

SOUTHWEST RESEARCH INSTITUTE®

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CHEMISTRY AND CHEMICAL ENGINEERING DIVISION
DEPARTMENT OF ANALYTICAL AND ENVIRONMENTAL CHEMISTRY

March 23, 2018

CH2M Hill Plateau Remediation Company
2420 Stevens Center Place
Mail Stop H8-41
Richland, WA 99352

Attn: Ms. Karen Waters-Husted

Subject:	SAF No:	CHRPC, X18-019
	SDG Number:	628098
	SwRI Project Number:	20859.01.00X
	SwRI Task Order Number:	180222-3, 180223-4, 180302-5
	SwRI Sample Receipt Number:	61231, 61243, 61268
	Samples Received	02.22.18, 02.23.18, 03.02.18
	Fraction:	Various Radchem Analyses

Dear Ms. Waters-Husted:

Please find the enclosed results for the nine (9) overall water samples received on the above referenced date. If you should have any questions, please do not hesitate to call me at (210) 522-3242, or at radonna.spies@swri.org.

Sincerely,

Radonna Spies
Principal Scientist

APPROVED:

Michael J. Dammann
Director

RPS: aa
Encl



Benefiting government, industry and the public through innovative science and technology

SOUTHWEST RESEARCH INSTITUTE
CLIENT: CH2M Hill Plateau Remediation
Company
TASK ORDER(s): 180222-3, 180222-3,
180302-5
SRR: 61231, 61243, 61268
SDG: 628098
VTSR: 02.22.18, 02.23.18, 03.02.18
PROJECT#: 20859.01.00X

NARRATIVE

CLIENT: CH2M Hill Plateau Remediation Company

SDG: 628098

SwRI Project Number: 20859.01.00X

SwRI Sample Receipt Number: 61231, 61243, 61268

Page#: 1

SwRI CASE NARRATIVE

1. Nine (9) samples were received for Various Radchem Analyses:

SwRI ID	Customer ID	Matrix
628098	B3D9K2	Water
628099	B3D9K3	Water
628196	B3H1M2	Water
628197	B3H1M3	Water
628198	B3H1M4	Water
628199	B3H1M5	Water
628200	B3H1M6	Water
628201	B3H1M7	Water
628368	B3FXM2	Water

Client: CH2M Hill Plateau Remediation

SDG: 628098

SwRI Project Number: 20859.01.00X

SwRI Task Order Number: 180222-3, 180223-4, 180302-5

RADIOLOGICAL ANALYSIS

The sample SDG 628098 consisted of water samples received for radiological analysis. The water samples for radiological analysis were reported on an "as received" basis. The recommended sample holding time of six months was met.

The samples were analyzed for the following:

Matrix	Analysis	Method
Water	Gross Alpha / Beta	Gas Proportional Counting
Water	³ H (Tritium)	Liquid Scintillation Spectroscopy
Water	¹²⁹ Iodine	Liquid Scintillation Spectroscopy

A coverage factor of $k=2$ was applied to the TPU of all analytes. TPU was calculated using 1 sigma error.

The duplicate error ratios are calculated using 1 sigma TPU with a coverage factor of $k=1$.

The reported MDAs are sample-specific.

Gross Alpha and Gross Beta Preparation

A 200mL aliquot of each sample was digested in 250ml glass beakers with nitric acid for gross alpha and gross beta analysis. The samples were taken to dryness, nitrated, and transferred with 10ml of 2M nitric acid. A preparation blank, laboratory control sample, and a duplicate were analyzed with the batch.

Total Radioactive Iodine Preparation

The initial preparation was contaminated. A re-preparation was performed and is discussed in this section. A 1000ml aliquot of each sample and a duplicate of one sample were used for total radioactive iodine. The samples were initially precipitated with silver nitrate, cleaned, and then precipitated as palladium iodide. A preparation blank, laboratory control sample, and a duplicate were precipitated with the samples. Carriers and spikes were added prior to the precipitation of the samples.

Gas Flow Proportional Counting

Daily instrument checks were within control limits and the weekly four hour background was within date and control limits.

Client: CH2M Hill Plateau Remediation

SDG: 628098

SwRI Project Number: 20859.01.00X

SwRI Task Order Number: 180222-3, 180223-4, 180302-5

Gross Alpha and Gross Beta

The samples were digested using nitric acid and the digestate brought to a final volume of 10ml with 2M nitric acid. An aliquot of each digestate was placed in weighed stainless steel planchets. The planchets were dried, allowed to cool, and a final weight was recorded before analysis on a Gas Proportional Counter (GPC) for gross beta. The planchets were then torched, allowed to cool, and a final weight was recorded before analysis on a Gas Proportional Counter (GPC) for gross alpha. The samples were counted in the GPC for 60 minutes for the Gross Alpha/Beta analysis. GPC results were corrected to pCi using existing efficiency.

The gross beta results were erroneously negative due to an alpha emitter in the samples with a low alpha to beta crosstalk. An alpha to beta crosstalk using ^{239}Pu was used to determine the beta activity in the samples. The beta results using the ^{239}Pu alpha to beta crosstalk are discussed in this section. The preparation blank result was less than the MDA and the RL for gross beta. The preparation blank result for gross alpha was greater than the MDA but was less than the RL. All of the samples had activities greater than five times the activity of the preparation blank. The results for the laboratory control samples for both gross alpha and gross beta were within the control limits of 80-120% recovery. SwRI laboratory sample ID 628196 was analyzed in duplicate and the RPD was less than 20% for both gross alpha and gross beta.

Liquid Scintillation Counting (^3H , ^{129}I)

For all liquid scintillation analysis, the daily instrument performance checks were within the running statistical control limits.

The sample vials were inspected prior to counting to ensure homogeneity of the scintillation fluid with the sample.

^3H - Tritium

For all liquid scintillation analysis, the daily instrument performance checks were within the running statistical control limits.

For ^3H analysis, a 40ml aliquot was distilled using sodium hydroxide and potassium permanganate with heat. 10ml of Ultima Gold LLT was added as the liquid scintillator and mixed 10ml of distillate prior to counting. The samples were counted on a liquid scintillation counter programmed to count only the ^3H region of interest. The liquid scintillation counter ^3H program was standardized using ^3H as the radioisotope to establish a specific efficiency quench curve.

The result for the preparation blank was less than the MDA and the RL. The result for the laboratory control sample was within the recovery control limits of 80-120%. SwRI sample ID 628098 was analyzed as a duplicate and the RPD was less than 20%. SwRI sample ID 628098 was also analyzed as a matrix spike and the matrix spike was within the recovery limits of 75-125%.

Client: CH2M Hill Plateau Remediation
SDG: 628098
SwRI Project Number: 20859.01.00X
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¹²⁹Iodine

For all liquid scintillation analysis, the daily instrument performance checks were within the running statistical control limits.

The precipitated AgI was then treated with zinc and sulfuric acid and reprecipitated as palladium iodide. The palladium iodide was cleaned with 6M ammonium hydroxide and precipitated again. It was then collected on a resolve filter that was rinsed and dried, and the weights were used to calculate percent recovery of the tracer.

Each filter was placed into a liquid scintillation vial and 0.5 mL of 6M ammonium hydroxide was added and the vial vortexed to dissolve the palladium iodide. Fifteen milliliters of cocktail was added to each vial and then counted on the liquid scintillation counter for 120 minutes using constant quench conditions.

The results of the re-preparation are discussed in this section. All reported results for the tracers were within the control limits of 40-110%. The preparation blank result was less than the MDA and the RL. The result for the laboratory control sample was within the recovery control limits of 80-120%. SwRI laboratory sample ID 628200R was analyzed in duplicate and the RPD was less than 20%. All of the samples met the RL of 1 pCi/L with the exception of SwRI sample ID 628200DR. SwRI sample ID 628200DR had an MDA of 1.02pCi/L.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his/her designee, as verified by the following signature. This report shall not be reproduced except in full without the written approval of SwRI."

Walter A. Nageli
Research Scientist

03/20/18
Date

**SOUTHWEST RESEARCH INSTITUTE
CLIENT: CH2M Hill Plateau Remediation
Company
TASK ORDER(s): 180222-3, 180222-3,
180302-5
SRR: 61231, 61243, 61268
SDG: 628098
VTSR: 02.22.18, 02.23.18, 03.02.18
PROJECT#: 20859.01.00X**

**SAMPLE RECEIPT, TASK ORDER
&
CHAIN OF CUSTODY**

Sample Receipt

Southwest Research Institute

Sample Receipt Number: 61231

VTSR: 02/22/18

Time: 09:00:00

Project: 20859.01.00X

Manager: SPIES, RADONNA

Case #: CHPRC

Logged in by: DXGARCIA

Client: CH2M Hill Plateau Remediation Company

Creation Date: 02/22/18

Notes

amples were received intact,

Fed Ex Tracking #(s):
7715 3774 7066_ 1.0°C (wet ice)

pH Test Paper 0.0- 13.0
Lot - 230016
Exp: 10/30/2019

Ice Chest No.:
GWS-713

Test requirements located on the applicable Task Order.

See chain-of-custody as part of the SRR system for more information.

ALL SAMPLE CONTAINERS / APPLICABLE ITEMS WERE RECEIVED OK.

Background CPM: <150 cpm
Container Wipe CPM: <150 cpm
Total CPM: <150

System ID	Customer ID	CED	Matrix	Containers	Special Reqs.
628098	B3D9K2	02/21/18	Water	1	
628099	B3D9K3	02/21/18	Water	1	
628100	B3H5Y3	02/20/18	Water	1	
628101	B3H6J9	02/20/18	Water	1	

Containers: 4

Samples: 4

These documents are associated with this receipt: 238499[COC for SRR 61231], 238500[Paperwork for SRR 61231]

Thermometer: 021056
Temperature: 1.0

61231 CH2M Hill Plateau Remediation

Southwest Research Institute

Laboratory Task Order

TO #: 180222-3 Revision: 2

Project(s): 20859.01.00X
 Manager(s): SPIES, RADONNA
 To Client: 03/21/18

SDG: 628098
 VTSR: 02/22/18
 SAF: S18-010

SRR #'s: 61231
 Client(s): CH2M Hill Plateau Remediation Company

Instructions

CH2MHill Plateau Remediation Company. 300071
 SAF No. S18-010

SDG 628098 is open until 03/08/18

30-day TAT.
 FINAL DATA/HARDCOPY IS DUE TO THE CLIENT ON 03/22/2018.

4 overall samples (4 containers) were received on 02/22/2018.
 OUT of the 4 samples, ONLY the 2 samples for H3, under S18-010, are listed here.

Sample Analysis REQUIRED
 906.0 TRITIUM_LSC: COMMON
 10028-17-8 Tritium

DATA DELIVERABLE _ Summary (Narrative / Results only)
 REQUESTER _ Karen Waters-Husted

ATTACHMENT C - QC Requirements for Chemical and Radiochemical Analysis
 Section 7.2.2 Sample Data Packages
 Section 7.2.3 Hard Copy Deliverable format
 Section 7.2.4 Final Data Package Requirements
 Section 8.8 CHPRC Electronic Address

Electronic copies of all sample receipt information, COCs, priority data packages, final data packages, corrected/revised data packages, closure reports, status reports, invoices, etc. shall be sent to: mailto:CPP_Sample_Management@rl.gov

REVISION 1, DRmz 02/23/18: Task Order revised to indicate additional samples were received on 02/23/18, which have been grouped with SDG 628098, located in Task Order # 180223-4, SRR 61243.

REVISION 2, DRmz 03/02/18: Task Order revised to indicate additional samples were received on 03/02/18, which have been grouped with SDG 628098, located in Task Order # 180302-5, SRR 61268.

Documents Related to this task order: 238499[COC for SRR 61231], 238500[Paperwork for SRR 61231]

Deliverables --> Hard Copy: no EDD: -YES- PDF: -YES-

Test: DIG-H3 Holding: 180 days from CED
 Section: RADPREP Digestion for H3

Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
628098		1	Water	B3D9K2	21 Feb 18	20 Aug 18
628099		1	Water	B3D9K3	21 Feb 18	20 Aug 18

Test: LSC-H3_906 Holding: 180 days from CED
 Section: RADCHEM EPA Method 906 Tritium by liquid scintillation counting

Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
628098		1	Water	B3D9K2	21 Feb 18	20 Aug 18
628099		1	Water	B3D9K3	21 Feb 18	20 Aug 18



3/23/2018

REV.0

CH2M Hill Plateau
Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

010009 C.O.C.#

S18-010-731

Page 1 of 1

Collector: Juan Aguilar /CHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: S18-010	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: SURV, OCTOBER 2017	Logbook No.: HNF-N-506 - 98143	Ice Chest No.: GWS-713
Shipped To (Lab): Southwest Research Institute	Method of Shipment: Commercial Carrier	Bill of Lading/Air Bill No.: 771537747066
Protocol: CERCLA	Priority: 30 Days	Offsite Property No.: 9074

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
B3D9K2	N	W	2-21-18	1153	1x250-mL P	906.0_TRITIUM_LSC: COMMON	6 Months	None

CHPRC
SRR # 61231

SwRI Prjct # 20859.01.00X
TO: 180222-3

SDG # 628098

Relinquished By: Juan Aguilar /CHPRC Signature: [Signature] Date/Time: FEB 21 2018 1330	Received By: Mike Esparza /CHPRC Signature: [Signature] Date/Time: FEB 21 2018 1330	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	
Relinquished By: Mike Esparza /CHPRC Signature: [Signature] Date/Time: FEB 21 2018 1400	Received By: FEDEX Signature: [Signature] Date/Time: [Signature]		
Relinquished By: FED EX Signature: [Signature] Date/Time: [Signature]	Received By: David Garcia /CHPRC Signature: [Signature] Date/Time: 02-22-2018 09:00		
Relinquished By: [Signature] Date/Time: [Signature]	Received By: [Signature] Date/Time: [Signature]		
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

3/23/2018

REV.0

CH2M Hill Plateau
Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

010010 C.O.C.#
S18-010-732

Page 1 of 1

Collector: Juan Aguilar ICHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: S18-010	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: SURV, OCTOBER 2017	Logbook No.: HNF-N-506 -98143	Ice Chest No.: GWS-713
Shipped To (Lab): Southwest Research Institute	Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No.: 77153774 7066
Protocol CERCLA	Priority: 30 Days	Offsite Property No.: 9074

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
B3D9K3	N	W	2-21-18	1153	1x250-mL P	906.0_TRITIUM_LSC: COMMON	6 Months	None

CHPRC
SRR # 61231
SDG # 628098

SwRI Prjct # 20859.01.00X
TO: 180222-3

SWRI

Relinquished By: Juan Aguilar ICHPRC Signature: [Signature] Date/Time: FEB 21 2018 1330	Received By: Mike Esperza ICHPRC Signature: [Signature] Date/Time: FEB 21 2018 1330	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	
Relinquished By: Mike Esperza ICHPRC Signature: [Signature] Date/Time: FEB 21 2018 1400	Received By: FEDEX Signature: [Signature] Date/Time: [Signature] Date/Time		
Relinquished By: FEDEX Signature: [Signature] Date/Time: [Signature] Date/Time	Received By: David Garcia Signature: [Signature] Date/Time: 02-22-2018 09:00		
Relinquished By: [Signature] Date/Time: [Signature] Date/Time	Received By: [Signature] Date/Time: [Signature] Date/Time		
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Southwest Research Institute

Traffic Report

Sample Custodian Signature:

David Garvin



- 1. Custody Seal Present
- 2. Chain of Custody Present
- 3. Sample Tags Not Present *N/A*
Sample Tag Numbers Not on COC
- 4. SMO Forms Present

Client: CH2M Hill Plateau Remediation Company

Project: 20859.01.00X

Case: CHPRC / SDG: See T.O.

Sample Receipt: 61231

Airbill: 7715 3774 7066

Custody Seal #(s): N/A

Date Received	Time Received	COC Record	SMO Sample #	Corresponding		Traffic Rpt, Tags, COC Agree	Sample Condition
				Sample Tag #	SwRI #		
02/22/18	09:00:00	S18-010-731	B3D9K2	N/A	628098	YES	Intact
02/22/18	09:00:00	S18-010-732	B3D9K3	N/A	628099	YES	Intact
02/22/18	09:00:00	S18-002-255	B3H5Y3	N/A	628100	YES	Intact
02/22/18	09:00:00	S18-002-253	B3H6J9	N/A	628101	YES	Intact

SAMPLE LOG-IN SHEET

Lab Name Southwest Research Institute			Page 1 of 1		
Received By (Print Name) David Garcia			Log-in Date 02/22/2018		
Received By (Signature) <i>David Garcia</i>					
Case Number CHPRC		Sample Delivery Group No. N/A		SAS Number N/A	
Remarks: 20859.01.00X					
		Corresponding		Remarks: Condition of Sample Shipment, etc	
	EPA Sample #	Sample Tag #	Assigned Lab #		
1. Custody Seal(s)	Present Absent* Intact Broken	B3D9K2	N/A	628098	Intact
2. Custody Seal Nos.	N/A	B3D9K3	N/A	628099	Intact
		B3H5Y3	N/A	628100	Intact
3. Chain-of Custody Records	Present Absent*	B3H6J9	N/A	628101	Intact
4. Traffic Reports or Packing Lists	Present Absent*				
5. Airbill	Airbill/Sticker Present Absent*				
6. Airbill No.	7715 3774 7066				
7. Sample Tags	Present Absent N/A				
Sample Tag Numbers	Listed Not listed on Chain of Custody				
8. Sample Condition	Intact Broken*/ Leaking				
9. Cooler Temperature	1.0C				
10. Does Information on custody records, traffic reports, and sample tags agree?	Yes No*				
11. Date Received at Lab	02/22/2018				
12. Time Received	09:00:00				
Sample Transfer					
Fraction	<i>I-029</i>	Fraction			
Area #	<i>R-13</i>	Area #			
By	David Garcia	By			
On	02/22/2018	On			

* Contact SMO and attach record of resolution

Reviewed By <i>Art Reynolds</i>	Logbook No. Sample Receipt (61231)
Date <i>2.22.18</i>	Logbook Page No. <i>10104 Sec 1054</i>

Sample Receipt

Southwest Research Institute

Sample Receipt Number: 61243

VTSR: 02/23/18

Time: 09:20:00

Project: 20859.01.00X

Manager: SPIES, RADONNA

Case #: X18-019

Logged in by: DXGARCIA

Client: CH2M Hill Plateau Remediation Company

Creation Date: 02/23/18

Notes

Samples were received intact.

Fed Ex tracking #:

7715 4639 1489 _ 19.8°C (no ice)

Ice Chest No:

GWS-729

pH Test Paper 0.0 to 3.0

Lot - 230315

Exp: 10/30/2018

See chain-of-custody as part of the SRR system for more information.

Test requirements located on Task Order.

Background CPM: <150cpm Container Wipe CPM: <150cpm Total CPM: <150

System ID	Customer ID	CED	Matrix	Containers	Special Reqs.
628196	B3H1M2	02/22/18	Water	1	
628197	B3H1M3	02/22/18	Water	1	
628198	B3H1M4	02/22/18	Water	1	
628199	B3H1M5	02/22/18	Water	1	
628200	B3H1M6	02/22/18	Water	1	
628201	B3H1M7	02/22/18	Water	1	

Containers: 6

Samples: 6

These documents are associated with this receipt: 238622[COC for SRR 61243], 238624[Paperwork for SRR 61243]

Thermometer: 021056 Temperature: 19.8
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61243 CH2M Hill Plateau Remediation

Southwest Research Institute

Laboratory Task Order

TO #: 180223-4 Revision: 2

Project(s): 20859.01.00X
 Manager(s): SPIES, RADONNA
 To Client: 03/21/18
 Client(s): CH2M Hill Plateau Remediation Company

SDG: 628098
 VTSR: 02/23/18
 SAF: X18-019

SRR #'s: 61243
 Client(s): CH2M Hill Plateau Remediation Company

Instructions

CH2M Hill Plateau Remediation Company. 300071
 SAF No. X18-019

SDG 628098 is open until 03/08/18

GROUPED _ with samples in SDG 628098, located in Task Order # 180222-3, SRR 61231.

30-day TAT.
 FINAL DATA/HARDCOPY IS DUE TO THE CLIENT ON 03/22/2018.

6 overall samples (6 containers) were received on 02/23/2018, which are ALL listed here.

Sample Analysis REQUIRED
 I129LL_SEP_LEPS_GS_LL: COMMON
 15046-84-1 Iodine-129
 9310_ALPHABETA_GPC: Common
 12587-46-1 Gross alpha, 12587-47-2 Gross beta

DATA DELIVERABLE _ Summary (Narrative / Results only)
 REQUESTER _ Karen Waters-Husted

ATTACHMENT C - QC Requirements for Chemical and Radiochemical Analysis
 Section 7.2.2 Sample Data Packages
 Section 7.2.3 Hard Copy Deliverable format
 Section 7.2.4 Final Data Package Requirements
 Section 8.8 CHPRC Electronic Address

Electronic copies of all sample receipt information, COCs, priority data packages, final data packages, corrected/revised data packages, closure reports, status reports, invoices, etc. shall be sent to: mailto:^CPP_Sample_Management@rl.gov

REVISION 1, DRmz 02/23/18: Task Order revised to correct the test codes.
 REVISION 2, DRmz 03/02/18: Task Order revised to indicate additional samples were received on 03/02/18, which have been grouped with SDG 628098, located in Task Order # 180302-5, SRR 61268.

Documents Related to this task order: 238622[COC for SRR 61243], 238624[Paperwork for SRR 61243]

Deliverables --> Hard Copy: no EDD: -YES- PDF: -YES-

Test: DIG-GrossA/B Holding: 180 days from CED
 Section: RADPREP

Digestion for Gross Alpha/Beta

Cnt: 3

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
628196		1	Water	B3H1M2	22 Feb 18	21 Aug 18
628197		1	Water	B3H1M3	22 Feb 18	21 Aug 18
628198		1	Water	B3H1M4	22 Feb 18	21 Aug 18

Test: DIG-I129 Holding: 180 days from CED
 Section: RADPREP

Digestion for Iodine-129

Cnt: 3

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
628199		1	Water	B3H1M5	22 Feb 18	21 Aug 18
628200		1	Water	B3H1M6	22 Feb 18	21 Aug 18
628201		1	Water	B3H1M7	22 Feb 18	21 Aug 18

Test: GPC-ALPHA_9310 Holding: 180 days from CED
 Section: RADCHEM

Gross Alpha by gas flow proportional counting SW846 Method 9310

Cnt: 3

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
628196		1	Water	B3H1M2	22 Feb 18	21 Aug 18



Southwest Research Institute

Laboratory Task Order

TO #: 180223-4 Revision: 2

Project(s): 20859.01.00X
Manager(s): SPIES, RADONNA
To Client: 03/21/18SDG: 628098
VTSR: 02/23/18
SAF: X18-019SRR #s: 61243
Client(s): CH2M Hill Plateau Remediation Company

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
628197		1	Water	B3H1M3	22 Feb 18	21 Aug 18
628198		1	Water	B3H1M4	22 Feb 18	21 Aug 18

Test: GPC-BETA_9310
Section: RADCHEM

Holding: 180 days from CED

Gross Beta by gas flow proportional counting SW846 Method 9310

Cnt: 3

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
628196		1	Water	B3H1M2	22 Feb 18	21 Aug 18
628197		1	Water	B3H1M3	22 Feb 18	21 Aug 18
628198		1	Water	B3H1M4	22 Feb 18	21 Aug 18

Test: LSC-I129_SWRI
Section: RADCHEM

Holding: 180 days from CED

Iodine-129 by liquid scintillation counting

Cnt: 3

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
628199		1	Water	B3H1M5	22 Feb 18	21 Aug 18
628200		1	Water	B3H1M6	22 Feb 18	21 Aug 18
628201		1	Water	B3H1M7	22 Feb 18	21 Aug 18

Test: MOUNT-GAB
Section: RADPREP

Holding: 180 days from CED

Mount for Gross Alpha/Beta

Cnt: 3

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
628196		1	Water	B3H1M2	22 Feb 18	21 Aug 18
628197		1	Water	B3H1M3	22 Feb 18	21 Aug 18
628198		1	Water	B3H1M4	22 Feb 18	21 Aug 18



3/23/2018

REV.0

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				010016	C.O.C.# X18-019-039	
						Page 1 of 1		
Collector: TIM CALLAWAY CHPRC		Contact/Requester: WATERS-HUSTED, K		Telephone No.: 376-4650				
SAF No.: X18-019		Sampling Origin: Hanford Site		Purchase Order/Charge Code: 300071				
Project Title: Background Study, January 2018		Logbook No.: HNF-N-506 - 49 pg 3.		Ice Chest No.: GWS- 729				
Shipped To (Lab): Southwest Research Institute		Method of Shipment Commercial Carrier		Bill of Lading/Air Bill No.: 7715 4639 1489				
Protocol SURV		Priority: 30 Days		Offsite Property No.: 9080				
POSSIBLE SAMPLE HAZARDS/REMARK *Contains Radioactive Material at concentrations that are not be 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
B3H1M2	N	W	2/22/18	0530	1x1-L P	9310_ALPHABETA_GPC: COMMON	6 Months	HNO3 to pH <2

CHPRC
SRR # 61243

SwRI Prjct # 20859.01.00X
TO: 180223-4

SDG # 628098

Relinquished By: Tim Callaway JCHPRC <i>T. Callaway</i> FEB 22 2018 1700	Received By: FEDEX	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	
<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>	<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>		
Relinquished By: NOT USED	Received By: NOT USED		
<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>	<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>		
Relinquished By: FEDEX	Received By: David Garcia <i>David Garcia</i> 02-23-2018 9:20		
<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>	<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>		
Relinquished By:	Received By:		
<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>	<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>		
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

3/23/2018

REV.0

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				010017	C.O.C. # X18-019-040	
						Page 1 of 1		
Collector: TIM CALLAWAY CHPRC		Contact/Requester: WATERS-HUSTED, K		Telephone No.: 376-4650				
SAF No.: X18-019		Sampling Origin: Hanford Site		Purchase Order/Charge Code: 300071				
Project Title: Background Study, January 2018		Logbook No.: HNF-N-506 - 99 pg 3		Ice Chest No.: CWS-729				
Shipped To (Lab): Southwest Research Institute		Method of Shipment: Commercial Carrier		Bill of Lading/Air Bill No.: 771546391489				
Protocol: SURV		Priority: 30 Days		Offsite Property No.: 9080				
POSSIBLE SAMPLE HAZARDS/REMARK *Contains Radioactive Material at concentrations that are not be 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
B3H1M3	N	W	2/27/18	0830	1x1-L P	9310_ALPHA BETA_GPC: COMMON	6 Months	HNO3 to pH <2

CHPRC
SRR # 61243
SDG # 628098

SwRI Prjct # 20859.01.00X
TO: 180223-4

SWRI

Relinquished By: Tim Callaway CHPRC <i>T. Callaway</i> FEB 22 2018 1400			Received By: FEDEX			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	
<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>			<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>				
Relinquished By: NOT USED			Received By: NOT USED				
<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>			<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>				
Relinquished By: FED EX			Received By: David Garcia 02-23-2018 9:20				
<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>			<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>				
Relinquished By:			Received By:				
<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>			<i>Print First and Last Name</i> <i>Signature</i> <i>Date/Time</i>				
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):				Disposed By:		Date/Time:

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		010018 C.O.C. # X18-019-041
Page 1 of 1				
Collector: TIM CALLAWAY CHPRC	Contact/Requester: WATERS-HUSTED, K		Telephone No.: 376-4650	
SAF No.: X18-019	Sampling Origin: Hanford Site		Purchase Order/Charge Code: 300071	
Project Title: Background Study, January 2018	Logbook No.: HNF-N-506 - 99 pg. 3		Ice Chest No.: GWS-729	
Shipped To (Lab): Southwest Research Institute	Method of Shipment: Commercial Carrier		Bill of Lading/Air Bill No.: 7715 4639 1489	
Protocol: SURV	Priority: 30 Days		Offsite Property No.: 9080	

POSSIBLE SAMPLE HAZARDS/REMARK
 *Contains Radioactive Material at concentrations that are not be 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
B3H1M4	N	W	2/22/18	0830	1x1-L P	9310_ALPHABETA_GPC: COMMON	6 Months	HNO3 to pH <2

CHPRC
 SRR # 61243
 SDG # 628098

SwRI Prjct # 20859.01.00X
 TO: 180223-4

Relinquished By: Tim Callaway /CHPRC <i>Tim Callaway</i> FEB 22 2018 1400 Print First and Last Name Signature Date/Time	Received By: FEDEX 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
Relinquished By: FED EX Print First and Last Name Signature Date/Time	Received By: <i>David Garcia</i> 02-23-2018 9:20 Print First and Last Name Signature Date/Time	
Relinquished By: Print First and Last Name Signature Date/Time	Received By: Print First and Last Name Signature Date/Time	
Relinquished By: Print First and Last Name Signature Date/Time	Received By: Print First and Last Name Signature Date/Time	
FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process):		Disposed By: Date/Time:

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				010019	C.O.C. # X18-019-042	
						Page 1 of 1		
Collector: TIM CALLAWAY CHPRC		Contact/Requester: WATERS-HUSTED, K		Telephone No.: 376-4650				
SAF No.: X18-019		Sampling Origin: Hanford Site		Purchase Order/Charge Code: 300071				
Project Title: Background Study, January 2018		Logbook No.: HNF-N-506 - 99 pg 3		Ice Chest No.: GWS-729				
Shipped To (Lab): Southwest Research Institute		Method of Shipment: Commercial Carrier		Bill of Lading/Air Bill No.: 7715 4639 1489				
Protocol: SURV		Priority: 30 Days		Offsite Property No.: 9080				
POSSIBLE SAMPLE HAZARDS/REMARK *Contains Radioactive Material at concentrations that are not be 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
B3H1M5	N	W	2/22/18	0830	1x4-L G/P	I129LL_SEP_LEPS_GS_LL: COMMON	6 Months	None

CHPRC
SRR # 61243
SDG # 628098

SwRI Prjct # 20859.01.00X
TC: 180223-4



Relinquished By: Tim Callaway CHPRC <i>[Signature]</i> FEB 22 2018 1700			Received By: FEDEX			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	
<i>[Signature]</i> <i>[Signature]</i> <i>[Signature]</i>			<i>[Signature]</i> <i>[Signature]</i> <i>[Signature]</i>				
Relinquished By: FED EX			Received By: David Garcia <i>[Signature]</i> 02-23-2018 9:20				
<i>[Signature]</i> <i>[Signature]</i> <i>[Signature]</i>			<i>[Signature]</i> <i>[Signature]</i> <i>[Signature]</i>				
Relinquished By:			Received By:				
<i>[Signature]</i> <i>[Signature]</i> <i>[Signature]</i>			<i>[Signature]</i> <i>[Signature]</i> <i>[Signature]</i>				
Relinquished By:			Received By:				
<i>[Signature]</i> <i>[Signature]</i> <i>[Signature]</i>			<i>[Signature]</i> <i>[Signature]</i> <i>[Signature]</i>				
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):				Disposed By:		Date/Time:

3/23/2018

REV.0

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				010020 C.O.C.# X18-019-043	Page 1 of 1	
Collector: TIM CALLAWAY CHPRC		Contact/Requester: WATERS-HUSTED, K		Telephone No.: 376-4650				
SAF No.: X18-019		Sampling Origin: Hanford Site		Purchase Order/Charge Code: 300071				
Project Title: Background Study, January 2018		Logbook No.: HNF-N-506 - 49 pg. 3		Ice Chest No.: GWS-729				
Shipped To (Lab): Southwest Research Institute		Method of Shipment: Commercial Carrier		Bill of Lading/Air Bill No.: 771546391489				
Protocol: SURV		Priority: 30 Days		Offsite Property No.: 9080				
POSSIBLE SAMPLE HAZARDS/REMARK *Contains Radioactive Material at concentrations that are not be 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
B3H1M6	N	W	2/22/18	0830	1x4-L G/P	I129LL_SEP_LEPS_GS_LL: COMMON	6 Months	None

CHPRC
SRR # 61243
SDG # 628098

SwRI Prjct # 20859.01.00X
TO: 180223-4

SwRI

Relinquished By: Tim Callaway <i>Tim Callaway</i> FEB 22 2018 1400 Print First and Last Name Signature Date/Time	Received By: FEDEX 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
Relinquished By: FEDEX Print First and Last Name Signature Date/Time	Received By: David Garcia <i>David Garcia</i> 02-23-2018 9:20 Print First and Last Name Signature Date/Time	
Relinquished By: Print First and Last Name Signature Date/Time	Received By: Print First and Last Name Signature Date/Time	
Relinquished By: Print First and Last Name Signature Date/Time	Received By: Print First and Last Name Signature Date/Time	
FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	

3/23/2018

45165

REV.0

CH2M Hill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	010021 C.O.C. # X18-019-044
Page 1 of 1		

Collector: TIM CALLAWAY CHPRC	Contact/Requester: WATERS-HUSTED, K	Telephone No.: 376-4650
SAF No.: X18-019	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: Background Study, January 2018	Logbook No.: HNF-N-506-94 pg 3.	Ice Chest No.: GWS-729.
Shipped To (Lab): Southwest Research Institute	Method of Shipment: Commercial Carrier	Bill of Lading/Air Bill No.: 77154639 1489
Protocol: SURV	Priority: 30 Days	Offsite Property No.: 9080

POSSIBLE SAMPLE HAZARDS/REMARK *Contains Radioactive Material at concentrations that are not be 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
B3H1M7	N	W	2/22/18	0530	1x4-L G/P	I129LL_SEP_LEPS_GS_LL: COMMON	6 Months	None

CHPRC
SRR # 61243
SDG # 628098

SwRI Prjct # 20859.01.00X
TO: 180223-4

SwRI

Relinquished By: Tim Callaway <i>Tim Callaway</i> FEB 22 2018 1400 <small>Print First and Last Name Signature Date/Time</small>	Received By: FEDEX <small>Print First and Last Name Signature Date/Time</small>	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
Relinquished By: FEDEX <small>Print First and Last Name Signature Date/Time</small>	Received By: David Garcia <i>David Garcia</i> 02-23-2018 9:20 <small>Print First and Last Name Signature Date/Time</small>	
Relinquished By: <small>Print First and Last Name Signature Date/Time</small>	Received By: <small>Print First and Last Name Signature Date/Time</small>	
Relinquished By: <small>Print First and Last Name Signature Date/Time</small>	Received By: <small>Print First and Last Name Signature Date/Time</small>	
FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process):		Disposed By:
		Date/Time:

Southwest Research Institute

Traffic Report

Sample Custodian Signature:

David Garcia



- 1. Custody Seal Present
- 2. Chain of Custody Present
- 3. Sample Tags Not Present *N/A*
Sample Tag Numbers Not on COC
- 4. SMO Forms Present

Client: CH2M Hill Plateau Remediation Company

Project: 20859.01.00X

Case: X18-019 / SDG: See T.O.

Sample Receipt: 61243

Airbill: 7715 4639 1489

Custody Seal #(s): N/A

Date Received	Time Received	COC Record	SMO Sample #	Corresponding		Traffic Rpt, Tags, COC Agree	Sample Condition
				Sample Tag #	SwRI #		
02/23/18	09:20:00	X18-019-039	B3H1M2	N/A	628196	YES	Intact
02/23/18	09:20:00	X18-019-040	B3H1M3	N/A	628197	YES	Intact
02/23/18	09:20:00	X18-019-041	B3H1M4	N/A	628198	YES	Intact
02/23/18	09:20:00	X18-019-042	B3H1M5	N/A	628199	YES	Intact
02/23/18	09:20:00	X18-019-043	B3H1M6	N/A	628200	YES	Intact
02/23/18	09:20:00	X18-019-044	B3H1M7	N/A	628201	YES	Intact

SAMPLE LOG-IN SHEET

Lab Name Southwest Research Institute			Page 1 of 1		
Received By (Print Name) David Garcia			Log-in Date 02/23/2018		
Received By (Signature) <i>David Garcia</i>					
Case Number X18-019		Sample Delivery Group No. N/A		SAS Number N/A	
Remarks: 20859.01.00X					
		Corresponding		Remarks: Condition of Sample Shipment, etc	
		EPA Sample #	Sample Tag #		Assigned Lab #
1. Custody Seal(s)	<input checked="" type="checkbox"/> Present / Absent* <input checked="" type="checkbox"/> Intact / Broken	B3H1M2	N/A	628196	Intact
2. Custody Seal Nos.	N/A	B3H1M3	N/A	628197	Intact
		B3H1M4	N/A	628198	Intact
3. Chain-of Custody Records	<input checked="" type="checkbox"/> Present / Absent*	B3H1M5	N/A	628199	Intact
4. Traffic Reports or Packing Lists	<input checked="" type="checkbox"/> Present / Absent*	B3H1M6	N/A	628200	Intact
5. Airbill	Airbill / Sticker <input checked="" type="checkbox"/> Present / Absent*	B3H1M7	N/A	628201	Intact
6. Airbill No.	7715 4639 1489				
7. Sample Tags	Present <input checked="" type="checkbox"/> Absent				
Sample Tag Numbers	Listed <input checked="" type="checkbox"/> Not listed on Chain of Custody				
8. Sample Condition	<input checked="" type="checkbox"/> Intact / Broken* / Leaking				
9. Cooler Temperature	19.8C				
10. Does Information on custody records, traffic reports, and sample tags agree?	<input checked="" type="checkbox"/> Yes / No*				
11. Date Received at Lab	02/23/2018				
12. Time Received	09:20:00				
Sample Transfer					
Fraction	<i>IA099</i>	Fraction	/		
Area #	<i>R.13</i>	Area #			
By	David Garcia	By			
On	02/23/2018	On			

* Contact SMO and attach record of resolution

Reviewed By <i>Atty</i>	Logbook No. <i>Sample Receipt (61243)</i>
Date <i>2.23.18</i>	Logbook Page No. <i>10105 Sec 1P1</i>

Sample Receipt

Southwest Research Institute

Sample Receipt Number: 61268

VTSR: 03/02/18

Time: 09:00:00

Project: 20859.01.00X

Manager: SPIES, RADONNA

Case #: CHPRC

Logged in by: DXGARCIA

Client: CH2M Hill Plateau Remediation Company

Creation Date: 03/02/18

Notes

amples were received intact,

Fed Ex Tracking #(s):

7716 6248 6562_ 1.1°C (wet ice)

pH Test Paper 0.0- 13.0

Lot - 230016

Exp: 10/30/2019

Ice Chest No.:

GWS-442

Test requirements located on the applicable Task Order.

See chain-of-custody as part of the SRR system for more information.

ALL SAMPLE CONTAINERS / APPLICABLE ITEMS WERE RECEIVED OK.

Background CPM: <150 cpm Container Wipe CPM: <150 cpm Total CPM: <150

System ID	Customer ID	CED	Matrix	Containers	Special Reqs.
628368	B3FXM2	02/28/18	Water	1	
628369	B3H609	02/28/18	Water	1	

Containers: 2

Samples: 2

These documents are associated with this receipt: 238902[COC for SRR 61268], 238903[Paperwork for SRR 61268]

Thermometer: 021056 Temperature: 1.1

61268 CH2M Hill Plateau Remediation

Southwest Research Institute

Laboratory Task Order

TO #: 180302-5 Revision: 0

Project(s): 20859.01.00X
 Manager(s): SPIES, RADONNA
 To Client: 03/21/18

SDG: 628098
 VTSR: 03/02/18
 SAF: S18-001

SRR #s: 61268
 Client(s): CH2M Hill Plateau Remediation Company

Instructions

CH2MHill Plateau Remediation Company. 300071
 SAF No. X18-019

SDG 628098 is open until 03/08/18

GROUPED _ with samples in SDG 628098, located in Task Order # 180222-3, SRR 61231; Task Order # 180223-4, SRR 61243.

30-day TAT.
 FINAL DATA/HARDCOPY IS DUE TO THE CLIENT ON 03/22/2018.

2 overall samples (2 containers) were received on 03/02/2018.
 OUT of the 2 samples, ONLY the 1 sample for Tritium, under S18-001, is listed here.

Sample Analysis REQUIRED
 906.0 TRITIUM_LSC: COMMON
 10028-17-8 Tritium

DATA DELIVERABLE _ Summary (Narrative / Results only)
 REQUESTER _ Karen Waters-Husted

ATTACHMENT C - QC Requirements for Chemical and Radiochemical Analysis
 Section 7.2.2 Sample Data Packages
 Section 7.2.3 Hard Copy Deliverable format
 Section 7.2.4 Final Data Package Requirements
 Section 8.8 CHPRC Electronic Address

Electronic copies of all sample receipt information, COCs, priority data packages, final data packages, corrected/revised data packages, closure reports, status reports, invoices, etc. shall be sent to: mailto:^CPP_Sample_Management@rl.gov

Documents Related to this task order: 238902[COC for SRR 61268], 238903[Paperwork for SRR 61268]

Deliverables --> Hard Copy: no EDD: -YES- PDF: -YES-

Test: DIG-H3 Holding: 180 days from CED
 Section: RADPREP **Digestion for H3** Cnt: 1

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
628368		1	Water	B3FXM2	28 Feb 18	27 Aug 18

Test: LSC-H3_906 Holding: 180 days from CED
 Section: RADCHEM **EPA Method 906 Tritium by liquid scintillation counting** Cnt: 1

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
628368		1	Water	B3FXM2	28 Feb 18	27 Aug 18



3/23/2018

REV.0

CH2MHill Plateau
Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

010026 C.O.C.#
S18-001-347

Page 1 of 2

Collector: Juan Aguilar /CHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: S18-001	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: SURV, JANUARY 2018	Logbook No.: HNF-N-506 - 98-48	Ice Chest No.: GLOS-442
Shipped To (Lab): Southwest Research Institute	Method of Shipment: Commercial Carrier	Bill of Lading/Air Bill No.: 771662481562
Protocol: SURV	Priority: 30 Days	Offsite Property No.: 9095

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
B3FXM2	N	W	FEB 28 2018	1027	1x250-mL P	906.0_TRITIUM_LSC: COMMON	6 Months	None

CHPRC SRR # 61268
 SDG # 628098
 SwRI Prjct # 20859.01.00X
 TO: 180302-5

Relinquished By: Juan Aguilar /CHPRC Signature: [Signature] Date/Time: FEB 28 2018 1040	Received By: Mike Esperza /CHPRC Signature: [Signature] Date/Time: FEB 28 2018 1040	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
Relinquished By: Mike Esperza /CHPRC Signature: [Signature] Date/Time: FEB 28 2018 1100	Received By: SSU-1 Signature: [Signature] Date/Time: FEB 28 2018 1100	
Relinquished By: SSU-1 Signature: [Signature] Date/Time: MAR 01 2018 0725	Received By: Lesly Wall /CHPRC Signature: [Signature] Date/Time: MAR 01 2018 0725	
Relinquished By: Lesly Wall /CHPRC Signature: [Signature] Date/Time: MAR 01 2018 1400	Received By: FEDEX Signature: [Signature] Date/Time: [Signature]	

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

Lab Name Southwest Research Institute		Page 1 of 1	
Received By (Print Name) David Garcia		Log-in Date 03/02/2018	
Received By (Signature) <i>David Garcia</i>			
Case Number CHPRC	Sample Delivery Group No. N/A	SAS Number N/A	
Remarks: 20859.01.00X			
	EPA Sample #	Corresponding Sample Tag #	Assigned Lab #
1. Custody Seal(s)	Present <input checked="" type="radio"/> Absent* Intact/Broken	B3FXM2	N/A
		628368	Intact
2. Custody Seal Nos.	N/A	B3H609	N/A
		628369	Intact
3. Chain-of Custody Records	<input checked="" type="radio"/> Present <input type="radio"/> Absent*		
4. Traffic Reports or Packing Lists	<input checked="" type="radio"/> Present <input type="radio"/> Absent		
5. Airbill	Airbill/Sticker <input checked="" type="radio"/> Present <input type="radio"/> Absent*		
6. Airbill No.	7716 6248 6562		
7. Sample Tags	<input checked="" type="radio"/> Present <input type="radio"/> Absent		
Sample Tag Numbers	Listed <input type="radio"/> Not listed on Chain of Custody		
8. Sample Condition	<input checked="" type="radio"/> Intact <input type="radio"/> Broken* / Leaking		
9. Cooler Temperature	1.1C		
10. Does Information on custody records, traffic reports, and sample tags agree?	<input checked="" type="radio"/> Yes <input type="radio"/> No*		
11. Date Received at Lab	03/02/2018		
12. Time Received	09:00:00		
Sample Transfer			
Fraction Inorg	Fraction		
Area # R.13	Area #		
By David Garcia	By		
On 03/02/2018	On		

* Contact SMO and attach record of resolution

Reviewed By <i>atlaugh</i>	Logbook No. Sample Receipt (61268)
Date 3.2.18	Logbook Page No. 10112 Sec 1 of 2

**SOUTHWEST RESEARCH INSTITUTE
CLIENT: CH2M Hill Plateau Remediation
Company
TASK ORDER(s): 180222-3, 180222-3,
180302-5
SRR: 61231, 61243, 61268
SDG: 628098
VTSR: 02.22.18, 02.23.18, 03.02.18
PROJECT#: 20859.01.00X**

RADCHEM ANALYSIS

SOUTHWEST RESEARCH INSTITUTE
CLIENT: CH2M Hill Plateau Remediation
Company
TASK ORDER(s): 180222-3, 180222-3,
180302-5
SRR: 61231, 61243, 61268
SDG: 628098
VTSR: 02.22.18, 02.23.18, 03.02.18
PROJECT#: 20859.01.00X

SAMPLE DATA

SOUTHWEST RESEARCH INSTITUTE

GAS FLOW PROPORTIONAL COUNTING DATA SHEET

Lab Name: Southwest Research Institute

Client: CH2M Hill Plateau Remediation

Lab Code: SwRI

Project No.: 20859.01.00X

Matrix: Water

SRR #: 61243

Date Received: 02/23/18

SDG: 628098

Task Order #: 180223-4

SAF #: X18-019

GROSS ALPHA - BETA								
Sample ID	Lab System ID	Analyte	Results (pCi/L)	Q	TPU (2s) (pCi/L)	MDA (pCi/L)	Counting Error (2s)	Date Analyzed
Prep Blank	pbwc07sd1	Alpha	1.20E+00		9.34E-01	1.14E+00	9.23E-01	03/12/18
	pbwc07sd1	Beta	7.45E-01	U	7.64E-01	1.28E+00	7.59E-01	03/11/18
Lab Control	lcswc07sd1	Alpha	2.55E+02		3.24E+01	1.15E+00	1.22E+01	03/12/18
	lcswc07sd2	Beta	3.29E+02		4.00E+01	1.28E+00	1.05E+01	03/11/18
True Value	-----	Alpha	2.63E+02		-----	-----	-----	-----
	-----	Beta	3.66E+02		-----	-----	-----	-----
Recovery	-----	Alpha	97.0%		-----	-----	-----	-----
	-----	Beta	89.8%		-----	-----	-----	-----
B3H1M2	628196	Alpha	1.65E+02		2.50E+01	2.99E+00	1.59E+01	03/12/18
	628196	Beta	8.50E+00		3.31E+00	2.80E+00	3.16E+00	03/12/18
Duplicate result	628196D	Alpha	1.82E+02		2.71E+01	2.97E+00	1.66E+01	03/12/18
	628196D	Beta	9.78E+00		3.51E+00	2.80E+00	3.32E+00	03/12/18
RPD	-----	Alpha	9.9%		-----	-----	-----	-----
	-----	Beta	14.0%		-----	-----	-----	-----
B3H1M3	628197	Alpha	1.40E+02		2.20E+01	2.96E+00	1.46E+01	03/13/18
	628197	Beta	1.15E+01		3.70E+00	2.79E+00	3.44E+00	03/12/18
B3H1M4	628198	Alpha	1.58E+02		2.41E+01	2.94E+00	1.54E+01	03/13/18
	628198	Beta	6.81E+00		3.05E+00	2.80E+00	2.94E+00	03/12/18

Q - Data Qualifier. U - Less than MDA. MDA - Minimum Detectable Activity. TPU - Total Propagated Uncertainty. MDAs are sample specific.

SOUTHWEST RESEARCH INSTITUTE

LIQUID SCINTILLATION COUNTING DATA SHEET

Lab Name: Southwest Research Institute

Client: CH2M Hill Plateau Remediation

Lab Code: SwRI

Project No.: 20859.01.00X

Matrix: Water

SRR #: 61243

Date Received: 02/23/18

SDG: 628098

Task Order #: 180223-4

SAF #: X18-019

IODINE-129									
Sample ID	Lab System ID	Analyte	Results (pCi/L)	Q	TPU (2s) (pCi/L)	MDA (pCi/L)	Counting Error (2s)	PdI ₂ Tracer Rec.	Date Analyzed
Prep Blank	pbwc13sd1	¹²⁹ I	8.97E-01	U	2.88E-01	9.23E-01	2.85E-01	93.30%	03/16/18
Lab Control	lcswc13sd1	¹²⁹ I	1.04E+03		4.71E+01	9.36E-01	2.50E+00	92.02%	03/17/18
True Value	-----	¹²⁹ I	1.05E+03		-----	-----	-----	-----	-----
Recovery	-----	¹²⁹ I	99.2%		-----	-----	-----	-----	-----
B3H1M5	628199R	¹²⁹ I	1.11E+01		6.27E-01	9.32E-01	3.78E-01	92.45%	03/17/18
B3H1M6	628200R	¹²⁹ I	1.01E+01		5.80E-01	9.05E-01	3.61E-01	95.14%	03/17/18
Duplicate result	628200DR	¹²⁹ I	1.03E+01		6.12E-01	1.02E+00	3.99E-01	84.45%	03/17/18
RPD	-----	¹²⁹ I	2.2%		-----	-----	-----	-----	-----
B3H1M7	628201R	¹²⁹ I	1.01E+01		5.87E-01	9.45E-01	3.74E-01	91.17%	03/17/18

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SOUTHWEST RESEARCH INSTITUTE

LIQUID SCINTILLATION COUNTING DATA SHEET

Lab Name: Southwest Research Institute

Client: CH2M Hill Plateau Remediation

Lab Code: SwRI

Project No.: 20859.01.00X

Matrix: Water

SRR #: 61231, 61268

Date Received: 02/22/18, 03/02/18

SDG: 628098

Task Order #: 180222-3, 180302-5

SAF #: S18-010, S18-001

TRITIUM								
Sample ID	Lab System ID	Analyte	Results (pCi/L)	Q	TPU (2s) (pCi/L)	MDA (pCi/L)	Counting Error (2s)	Date Analyzed
Prep Blank	pbwc08sd1	³ H	1.39E+02	U	1.21E+02	1.85E+02	1.20E+02	03/09/18
Lab Control	lcswc08sd1	³ H	1.24E+04		1.50E+03	2.13E+02	4.19E+02	03/09/18
True Value	-----	³ H	1.11E+04		-----	-----	-----	-----
Recovery	-----	³ H	111.4%		-----	-----	-----	-----
B3D9K2	628098	³ H	1.53E+03		2.48E+02	1.84E+02	1.72E+02	03/09/18
Duplicate result	628098D	³ H	1.72E+03		2.73E+02	1.97E+02	1.86E+02	03/10/18
RPD	-----	³ H	11.7%		-----	-----	-----	-----
Spike result	628098MS	³ H	1.17E+04		1.42E+03	1.78E+02	3.73E+02	03/10/18
True Value	-----	³ H	1.11E+04		-----	-----	-----	-----
Recovery	-----	³ H	91.8%		-----	-----	-----	-----
B3D9K3	628099	³ H	1.46E+03		2.39E+02	1.80E+02	1.68E+02	03/10/18
B3FXM2	628368	³ H	1.13E+04		1.37E+03	1.87E+02	3.75E+02	03/10/18

Q - Data Qualifier. U - Less than MDA. MDA - Minimum Detectable Activity. TPU - Total Propagated Uncertainty. MDAs are sample specific.