

TestAmerica Job ID: AWF0034

GC VOA

Analysis Batch: 138911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
AWF0034-01	MW-A	Total/NA	Water	AK101	
AWF0034-02	MW-B	Total/NA	Water	AK101	
AWF0034-03	MW-Ca	Total/NA	Water	AK101	
AWF0034-04	MW-C	Total/NA	Water	AK101	
AWF0034-05	MW-13	Total/NA	Water	AK101	
AWF0034-06	tripblank	Total/NA	Water	AK101	
LCS 580-138911/6	Lab Control Sample	Total/NA	Water	AK101	
LCSD 580-138911/7	Lab Control Sample Dup	Total/NA	Water	AK101	
MB 580-138911/5	Method Blank	Total/NA	Water	AK101	

Dilution

Factor

1

10

1

1

0.769

0.769

1.00

1

1.00

Run

RE1

RE1

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total

Total

Total

Total

Total/NA

Client Sample ID: MW-A

Date Collected: 06/23/13 10:20

Date Received: 06/24/13 16:05

Batch

Туре

Analysis

Analysis

Analysis

Analysis

Analysis

Analysis

Analysis

Prep

Prep

Prep

Batch

Method

8260B

8260B

TAqH

3520C

8270C SIM

EPA 3510

AK102/103

EPA 3510

AK102/103

AK101

TestAmerica Job ID: AWF0034

5

10

Client Sample ID: MW-B

Date Collected: 06/23/13 10:35 Date Received: 06/24/13 16:05

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	139107	07/02/13 18:04	EB1	TAL SEA
Total	Prep	EPA 3510	RE1	0.769	13F0074_P	06/28/13 08:20	KDC	TAL ANC
Total	Analysis	AK102/103	RE1	1.00	W000327	06/28/13 13:13	KDC	TAL ANC
Total/NA	Analysis	AK101		1	138911	06/29/13 16:40	ERZ	TAL SEA

Client Sample ID: MW-Ca

Date Collected: 06/23/13 10:25 Date Received: 06/24/13 16:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	138966	07/01/13 21:46	EB1	TAL SEA
Total/NA	Analysis	TAqH		1	140360	07/18/13 16:14	PRJ	TAL SEA
Total/NA	Prep	3520C			138690	06/26/13 14:51	ALC	TAL SEA
Total/NA	Analysis	8270C SIM		1	138936	07/01/13 20:25	EKK	TAL SEA
Total	Prep	EPA 3510	RE1	0.769	13F0074_P	06/28/13 08:20	KDC	TAL ANC
Total	Analysis	AK102/103	RE1	1.00	W000327	06/28/13 14:16	KDC	TAL ANC
Total/NA	Analysis	AK101		1	138911	06/29/13 17:03	ERZ	TAL SEA

Client Sample ID: MW-C Date Collected: 06/23/13 10:45 Date Received: 06/24/13 16:05

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	138966	07/01/13 22:09	EB1	TAL SEA
Total/NA	Analysis	8260B		1	139435	07/08/13 21:37	EB1	TAL SEA
Total/NA	Analysis	TAqH		1	140360	07/18/13 16:14	PRJ	TAL SEA

TestAmerica Anchorage

Batch

Number

138966

139107

140360

138690

138936

13F0064_P

13F0074_P

W000328

138911

W000324

Prepared

or Analyzed

07/01/13 21:00

07/02/13 16:54

07/18/13 16:14

06/26/13 14:51

07/01/13 20:01

06/26/13 08:30

06/26/13 13:58

06/28/13 08:20

06/28/13 13:13

06/29/13 16:18

Analyst

EB1

EB1

PRJ

ALC

EKK

KDC

KDC

KDC

KDC

ERZ

Lab

TAL SEA

TAL SEA

TAL SEA

TAL SEA TAL SEA

TAL ANC

TAL ANC

TAL ANC

TAL ANC

TAL SEA

Lab Sample ID: AWF0034-01

Lab Sample ID: AWF0034-02

Lab Sample ID: AWF0034-03

Lab Sample ID: AWF0034-04

Matrix: Water

Matrix: Water

Matrix: Water

Page 27 of 34

Matrix: Water

10

Client Samp	le ID: MW-C	;					L	.ab Sample I	D: AWF0034-04
Date Collected	I: 06/23/13 10:4	45							Matrix: Water
Date Received	: 06/24/13 16:0)5							
	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3520C			138690	06/26/13 14:51	ALC	TAL SEA	
Total/NA	Analysis	8270C SIM		1	139153	07/03/13 09:27	EKK	TAL SEA	
Total	Prep	EPA 3510	RE1	0.769	13F0074_P	06/28/13 08:20	KDC	TAL ANC	
Total	Analysis	AK102/103	RE1	1.00	W000327	06/28/13 14:48	KDC	TAL ANC	
Total/NA	Analysis	AK101		1	138911	06/29/13 17:25	ERZ	TAL SEA	
Client Samp	le ID: MW-1	3					L	.ab Sample I	D: AWF0034-05
Date Collected	I: 06/23/13 02:	50							Matrix: Water
Date Received	l: 06/24/13 16:0)5							
_	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	8260B		1	138966	07/01/13 22:32	EB1	TAL SEA	
Total	Prep	EPA 3510	RE1	0.769	13F0074_P	06/28/13 08:20	KDC	TAL ANC	
Total	Analysis	AK102/103	RE1	1.00	W000327	06/28/13 15:53	KDC	TAL ANC	

1

138911 06/29/13 17:47 ERZ

TAL SEA

Lab Sample ID: AWF0034-06

Matrix: Water

Client Sample ID: tripblank

Analysis

AK101

Date Collected: 06/23/13 00:00 Date Received: 06/24/13 16:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	139107	07/02/13 17:41	EB1	TAL SEA
Total/NA	Analysis	AK101		1	138911	06/29/13 14:49	ERZ	TAL SEA

Laboratory References:

Total/NA

TAL ANC = TestAmerica Anchorage, 2000 West International Airport Road Suite A10, Anchorage, AK 99502-1119, TEL (907) 563-9200 TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

1 2 3 4 5 6 7 8 9 10 11 12 13 14

Laboratory: TestAmerica Anchorage

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	AK00975	06-30-14
Alaska (UST)	State Program	10	UST-067	06-16-14

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-04-14
California	NELAP	9	01115CA	01-31-14
L-A-B	DoD ELAP		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-13
USDA	Federal		P330-11-00222	05-20-14
Washington	State Program	10	C553	02-17-14

Method Summary

Client: ChemTrack Project/Site: 6083

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Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SEA
TAqH	Total Aqueous Hydrocarbons	TAL-TAC	TAL SEA
8270C SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	TAL SEA
AK102/103	Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO		TAL ANC
AK101	Alaska - Gasoline Range Organics (GC)	ADEC	TAL SEA

ADEC = Alaska Department of Environmental Conservation

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-TAC = TestAmerica Laboratories, Tacoma, Facility Standard Operating Procedure.

Laboratory References:

TAL ANC = TestAmerica Anchorage, 2000 West International Airport Road Suite A10, Anchorage, AK 99502-1119, TEL (907) 563-9200

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: ChemTrack Project/Site: 6083

TestAmerica Job ID: AWF0034

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	
AWF0034-01		Water	06/23/13 10:20	06/24/13 16:05	
AWF0034-02		Water	06/23/13 10:35	06/24/13 16:05	
AWF0034-03		Water	06/23/13 10.25	06/24/13 16:05	5
AWF0034-04		Water	06/23/13 10:45	06/24/13 16:05	
AWF0034-06	tripblank	Water	06/23/13 00:00	06/24/13 16:05	
				8	8
				9	9
				1	3
				1	4

TestAmerica	11720 North Creek Pkwy N Suite 400, Bothell, V 11922 E. First Ave, Spokane, V 0405 EW Nitz-burg And Barnester	WA 98011-8244 WA 99206-5302	425-420-9200 FAX 420-9210 509-924-9200 FAX 924-9290 500-026-0000 FAX 924-9290	
THE LEADER IN ENVIRONMENTAL TESTING	940.5 3W MINIDUS APC, 5W MINIDUS APC, DEGRACTION, CO 00 W International Airport Rd Ste A10, Anchorage, 1	OK 9/008-/145 AK 99502-1119	907-563-9200 FAX 906-9210	1
CHAIN OF CUSTODY R	EPORT	Work Order	: AUF 0034	
CLIENT CHEMINOLOK		TURN	ROUND REQUEST	<u> </u>
ADDRESS: 11711 S. Cambell Anthorage AK 99515 Jack Lit	HC] Organic	n Business Days * & Inorganic Analyses.	
PHONE: 349-2511 PAX: 522-3150		10 7 5	4 3 2 1 <1	
PROJECT NAME. Haines Grand Water threetwest PRESERVATIVE		5	3 2 1 <1	
PROJECT NUMBER:		l J]]]	
LOUK3 SAMPLED BY: 白やかいがな Darrer (単の) 本 1 1 1 1 1 1 1	SES	* T	Specify: .	
CLIENT SAMPLE CLIENT SAMPLE SAMPLING DATE/TIME DATE/TIME DATE/TIME		MATRIX # OF (W, S, O) CON	LOCATION/ TA LOCATION/ TA COMMENTS WO ID	
MM-A 6/23/13 10:30 / /		t M	alcase do 01	1
mw-B (d23/13 10:35)		N 5	TALL & THOH 02	r —
MW-Ca co/as/13 10:35 / /		H M	Calc tural 03 samples 03	Τ
· MW-C [0/23/13 10:45 / / /		K N	70	
·MW-13 (0/33)13 2:50 / /		H M	GPO/ETEX Vivil 05 broke (missing 1) 05	
trip blank		W^{3}	90	·
				1
				T
RELEASED POTO DATE (0/24/13 REC PRINT NAME 720 AD OF PRINT HAN HENT TO CK TIME (0/24/13 REC PRINT NAME 720 AD OF PRINT PRINT POLICE DATE (0:05 PRINT	NELVED BY: Madike Animed MINAME: MAARICAL	FIRM: TA	PK TIME 16-201	R
RELEASED BY: 0 DATE: DATE: REC PRINT NAME: TIME: PRINT NAME: PRINT PRINT NAME: PRINT PRINT NAME: PRINT	JEIVED BY: NT NAME:	FIRM:	DATE: TIME:	Г
ADDITIONAL REMARKS:			TEMP: 2.70C PAGE OF	
			TAL-1000(040] <u>ଛ</u> ି

Test America Cooler Receipt Form							
	WORK ORDER # ALIFODZY CLIENT: (A	rentrack	PROJ	ECT: Haines Grandwater treatment			
Date/Time Cooler Arrived 6 / 24 / 13 16:05 Cooler signed for by: Andrew Polen Madiha Almed							
Dreliminary Examination Phase: $A \not P \ l/r \ q$ (Print name)							
	an a						
	Cooler opened by (print) Andres Black Madiha Ahred	(sign) Gibb	pil	Madihed			
	Delivered by ALASKA AIRLINES Fed-Ex UPS NAC LYNDEN ACLIENT Other						
:. :	Shipment Tracking # if applicable	(include copy of s	shipping pa	pers in file)			
	2. Number of Custody Seals D Signed by <u>5Ce</u>	back	Date	<u>/</u>			
	Were custody seals unbroken and intact on arrival?	X Yes	No				
. '	3. Were custody papers sealed in a plastic bag?	X Yes	No	and the second			
	4. Were custody papers filled out properly (ink, signed, etc.)?	X Yes	□ No				
	5. Did you sign the custody papers in the appropriate place?	Yes	□No	the second s			
	6. Was ice used? Xes No Type of ice: <u>I blue ice</u> <u>y</u> g	el ice real ice	dry ice	Condition of Ice: hard			
	Temperature 2,7 °C (portented)) Thermometer #	Rec HS	- 			
)		· ·			
	7. Packing in Cooler: A bubble wrap Styrofoam cardboard	Other:					
	8. Did samples arrive in plastic bags?	K Yes					
•	9. Did all bottles arrive unbroken, and with labels in good condition?	Yes					
	10. Are all bottle labels complete (ID, date, time, etc.)	i Yes ⊡					
	11. Do bottle labels and Chain of Custody agree?	X Yes					
	12. Are the containers and preservatives correct for the tests indicated?	X Yes		57774			
	13. Conoco Phillips, Alyeska, BP H2O samples only, pH <2?		. No	<u> ∕×</u> N/A			
	14. Is there adequate volume for the tests requested?	∐XtYes					
	14. Is there dry weight volume provided?	[A] Yes		I E MW-A J OF MW-B. LOF MW-G			
	15. Were VOA vials free of bubbles?		IN NO	lof MW-L, one of MW-13			
	Lf "NO" which containers contained "head space" or bubbles?						
	16. Are methanol soils immersed in methanol?						
	Log-in Phase: Date of sample log-in <u>6 124 13</u>	•		• •			
i	Samples logged in by (print) Andrew filed	(sign) at 7	Pit				
	1. Was project identifiable from custody papers?	Yes	No				
	2. Do Tum Around Times and Due Dates agree?	Yes	Νο				
	3. Was the Project Manager notified of status?	⊠ Yes	No				
4	4. Was the Lab notified of status?	🔀 Yes	□ No				
4	5. Was the COC scanned and copied?	X Yes	No				
			AK-F	ORM-SPL-005 5 October 2011			

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Laboratory Data Review Checklist

Completed by:	Georgia Doerr					
Title:	Environmental ScientistDate:July 24, 2013					
CS Report Name	: Haines Groundwater Treatment System Report Date: July 19, 2013					
Consultant Firm: ChemTrack						
Laboratory Name: TestAmerica Laboratory Report Number: AWF0034						
ADEC File Number: ADEC RecKey Number:						
 Laboratory Laboratory Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? Yes No NA (Please explain.) Comments: 						
b. If the labora	samples were transferred to another "network" laboratory or sub-contracted to an alternate atory, was the laboratory performing the analyses ADEC CS approved? Yes No NA (Please explain.) Comments:					
 2. <u>Chain of Custody (COC)</u> a. COC information completed, signed, and dated (including released/received by)? ☑ Yes □ No □NA (Please explain.) Comments: 						
b. Corre	ct analyses requested? Yes No NA (Please explain.) Comments:					
3. <u>Laboratory S</u> a. Samp	ample Receipt Documentationle/cooler temperature documented and within range at receipt $(4^\circ \pm 2^\circ C)$?YesNoNoNA (Please explain.)					
b. Samp Volati	le preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, ile Chlorinated Solvents, etc.)? Yes No NA (Please explain.) Comments:					
[

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)? Yes No NA (Please explain.) Comments:

The following samples were received with headspace $>1/4$ " in the sample vial: AWF0034-02,
AWF0034-03,AWF0034-04, AWF0034-05,

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

 \forall Yes \Box No \Box NA (Please explain.)

Comments:

e. Data quality or usability affected? (Please explain.)

Comments:

Data quality acceptable. There is relatively high level of dissolved oxygen naturally present in the water that was sampled. This may have some effect on how much headspace was in the jars. In addition, data was consistent throughout all samples submitted. Samples from untreated water also had greater than 1/4"headspace and still showed volatile results indicating that results are consistent throughout the sample batch.

4. Case Narrative

- a. Present and understandable?
 - $Yes \square No \square NA (Please explain.)$

Comments:

b. Discrepancies, errors or QC failures identified by the lab? Yes No NA (Please explain.) Comments:

Sample AWF0034-04 was analyzed outside of the analytical holding time due to instrument malfunction.

Samples AWF0034-03, AWF0034-04 and AWF0034-05 fell outside of the tune window for analysis batch 69956.

c. Were all corrective actions documented? Yes No NA (Please explain.)

Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Data quality acceptable.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

	\bigvee Yes \square No \square NA (Please explain.)	Comments:			
	 b. All applicable holding times met? ☑Yes □ No □NA (Please explain.) 	Comments:			
,	 c. All soils reported on a dry weight basis? ☐Yes ☐ No ⊠NA (Please explain.) 	Comments:			
	Only submitted water samples.				
	Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?				
	Yes \square No \square NA (Please explain.)	Comments:			
	e. Data quality or usability affected?	Comments:			
	Data quality acceptable.				
	a. Method Blank i. One method blank reported per matrix, analysis ⊠Yes □ No □NA (Please explain.)	and 20 samples? Comments:			
	ii. All method blank results less than PQL? \Box Yes \Box No \Box NA (Please explain.)	Comments:			
	For method AK102/103 DRO and RRO was detected in the method blank all results were less than the PQL.	the Method Blank. Upon re-analysis of			
	iii. If above PQL, what samples are affected?	Comments:			
	No samples were affected.				
	iv. Do the affected sample(s) have data flags and if Yes No NA (Please explain.)	f so, are the data flags clearly defined? Comments:			
	v. Data quality or usability affected? (Please expl	ain.) Comments:			
	Data quality acceptable.				

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

	Yes	No	NA (Please explain.)	Comments:
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ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes 🗌 No 🖾 NA (Please explain.)

Comments:

No metals analyzed.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
Yes ∑ No ∑NA (Please explain.) Comments:

Acenaphthylene was below the lower control limits for the LCS and LCSD. Due to the large number of spiked analytes, there was a high probability that one or more analytes would recover outside the acceptance limits. The laboratory's SOP allows for one analyte to recover criteria for this method when a PAH spike list is utilized.

 iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

 \bigvee Yes \square No \square NA (Please explain.)

Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected? Comments:

No samples were affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? Xes No NA (Please explain.) Comments:

vii. Data quality or usability affected? (Use comment box to explain.) Comments:

Data quality acceptable.

ethod or laboratory limits? hods 50-150 %R; all other
ethod or laboratory limits? hods 50-150 %R; all other
other surrogate recoveries
omitted during the extraction and or re- tance limits.
a flags? If so, are the data
plain.)
1 Solvents, etc.): <u>Water and</u>
containing volatile samples:
clearly indicated on the COC?
-

iv.	If above	PQL,	what	samples	are affected?
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Comments:

v. Data quality or usability affected? (Please explain.)

Comments:

Data quality acceptable.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples? Yes No NA (Please explain.) Comments:

ii. Submitted blind to lab? ∑Yes □ No □NA (Please explain.)

Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: (R_1-R_2) x 100

 $((R_1+R_2)/2)$

Where R_1 = Sample Concentration
 R_2 = Field Duplicate ConcentrationYes \boxtimes No \square NA (Please explain.)Comments:

For Ethylbenzene the RPD is 31% and for Toluene the RPD is 32%.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality acceptable. All other RPD's for the analytes that contained sample results were within the acceptable limits. One of the values for the Toluene calculation was an estimated value therefore the RPD calulation for toluene is also an estimated value.

f. Decontamination or Equipment Blank (If not used explain why).

Used clean sampling equipment at each sampling location.

	Yes No NA (Please explain.)	Comments:				
	i. All results less than PQL?					
	Yes No NA (Please explain.)	Comments:				
	ii. If above PQL, what samples are affected?					
		Comments:				
	iii. Data quality or usability affected? (Please ex	plain.)				
		Comments:				
	Data quality acceptable.					
7. <u>Oth</u>	Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.) a Defined and appropriate?					
	Yes No NA (Please explain.)	Comments:				