3810 East Boone Avenue, Suite 101
Spokane, Washington 99202
509.688.5376

April 2, 2019

Mr. Matt Breen
Spokane International Airport
9000 West Airport Drive
Spokane, Washington 99219

RE: Limited Groundwater Assessment Park Drive Disposal Area
Spokane International Airport
Spokane, Washington
SIA Contract #19-43-9999-006-001-00
SES Project No.:0270-002

Dear Mr. Breen:

Attached are the results and supporting documentation for the recent, limited groundwater monitoring event for perfluorinated chemicals and conventional chemistry contaminants of concern historically associated with this site. This monitoring event was conducted per your request to provide a snap shot of current shallow groundwater conditions beneath the Site. Samples were collected from historic groundwater monitoring wells installed in the 1990s on behalf of the Army Corps of Engineers.

SES understands that the site was formerly used as a borrow source, with an associated asphalt batch plant being located to the north. Later, portions of the site were used as a construction waste disposal site. The Site location is shown on **Figure 1**.

The latest Site Closure Summary was conducted by Herrera and Associates in 2003 which reported that the only contaminates of concern (COCs) exceeding the Model Toxics Control Act (MTCA) Method A cleanup criteria for unrestricted use in shallow groundwater were oil-range petroleum hydrocarbons and arsenic. Detections of TCE were also observed in samples collected from site wells but these detections were reported as 'minor and infrequent'. The last reported sampling of these wells was in 1999.

Our scope of work for this project included the following tasks:

- SES developed a Work Plan which dictated site sampling protocol. The Work plan included a sampling and analysis plan and a site-specific health and safety plan.
- Conducted one (1) groundwater sampling event on February 28, 2019. Groundwater samples were collected from the well pair from MW1-A and MW1-B.
- Groundwater samples were delivered to TestAmerica in Spokane, Washington for analysis of: diesel-range petroleum hydrocarbons by Northwest Method NWTPH-Dx, volatile organic compounds (VOCs) by EPA Method 8260, and total arsenic by EPA Methods 6000/7000. Sample containers collected for perfluorinated compounds were sent to ALS Global laboratory for analysis by EPA Method 537M. ALS is accredited by the Washington State Department of Ecology with the certification number C544. The samples were analyzed for PFOA and PFOS by USEPA Method 537M.

Samples were submitted on a standard turnaround time of 15–business days. SES reviewed the analytical data and no data usability issues were identified.

- Prepared this letter report presenting the results of the sampling event, compared the analytical results to national standards, and provided our conclusions and recommendations.

Groundwater Sampling

Depth to water in each well was measured to the nearest 1/100th of a foot prior to sampling.

Depth to water was measured at 14.35 feet below top of casing in MW-1A and 13.23 feet below top of casing in MW-1B.

Groundwater samples were collected from each well using a peristaltic pump. Purging and sampling using low-flow sampling techniques where flow rates were generally about 0.2 to 0.3 liters per minute (l/min). The purge rate was adjusted to minimize the drawdown of groundwater in the wells during purging.

Groundwater levels were measured in the monitoring wells on February 28, 2019. Depth to water ranged from 13.23 to 14.35 feet below top of casing in monitoring wells MW-1B and MW-1A, respectively.

The well pair are located on the south side of the Site, north of the current pond. MW-1A is the deepest of the wells and has an installed depth of 83 feet. The well is screened from 65 - 75 feet. SES was not able to advance the sample tubing to the screened interval due to an obstruction in the well casing at about 50 feet below top of casing. This obstruction is likely a joint in the casing that has loosened over time and creates a ridge which does not allow the tubing to pass as it hangs on the sidewall. The well is screened into a deeper, semi-confined water-bearing unit. The connection, if any with the water-bearing unit sampled from MW-1B is not fully understood.

Monitoring well MW-1B has an installed depth of 65.5 feet and has screened intervals between 2.5 - 32.5 feet and from 35 – 45 feet. SES placed the sample tubing intake at approximately 20 feet for this sample.

Field parameters were measured with a Horiba-U52 water quality meter. Parameters include pH, conductivity, turbidity, dissolved oxygen (DO), temperature, and oxidation reduction potential (ORP). Once field parameters stabilized within 10% from reading to reading for each parameter, laboratory-prepared sample containers were filled with water from the wells, sealed, and placed on ice. Samples were shipped next-day delivery to the laboratory the same day as collected.

Monitoring well locations are shown on **Figure 2**. Boring logs and well construction information is included in **Attachment A - Boring Logs.**

Analytical Results

PFOA and PFOS were not detected at a concentration exceeding the screening level of 70 ng\L in either sample.

Concentrations of BTEX, TCE and Dx did not exceed Method Reporting Limits (MRL) and/or MTCA Method A cleanup criteria in either sample.

Concentrations of total arsenic in groundwater samples did not exceed the MRL and/or MTCA Method A cleanup criteria in either sample.

Analytical results are shown on **Table 1 and Table 2.** Laboratory analytical reports are included in **Attachment B – Analytical Results**.

Summary
The highest concentration of perfluorinated compounds was detected in the groundwater sample collected from MW-1B. This well is screened near-surface and groundwater is likely interconnected to surface water in the adjacent pond. In general, contaminants of concern in both wells do not exceed applicable cleanup criteria.

Limitations
The findings and conclusions documented in this report have been prepared for specific application to this project and have been developed in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area and in general accordance with the terms and conditions set forth in our Agreement, and with the revised SES proposal dated February 9, 2019. No other warranty, express or implied, is made.

The findings presented in this report are based on conditions observed at specific site locations and sampling intervals at the time of the assessment. Because conditions between the wells and sampling intervals may vary over distance and time, the potential always remains for the presence of unknown, unidentified, unforeseen, or changed surface and subsurface contamination.

This report is for the exclusive use of Spokane International Airport and its representatives. No third party shall have the right to rely on SES's opinions rendered in connection with the services or in this document without our written consent and the third party's agreement to be bound to the same conditions and limitations as Spokane International Airport.

SES appreciates the opportunity to provide these services. Please contact the undersigned regarding any questions related to the information provided in this letter report.

Sincerely,

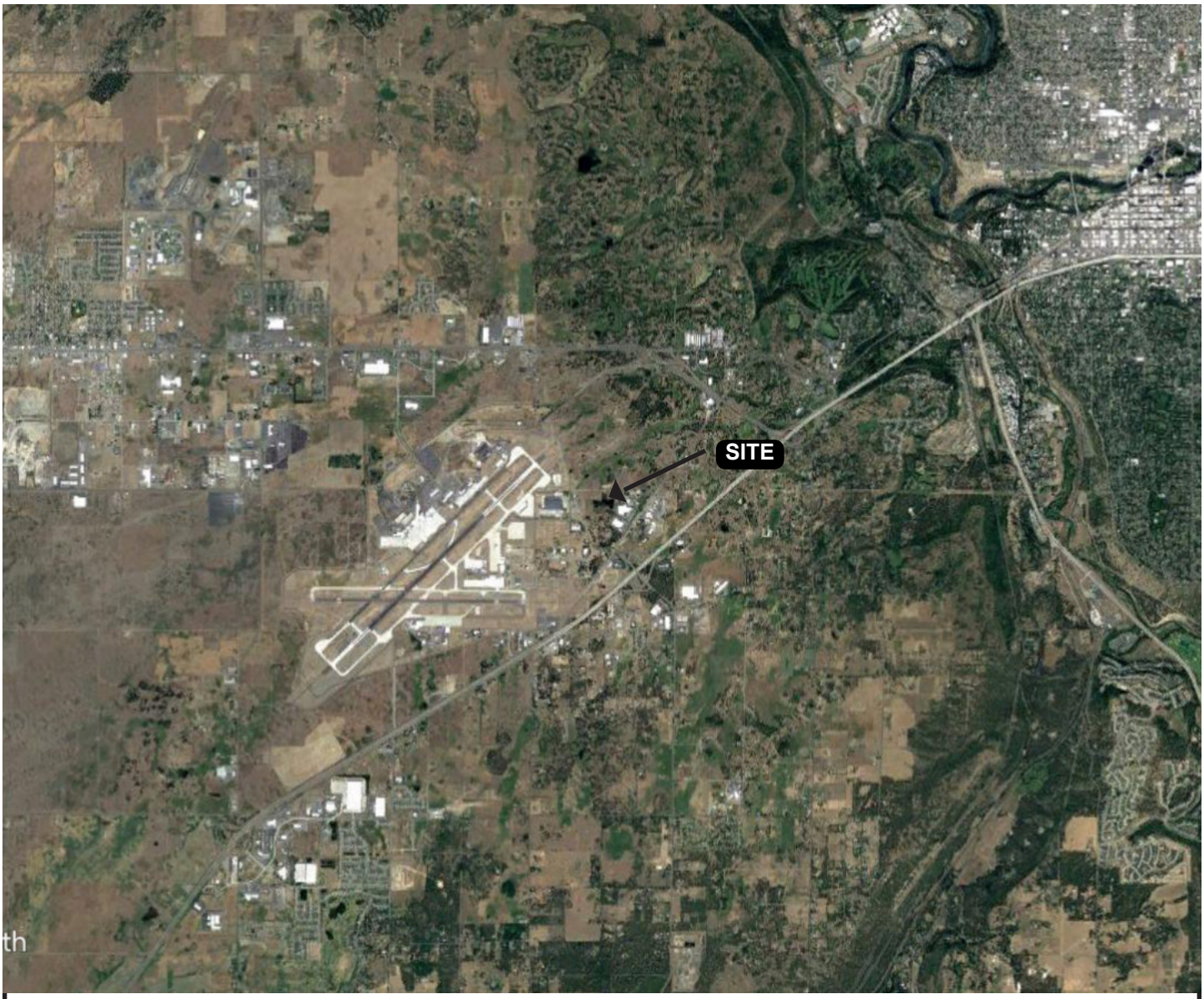
Spokane Environmental Solutions, LLC.

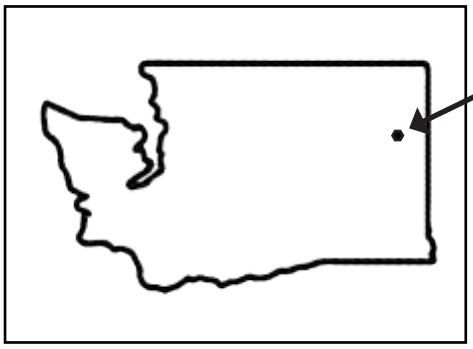
Gary D. Panther, LG, LEG

Attachments:

Figure 1: Location Map
Table 1: Summary of Groundwater Analytical Results - PFOA-PFOS
Table 2: Summary of Groundwater Analytical Results - Conventional Chemistry
Attachment A: Boring Logs
Attachment B: Analytical Results

Figures





Notes:

1. *The locations of all features shown are approximate.*
2. *This drawing is for information purposes. it is intended to assist in showing features discussed in an attached document.*

LOCATION MAP	
SIA PARK DRIVE BORROW PIT LIMITED GROUNDWATER ASSESSMENT SPOKANE, WASHINGTON	
SES SPOKANE ENVIRONMENTAL SOLUTIONS	FIGURE 1

LEGEND:

- Monitoring Wells Sampled February 2019
- Spokane Waste to Energy Plant
- Waste to Energy Plant Stormwater Outfall

N

Notes:

1. *The locations of all features shown are approximate.*
2. *This drawing is for information purposes. it is intended to assist in showing features discussed in an attached document.*

Source: Google Maps

SAMPLE LOCATION MAP

SIA PARK DRIVE BORROW PIT
LIMITED GROUNDWATER ASSESSMENT
SPOKANE, WASHINGTON

SES SPOKANE ENVIRONMENTAL SOLUTIONS

FIGURE 2

Tables

Table 1
Summary of Groundwater Analytical Results - Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS)
Limited Groundwater Assessment Park Drive Disposal Area
Spokane International Airport

			EPA-PFC/537M	
Well ID	**Sample Date**	**Depth to Water**	**PFOA (ng/L)**	**PFOS (ng/L)**
MW-1A	2/28/2019	14.35	10	5.9
MW-1B	2/28/2019	13.23	27	12
Groundwater Screening Level (ng/L) [1]			70	70

Notes:

[1] Groundwater screening levels were obtained from EPA's "Fact Sheet, PFOA & PFOS Drinking Water Health Advisories," dated November 2016.

Values in **bold** font indicate that the result reported meets or exceeds the groundwater screening level.

Depth to water measured from top of casing.

ng/L - nanogram per liter

PFOA - perfluorooctanoic acid

PFOS - perfluorooctane sulfonic acid

Samples analyzed by ALS Global Laboratories, Kelso, Washington.

SES SPOKANE ENVIRONMENTAL SOLUTIONS

Table 2
Summary of Groundwater Analytical Results - Conventional Chemistry
Limited Groundwater Assessment Park Drive Disposal Area
Spokane International Airport

			EPA-8260C					NWTPH-Dx		EPA-6020B
Sample ID	**Date Sampled**	**Depth to Water**	**Benzene ug/L**	**Toluene ug/L**	**Ethylbenzene ug/L**	**Total Xylenes ug/L**	**TCE ug/L**	**DRO mg/L**	**RRO mg/L**	**Arsenic mg/L**
MW-1A	2/28/2019	14.35	<0.40	<1.0	<1.0	<3.0	<1.0	<0.23	<0.39	<0.0050
MW-1B	2/28/2019	13.23	<0.4	<1.0	<1.0	<3.0	<1.0	<0.23	<0.38	<0.0050
MTCA Method A Cleanup Level [a]			5	1000	700	1000	5	0.5	0.5	0.005

Notes:

a: MTCA = Model Toxics Control Act Method A cleanup level for unrestricted use. Method B value used where Method A value not established.

DRO = Diesel-Range Organics.
RRO = Residual-Range Organics.
BTEX = benzene, toluene, ethylbenzene, (total) xylenes.
TCE = Trichloroethylene
ND = Analyte not detected at a concentration exceeding Method Reporting Limit (MRL). MRL is less than MTCA Method A Cleanup Criteria.
BOLD = Exceedance of cleanup level.

Samples Analyzed by TestAmerica, Spokane, WA

Attachment – A

Boring Logs

ECOVA Corporation

Well Installation Log

Well Number MW-1A
Date Drilled 5-10-90
Client · Army Corps of Engineers
Drilling Company Fogle Pump & Supply
Coordinates 246670.5625 N
Site SP Site (Task 6)
Boring Method Air Rotary
2460128.4101 E
Job Number 801126
Borehole Depth 83 Feet
Casing Elevation 2319.00'
Field Geologist R.M. Weber
Water Depth 13 Feet
Sheet 1 of 2

General: 50 feet 6" steel casing, pressure grout.

Depth (Feet)	Blow Counts	Sample No.	Recover	Organic* Vapor (ppm)	% LEL	% O_2	Sample Description	Graphic Log
5							SILTY SAND (SM) – Fine– to coarse–grained sand, brown, with black basalt cuttings, damp.	
10							BASALT – Fresh, light gray, dry.	
15							Basalt – Fresh, dark gray, dry. Hard drilling. ▽ Static water level at 13 Feet. BASALT – Alternating light and dark gray, dry.	
20								
25							Dry, hard drilling.	
30							BASALT – Gray, with white and orange fragments, easier drilling, damp.	
35							WEATHERED BASALT – Same as above with minor clay, sand, and gravel.	
40							Water yielding zone at 40 feet.	
45							BASALT – Fractured, weathered, orange and white fragments, some clays, sand and gravel. BASALT – Dark gray.	
50				3				

801126-A-MW1A

* Background = 0 ppm

ECOVA Corporation

Well Installation Log

Well Number MW-1A

Date Drilled 5-10-90

Client Army Corps of Engineers | Drilling Company Fogle Pump & Supply | Coordinates 246670.5625 N

Site SP Site (Task 6) | Boring Method Air Rotary | 2460128.4101 E

Job Number 801126 | Borehole Depth 83 Feet | Casing Elevation 2319.00

Field Geologist R.M. Weber | Water Depth 13 Feet | Sheet 2 of 2

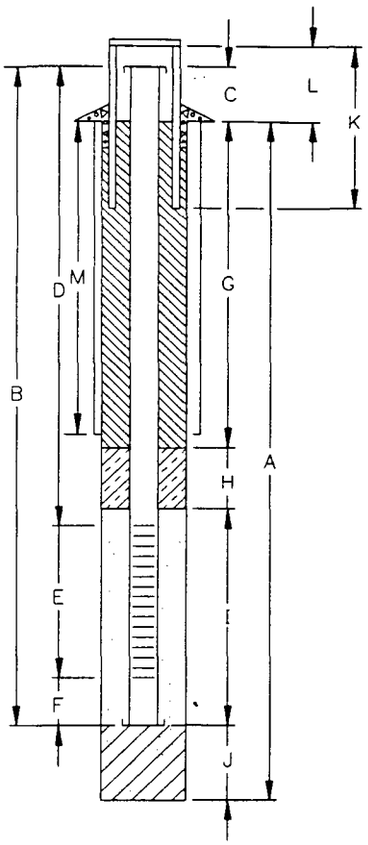
General: 50 feet 6" steel casing, pressure grout.

Depth (Feet)	Blow Counts	Sample No.	Recover	Organic* Vapor (ppm)	% LEL	% O_2	Sample Description	Graphic Log
55							BASALT – Black, no water, good seal on conductor casing.	
60							BASALT – Black, with dark gray clay, damp.	
65							SILT AND CLAY WITH GRAVEL (GM/GC) – Black, damp. Color change to dark brown.	
70							Color change to brown with increase in white and orange fragments, predominatly clay.	
75							WEATHERED BASALT – Black–gray, with orange and white clasts, soft drilling, damp. Water yielding zone at 75 feet.	
80							WEATHERED BASALT – Black–gray, with abundant orange and white fragments, soft drilling.	
85							BASALT – Dark gray, hard.	
90							Bottom of Hole – 83 Feet	
95								
100								

801126-A-MW1A

* Background = _____ppm

WELL COMPLETION MW-1A



TOP OF CASING ELEVATION 2319.00'

A BORING DEPTH 83 FT.
BORING DIAMETER 6 IN.

B WELL DEPTH 79.3 FT.

C WELL STICKUP 1 FT.

D BLANK INTERVAL 66 FT.
BLANK DIAMETER 2 IN.

E SCREEN INTERVAL 65-75' FT.
SCREEN DIAMETER 2 IN.
TYPE/SLOT SIZE 0.01

F SEDIMENT TRAP 5 FT.

G ANNULAR SEAL 54 FT.
MATERIAL: GROUT

H. BENTONITE SEAL 6 FT.

I SANDPACK 18 FT.
TYPE/SIZE: 20/40

J BOTOM SEAL/PACK 2 FT.
MATERIAL: SAND

K WELL COVER _____ FT.

L STICKUP _____ FT.

M CONDUCTOR CASING 50 FT.

NOT TO SCALE

DRILLING TIMES:
START 0800 - 5/10/90 FINISH 1100 - 5/11/90
STANDBY or DOWN TIME:

METHOD OF DECON. PRIOR TO DRILLING:

DEVELOPMENT

METHOD OF DEVELOPMENT: DISPLACEMENT PUMPING @ 70 CYCLES/SEC

PUMP TIME 0305 TO 0500 DATE 5/17/90

TURBIDITY AFTER DEVELOPMENT: X CLEAR; _____ MOD. TURBID; _____ SL. TURBID; _____ TURBID

ODOR IN WATER ?

WATER DISCHARGED TO: _____ GROUND SURFACE; _____ STORM SEWERS; 3 DRUMS; _____ STORAGE TANK; _____ TANK TRUCK

DEPTH OF WATER AFTER DEVELOPMENT: 6'

MATERIALS USED

4 1/2 SACKS of 20/40 SAND
7 SACKS of PORTLAND CEMENT
_____ SACKS of PREMIX CONCRETE
_____ GALLONS of GROUT USED
_____ GROUT COMPOSITION #6 BENTONITE
1 SACKS of BENTONITE PELLETS
_____ BUCKETS of BENTONITE PELLETS
_____ YARDS CEMENT - SAND USED
3 CENTRALIZERS at 31, 59, AND 78.5' BGS

WELL COVER USED: X Above Grade; _____ At Grade; _____ Other; X Lockable

FEB 6 1991

801126-A-MW1AW

ECOVA Corporation

Well Installation Log

Well Number MW-1B
Date Drilled 5-8-90
Client: Army Corps of Engineers
Drilling Company Fogle Pump & Supply
Coordinates 246670.3593 N
Site SP Site (Task 6)
Boring Method Air Rotary
2460138.2368 E
Job Number 801126
Borehole Depth 65.5 Feet
Casing Elevation 2318.63
Field Geologist R.M. Weber
Water Depth 5 Feet
Sheet 1 of 2

General: 6" steel casing to 5 feet.

Depth (Feet)	Blow Counts	Sample No.	Recover	Organic* Vapor (ppm)	% LEL	% O_2	Sample Description	Graphic Log
5							SILTY SAND (SM) – Fine– to coarse–grained sand, brown, black basalt gravel. ▽ Static water level at 5 feet. BASALT – Fresh, gray, dry.	
10							BASALT – Fresh, dark gray – water at 12 feet. Water yielding zone at 12 feet.	
15							BASALT – Light gray, cuttings are fine and powdery, very hard, dry.	
20								
25								
30							BASALT – Dark gray, softer drilling, damp.	
35								
40							Water yielding zone at 30 feet. WEATHERED BASALT – Dark gray, orange, and white fragments, minor clay and sand, soft.	
45								
50								

801126-A-MW1B

* Background = 0 ppm

ECOVA Corporation

Well Installation Log

Well Number MW-1B

Date Drilled 5-8-90

Client Army Corps of Engineers | Drilling Company Fogle Pump & Supply | Coordinates 246670.3593N

Site SP Site (Task 6) | Boring Method Air Rotary | 2460138.2368E

Job Number 801126 | Borehole Depth 65.5 Feet | Casing Elevation 2318.63

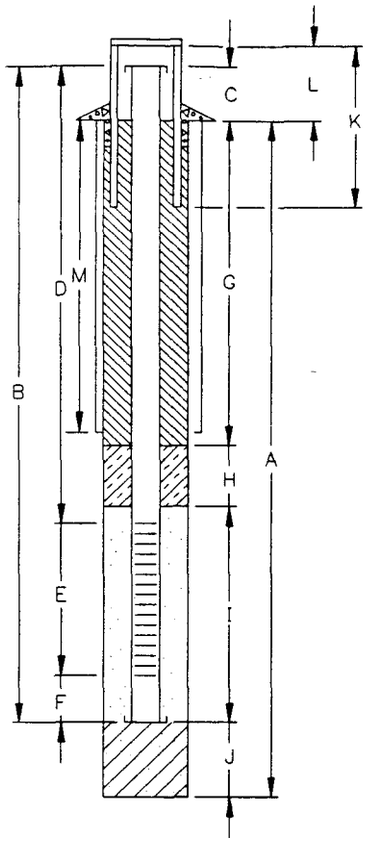
Field Geologist R.M. Weber | Water Depth 12/39 Feet | Sheet 2 of 2

Depth (Feet)	Blow Counts	Sample No.	Recover	Organic* Vapor (ppm)	% LEL	% O_2	General: Sample Description	Graphic Log
55							BASALT – Dark gray, hard.	
60								
65							Bottom of Hole – 65.5 Feet	
70								
75								
80								
85								
90								
95								
100								

801126-A-MW1B

* Background = 0 ppm

WELL COMPLETION MW-1B



TOP OF CASING ELEVATION 2318.63 FT.

A BORING DEPTH 65.5 FT.
BORING DIAMETER 6 IN.

B WELL DEPTH 50.0 FT.

C WELL STICKUP 0.5' FT.

D BLANK INTERVAL 66 FT.
BLANK DIAMETER 2 IN.

E SCREEN INTERVAL 2.5-32.5' 35-45' FT.
SCREEN DIAMETER 2 IN.
TYPE/SLOT SIZE 0.01

F SEDIMENT TRAP 5 FT.

G ANNULAR SEAL ____ FT.
MATERIAL: GROUT

H. BENTONITE SEAL ____ FT.

I SANDPACK ____ FT.
TYPE/SIZE: 20/40

J BOTOM SEAL/PACK 2 FT.
MATERIAL: SAND

K WELL COVER ____ FT.

L STICKUP ____ FT.

M CONDUCTOR CASING ____ FT.

NOT TO SCALE

DRILLING TIMES:
START 1245 5/8/90 FINISH 1504 5/8/90
STANDBY or DOWN TIME:

METHOD OF DECON. PRIOR TO DRILLING:

DEVELOPMENT

METHOD OF DEVELOPMENT: DISPLACEMENT PUMPING 60 CYCLES/SEC

START TIME 0820 TO 0120 DATE 5/17/90

TURBIDITY AFTER DEVELOPMENT:
____ CLEAR ____ MOD. TURBID
X SL. TURBID ____ TURBID

ODOR IN WATER ? NONE

WATER DISCHARGED TO:
____ GROUND SURFACE ____ STORAGE TANK
____ STORM SEWERS ____ TANK TRUCK
X DRUMS

DEPTH OF WATER AFTER DEVELOPMENT: 6 FEET

MATERIALS USED

9.5 SACKS of 20/40 SAND
4.5 SACKS of PORTLAND CEMENT
____ SACKS of PREMIX CONCRETE
____ GALLONS of GROUT USED
____ GROUT COMPOSITION #6 BENTONITE
____ SACKS of BENTONITE PELLETS
____ BUCKETS of BENTONITE PELLETS
____ YARDS CEMENT - SAND USED
2 CENTRALIZERS at 15' AND 36' BGS

WELL COVER USED:
x Above Grade
____ At Grade
____ Other
x Lockable

801126-A-MW1BW

Attachment – B

Analytical Results

March 20, 2019 Service Request No:K1901784

Gary Panther
Spokane Environmental Solutions, LLC
3810 E. Boone Avenue, Ste 101
Spokane, WA 99202

Laboratory Results for: Borrow Pit

Dear Gary,

Enclosed are the results of the sample(s) submitted to our laboratory March 01, 2019
For your reference, these analyses have been assigned our service request number **K1901784.**

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

Please contact me if you have any questions. My extension is 3275. You may also contact me via email at Chris.Leaf@ALSGlobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Chris Leaf
Project Manager

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

Narrative Documents

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

Client: Spokane Environmental Solutions, LLC
Project: Borrow Pit
Sample Matrix: Water

Service Request: K1901784
Date Received: 03/01/2019

CASE NARRATIVE

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

Sample Receipt:

Two water samples were received for analysis at ALS Environmental on 03/01/2019. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Organic LC:

Method PFC/537M, 03/08/2019: Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

Approved by _____ Date 03/20/2019

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-1A			Lab ID: K1901784-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Perfluorooctane sulfonic acid (PFOS)	10			4.2	ng/L	PFC/537M
Perfluorooctanoic acid (PFOA)	5.9			1.7	ng/L	PFC/537M

CLIENT ID: MW-1B			Lab ID: K1901784-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Perfluorooctane sulfonic acid (PFOS)	27			4.2	ng/L	PFC/537M
Perfluorooctanoic acid (PFOA)	12			1.7	ng/L	PFC/537M

Sample Receipt Information

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

Client: Spokane Environmental Solutions, LLC **Service Request:**K1901784
Project: Borrow Pit/0270-003

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K1901784-001	MW-1A	2/28/2019	1300
K1901784-002	MW-1B	2/28/2019	1400

ALS Environmental

CHAIN OF CUSTODY
97379

001

SR# K1901784

COC Set____of____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Borrow Pit	Project Number: 0270-003
Project Manager: GARY D. PANTHER	
Company: SPOKANE ENVIRONMENTAL SOLUTIONS, LLC	
Address: 3810 E. Boone Ave, Ste 101, Spokane, WA 99202	
Phone #: 509-954-5090	email: gary@spokaneenvironmental.com
Sampler Signature:	Sampler Printed Name: GARY D. PANTHER

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D PFC/537M / PFOA	1	2	3	4	5	Remarks
1. MW-1A		2.28.19	1300	W	2	X						
2. MW-1b		2.28.19	1320	W	2	X						
3.												
4.												
5.												
6.												
7.												
8.												
9.												
10.												

Report Requirements

- X I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. CLP Like Summary (no raw data)
- ___ IV. Data Validation Report
- X V. EDD

Invoice Information

P.O.# 0270-003

Bill To: Spokane Environmental Solutions

ATTN: Gary Panther

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Signature	Signature	Signature	Signature	Signature
Printed Name: GARY D. PANTHER	Printed Name: ALS K	Printed Name	Printed Name	Printed Name	Printed Name
Firm: SES LLC	Firm: 3-1-19 1000	Firm	Firm	Firm	Firm
Date/Time: 2-28-19 1600	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

PC CL

Cooler Receipt and Preservation Form

Client Spokane Environmental Services Service Request *K19* 01784

Received: 3-1-19 Opened: 3-1-19 By: DSP Unloaded: 3-1-19 By: DSP

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

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
0.0	-0.1	5.8	5.7	-0.1	371	97379	4808 3227 9050	

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

Sample ID on Bottle	Sample ID on COC	Identified by:

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

Notes, Discrepancies, & Resolutions: _____

Miscellaneous Forms

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Inorganic Data Qualifiers

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

Metals Data Qualifiers

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

Organic Data Qualifiers

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

Additional Petroleum Hydrocarbon Specific Qualifiers

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

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

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

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

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

Client:	Spokane Environmental Solutions, LLC	**Service Request:**	K1901784
Project:	Borrow Pit/0270-003		

Sample Name:	MW-1A	**Date Collected:**	02/28/19
Lab Code:	K1901784-001	**Date Received:**	03/1/19
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
PFC/537M	NHILLIKER	LDOMREIS

Sample Name:	MW-1B	**Date Collected:**	02/28/19
Lab Code:	K1901784-002	**Date Received:**	03/1/19
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
PFC/537M	NHILLIKER	LDOMREIS

Sample Results

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High Performance Liquid Chromatography

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Analytical Report

Client:	Spokane Environmental Solutions, LLC	**Service Request:**	K1901784
Project:	Borrow Pit/0270-003	**Date Collected:**	02/28/19 13:00
Sample Matrix:	Water	**Date Received:**	03/01/19 10:00
Sample Name:	MW-1A	**Units:**	ng/L
Lab Code:	K1901784-001	**Basis:**	NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M
Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkane Sulfonic Acids						
Perfluorooctane sulfonic acid (PFOS)	**10**	4.2	1	03/08/19 00:26	3/5/19	
Perfluoroalkane Carboxylic Acids						
Perfluorooctanoic acid (PFOA)	**5.9**	1.7	1	03/08/19 00:26	3/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C4-PFOS	117	25 - 121	03/08/19 00:26	
13C4-PFOA	97	22 - 130	03/08/19 00:26	

Analytical Report

Client:	Spokane Environmental Solutions, LLC	**Service Request:**	K1901784
Project:	Borrow Pit/0270-003	**Date Collected:**	02/28/19 14:00
Sample Matrix:	Water	**Date Received:**	03/01/19 10:00
Sample Name:	MW-1B	**Units:**	ng/L
Lab Code:	K1901784-002	**Basis:**	NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M
Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkane Sulfonic Acids						
Perfluorooctane sulfonic acid (PFOS)	**27**	4.2	1	03/08/19 00:37	3/5/19	
Perfluoroalkane Carboxylic Acids						
Perfluorooctanoic acid (PFOA)	**12**	1.7	1	03/08/19 00:37	3/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C4-PFOS	103	25 - 121	03/08/19 00:37	
13C4-PFOA	92	22 - 130	03/08/19 00:37	

QC Summary Forms

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High Performance Liquid Chromatography

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Client: Spokane Environmental Solutions, LLC **Service Request:** K1901784

Project: Borrow Pit/0270-003

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M

Extraction Method: EPA 3535A

Sample Name	Lab Code	13C4-PFOS 25-121	13C4-PFOA 22-130
MW-1A	K1901784-001	117	97
MW-1B	K1901784-002	103	92
Method Blank	KQ1902759-03	101	90
Lab Control Sample	KQ1902759-01	107	82
Duplicate Lab Control Sample	KQ1902759-02	105	87

Analytical Report

Client:	Spokane Environmental Solutions, LLC	**Service Request:**	K1901784
Project:	Borrow Pit/0270-003	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/L
Lab Code:	KQ1902759-03	**Basis:**	NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M
Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkane Sulfonic Acids						
Perfluorooctane sulfonic acid (PFOS)	ND U	5.0	1	03/07/19 21:07	3/5/19	
Perfluoroalkane Carboxylic Acids						
Perfluorooctanoic acid (PFOA)	ND U	2.0	1	03/07/19 21:07	3/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C4-PFOS	101	25 - 121	03/07/19 21:07	
13C4-PFOA	90	22 - 130	03/07/19 21:07	

Client:	Spokane Environmental Solutions, LLC	**Service Request:**	K1901784
Project:	Borrow Pit/0270-003	**Date Analyzed:**	03/07/19
Sample Matrix:	Water	**Date Extracted:**	03/05/19

Duplicate Lab Control Sample Summary
Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method:	PFC/537M	**Units:**	ng/L
Prep Method:	EPA 3535A	**Basis:**	NA
		Analysis Lot:	627545

	Lab Control Sample KQ1902759-01			Duplicate Lab Control Sample KQ1902759-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perfluorooctane sulfonic acid (PFOS)	28.2	29.7	95	24.7	29.7	83	71-139	13	30
Perfluorooctanoic acid (PFOA)	31.9	32.0	100	29.2	32.0	91	74-146	9	30

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

TestAmerica Job ID: 590-10497-1
Client Project/Site: Borrow Pit/0207-003
Revision: 1

For:
Spokane Environmental Solutions LLC
3810 E. Boone Avenue
Suite #101
Spokane, Washington 99202

Attn: Gary Panther

Randee Arrington

Authorized for release by:
4/2/2019 1:39:29 PM

Randee Arrington, Project Manager II
(509)924-9200
randee.arrington@testamericainc.com

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.

Table of Contents

Case Narrative

Client: Spokane Environmental Solutions LLC
Project/Site: Borrow Pit/0207-003

TestAmerica Job ID: 590-10497-1

Job ID: 590-10497-1

Laboratory: TestAmerica Spokane

Narrative

Report Revision 04/01/2019
Per the client's request Trichloroethene data was added to the final report.

Receipt
The samples were received on 2/28/2019 4:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.0º C.

Receipt Exceptions
A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC). The trip blank has been placed on hold.

One of two voa vial containers for the following sample was received broken or leaking: Trip Blank (590-10497-3). Sufficient volume was received to continue with analysis.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Spokane Environmental Solutions LLC
Project/Site: Borrow Pit/0207-003

TestAmerica Job ID: 590-10497-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-10497-1	MW-1A	Water	02/28/19 13:00	02/28/19 16:45
590-10497-2	MW-1B	Water	02/28/19 14:00	02/28/19 16:45

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
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: MW-1A

Lab Sample ID: 590-10497-1

Date Collected: 02/28/19 13:00
Matrix: Water
Date Received: 02/28/19 16:45

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			03/05/19 21:35	1
Ethylbenzene	ND		1.0		ug/L			03/05/19 21:35	1
m,p-Xylene	ND		2.0		ug/L			03/05/19 21:35	1
o-Xylene	ND		1.0		ug/L			03/05/19 21:35	1
Toluene	ND		1.0		ug/L			03/05/19 21:35	1
Xylenes, Total	ND		3.0		ug/L			03/05/19 21:35	1
Trichloroethene	ND		1.0		ug/L			03/05/19 21:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 125*		*03/05/19 21:35*	*1*
4-Bromofluorobenzene (Surr)	*98*		*69 - 120*		*03/05/19 21:35*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*03/05/19 21:35*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*03/05/19 21:35*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.23		mg/L		03/01/19 11:41	03/04/19 17:07	1
Residual Range Organics (RRO) (C25-C36)	ND		0.39		mg/L		03/01/19 11:41	03/04/19 17:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*89*		*50 - 150*	*03/01/19 11:41*	*03/04/19 17:07*	*1*
n-Triacontane-d62	*80*		*50 - 150*	*03/01/19 11:41*	*03/04/19 17:07*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050		mg/L		03/07/19 11:11	03/08/19 13:55	5

Client Sample ID: MW-1B

Lab Sample ID: 590-10497-2

Date Collected: 02/28/19 14:00
Matrix: Water
Date Received: 02/28/19 16:45

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			03/05/19 21:56	1
Ethylbenzene	ND		1.0		ug/L			03/05/19 21:56	1
m,p-Xylene	ND		2.0		ug/L			03/05/19 21:56	1
o-Xylene	ND		1.0		ug/L			03/05/19 21:56	1
Toluene	ND		1.0		ug/L			03/05/19 21:56	1
Xylenes, Total	ND		3.0		ug/L			03/05/19 21:56	1
Trichloroethene	ND		1.0		ug/L			03/05/19 21:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 125*		*03/05/19 21:56*	*1*
4-Bromofluorobenzene (Surr)	*104*		*69 - 120*		*03/05/19 21:56*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*03/05/19 21:56*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*03/05/19 21:56*	*1*

Client: Spokane Environmental Solutions LLC
Project/Site: Borrow Pit/0207-003

TestAmerica Job ID: 590-10497-1

Client Sample ID: MW-1B
Date Collected: 02/28/19 14:00
Date Received: 02/28/19 16:45

Lab Sample ID: 590-10497-2
Matrix: Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.23		mg/L		03/01/19 11:41	03/04/19 17:27	1
Residual Range Organics (RRO) (C25-C36)	ND		0.38		mg/L		03/01/19 11:41	03/04/19 17:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*87*		*50 - 150*	*03/01/19 11:41*	*03/04/19 17:27*	*1*
n-Triacontane-d62	*77*		*50 - 150*	*03/01/19 11:41*	*03/04/19 17:27*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050		mg/L		03/07/19 11:11	03/08/19 13:59	5

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-21195/5
Matrix: Water
Analysis Batch: 21195

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			03/05/19 19:30	1
Ethylbenzene	ND		1.0		ug/L			03/05/19 19:30	1
m,p-Xylene	ND		2.0		ug/L			03/05/19 19:30	1
o-Xylene	ND		1.0		ug/L			03/05/19 19:30	1
Toluene	ND		1.0		ug/L			03/05/19 19:30	1
Xylenes, Total	ND		3.0		ug/L			03/05/19 19:30	1
Trichloroethene	ND		1.0		ug/L			03/05/19 19:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 125*		*03/05/19 19:30*	*1*
4-Bromofluorobenzene (Surr)	*103*		*69 - 120*		*03/05/19 19:30*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*03/05/19 19:30*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*03/05/19 19:30*	*1*

Lab Sample ID: LCS 590-21195/1003
Matrix: Water
Analysis Batch: 21195

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			10.0	10.6		ug/L		106	80 - 120		
Ethylbenzene			10.0	10.4		ug/L		104	80 - 120		
m,p-Xylene			10.0	10.7		ug/L		107	80 - 120		
o-Xylene			10.0	10.6		ug/L		106	80 - 120		
Toluene			10.0	10.4		ug/L		104	80 - 123		
Trichloroethene			10.0	10.7		ug/L		107	75 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 125*
4-Bromofluorobenzene (Surr)	*98*		*69 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Lab Sample ID: LCSD 590-21195/6
Matrix: Water
Analysis Batch: 21195

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			10.0	11.1		ug/L		111	80 - 120	4	25
Ethylbenzene			10.0	10.7		ug/L		107	80 - 120	3	25
m,p-Xylene			10.0	10.9		ug/L		109	80 - 120	2	25
o-Xylene			10.0	10.8		ug/L		108	80 - 120	1	25
Toluene			10.0	10.8		ug/L		108	80 - 123	4	25
Trichloroethene			10.0	10.8		ug/L		108	75 - 129	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 125*
4-Bromofluorobenzene (Surr)	*99*		*69 - 120*

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

Lab Sample ID: LCSD 590-21195/6
Matrix: Water
Analysis Batch: 21195

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

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 590-21144/1-A
Matrix: Water
Analysis Batch: 21158

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 21144

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24		mg/L		03/01/19 11:41	03/04/19 10:52	1
Residual Range Organics (RRO) (C25-C36)	ND		0.40		mg/L		03/01/19 11:41	03/04/19 10:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*81*		*50 - 150*	*03/01/19 11:41*	*03/04/19 10:52*	*1*
n-Triacontane-d62	*82*		*50 - 150*	*03/01/19 11:41*	*03/04/19 10:52*	*1*

Lab Sample ID: LCS 590-21144/2-A
Matrix: Water
Analysis Batch: 21158

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 21144

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (DRO) (C10-C25)	1.60	1.21		mg/L		76	50 - 150
Residual Range Organics (RRO) (C25-C36)	1.60	1.58		mg/L		99	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*86*		*50 - 150*
n-Triacontane-d62	*93*		*50 - 150*

Lab Sample ID: LCSD 590-21144/3-A
Matrix: Water
Analysis Batch: 21158

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 21144

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)	1.60	1.19		mg/L		74	50 - 150	2	25
Residual Range Organics (RRO) (C25-C36)	1.60	1.54		mg/L		96	50 - 150	3	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*85*		*50 - 150*
n-Triacontane-d62	*89*		*50 - 150*

QC Sample Results

Client: Spokane Environmental Solutions LLC
Project/Site: Borrow Pit/0207-003

TestAmerica Job ID: 590-10497-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-295753/22-A
Matrix: Water
Analysis Batch: 295933

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295753

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		03/07/19 11:11	03/08/19 12:16	1

Lab Sample ID: LCS 580-295753/23-A
Matrix: Water
Analysis Batch: 295933

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295753

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic			1.00	0.946		mg/L		95	80 - 120		

Lab Sample ID: LCSD 580-295753/24-A
Matrix: Water
Analysis Batch: 295933

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295753

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic			1.00	0.959		mg/L		96	80 - 120	1	20

Lab Chronicle

Client: Spokane Environmental Solutions LLC
Project/Site: Borrow Pit/0207-003

TestAmerica Job ID: 590-10497-1

Client Sample ID: MW-1A

Date Collected: 02/28/19 13:00
Date Received: 02/28/19 16:45

Lab Sample ID: 590-10497-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	21195	03/05/19 21:35	MRS	TAL SPK
Total/NA	Prep	3510C			259.2 mL	2 mL	21144	03/01/19 11:41	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			21158	03/04/19 17:07	NMI	TAL SPK
Total Recoverable	Prep	3005A			50 mL	50 mL	295753	03/07/19 11:11	JKM	TAL SEA
Total Recoverable	Analysis	6020B		5	50 mL	50 mL	295933	03/08/19 13:55	FCW	TAL SEA

Client Sample ID: MW-1B

Date Collected: 02/28/19 14:00
Date Received: 02/28/19 16:45

Lab Sample ID: 590-10497-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	21195	03/05/19 21:56	MRS	TAL SPK
Total/NA	Prep	3510C			260 mL	2 mL	21144	03/01/19 11:41	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			21158	03/04/19 17:27	NMI	TAL SPK
Total Recoverable	Prep	3005A			50 mL	50 mL	295753	03/07/19 11:11	JKM	TAL SEA
Total Recoverable	Analysis	6020B		5	50 mL	50 mL	295933	03/08/19 13:59	FCW	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310
TAL SPK = TestAmerica Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Spokane Environmental Solutions LLC
Project/Site: Borrow Pit/0207-003

TestAmerica Job ID: 590-10497-1

Laboratory: TestAmerica Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C569	01-06-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Seattle

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-20
ANAB	DoD / DOE		L2236	01-19-22
ANAB	ISO/IEC 17025		L2236	01-19-22
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-20

Method Summary

Client: Spokane Environmental Solutions LLC
Project/Site: Borrow Pit/0207-003

TestAmerica Job ID: 590-10497-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
6020B	Metals (ICP/MS)	SW846	TAL SEA
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SEA
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL SPK
5030C	Purge and Trap	SW846	TAL SPK

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

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

Laboratory References:

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

TAL SPK = TestAmerica Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

TestAmerica Spokane
11922 East 1st Ave
Spokane, WA 99206
Phone (509) 924-9200 Fax (509) 924-9290

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: GP	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 590-4398-1420.1
Client Contact: Gary Panther	Phone: 509-954-5090	E-Mail: randee.arrington@testamericainc.com		Page: Page 1 of 1
Company: Spokane Environmental Solutions LLC				Job #:
Address: 3810 E. Boone Avenue Suite #101	Due Date Requested: STD TAT			
City: Spokane	TAT Requested (days):			
State, Zip: WA, 99202				
Phone: 509-954-5090(Tel)	PO #: Advance Payment Required			
Email: gary@spokaneenvironmental.com	WO #:			
Project Name: Borrow Pit	Project #: 59001518			
Site: 0270-003	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B - Arsenic	NWTPH_Dx - DRO and RRO	8260C - BTEX	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	A	A		
MW-1A	2-28-19	1300	G	Water			X	X	X		
MW-1b	2-28-19	1400	G	Water			X	X	X		
				Water							

590-10497 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Gary Panther	2-28-19 1640	SES	Randee Arrington	2/28/19 1640	TASP
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 6.0°C IR Gun

Ver: 01/16/2019

4/2/2019 (Rev. 1)

TestAmerica Spokane
11922 East 1st Ave
Spokane, WA 99206
Phone (509) 924-9200 Fax (509) 924-9290

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 590-4156.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: randee.arrington@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Washington		Job #: 590-10497-1
Address: 5755 8th Street East, ,	Due Date Requested: 3/12/2019			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel) 253-922-5047(Fax)	PO #:			
Email:	WO #:			
Project Name: Borrow Pit/0207-003	Project #: 59001518			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3005A (MOD) Arsenic	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-1A (590-10497-1)	2/28/19	13:00 Pacific		Water			X	1	
MW-1B (590-10497-2)	2/28/19	14:00 Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Mavia OTOOLE	3/1/19 15:46			3-2-19 1030	TASE2
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 21.3

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Spokane Environmental Solutions LLC

Job Number: 590-10497-1

Login Number: 10497
List Number: 1
Creator: O'Toole, Maria C

List Source: TestAmerica Spokane

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	One of the two trip blanks was broken
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: Spokane Environmental Solutions LLC

Job Number: 590-10497-1

Login Number: 10497
List Number: 2
Creator: Hobbs, Kenneth F

List Source: TestAmerica Seattle
List Creation: 03/02/19 12:49 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	