TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

TestAmerica Job ID: 160-26793-1
TestAmerica Sample Delivery Group: SL2808
Client Project/Site: S18-002 / W18-002
Revision: 1

For:
CH2M Hill Plateau Remediation Company
PO BOX 1600, MS H8-41
Richland, Washington 99352

Attn: Mr. Scot Fitzgerald

Authorized for release by:
4/6/2018 1:28:57 PM

Jayna Awalt, Project Manager II
(314)298-8566
jayna.awalt@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.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.

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Job ID: 160-26793-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE
Rev. 1 - COCs have now been signed per SIR18-0541.

CH2MHill Plateau Remediation Company
P.O. Box 1600
Richland, Washington 99352
March 13, 2018
Attention: Scot Fitzgerald

SDG	: SL2808
Number of Samples	: 12 samples
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: February 15, 2018

II. Introduction

On February 15, 12 samples were received by TestAmerica - St. Louis for analysis. The samples were received within temperature criteria. See the COC and receipt checklists for documentation of any variations on receipt conditions and temperature. Upon receipt, samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: S18-002 and W18-002

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with an LCS/LCS duplicate.

Note: For Metals analyses, per standard practice, all 6020 water and soil samples are initially prepared at 2x dilution. This standard dilution does not affect reporting limits as MDL studies are also prepared in the same manner. These dilutions do not necessitate a narrative note; however, they are flagged “D” due to a limitation in the LIMS.

For solid matrices, all Metals analyses (including Hg) use a Standard Reference Material for the Laboratory Control Sample (LCS). Certificate for this source material may be obtained from TASL.

For Anion analysis, samples have been started at a 2x dilution per CHPRC direction. The samples are flagged accordingly with a “D” flag if sample concentration is above the MDL/RL. Non-conformance will be included in the below section only if dilution is greater than 2x.

For WTPH methods, the lab utilizes method 8015B. Per CHPRC direction, the method name in the electronic data has been modified to read WTPH in the place of 8015B.

Per CHPRC direction, due to the short hold times for Nitrate, Nitrite and Phosphate by IC (48 hours) as well as pH analysis (24 hours), a SIR request is not needed when samples are run outside 1x hold but within 2x hold. A narrative comment will be included below if a sample is run outside the lab-specified hold time for waters.

For extractable and volatile organic analyses, several analytes are considered poor performers and will not meet CHPRC QC limits. Per CHPRC direction, the lab’s statistical limits have been reported. Excursions outside these statistical limits will include a

Job ID: 160-26793-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

non-conformance in the sections below.

IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

The term “Detection Limit” used in the analytical data report refers to either the lab’s standard reporting limits or contractually required reporting limits, whichever is applicable.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** - For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** - For organic analyses, Method Blank contamination. The Method Blank contains the target analyte above the MDL/RL and Method Blank is greater than 5% of the sample concentration.
- **B** - For inorganics and radiochemistry, Method Blank reported above the MDC/MDL.
- **J** - For organic analyses, the sample is estimated and less than the RL. If on Method Blank, indicates Method Blank contamination.
- **C** - For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL/RL and Method Blank concentration is greater than 5% of the sample concentration.
- **D** - For all analyses, the sample result was obtained from the analysis of a dilution. For ICPMS Metals analyses, per standard practice, all samples are initially prepared at a 2x dilution. This standard dilution does not affect reporting limits as MDL studies are also prepared in the same manner and will not be narrated below. Only dilutions above 2x will be narrated and considered a true dilution for these samples.
- **N** - For inorganics, rad and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** - For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.
- **o** - For all analyses, the LCS (LCSD) recoveries are outside QC limits.
- **P -** For organic analyses (PCB/Pests only), the aroclor target analyte has greater than 25% difference for detected concentrations between the two GC columns.
- **X-** Organics and Anions IC - Sample concentration over calibration and/or surrogate recovery outside QC limits.
- **X-** Inorganics - The analyte present in the original sample is > 4x the spike concentration.
- **X-** Radiochemistry - Carrier or Tracer recovery is outside limits.
- **Z-** Sample was prepped or analyzed beyond the specified sample holding time.
- **y -** RPD is outside established limits.

Semivolatiles

Batch: 354113

The following samples necessitated re-extraction outside 1x hold due to instrument QC failures that made initial in-hold data unreportable. Samples were re-prepared within the 2X holding window of 14 days. B3H4P8 (160-26793-4), B3H4P7 (160-26793-5), (160-26793-C-5-A MS) and (160-26793-D-5-A MSD)

The matrix spike / matrix spike duplicate (MS/MSD) recoveries were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. These analytes have been qualified accordingly with a "T" flag in the associated samples.

There were no observations or non-conformances associated with the following methods:

ICP Metals
ICPMS Metals
Alkalinity

Job ID: 160-26793-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

TOC
Tritium

We certify that this data package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager or designee and the laboratory's client services representative as verified by their signature on this report.

Reviewed and approved:

Jayna Awalt
St. Louis Project Manager

SAMPLE ISSUE RESOLUTION (SIR) REPORT

SIR Number: SIR18-0541
Rev. Number: 0
Date Initiated: 03/09/2018

SAMPLE EVENT INFORMATION

SAF NUM(S): W18-002

LABORATORY: TASL

SAMPLING INFORMATION

NUMBER OF SAMPLES: 3

SAMPLE NUMBERS: B3H327, B3H342, B3H3C6

SAMPLE MATRIX: WATER

SDG NUM(S): SL2808

ISSUE BACKGROUND

CLASS: Laboratory Issue

TYPE: Chain of Custody Issue

DESCRIPTION: COC W18-002-005, SAMPLE B3H342 & B3H3C6;
COC W18-002-153, SAMPLE B3H327;
Missing final received by information

RESOLUTION

PROPOSED RESOLUTION: Correct final received by information

FINAL RESOLUTION: Correct COCs and close

SUBMITTED BY:

GIBSON, GG 02/20/2018

ACCEPTED BY:

KILLAND, KE 03/09/2018

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-26793-1
SDG Number: SL2808

Login Number: 26793
List Number: 1
Creator: Daniels, Brian J

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
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	0.4
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	

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S18-002-634

Page 1 of 1

Collector: Daniel Klug CHPRC SL2808	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: S18-002	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: Sitewide Surv, February 2018	**Logbook No.:** HNF-N-506 98/38	**Ice Chest No.:** GWS-731
Shipped To (Lab): TestAmerica St. Louis	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7714 8478 9558
Protocol SURV	**Priority:** 30 Days	**Offsite Property No.:** N/A

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H344	N	W	FEB 13 2018	1307	1x250-mL P	906.0_TRITIUM_LSC: COMMON	6 Months	None

Relinquished By: Daniel Klug CHPRC — Print First and Last Name; Signature: D. Klug; Date/Time: FEB 13 2018 1410	Received By: SSU-1 — Print First and Last Name; Signature; Date/Time: FEB 13 2018 1410	Matrix *
Relinquished By: SSU-1 — Print First and Last Name; Signature; Date/Time: FEB 14 2018 1240	Received By: Lesly Wall /CHPRC — Print First and Last Name; Signature: Lesly Wall; Date/Time: FEB 14 2018 1240	S = Soil; SE = Sediment; SO = Solid; SL = Sludge; W = Water; O = Oil; A = Air; DS = Drum Solids; DL = Drum Liquid; T = Tissue; WI = Wipe; L = Liquid; V = Vegetation; X = Other
Relinquished By: Lesly Wall /CHPRC — Print First and Last Name; Signature: Lesly Wall; Date/Time: FEB 14 2018 1400	Received By: FEDEX — Print First and Last Name; Signature; Date/Time	
Relinquished By: FED EX — Print First and Last Name; Signature; Date/Time	Received By: Brian Daniels — Print First and Last Name; Signature; Date/Time: 2/15/18 0900	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process): Jayna Awalt — Disposed By: Jayna Awalt — Date/Time:

Printed On 1/18/2018 — FSR ID# FSR57315 — A-6004-842 (REV 3)

04/06/2018

REV.1

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S18-002-497

Page 1 of 1

Collector:	MIKE ESPARZA CHPRC 822808	**Contact/Requester:**	Karen Waters-Husted	**Telephone No.:**	509-376-4650
SAF No.:	S18-002	**Sampling Origin:**	Hanford Site	**Purchase Order/Charge Code:**	300071
Project Title:	Sitewide Surv, February 2018	**Logbook No.:**	HNF-N-506	**Ice Chest No.:**	GWS-1731
Shipped To (Lab):	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.:**	7714 8478 9558
Protocol	SURV	**Priority:**	30 Days	**Offsite Property No.:**	N/A

POSSIBLE SAMPLE HAZARDS/REMARK

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H4P5	N		FEB 14 2018	1100	1x250-mL P	906.0_TRITIUM_LSC: COMMON	6 Months	None

Relinquished By:	Signature	Date/Time	Received By:	Signature	Date/Time
MIKE ESPARZA CHPRC	Mike Esparza	FEB 14 2018 1130	FEDEX		
FED EX			Brian Daniels		2/15/18 0930

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process): Jayna Awalt Disposed By: Jayna Awalt Date/Time:

Printed On 12/13/2017 FSR ID = FSR55448 A-6004-842 (REV 3)

04/06/2018

REV.1

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S18-002-498

Page 1 of 1

Collector:	MIKE ESPARZA CHPRC 822808	**Contact/Requester:**	Karen Waters-Husted	**Telephone No.:**	509-376-4650
SAF No.:	S18-002	**Sampling Origin:**	Hanford Site	**Purchase Order/Charge Code:**	300071
Project Title:	Sitewide Surv, February 2018	**Logbook No.:**	HNF-N-506	**Ice Chest No.:**	GWS-731
Shipped To (Lab):	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.:**	7714 8478 9558
Protocol	SURV	**Priority:**	30 Days	**Offsite Property No.:**	N/A

POSSIBLE SAMPLE HAZARDS/REMARK

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H4P6	N	W	FEB 14 2018	1100	1x250-mL P	906.0_TRITIUM_LSC: COMMON	6 Months	None

Relinquished By	Signature	Date/Time	Received By	Signature	Date/Time
MIKE ESPARZA CHPRC	Mike Esparza	FEB 14 2018 1130	FEDEX		
FED EX			Brian Daniels	B	2/15/18 0900

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process): Jayna Awalt Disposed By: Jayna Awalt Date/Time:

Printed On 12/13/2017 FSR ID = FSR55448 A-6004-842 (REV 3)

04/06/2018 REV.1

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S18-002-558

Page 1 of 1

Collector:	MIKE ESPARZA CHPRC SL2808	**Contact/Requester:**	Karen Waters-Husted	**Telephone No.:**	509-376-4650
SAF No.:	S18-002	**Sampling Origin:**	Hanford Site	**Purchase Order/Charge Code:**	300071
Project Title:	Sitewide Surv, February 2018	**Logbook No.:**	HNF-N-506	**Ice Chest No.:**	GWS-731
Shipped To (Lab):	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.:**	7714 8478 9558
Protocol	SURV	**Priority:**	30 Days	**Offsite Property No.:**	N/A

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H4P8	N	W	FEB 14 2018	1100	4x1-L aG	8270_SVOA_GCMS: 1,4 Dioxane (1)	7/40 Days	Cool <=6C

Relinquished By: MIKE ESPARZA CHPRC	Mike Esparza	FEB 14 2018 1130	Received FEDEX		
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time
Relinquished By: FED EX			Received By: Brian Daniels	8	2/15/18 0900
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time
Relinquished By:			Received By:		
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time
Relinquished By:			Received By:		
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process): Jayna Awalt	Disposed By: Jayna Awalt	Date/Time:

Printed On 12/13/2017 FSR ID = FSR55448 A-6004-842 (REV 3)

04/06/2018

REV.1

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # S18-002-557 Page 1 of 1

Collector:	MIKE ESPARZA CHPRC 8/28/08	**Contact/Requester:**	Karen Waters-Husted	**Telephone No.:**	509-376-4650
SAF No.:	S18-002	**Sampling Origin:**	Hanford Site	**Purchase Order/Charge Code:**	300071
Project Title:	Sitewide Surv, February 2018	**Logbook No.:**	HNF-N-506	**Ice Chest No.:**	GWS-731
Shipped To (Lab):	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.:**	7714 8478 9558
Protocol	SURV	**Priority:**	30 Days	**Offsite Property No.:**	N/A

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H4P7	N	W	FEB 14 2018	1100	4x1-L aG	8270_SVOA_GCMS: 1,4 Dioxane (1)	7/40 Days	Cool <=6C

Relinquished By:	Signature	Date/Time	Received By:	Signature	Date/Time
MIKE ESPARZA CHPRC	Mike Esparza	FEB 14 2018 1130	FEDEX		
FED EX			Brian Fiorinis	B	2/15/18 09a

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquid
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process): Tyna Awalt	Disposed By: Tayna Awalt	Date/Time:

Printed On 12/13/2017 FSR ID = FSR55448 A-6004-842 (REV 3)

04/06/2018

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91105

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # S18-002-534 Page 1 of 1

Collector: Juan Aguilar /CHPRC 912808	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: S18-002	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: Sitewide Surv, February 2018	**Logbook No.:** HNF-N-506-97160	**Ice Chest No.:** GWS-731
Shipped To (Lab): TestAmerica St. Louis	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7714 8478 9558
Protocol SURV	**Priority:** 30 Days	**Offsite Property No.:** N/A

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H448	N	W	2-14-18	0925	1x500-mL G/P	6020_METALS_ICPMS: Chromium (1)	6 Months	HNO3 to pH <2
B3H451	Y	W	2-14-18	0925	1x500-mL G/P	6020_METALS_ICPMS: Chromium (1)	6 Months	HNO3 to pH <2

Relinquished By	Print First and Last Name	Signature	Date/Time	Received By	Print First and Last Name	Signature	Date/Time
Juan Aguilar /CHPRC			FEB 14 2018 1015	Troy Bacon CHPRC		Troy L. Bacon	FEB 14 2018 1015
Troy L. Bacon			FEB 14 2018 1400	FEDEX			
FED EX				Brian Dennis			2/15/18 0900

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process): Jayna Awalt **Disposed By:** Jayna Awalt **Date/Time:**

Printed On 12/13/2017 FSR ID = FSR55386 A-6004-842 (REV 3)

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S18-002-535

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Collector:	Juan Aguilar /CHPRC 8L2808	**Contact/Requester:**	Karen Waters-Husted	**Telephone No.:**	509-376-4650
SAF No.:	S18-002	**Sampling Origin:**	Hanford Site	**Purchase Order/Charge Code:**	300071
Project Title:	Sitewide Surv, February 2018	**Logbook No.:**	HNF-N-506-97160	**Ice Chest No.:**	GWS-731
Shipped To (Lab):	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.:**	7714 8478 9558
Protocol	SURV	**Priority:**	30 Days	**Offsite Property No.:**	N/A

POSSIBLE SAMPLE HAZARDS/REMARK

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H4Y8	N	W	2-14-18	0932	1x500-mL G/P	6020_METALS_ICPMS: Chromium (1)	6 Months	HNO3 to pH <2
B3H501	Y	W	2-14-18	0932	1x500-mL G/P	6020_METALS_ICPMS: Chromium (1)	6 Months	HNO3 to pH <2

Relinquished By	Signature	Date/Time	Received By	Signature	Date/Time
Juan Aguilar /CHPRC		FEB 14 2018 1015	Troy Bacon CHPRC	Troy L. Bacon	FEB 14 2018 1015
Troy Bacon CHPRC	Troy L. Bacon	FEB 14 2018 1400	FEDEX		
FED EX			Brian Harris		2/15/18 0900

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process): Jayna Awalt

Disposed By: Jayna Awalt

Date/Time:

Printed On 12/13/2017

FSR ID = FSR55399

A-6004-842 (REV 3)

04/06/2018

REV.1

4/6/2018 (Rev. 1)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # W18-002-005

Collector:	Daniel Klug CHPRC SL2808	**Contact/Requester:**	Karen Waters-Husted	**Telephone No.:**	509-376-4650
SAF No.:	W18-002	**Sampling Origin:**	Hanford Site	**Purchase Order/Charge Code:**	300071
Project Title:	RCRA, February 2018	**Logbook No.:**	HNF-N-506 98/38	**Ice Chest No.:**	GWS-731
Shipped To (Lab):	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.:**	7714 8478 9558
Protocol	RCRA	**Priority:**	30 Days	**Offsite Property No.:**	N/A

POSSIBLE SAMPLE HAZARDS/REMARK

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H342	N	W	FEB 13 2018	1307	1x250-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B3H342	N	W			1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B3H342	N	W			1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2 / Cool <=6C
B3H3C6	Y	W			1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2

04/06/2018

Relinquished By	Print First and Last Name	Signature	Date/Time	Received By	Print First and Last Name	Signature	Date/Time
Daniel Klug CHPRC	D. Klug		FEB 13 2018 1410	SSU-1			FEB 13 2018 1410
SSU-1			FEB 14 2018 1240	Lesly Wall /CHPRC	Lesly Wall		FEB 14 2018 1240
Lesly Wall /CHPRC	Lesly Wall		FEB 14 2018 1400	FEDEX			
FED EX				Brian Hanel			2/15/18 0900

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

REV.1

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Jajna Awalt

Disposed By: Jajna Awalt

Date/Time:

Printed On 1/18/2018

FSR ID = FSR57315

A-6004-842 (REV 3)

4/6/2018 (Rev. 1)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.# W18-002-153

Collector:	Daniel Klug CHPRC 8128808	**Contact/Requester:**	Karen Waters-Husted	**Telephone No.:**	509-376-4650
SAF No.:	W18-002	**Sampling Origin:**	Hanford Site	**Purchase Order/Charge Code:**	300071
Project Title:	RCRA, February 2018	**Logbook No.:**	HNF-N-506 98/39	**Ice Chest No.:**	GWS-731
Shipped To (Lab):	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.:**	7714 8478 9558
Protocol	RCRA	**Priority:**	30 Days	**Offsite Property No.:**	N/A

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H327	N	W	FEB 14 2018	0932	1x250-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B3H327	N	W	/	/	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2 / Cool <=6C

Relinquished By:	Received By:
Daniel Klug CHPRC — D.K. — FEB 14 2018 1050 (Print First and Last Name / Signature / Date/Time)	Troy Bacon CHPRC — Troy L. Bacon — FEB 14 2018 1050 (Print First and Last Name / Signature / Date/Time)
Troy Bacon CHPRC — Troy L. Bacon — FEB 14 2018 1400 (Print First and Last Name / Signature / Date/Time)	FEDEX (Print First and Last Name / Signature / Date/Time)
FED EX (Print First and Last Name / Signature / Date/Time)	Brian Dave S — B — 2/15/18 0900 (Print First and Last Name / Signature / Date/Time)
(Print First and Last Name / Signature / Date/Time)	(Print First and Last Name / Signature / Date/Time)

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process): Jayna Awalt — Disposed By: Jayna Awalt — Date/Time:

Printed On 1/8/2018 — FSR ID - FSR55489 — A-6004-842 (REV 3)

04/06/2018 REV.1

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FedEx® Tracking

771484789558

Ship date:		Actual delivery:
Wed 2/14/2018		**Thu 2/15/2018 9:02 am**
Richland, WA US	**Delivered** *Signed for by: B.DANIELS*	EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 2/15/2018 - Thursday		
9:02 am	Delivered	EARTH CITY, MO
7:18 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:12 am	At local FedEx facility	EARTH CITY, MO
5:35 am	At destination sort facility	BERKELEY, MO
4:51 am	Departed FedEx location	MEMPHIS, TN
12:56 am	Arrived at FedEx location	MEMPHIS, TN
- 2/14/2018 - Wednesday		
4:50 pm	Left FedEx origin facility	PASCO, WA
3:17 pm	Picked up	PASCO, WA
3:00 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking Number	771484789558	**Service**	FedEx Standard Overnight
Weight	91 lbs / 41.28 kgs	**Delivered To**	Shipping/Receiving
Total pieces	1	**Total shipment weight**	91 lbs / 41.28 kgs
Terms	Recipient	**Shipper reference**	GWS-731
Packaging	Your Packaging	**Special handling section**	Deliver Weekday
Standard transit	2/15/2018 by 3:00 pm		

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Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Analyzed for but not detected.
Z	Sample was prepped or analyzed beyond the specified holding time
T	MS, MSD: Recovery exceeds upper or lower control limits.

GC/MS Semi VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
Z	Sample was prepped or analyzed beyond the specified holding time

Metals

Qualifier	Qualifier Description
B	Estimated result. Result is less than the RL, but greater than MDL
D	The reported value is from a dilution.
U	Analyzed for but not detected.
X	See case narrative notes for explanation of the 'X' flag

General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

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)

Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-002 / W18-002

TestAmerica Job ID: 160-26793-1
SDG: SL2808

Method	Method Description	Protocol	Laboratory
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SL
6010C	Metals (ICP)	SW846	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
310.1	Alkalinity	MCAWW	TAL SL
9060	Organic Carbon, Total (TOC)	SW846	TAL SL
906.0	Tritium, Total (LSC)	EPA	TAL SL

Protocol References:

EPA = US Environmental Protection Agency
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-002 / W18-002

TestAmerica Job ID: 160-26793-1
SDG: SL2808

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-26793-1	B3H344	Water	02/13/18 13:07	02/15/18 09:00
160-26793-2	B3H4P5	Water	02/14/18 11:00	02/15/18 09:00
160-26793-3	B3H4P6	Water	02/14/18 11:00	02/15/18 09:00
160-26793-4	B3H4P8	Water	02/14/18 11:00	02/15/18 09:00
160-26793-5	B3H4P7	Water	02/14/18 11:00	02/15/18 09:00
160-26793-6	B3H448	Water	02/14/18 09:25	02/15/18 09:00
160-26793-7	B3H451	Water	02/14/18 09:25	02/15/18 09:00
160-26793-8	B3H4Y8	Water	02/14/18 09:32	02/15/18 09:00
160-26793-9	B3H501	Water	02/14/18 09:32	02/15/18 09:00
160-26793-10	B3H342	Water	02/13/18 13:07	02/15/18 09:00
160-26793-11	B3H3C6	Water	02/13/18 13:07	02/15/18 09:00
160-26793-12	B3H327	Water	02/14/18 09:32	02/15/18 09:00

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

Client Sample ID: B3H4P8 — **Lab Sample ID: 160-26793-4**
Date Collected: 02/14/18 11:00 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.94	U Z	9.4	0.94	ug/L		02/28/18 11:45	03/06/18 15:19	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1-Eicosanol	*9.4*	*Z N J*	*ug/L*		*12.36*	*629-96-9*	*02/28/18 11:45*	*03/06/18 15:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*44*		*15 - 59*	*02/28/18 11:45*	*03/06/18 15:19*	*1*
2,4,6-Tribromophenol (Surr)	*79*		*37 - 120*	*02/28/18 11:45*	*03/06/18 15:19*	*1*
Nitrobenzene-d5 (Surr)	*69*		*50 - 101*	*02/28/18 11:45*	*03/06/18 15:19*	*1*
Phenol-d5 (Surr)	*27*		*10 - 50*	*02/28/18 11:45*	*03/06/18 15:19*	*1*
Terphenyl-d14 (Surr)	*85*		*21 - 97*	*02/28/18 11:45*	*03/06/18 15:19*	*1*
2-Fluorobiphenyl (Surr)	*70*		*43 - 108*	*02/28/18 11:45*	*03/06/18 15:19*	*1*

Client Sample ID: B3H4P7 — **Lab Sample ID: 160-26793-5**
Date Collected: 02/14/18 11:00 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.94	U Z	9.4	0.94	ug/L		02/28/18 11:45	03/06/18 15:46	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1-Octadecanol	*6.3*	*Z N J*	*ug/L*		*12.37*	*112-92-5*	*02/28/18 11:45*	*03/06/18 15:46*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*44*		*15 - 59*	*02/28/18 11:45*	*03/06/18 15:46*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*37 - 120*	*02/28/18 11:45*	*03/06/18 15:46*	*1*
Nitrobenzene-d5 (Surr)	*76*		*50 - 101*	*02/28/18 11:45*	*03/06/18 15:46*	*1*
Phenol-d5 (Surr)	*28*		*10 - 50*	*02/28/18 11:45*	*03/06/18 15:46*	*1*
Terphenyl-d14 (Surr)	*79*		*21 - 97*	*02/28/18 11:45*	*03/06/18 15:46*	*1*
2-Fluorobiphenyl (Surr)	*78*		*43 - 108*	*02/28/18 11:45*	*03/06/18 15:46*	*1*

Method: 6010C - Metals (ICP)

Client Sample ID: B3H342 — **Lab Sample ID: 160-26793-10**
Date Collected: 02/13/18 13:07 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**62500**		1000	300	ug/L		02/21/18 15:16	02/23/18 19:28	1
Iron	**80.8**	**B**	100	30.0	ug/L		02/21/18 15:16	02/23/18 19:28	1
Magnesium	**16800**		1000	300	ug/L		02/21/18 15:16	02/23/18 19:28	1
Potassium	**8130**		5000	1500	ug/L		02/21/18 15:16	02/23/18 19:28	1
Sodium	**47000**		1000	300	ug/L		02/21/18 15:16	02/23/18 19:28	1
Vanadium	**16.8**	**B**	50.0	4.0	ug/L		02/21/18 15:16	02/23/18 19:28	1
Boron	**43.7**	**B**	100	25.0	ug/L		02/21/18 15:16	02/23/18 19:28	1

Method: 6010C - Metals (ICP) - Dissolved

Client Sample ID: B3H3C6 — **Lab Sample ID: 160-26793-11**
Date Collected: 02/13/18 13:07 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**41.8**	**B**	100	25.0	ug/L		02/21/18 15:16	02/23/18 20:00	1

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Client Sample ID: B3H3C6 — **Lab Sample ID: 160-26793-11**
Date Collected: 02/13/18 13:07 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	61700		1000	300	ug/L		02/21/18 15:16	02/23/18 20:00	1
Iron	42.3	B	100	30.0	ug/L		02/21/18 15:16	02/23/18 20:00	1
Magnesium	16600		1000	300	ug/L		02/21/18 15:16	02/23/18 20:00	1
Potassium	8100		5000	1500	ug/L		02/21/18 15:16	02/23/18 20:00	1
Sodium	44800		1000	300	ug/L		02/21/18 15:16	02/23/18 20:00	1
Vanadium	16.8	B	50.0	4.0	ug/L		02/21/18 15:16	02/23/18 20:00	1

Method: 6020A - Metals (ICP/MS)

Client Sample ID: B3H448 — **Lab Sample ID: 160-26793-6**
Date Collected: 02/14/18 09:25 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	14.0	D	10.0	4.0	ug/L		02/21/18 15:14	03/13/18 02:10	2

Client Sample ID: B3H4Y8 — **Lab Sample ID: 160-26793-8**
Date Collected: 02/14/18 09:32 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	9.8	B D	10.0	4.0	ug/L		02/21/18 15:14	03/13/18 02:24	2

Client Sample ID: B3H342 — **Lab Sample ID: 160-26793-10**
Date Collected: 02/13/18 13:07 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	20.0	U D	50.0	20.0	ug/L		02/21/18 15:14	03/13/18 02:37	2
Antimony	2.0	U D	5.0	2.0	ug/L		02/21/18 15:14	03/13/18 02:37	2
Arsenic	6.6	B D	10.0	4.0	ug/L		02/21/18 15:14	03/13/18 02:37	2
Barium	49.7	D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 02:37	2
Beryllium	0.20	U D	0.50	0.20	ug/L		02/21/18 15:14	03/13/18 02:37	2
Cadmium	0.20	U D	0.50	0.20	ug/L		02/21/18 15:14	03/13/18 02:37	2
Chromium	19.2	D	10.0	4.0	ug/L		02/21/18 15:14	03/13/18 02:37	2
Cobalt	0.90	U D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 02:37	2
Copper	1.3	D	1.0	0.40	ug/L		02/21/18 15:14	03/13/18 02:37	2
Lead	1.0	U D	3.0	1.0	ug/L		02/21/18 15:14	03/13/18 02:37	2
Manganese	1.7	B D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 02:37	2
Molybdenum	6.6	D	5.0	2.0	ug/L		02/21/18 15:14	03/13/18 02:37	2
Nickel	6.8	D	5.0	2.0	ug/L		02/21/18 15:14	03/13/18 02:37	2
Selenium	6.4	D	5.0	2.0	ug/L		02/21/18 15:14	03/13/18 02:37	2
Silver	0.90	U D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 02:37	2
Strontium	300	D	5.0	0.50	ug/L		02/21/18 15:14	03/13/18 02:37	2
Thallium	0.90	U D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 02:37	2
Thorium	0.90	U D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 02:37	2
Tin	1.2	U D	2.0	1.2	ug/L		02/21/18 15:14	03/13/18 02:37	2
Uranium	42.0	D	1.0	0.40	ug/L		02/21/18 15:14	03/13/18 02:37	2
Zinc	7.5	U D	20.0	7.5	ug/L		02/21/18 15:14	03/13/18 02:37	2

Method: 6020A - Metals (ICP/MS) - Dissolved

Client Sample ID: B3H451 — **Lab Sample ID: 160-26793-7**
Date Collected: 02/14/18 09:25 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	**13.8**	**D**	10.0	4.0	ug/L		02/21/18 15:14	03/13/18 02:17	2

Client Sample ID: B3H501 — **Lab Sample ID: 160-26793-9**
Date Collected: 02/14/18 09:32 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	**9.8**	**B D**	10.0	4.0	ug/L		02/21/18 15:14	03/13/18 02:31	2

Client Sample ID: B3H3C6 — **Lab Sample ID: 160-26793-11**
Date Collected: 02/13/18 13:07 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	20.0	U D	50.0	20.0	ug/L		02/21/18 15:14	03/13/18 03:04	2
Antimony	2.0	U D	5.0	2.0	ug/L		02/21/18 15:14	03/13/18 03:04	2
Arsenic	**7.2**	**B D**	10.0	4.0	ug/L		02/21/18 15:14	03/13/18 03:04	2
Barium	**49.5**	**D**	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 03:04	2
Beryllium	0.20	U D	0.50	0.20	ug/L		02/21/18 15:14	03/13/18 03:04	2
Cadmium	0.20	U D	0.50	0.20	ug/L		02/21/18 15:14	03/13/18 03:04	2
Chromium	**10.7**	**D**	10.0	4.0	ug/L		02/21/18 15:14	03/13/18 03:04	2
Cobalt	0.90	U D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 03:04	2
Copper	**0.93**	**B D**	1.0	0.40	ug/L		02/21/18 15:14	03/13/18 03:04	2
Lead	1.0	U D	3.0	1.0	ug/L		02/21/18 15:14	03/13/18 03:04	2
Manganese	**1.3**	**B D**	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 03:04	2
Molybdenum	**7.1**	**D**	5.0	2.0	ug/L		02/21/18 15:14	03/13/18 03:04	2
Nickel	**3.7**	**B D**	5.0	2.0	ug/L		02/21/18 15:14	03/13/18 03:04	2
Selenium	**6.1**	**D**	5.0	2.0	ug/L		02/21/18 15:14	03/13/18 03:04	2
Silver	0.90	U D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 03:04	2
Strontium	**298**	**D**	5.0	0.50	ug/L		02/21/18 15:14	03/13/18 03:04	2
Thallium	0.90	U D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 03:04	2
Thorium	**1.3**	**B D**	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 03:04	2
Tin	1.2	U D	2.0	1.2	ug/L		02/21/18 15:14	03/13/18 03:04	2
Uranium	**38.6**	**D**	1.0	0.40	ug/L		02/21/18 15:14	03/13/18 03:04	2
Zinc	7.5	U D	20.0	7.5	ug/L		02/21/18 15:14	03/13/18 03:04	2

General Chemistry

Client Sample ID: B3H342 — **Lab Sample ID: 160-26793-10**
Date Collected: 02/13/18 13:07 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**118**		5.0	0.54	mg/L			02/23/18 08:52	1
Bicarbonate Alkalinity	**118**		5.0	0.54	mg/L			02/23/18 08:52	1
Carbonate Alkalinity	0.54	U	5.0	0.54	mg/L			02/23/18 08:52	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			02/23/18 08:52	1
Total Organic Carbon	0.50	U	1.0	0.50	mg/L			02/20/18 00:26	1

General Chemistry

Client Sample ID: B3H327 — **Lab Sample ID: 160-26793-12**
Date Collected: 02/14/18 09:32 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**120**		5.0	0.54	mg/L			02/23/18 08:52	1
Bicarbonate Alkalinity	**120**		5.0	0.54	mg/L			02/23/18 08:52	1
Carbonate Alkalinity	0.54	U	5.0	0.54	mg/L			02/23/18 08:52	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			02/23/18 08:52	1
Total Organic Carbon	0.50	U	1.0	0.50	mg/L			02/20/18 00:38	1

Method: 906.0 - Tritium, Total (LSC)

Client Sample ID: B3H344 — **Lab Sample ID: 160-26793-1**
Date Collected: 02/13/18 13:07 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	**2590**		359	425	500	338	pCi/L	02/20/18 14:06	02/22/18 00:37	1

Client Sample ID: B3H4P5 — **Lab Sample ID: 160-26793-2**
Date Collected: 02/14/18 11:00 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	**11500**		665	1210	500	331	pCi/L	02/20/18 14:06	02/22/18 12:14	1

Client Sample ID: B3H4P6 — **Lab Sample ID: 160-26793-3**
Date Collected: 02/14/18 11:00 — **Matrix: Water**
Date Received: 02/15/18 09:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	**12200**		693	1270	500	343	pCi/L	02/20/18 14:06	02/22/18 00:59	1

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

Lab Sample ID: MB 160-353487/1-A
Matrix: Water
Analysis Batch: 354113

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 353487

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.0	U	10	1.0	ug/L		02/28/18 11:45	03/06/18 14:24	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1-Docosene	*19.3*	*N J*	*ug/L*		*12.36*	*1599-67-3*	*02/28/18 11:45*	*03/06/18 14:24*	*1*
2,6,10,14,18,22-Tetracosahexaene, 2,6,10,15,19,23-hexamethyl	*11.2*	*N J*	*ug/L*		*14.17*	*111-02-4*	*02/28/18 11:45*	*03/06/18 14:24*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*48*		*15 - 59*	*02/28/18 11:45*	*03/06/18 14:24*	*1*
2,4,6-Tribromophenol (Surr)	*93*		*37 - 120*	*02/28/18 11:45*	*03/06/18 14:24*	*1*
Nitrobenzene-d5 (Surr)	*79*		*50 - 101*	*02/28/18 11:45*	*03/06/18 14:24*	*1*
Phenol-d5 (Surr)	*32*		*10 - 50*	*02/28/18 11:45*	*03/06/18 14:24*	*1*
Terphenyl-d14 (Surr)	*96*		*21 - 97*	*02/28/18 11:45*	*03/06/18 14:24*	*1*
2-Fluorobiphenyl (Surr)	*83*		*43 - 108*	*02/28/18 11:45*	*03/06/18 14:24*	*1*

Lab Sample ID: LCS 160-353487/2-A
Matrix: Water
Analysis Batch: 354113

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 353487

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	100	81.4		ug/L		81	58 - 108
Acenaphthylene	100	81.2		ug/L		81	59 - 110
Anthracene	100	83.4		ug/L		83	59 - 106
Benzo[a]anthracene	100	84.8		ug/L		85	56 - 105
Benzo[b]fluoranthene	100	98.0		ug/L		98	58 - 109
Benzo[k]fluoranthene	100	97.3		ug/L		97	54 - 109
Benzo[g,h,i]perylene	100	67.7		ug/L		68	50 - 119
Benzo[a]pyrene	100	98.4		ug/L		98	54 - 109
Bis(2-chloroethoxy)methane	100	77.6		ug/L		78	59 - 110
Bis(2-chloroethyl)ether	100	72.7		ug/L		73	58 - 109
Bis(2-ethylhexyl) phthalate	100	86.8		ug/L		87	58 - 111
4-Bromophenyl phenyl ether	100	86.3		ug/L		86	62 - 98
Butyl benzyl phthalate	100	86.2		ug/L		86	56 - 111
Carbazole	100	78.1		ug/L		78	56 - 101
4-Chloroaniline	100	77.3		ug/L		77	43 - 97
4-Chloro-3-methylphenol	100	78.0		ug/L		78	51 - 102
2-Chloronaphthalene	100	78.5		ug/L		79	58 - 109
2-Chlorophenol	100	73.8		ug/L		74	47 - 97
4-Chlorophenyl phenyl ether	100	83.6		ug/L		84	59 - 110
Chrysene	100	84.9		ug/L		85	55 - 107
Dibenz(a,h)anthracene	100	88.3		ug/L		88	52 - 118
Dibenzofuran	100	80.7		ug/L		81	57 - 106
Di-n-butyl phthalate	100	84.8		ug/L		85	60 - 105
1,2-Dichlorobenzene	100	64.2		ug/L		64	50 - 99
1,3-Dichlorobenzene	100	61.2		ug/L		61	55 - 99
1,4-Dichlorobenzene	100	62.7		ug/L		63	47 - 99
3,3'-Dichlorobenzidine	100	82.2		ug/L		82	50 - 105

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

Lab Sample ID: LCS 160-353487/2-A
Matrix: Water
Analysis Batch: 354113

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 353487

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-Dichlorophenol	100	79.9		ug/L		80	55 - 104
Diethyl phthalate	100	85.6		ug/L		86	58 - 113
2,4-Dimethylphenol	100	74.4		ug/L		74	53 - 99
Dimethyl phthalate	100	84.0		ug/L		84	60 - 114
4,6-Dinitro-2-methylphenol	100	86.5		ug/L		86	56 - 118
2,4-Dinitrophenol	100	72.9		ug/L		73	53 - 119
2,4-Dinitrotoluene	100	83.4		ug/L		83	57 - 117
2,6-Dinitrotoluene	100	83.2		ug/L		83	59 - 117
Di-n-octyl phthalate	100	91.8		ug/L		92	59 - 113
Fluoranthene	100	85.0		ug/L		85	56 - 113
Fluorene	100	82.8		ug/L		83	61 - 113
Hexachlorobenzene	100	86.7		ug/L		87	57 - 113
Hexachlorobutadiene	100	62.4		ug/L		62	52 - 102
Hexachlorocyclopentadiene	100	66.3		ug/L		66	40 - 120
Hexachloroethane	100	58.8		ug/L		59	52 - 102
Indeno[1,2,3-cd]pyrene	100	94.7		ug/L		95	49 - 120
Isophorone	100	79.1		ug/L		79	56 - 101
2-Methylnaphthalene	100	74.8		ug/L		75	54 - 101
2-Methylphenol	100	64.6		ug/L		65	40 - 96
3 & 4 Methylphenol	100	66.2		ug/L		66	40 - 87
Naphthalene	100	72.2		ug/L		72	54 - 98
2-Nitroaniline	100	80.8		ug/L		81	57 - 120
3-Nitroaniline	100	82.2		ug/L		82	47 - 113
4-Nitroaniline	100	78.5		ug/L		78	51 - 119
Nitrobenzene	100	77.2		ug/L		77	59 - 110
2-Nitrophenol	100	77.9		ug/L		78	58 - 111
4-Nitrophenol	100	35.1		ug/L		35	20 - 47
N-Nitrosodiphenylamine	100	95.7		ug/L		96	65 - 119
N-Nitrosodi-n-propylamine	100	75.7		ug/L		76	59 - 115
2,2'-oxybis[1-chloropropane]	100	78.1		ug/L		78	49 - 97
Pentachlorophenol	100	71.4		ug/L		71	49 - 115
Phenanthrene	100	84.3		ug/L		84	59 - 110
Phenol	100	31.6		ug/L		32	20 - 69
Pyrene	100	83.0		ug/L		83	55 - 105
1,2,4-Trichlorobenzene	100	68.8		ug/L		69	56 - 100
2,4,5-Trichlorophenol	100	83.3		ug/L		83	56 - 113
2,4,6-Trichlorophenol	100	83.3		ug/L		83	47 - 116

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*47*		*15 - 59*
2,4,6-Tribromophenol (Surr)	*91*		*37 - 120*
Nitrobenzene-d5 (Surr)	*78*		*50 - 101*
Phenol-d5 (Surr)	*32*		*10 - 50*
Terphenyl-d14 (Surr)	*88*		*21 - 97*
2-Fluorobiphenyl (Surr)	*83*		*43 - 108*

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

Lab Sample ID: 160-26793-5 MS **Client Sample ID: B3H4P7**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 354113 **Prep Batch: 353487**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	0.94	U Z	95.0	73.0		ug/L		77	63 - 103
Acenaphthylene	0.94	U Z	95.0	73.0		ug/L		77	64 - 105
Anthracene	0.94	U Z	95.0	77.0		ug/L		81	64 - 101
Benzo[a]anthracene	0.94	U Z	95.0	77.2		ug/L		81	55 - 116
Benzo[b]fluoranthene	0.94	U Z	95.0	90.9		ug/L		96	56 - 119
Benzo[k]fluoranthene	0.94	U Z	95.0	84.3		ug/L		89	54 - 110
Benzo[g,h,i]perylene	0.94	U Z	95.0	60.6		ug/L		64	40 - 127
Benzo[a]pyrene	0.94	U Z	95.0	87.1		ug/L		92	55 - 109
Bis(2-chloroethoxy)methane	0.94	U Z	95.0	71.1		ug/L		75	64 - 105
Bis(2-chloroethyl)ether	0.94	U Z	95.0	64.9		ug/L		68	63 - 104
Bis(2-ethylhexyl) phthalate	1.8	U Z	95.0	78.3		ug/L		82	53 - 125
4-Bromophenyl phenyl ether	0.94	U Z	95.0	78.9		ug/L		83	64 - 108
Butyl benzyl phthalate	0.94	U Z	95.0	79.0		ug/L		83	56 - 128
Carbazole	0.94	U Z	95.0	73.6		ug/L		78	62 - 106
4-Chloroaniline	1.9	U Z	95.0	72.2		ug/L		76	48 - 92
4-Chloro-3-methylphenol	0.94	U Z	95.0	71.9		ug/L		76	51 - 105
2-Chloronaphthalene	0.94	U Z	95.0	70.7		ug/L		74	63 - 104
2-Chlorophenol	0.94	U Z	95.0	64.1		ug/L		68	52 - 92
4-Chlorophenyl phenyl ether	0.94	U Z	95.0	76.7		ug/L		81	64 - 105
Chrysene	0.94	U Z	95.0	76.2		ug/L		80	56 - 115
Dibenz(a,h)anthracene	0.94	U Z	95.0	78.9		ug/L		83	44 - 128
Dibenzofuran	0.94	U Z	95.0	73.3		ug/L		77	62 - 101
Di-n-butyl phthalate	0.94	U Z	95.0	77.9		ug/L		82	62 - 109
1,2-Dichlorobenzene	0.94	U Z T	95.0	50.3	T	ug/L		53	62 - 97
1,3-Dichlorobenzene	0.94	U Z T	95.0	45.4	T	ug/L		48	60 - 94
1,4-Dichlorobenzene	0.94	U Z T	95.0	48.0	T	ug/L		51	60 - 94
3,3'-Dichlorobenzidine	1.2	U Z	95.0	75.7		ug/L		80	43 - 117
2,4-Dichlorophenol	0.94	U Z	95.0	72.3		ug/L		76	60 - 99
Diethyl phthalate	0.94	U Z	95.0	79.7		ug/L		84	63 - 108
2,4-Dimethylphenol	0.94	U Z	95.0	69.1		ug/L		73	54 - 97
Dimethyl phthalate	0.94	U Z	95.0	79.2		ug/L		83	65 - 109
4,6-Dinitro-2-methylphenol	1.2	U Z	95.0	81.8		ug/L		86	61 - 113
2,4-Dinitrophenol	1.9	U Z	95.0	68.2		ug/L		72	20 - 131
2,4-Dinitrotoluene	0.94	U Z	95.0	77.3		ug/L		81	62 - 112
2,6-Dinitrotoluene	2.0	U Z	95.0	77.3		ug/L		81	64 - 112
Di-n-octyl phthalate	0.94	U Z	95.0	82.0		ug/L		86	54 - 128
Fluoranthene	0.94	U Z	95.0	77.6		ug/L		82	61 - 108
Fluorene	0.94	U Z	95.0	75.4		ug/L		79	66 - 108
Hexachlorobenzene	0.94	U Z	95.0	81.0		ug/L		85	62 - 108
Hexachlorobutadiene	0.94	U Z T	95.0	52.6	T	ug/L		55	57 - 97
Hexachlorocyclopentadiene	0.94	U Z	95.0	60.1		ug/L		63	16 - 115
Hexachloroethane	0.94	U Z T	95.0	40.1	T	ug/L		42	57 - 97
Indeno[1,2,3-cd]pyrene	0.94	U Z	95.0	83.8		ug/L		88	42 - 131
Isophorone	0.94	U Z	95.0	73.5		ug/L		77	48 - 106
2-Methylnaphthalene	0.94	U Z	95.0	67.2		ug/L		71	64 - 99
2-Methylphenol	0.94	U Z	95.0	56.0		ug/L		59	39 - 83
3 & 4 Methylphenol	1.9	U Z	95.0	56.8		ug/L		60	39 - 82
Naphthalene	0.94	U Z	95.0	64.6		ug/L		68	63 - 98

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

Lab Sample ID: 160-26793-5 MS — **Client Sample ID: B3H4P7**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354113 — **Prep Batch: 353487**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Nitroaniline	1.0	U Z	95.0	75.5		ug/L		79	62 - 115
3-Nitroaniline	0.94	U Z	95.0	76.5		ug/L		81	52 - 108
4-Nitroaniline	0.94	U Z	95.0	74.5		ug/L		78	56 - 114
Nitrobenzene	0.94	U Z	95.0	69.8		ug/L		74	64 - 105
2-Nitrophenol	1.4	U Z	95.0	70.6		ug/L		74	64 - 106
4-Nitrophenol	1.9	U Z	95.0	32.2		ug/L		34	15 - 42
N-Nitrosodiphenylamine	0.94	U Z	95.0	89.8		ug/L		95	70 - 119
N-Nitrosodi-n-propylamine	1.4	U Z	95.0	68.1		ug/L		72	64 - 110
2,2'-oxybis[1-chloropropane]	0.94	U Z	95.0	69.5		ug/L		73	54 - 102
Pentachlorophenol	1.2	U Z	95.0	65.2		ug/L		69	54 - 110
Phenanthrene	0.94	U Z	95.0	77.3		ug/L		81	64 - 105
Phenol	1.9	U Z	95.0	25.8		ug/L		27	15 - 70
Pyrene	0.94	U Z	95.0	76.0		ug/L		80	57 - 118
1,2,4-Trichlorobenzene	0.94	U Z T	95.0	60.2		ug/L		63	61 - 95
2,4,5-Trichlorophenol	0.94	U Z	95.0	76.8		ug/L		81	61 - 108
2,4,6-Trichlorophenol	0.94	U Z	95.0	77.4		ug/L		81	61 - 108

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*44*		*15 - 59*
2,4,6-Tribromophenol (Surr)	*91*		*37 - 120*
Nitrobenzene-d5 (Surr)	*78*		*50 - 101*
Phenol-d5 (Surr)	*29*		*10 - 50*
Terphenyl-d14 (Surr)	*84*		*21 - 97*
2-Fluorobiphenyl (Surr)	*82*		*43 - 108*

Lab Sample ID: 160-26793-5 MSD — **Client Sample ID: B3H4P7**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354113 — **Prep Batch: 353487**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	0.94	U Z	94.3	70.7		ug/L		75	63 - 103	3	20
Acenaphthylene	0.94	U Z	94.3	70.5		ug/L		75	64 - 105	3	20
Anthracene	0.94	U Z	94.3	73.7		ug/L		78	64 - 101	5	20
Benzo[a]anthracene	0.94	U Z	94.3	74.2		ug/L		79	55 - 116	4	20
Benzo[b]fluoranthene	0.94	U Z	94.3	84.4		ug/L		89	56 - 119	7	20
Benzo[k]fluoranthene	0.94	U Z	94.3	84.1		ug/L		89	54 - 110	0	20
Benzo[g,h,i]perylene	0.94	U Z	94.3	58.1		ug/L		62	40 - 127	4	20
Benzo[a]pyrene	0.94	U Z	94.3	84.3		ug/L		89	55 - 109	3	20
Bis(2-chloroethoxy)methane	0.94	U Z	94.3	67.8		ug/L		72	64 - 105	5	20
Bis(2-chloroethyl)ether	0.94	U Z	94.3	60.4		ug/L		64	63 - 104	7	20
Bis(2-ethylhexyl) phthalate	1.8	U Z	94.3	76.0		ug/L		81	53 - 125	3	20
4-Bromophenyl phenyl ether	0.94	U Z	94.3	75.7		ug/L		80	64 - 108	4	20
Butyl benzyl phthalate	0.94	U Z	94.3	76.8		ug/L		81	56 - 128	3	20
Carbazole	0.94	U Z	94.3	70.0		ug/L		74	62 - 106	5	20
4-Chloroaniline	1.9	U Z	94.3	67.2		ug/L		71	48 - 92	7	20
4-Chloro-3-methylphenol	0.94	U Z	94.3	68.8		ug/L		73	51 - 105	4	20
2-Chloronaphthalene	0.94	U Z	94.3	68.0		ug/L		72	63 - 104	4	20
2-Chlorophenol	0.94	U Z	94.3	58.3		ug/L		62	52 - 92	9	20

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

Lab Sample ID: 160-26793-5 MSD | **Client Sample ID: B3H4P7**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 354113 | **Prep Batch: 353487**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Chlorophenyl phenyl ether	0.94	U Z	94.3	73.0		ug/L		77	64 - 105	5	20
Chrysene	0.94	U Z	94.3	74.1		ug/L		79	56 - 115	3	20
Dibenz(a,h)anthracene	0.94	U Z	94.3	74.1		ug/L		79	44 - 128	6	20
Dibenzofuran	0.94	U Z	94.3	70.2		ug/L		74	62 - 101	4	20
Di-n-butyl phthalate	0.94	U Z	94.3	74.4		ug/L		79	62 - 109	5	20
1,2-Dichlorobenzene	0.94	U Z T	94.3	43.5	T	ug/L		46	62 - 97	15	20
1,3-Dichlorobenzene	0.94	U Z T	94.3	38.7	T	ug/L		41	60 - 94	16	20
1,4-Dichlorobenzene	0.94	U Z T	94.3	40.4	T	ug/L		43	60 - 94	17	20
3,3'-Dichlorobenzidine	1.2	U Z	94.3	73.2		ug/L		78	43 - 117	3	20
2,4-Dichlorophenol	0.94	U Z	94.3	68.0		ug/L		72	60 - 99	6	20
Diethyl phthalate	0.94	U Z	94.3	75.9		ug/L		80	63 - 108	5	20
2,4-Dimethylphenol	0.94	U Z	94.3	64.8		ug/L		69	54 - 97	6	20
Dimethyl phthalate	0.94	U Z	94.3	74.5		ug/L		79	65 - 109	6	20
4,6-Dinitro-2-methylphenol	1.2	U Z	94.3	77.7		ug/L		82	61 - 113	5	20
2,4-Dinitrophenol	1.9	U Z	94.3	64.1		ug/L		68	20 - 131	6	20
2,4-Dinitrotoluene	0.94	U Z	94.3	73.4		ug/L		78	62 - 112	5	20
2,6-Dinitrotoluene	2.0	U Z	94.3	74.7		ug/L		79	64 - 112	3	20
Di-n-octyl phthalate	0.94	U Z	94.3	79.7		ug/L		85	54 - 128	3	20
Fluoranthene	0.94	U Z	94.3	74.2		ug/L		79	61 - 108	4	20
Fluorene	0.94	U Z	94.3	72.4		ug/L		77	66 - 108	4	20
Hexachlorobenzene	0.94	U Z	94.3	75.9		ug/L		80	62 - 108	7	20
Hexachlorobutadiene	0.94	U Z T	94.3	48.8	T	ug/L		52	57 - 97	8	20
Hexachlorocyclopentadiene	0.94	U Z	94.3	57.3		ug/L		61	16 - 115	5	20
Hexachloroethane	0.94	U Z T	94.3	35.2	T	ug/L		37	57 - 97	13	20
Indeno[1,2,3-cd]pyrene	0.94	U Z	94.3	78.8		ug/L		84	42 - 131	6	20
Isophorone	0.94	U Z	94.3	70.1		ug/L		74	48 - 106	5	20
2-Methylnaphthalene	0.94	U Z	94.3	63.8		ug/L		68	64 - 99	5	20
2-Methylphenol	0.94	U Z	94.3	52.7		ug/L		56	39 - 83	6	20
3 & 4 Methylphenol	1.9	U Z	94.3	54.5		ug/L		58	39 - 82	4	20
Naphthalene	0.94	U Z	94.3	59.9		ug/L		64	63 - 98	8	20
2-Nitroaniline	1.0	U Z	94.3	73.6		ug/L		78	62 - 115	3	20
3-Nitroaniline	0.94	U Z	94.3	72.4		ug/L		77	52 - 108	6	20
4-Nitroaniline	0.94	U Z	94.3	70.0		ug/L		74	56 - 114	6	20
Nitrobenzene	0.94	U Z	94.3	65.7		ug/L		70	64 - 105	6	20
2-Nitrophenol	1.4	U Z	94.3	66.2		ug/L		70	64 - 106	6	20
4-Nitrophenol	1.9	U Z	94.3	30.8		ug/L		33	15 - 42	4	20
N-Nitrosodiphenylamine	0.94	U Z	94.3	85.6		ug/L		91	70 - 119	5	20
N-Nitrosodi-n-propylamine	1.4	U Z	94.3	65.7		ug/L		70	64 - 110	4	20
2,2'-oxybis[1-chloropropane]	0.94	U Z	94.3	65.4		ug/L		69	54 - 102	6	20
Pentachlorophenol	1.2	U Z	94.3	62.2		ug/L		66	54 - 110	5	20
Phenanthrene	0.94	U Z	94.3	73.9		ug/L		78	64 - 105	5	20
Phenol	1.9	U Z	94.3	24.7		ug/L		26	15 - 70	5	20
Pyrene	0.94	U Z	94.3	73.3		ug/L		78	57 - 118	4	20
1,2,4-Trichlorobenzene	0.94	U Z T	94.3	55.5	T	ug/L		59	61 - 95	8	20
2,4,5-Trichlorophenol	0.94	U Z	94.3	73.2		ug/L		78	61 - 108	5	20
2,4,6-Trichlorophenol	0.94	U Z	94.3	72.1		ug/L		77	61 - 108	7	20

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

Lab Sample ID: 160-26793-5 MSD — **Client Sample ID: B3H4P7**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354113 — **Prep Batch: 353487**

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2-Fluorophenol (Surr)	38		15 - 59
2,4,6-Tribromophenol (Surr)	83		37 - 120
Nitrobenzene-d5 (Surr)	72		50 - 101
Phenol-d5 (Surr)	26		10 - 50
Terphenyl-d14 (Surr)	78		21 - 97
2-Fluorobiphenyl (Surr)	78		43 - 108

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-352347/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352776 — **Prep Batch: 352347**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	300	U	1000	300	ug/L		02/21/18 15:16	02/23/18 19:20	1
Iron	30.0	U	100	30.0	ug/L		02/21/18 15:16	02/23/18 19:20	1
Magnesium	300	U	1000	300	ug/L		02/21/18 15:16	02/23/18 19:20	1
Potassium	1500	U	5000	1500	ug/L		02/21/18 15:16	02/23/18 19:20	1
Sodium	300	U	1000	300	ug/L		02/21/18 15:16	02/23/18 19:20	1
Boron	25.0	U	100	25.0	ug/L		02/21/18 15:16	02/23/18 19:20	1
Vanadium	4.0	U	50.0	4.0	ug/L		02/21/18 15:16	02/23/18 19:20	1

Lab Sample ID: LCS 160-352347/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352776 — **Prep Batch: 352347**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	10000	10700		ug/L		107	80 - 120
Iron	10000	9945		ug/L		99	80 - 120
Magnesium	10000	9726		ug/L		97	80 - 120
Potassium	10000	9852		ug/L		99	80 - 120
Sodium	10000	9701		ug/L		97	80 - 120
Boron	200	192.1		ug/L		96	80 - 120
Vanadium	1000	924.3		ug/L		92	80 - 120

Lab Sample ID: 160-26793-10 MS — **Client Sample ID: B3H342**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352776 — **Prep Batch: 352347**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	62500		10000	73050	X	ug/L		105	75 - 125
Iron	80.8	B	10000	10000		ug/L		99	75 - 125
Magnesium	16800		10000	26590		ug/L		98	75 - 125
Potassium	8130		10000	18010		ug/L		99	75 - 125
Sodium	47000		10000	56880	X	ug/L		99	75 - 125
Boron	43.7	B	200	239.2		ug/L		98	75 - 125
Vanadium	16.8	B	1000	949.8		ug/L		93	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 160-26793-10 MSD — **Client Sample ID: B3H342**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352776 — **Prep Batch: 352347**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	62500		10000	73720	X	ug/L		112	75 - 125	1	20
Iron	80.8	B	10000	10110		ug/L		100	75 - 125	1	20
Magnesium	16800		10000	26880		ug/L		100	75 - 125	1	20
Potassium	8130		10000	18150		ug/L		100	75 - 125	1	20
Sodium	47000		10000	57200	X	ug/L		102	75 - 125	1	20
Boron	43.7	B	200	241.7		ug/L		99	75 - 125	1	20
Vanadium	16.8	B	1000	956.0		ug/L		94	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-352346/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355131 — **Prep Batch: 352346**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	20.0	U D	50.0	20.0	ug/L		02/21/18 15:14	03/13/18 01:37	2
Antimony	2.0	U D	5.0	2.0	ug/L		02/21/18 15:14	03/13/18 01:37	2
Arsenic	4.0	U D	10.0	4.0	ug/L		02/21/18 15:14	03/13/18 01:37	2
Barium	0.90	U D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 01:37	2
Beryllium	0.20	U D	0.50	0.20	ug/L		02/21/18 15:14	03/13/18 01:37	2
Cadmium	0.20	U D	0.50	0.20	ug/L		02/21/18 15:14	03/13/18 01:37	2
Chromium	4.0	U D	10.0	4.0	ug/L		02/21/18 15:14	03/13/18 01:37	2
Cobalt	0.90	U D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 01:37	2
Copper	0.40	U D	1.0	0.40	ug/L		02/21/18 15:14	03/13/18 01:37	2
Lead	1.0	U D	3.0	1.0	ug/L		02/21/18 15:14	03/13/18 01:37	2
Manganese	0.90	U D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 01:37	2
Molybdenum	2.0	U D	5.0	2.0	ug/L		02/21/18 15:14	03/13/18 01:37	2
Nickel	2.0	U D	5.0	2.0	ug/L		02/21/18 15:14	03/13/18 01:37	2
Selenium	2.0	U D	5.0	2.0	ug/L		02/21/18 15:14	03/13/18 01:37	2
Silver	0.90	U D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 01:37	2
Strontium	0.50	U D	5.0	0.50	ug/L		02/21/18 15:14	03/13/18 01:37	2
Thallium	0.90	U D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 01:37	2
Thorium	0.90	U D	2.0	0.90	ug/L		02/21/18 15:14	03/13/18 01:37	2
Tin	1.2	U D	2.0	1.2	ug/L		02/21/18 15:14	03/13/18 01:37	2
Uranium	0.40	U D	1.0	0.40	ug/L		02/21/18 15:14	03/13/18 01:37	2
Zinc	7.5	U D	20.0	7.5	ug/L		02/21/18 15:14	03/13/18 01:37	2

Lab Sample ID: LCS 160-352346/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355131 — **Prep Batch: 352346**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10000	9818	D	ug/L		98	80 - 120
Antimony	500	482.6	D	ug/L		97	80 - 120
Arsenic	1000	955.7	D	ug/L		96	80 - 120
Barium	1000	1038	D	ug/L		104	80 - 120
Beryllium	100	98.18	D	ug/L		98	80 - 120
Cadmium	1000	1011	D	ug/L		101	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 160-352346/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355131 — **Prep Batch: 352346**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	1000	1048	D	ug/L		105	80 - 120
Cobalt	1000	1026	D	ug/L		103	80 - 120
Copper	1000	1080	D	ug/L		108	80 - 120
Lead	1000	997.8	D	ug/L		100	80 - 120
Manganese	1000	1090	D	ug/L		109	80 - 120
Molybdenum	500	528.8	D	ug/L		106	80 - 120
Nickel	1000	1031	D	ug/L		103	80 - 120
Selenium	500	459.5	D	ug/L		92	80 - 120
Silver	200	212.2	D	ug/L		106	80 - 120
Strontium	1000	984.0	D	ug/L		98	80 - 120
Thallium	200	203.0	D	ug/L		101	80 - 120
Thorium	1000	1023	D	ug/L		102	80 - 120
Tin	1000	1010	D	ug/L		101	80 - 120
Uranium	1000	1025	D	ug/L		103	80 - 120
Zinc	1000	954.5	D	ug/L		95	80 - 120

Lab Sample ID: 160-26793-10 MS — **Client Sample ID: B3H342**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355131 — **Prep Batch: 352346**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	20.0	U D	10000	9824	D	ug/L		98	75 - 125
Antimony	2.0	U D	500	497.8	D	ug/L		100	75 - 125
Arsenic	6.6	B D	1000	996.2	D	ug/L		99	75 - 125
Barium	49.7	D	1000	1094	D	ug/L		104	75 - 125
Beryllium	0.20	U D	100	98.78	D	ug/L		99	75 - 125
Cadmium	0.20	U D	1000	1024	D	ug/L		102	75 - 125
Chromium	19.2	D	1000	1052	D	ug/L		103	75 - 125
Cobalt	0.90	U D	1000	1019	D	ug/L		102	75 - 125
Copper	1.3	D	1000	1070	D	ug/L		107	75 - 125
Lead	1.0	U D	1000	993.5	D	ug/L		99	75 - 125
Manganese	1.7	B D	1000	1091	D	ug/L		109	75 - 125
Molybdenum	6.6	D	500	537.3	D	ug/L		106	75 - 125
Nickel	6.8	D	1000	1021	D	ug/L		101	75 - 125
Selenium	6.4	D	500	483.6	D	ug/L		95	75 - 125
Silver	0.90	U D	200	209.6	D	ug/L		105	75 - 125
Strontium	300	D	1000	1289	D	ug/L		99	75 - 125
Thallium	0.90	U D	200	202.4	D	ug/L		101	75 - 125
Thorium	0.90	U D	1000	1034	D	ug/L		103	75 - 125
Tin	1.2	U D	1000	1018	D	ug/L		102	75 - 125
Uranium	42.0	D	1000	1076	D	ug/L		103	75 - 125
Zinc	7.5	U D	1000	969.3	D	ug/L		97	75 - 125

Lab Sample ID: 160-26793-10 MSD — **Client Sample ID: B3H342**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355131 — **Prep Batch: 352346**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	20.0	U D	10000	9569	D	ug/L		96	75 - 125	3	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 160-26793-10 MSD — **Client Sample ID: B3H342**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355131 — **Prep Batch: 352346**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	2.0	U D	500	490.9	D	ug/L		98	75 - 125	1	20
Arsenic	6.6	B D	1000	992.3	D	ug/L		99	75 - 125	0	20
Barium	49.7	D	1000	1091	D	ug/L		104	75 - 125	0	20
Beryllium	0.20	U D	100	97.76	D	ug/L		98	75 - 125	1	20
Cadmium	0.20	U D	1000	1012	D	ug/L		101	75 - 125	1	20
Chromium	19.2	D	1000	1033	D	ug/L		101	75 - 125	2	20
Cobalt	0.90	U D	1000	1000	D	ug/L		100	75 - 125	2	20
Copper	1.3	D	1000	1051	D	ug/L		105	75 - 125	2	20
Lead	1.0	U D	1000	970.5	D	ug/L		97	75 - 125	2	20
Manganese	1.7	B D	1000	1069	D	ug/L		107	75 - 125	2	20
Molybdenum	6.6	D	500	534.6	D	ug/L		106	75 - 125	1	20
Nickel	6.8	D	1000	995.9	D	ug/L		99	75 - 125	3	20
Selenium	6.4	D	500	480.0	D	ug/L		95	75 - 125	1	20
Silver	0.90	U D	200	206.2	D	ug/L		103	75 - 125	2	20
Strontium	300	D	1000	1277	D	ug/L		98	75 - 125	1	20
Thallium	0.90	U D	200	197.4	D	ug/L		99	75 - 125	3	20
Thorium	0.90	U D	1000	1012	D	ug/L		101	75 - 125	2	20
Tin	1.2	U D	1000	1004	D	ug/L		100	75 - 125	1	20
Uranium	42.0	D	1000	1062	D	ug/L		102	75 - 125	1	20
Zinc	7.5	U D	1000	959.4	D	ug/L		96	75 - 125	1	20

Method: 310.1 - Alkalinity

Lab Sample ID: MB 160-352645/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352645

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	0.54	U	5.0	0.54	mg/L			02/23/18 08:52	1
Bicarbonate Alkalinity	0.54	U	5.0	0.54	mg/L			02/23/18 08:52	1
Carbonate Alkalinity	0.54	U	5.0	0.54	mg/L			02/23/18 08:52	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			02/23/18 08:52	1

Lab Sample ID: HLCS 160-352645/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352645

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	400	386.0		mg/L		96	90 - 110
Bicarbonate Alkalinity	400	386.0		mg/L		96	90 - 110

Lab Sample ID: LCS 160-352645/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352645

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	194.0		mg/L		97	90 - 110
Bicarbonate Alkalinity	200	194.0		mg/L		97	90 - 110

Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: 160-26773-A-7 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352645

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	107		100	206.0		mg/L		99	80 - 120
Bicarbonate Alkalinity	107		100	206.0		mg/L		99	80 - 120

Lab Sample ID: 160-26773-A-7 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352645

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	107		108.0		mg/L		0.9	20
Bicarbonate Alkalinity	107		108.0		mg/L		0.9	20
Carbonate Alkalinity	0.54	U	0.54	U	mg/L		NC	20
Hydroxide Alkalinity	0.54	U	0.54	U	mg/L		NC	20

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 160-352159/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352159

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.50	U	1.0	0.50	mg/L			02/19/18 18:52	1

Lab Sample ID: LCS 160-352159/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352159

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	10.08		mg/L		101	90 - 110

Lab Sample ID: 160-26796-C-2 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352159

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	1.9		5.00	6.40		mg/L		91	76 - 120

Lab Sample ID: 160-26796-C-2 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352159

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	1.9		1.75		mg/L		7	20

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-352156/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352663 — **Prep Batch: 352156**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-107	U	171	171	500	325	pCi/L	02/20/18 14:06	02/22/18 11:06	1

Lab Sample ID: LCS 160-352156/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352497 — **Prep Batch: 352156**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Tritium			2780	2901		454	500	340	pCi/L	104	80 - 120		

Lab Sample ID: 160-26764-A-8-C MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352663 — **Prep Batch: 352156**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Tritium	-62	U	2780	2698		434	500	336	pCi/L	97	75 - 125		

Lab Sample ID: 160-26764-A-7-C DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352497 — **Prep Batch: 352156**

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RPD	RPD Limit
Tritium	8920	B		9234		1010	500	339	pCi/L			3	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-002 / W18-002

TestAmerica Job ID: 160-26793-1
SDG: SL2808

GC/MS Semi VOA

Prep Batch: 353487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-26793-4	B3H4P8	Total/NA	Water	3510C	
160-26793-5	B3H4P7	Total/NA	Water	3510C	
MB 160-353487/1-A	Method Blank	Total/NA	Water	3510C	
LCS 160-353487/2-A	Lab Control Sample	Total/NA	Water	3510C	
160-26793-5 MS	B3H4P7	Total/NA	Water	3510C	
160-26793-5 MSD	B3H4P7	Total/NA	Water	3510C	

Analysis Batch: 354113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-26793-4	B3H4P8	Total/NA	Water	8270D	353487
160-26793-5	B3H4P7	Total/NA	Water	8270D	353487
MB 160-353487/1-A	Method Blank	Total/NA	Water	8270D	353487
LCS 160-353487/2-A	Lab Control Sample	Total/NA	Water	8270D	353487
160-26793-5 MS	B3H4P7	Total/NA	Water	8270D	353487
160-26793-5 MSD	B3H4P7	Total/NA	Water	8270D	353487

Metals

Prep Batch: 352346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-26793-6	B3H448	Total/NA	Water	3010A	
160-26793-7	B3H451	Dissolved	Water	3010A	
160-26793-8	B3H4Y8	Total/NA	Water	3010A	
160-26793-9	B3H501	Dissolved	Water	3010A	
160-26793-10	B3H342	Total/NA	Water	3010A	
160-26793-11	B3H3C6	Dissolved	Water	3010A	
MB 160-352346/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-352346/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-26793-10 MS	B3H342	Total/NA	Water	3010A	
160-26793-10 MSD	B3H342	Total/NA	Water	3010A	

Prep Batch: 352347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-26793-10	B3H342	Total/NA	Water	3010A	
160-26793-11	B3H3C6	Dissolved	Water	3010A	
MB 160-352347/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-352347/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-26793-10 MS	B3H342	Total/NA	Water	3010A	
160-26793-10 MSD	B3H342	Total/NA	Water	3010A	

Analysis Batch: 352776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-26793-10	B3H342	Total/NA	Water	6010C	352347
160-26793-11	B3H3C6	Dissolved	Water	6010C	352347
MB 160-352347/1-A	Method Blank	Total/NA	Water	6010C	352347
LCS 160-352347/2-A	Lab Control Sample	Total/NA	Water	6010C	352347
160-26793-10 MS	B3H342	Total/NA	Water	6010C	352347
160-26793-10 MSD	B3H342	Total/NA	Water	6010C	352347

Metals (Continued)

Analysis Batch: 355131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-26793-6	B3H448	Total/NA	Water	6020A	352346
160-26793-7	B3H451	Dissolved	Water	6020A	352346
160-26793-8	B3H4Y8	Total/NA	Water	6020A	352346
160-26793-9	B3H501	Dissolved	Water	6020A	352346
160-26793-10	B3H342	Total/NA	Water	6020A	352346
160-26793-11	B3H3C6	Dissolved	Water	6020A	352346
MB 160-352346/1-A	Method Blank	Total/NA	Water	6020A	352346
LCS 160-352346/2-A	Lab Control Sample	Total/NA	Water	6020A	352346
160-26793-10 MS	B3H342	Total/NA	Water	6020A	352346
160-26793-10 MSD	B3H342	Total/NA	Water	6020A	352346

General Chemistry

Analysis Batch: 352159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-26793-10	B3H342	Total/NA	Water	9060	
160-26793-12	B3H327	Total/NA	Water	9060	
MB 160-352159/5	Method Blank	Total/NA	Water	9060	
LCS 160-352159/6	Lab Control Sample	Total/NA	Water	9060	
160-26796-C-2 MS	Matrix Spike	Total/NA	Water	9060	
160-26796-C-2 DU	Duplicate	Total/NA	Water	9060	

Analysis Batch: 352645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-26793-10	B3H342	Total/NA	Water	310.1	
160-26793-12	B3H327	Total/NA	Water	310.1	
MB 160-352645/1	Method Blank	Total/NA	Water	310.1	
HLCS 160-352645/3	Lab Control Sample	Total/NA	Water	310.1	
LCS 160-352645/2	Lab Control Sample	Total/NA	Water	310.1	
160-26773-A-7 MS	Matrix Spike	Total/NA	Water	310.1	
160-26773-A-7 DU	Duplicate	Total/NA	Water	310.1	

Rad

Prep Batch: 352156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-26793-1	B3H344	Total/NA	Water	LSC_Dist_Susp	
160-26793-2	B3H4P5	Total/NA	Water	LSC_Dist_Susp	
160-26793-3	B3H4P6	Total/NA	Water	LSC_Dist_Susp	
MB 160-352156/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-352156/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
160-26764-A-8-C MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
160-26764-A-7-C DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Surrogate Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-002 / W18-002

TestAmerica Job ID: 160-26793-1
SDG: SL2808

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		2FP	TBP	NBZ	PHL	TPHL	FBP
Lab Sample ID	Client Sample ID	(15-59)	(37-120)	(50-101)	(10-50)	(21-97)	(43-108)
160-26793-4	B3H4P8	44	79	69	27	85	70
160-26793-5	B3H4P7	44	85	76	28	79	78
160-26793-5 MS	B3H4P7	44	91	78	29	84	82
160-26793-5 MSD	B3H4P7	38	83	72	26	78	78
LCS 160-353487/2-A	Lab Control Sample	47	91	78	32	88	83
MB 160-353487/1-A	Method Blank	48	93	79	32	96	83

Surrogate Legend

2FP = 2-Fluorophenol (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)
FBP = 2-Fluorobiphenyl (Surr)