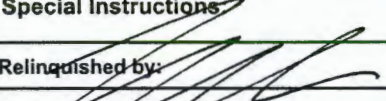


The order of this data package is as follows:

1. Chain-of-Custody/Lab Request
2. Copies of field COCs
3. Validation Report
4. Laboratory analysis

Comments:

American Radiation Baton Rouge LA		Chain of Custody/Analysis Request															COC/Lab Request #: 2018-585-1 Page 1 of 1				
Client Contact:		Lab Agreement #:			Site Name: Los Alamos National Laboratory															Rad Screening Info: Location <i>ND</i> Lab Reporting Limit Type: Method Detection Limit	
		Project Number: ADEP			<div>WSP-LL-H-3</div>																
		Analysis Turnaround Time:																			
		24 Hour - <input type="checkbox"/> Other - <input type="checkbox"/>																			
		7 Days - <input type="checkbox"/>																			
		14 Days - <input type="checkbox"/>																			
		21 Days - <input type="checkbox"/>																			
		28 Days - <input checked="" type="checkbox"/>																			
Field Sample ID	Sample Date	Sample Time	Sample Matrix																		
CAPA-18-147574	Oct 23 2017	14:19	W	1																	
CAPA-18-147575	Oct 19 2017	13:41	W	1																	
CAPA-18-147576	Oct 25 2017	09:44	W	1																	
CAPA-18-147577	Oct 24 2017	10:20	W	1																	
CAPA-18-147578	Oct 24 2017	12:56	W	1																	
CAPA-18-147579	Oct 19 2017	13:10	W	1																	
CAPA-18-147580	Oct 24 2017	11:42	W	1																	
CAMO-18-147650	Oct 25 2017	13:50	W	1																	
CAMO-18-147683	Oct 25 2017	13:50	W	1																	
CAPA-18-147581	Oct 25 2017	11:51	W	1																	
CAPA-18-147584	Oct 20 2017	12:50	W	1																	
CAPA-18-147585	Oct 19 2017	10:55	W	1																	
CAPA-18-147594	Oct 23 2017	11:05	W	1																	
CAPA-18-147595	Oct 23 2017	12:40	W	1																	
CAMO-18-147661	Oct 20 2017	10:38	W	1																	
CAPA-18-147598	Oct 20 2017	10:36	W	1																	
CAPA-18-147599	Oct 20 2017	12:12	W	1																	
Special Instructions																					
Relinquished by: 		Print Name: <i>Melissa Monfey</i>		Date/Time: <i>10/26/17 3:00</i>		Received by:					Print Name:					Date/Time:					
Relinquished by:		Print Name:		Date/Time:		Received by:					Print Name:					Date/Time:					
Relinquished by:		Print Name:		Date/Time:		Received by:					Print Name:					Date/Time:					

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147574

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	10-23-17	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1419		MEDIA:		
PRS ID:	NA		SAMPLE TECH CODE:	RSP	
LOCATION ID:	R-20 S1		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	REG	
TOP DEPTH:			SAMPLE USAGE:	INV	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / (NA)

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	MSGP-Hg	500 ML POLY	1	HNO3	Y	NA
	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL		
	WSP-8270C-SVOA	1 LITER AMBER GLASS	2	ICE		
	WSP-CN(T)	250 ML POLY	1	NAOH		
	WSP-GrossA/B	1 LITER POLY	1	HNO3		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-RAD	1 GAL POLY	1	HNO3		
	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4		

SAMPLE COMMENTS: none

LOCATION COMMENTS: none

FIELD PARAMETERS:

Sample Time	1419	HH:MM	Dissolved Oxygen	2.23 mg/L	Flow (in gpm)	0.72 gpm
Oxidation-Reduction Potential	132.9 mV		pH	8.39	Specific Conductance	139.0 μ S/cm
Temperature	18.50C		Turbidity	0.92 NTU		

COLLECTED BY (PRINT): A. Vigil

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY**EVENT ID:** 11508**EVENT NAME:** Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1**SAMPLE ID:** CAPA-18-147574**WORK ORDER:**

RELINQUISHED BY (Printed Name) Tanya VanderVier (Signature) <i>Tanya VanderVier</i>	Date/Time 10-23-17 1500	RECEIVED BY (Printed Name) <i>Sherwood</i> (Signature) <i>Sherwood</i>	Date/Time 10/23/17 1500
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147575

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	10-19-2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	13:41		MEDIA:	OK	
PRS ID:	NA		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-20 S2		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	REG	
TOP DEPTH:			SAMPLE USAGE:	INV	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / <u>NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	MSGP-Hg	500 ML POLY	1	HNO3	Y	NA
	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL		
	WSP-8270C-SVOA	1 LITER AMBER GLASS	2	ICE		
	WSP-CN(T)	250 ML POLY	1	NAOH		
	WSP-GrossA/B	1 LITER POLY	1	HNO3		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-RAD	1 GAL POLY	1	HNO3		
	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4		

SAMPLE COMMENTS:

Sampled 50' from running diesel generator

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time	13:41	HH:MM	Dissolved Oxygen	2.61	Flow (in gpm)	1.64
Oxidation-Reduction Potential	19.0		pH	7.85	Specific Conductance	143.0
Temperature	20.0		Turbidity	0.34		

COLLECTED BY (PRINT):

D. Hughes, W. Pryce

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY**EVENT ID:** 11508**EVENT NAME:** Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1**SAMPLE ID:** CAPA-18-147575**WORK ORDER:**

RELINQUISHED BY (Printed Name) <i>Damen Hughes</i> (Signature) <i>[Signature]</i>	Date/Time <i>10-19-2017</i> <i>15:00</i>	RECEIVED BY (Printed Name) <i>S. Sherwood</i> (Signature) <i>[Signature]</i>	Date/Time <i>10/19/17</i> <i>1500</i>
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147576

WORK ORDER:

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>		<u>AS PLANNED</u>	<u>AS COLLECTED</u>
Date Collected (MM/DD/YYYY):	10-25-17	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	0944		MEDIA:		
PRS ID:	NA		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-23		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	REG	
TOP DEPTH:			SAMPLE USAGE:	INV	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / <u>NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	MSGP-Hg	500 ML POLY	1	HNO3	Y	NA
	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL		
	WSP-8270C-SVOA	1 LITER AMBER GLASS	2	ICE		
	WSP-CN(T)	250 ML POLY	1	NAOH		
	WSP-GrossA/B	1 LITER POLY	1	HNO3		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-RAD	1 GAL POLY	1	HNO3		
	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4		

SAMPLE COMMENTS: Sampled with running diesel generator ~40 ft. away

LOCATION COMMENTS: none

FIELD PARAMETERS:

Sample Time	0944	HH:MM	Dissolved Oxygen	6.71 mg/L	Flow (in gpm)	11.11
Oxidation-Reduction Potential	241.9 mV		pH	8.00	Specific Conductance	168.4 μ S/cm
Temperature	21.0 °C		Turbidity	1.31 NTU		

COLLECTED BY (PRINT): D. Hughes

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY**EVENT ID:** 11508**EVENT NAME:** Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1**SAMPLE ID:** CAPA-18-147576**WORK ORDER:**

RELINQUISHED BY (Printed Name) Tanya VanderVic (Signature) <i>Tanya VanderVic</i>	Date/Time 10-25-17 1235	RECEIVED BY (Printed Name) <i>M. Montoya</i> (Signature) <i>[Signature]</i>	Date/Time 10/25/17 1235
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147577

WORK ORDER:

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>		<u>AS PLANNED</u>	<u>AS COLLECTED</u>
Date Collected (MM/DD/YYYY):	<u>10/24/2017</u>	<u>OK</u>	FIELD MATRIX:	<u>WG</u>	<u>OK</u>
TIME COLLECTED (HH:MM):	<u>1020</u>		MEDIA:	<u>OK</u>	
PRS ID:	<u>OK</u>		SAMPLE TECH CODE:	<u>RSP</u>	
LOCATION ID:	<u>R-23i S1</u>		FIELD PREP:	<u>UF</u>	
LOCATION TYPE:	<u>OK</u>		FIELD QC TYPE:	<u>REG</u>	
TOP DEPTH:			SAMPLE USAGE:	<u>INV</u>	
BOTTOM DEPTH:			EXCAVATED:		<u>YES / NO / NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
<u>MA</u>	MSGP-Hg	500 ML POLY	1	HNO3	<u>Y</u>	<u>MA</u>
	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL		
	WSP-8270C-SVOA	1 LITER AMBER GLASS	2	ICE		
	WSP-CN(T)	250 ML POLY	1	NAOH		
	WSP-GrossA/B	1 LITER POLY	1	HNO3		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-RAD	1 GAL POLY	1	HNO3		
	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4		

SAMPLE COMMENTS: MALOCATION COMMENTS: MA

FIELD PARAMETERS:

Sample Time	<u>1020</u>	HH:MM	Dissolved Oxygen	<u>5.53</u>	Flow (in gpm)	<u>1.35</u>
Oxidation-Reduction Potential	<u>16.9</u>		pH	<u>7.54</u>	Specific Conductance	<u>301.8</u>
Temperature	<u>14.6</u>		Turbidity	<u>13.2</u>		

COLLECTED BY (PRINT): T. Bonham

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147577

WORK ORDER:

RELINQUISHED BY (Printed Name) <i>Tanner Borham</i> (Signature) <i>[Signature]</i>	Date/Time <i>10/24/2017</i> <i>1350</i>	RECEIVED BY (Printed Name) <i>M. Martinez</i> (Signature) <i>[Signature]</i>	Date/Time <i>10/24/17</i> <i>1350</i>
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147578

WORK ORDER:

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>		<u>AS PLANNED</u>	<u>AS COLLECTED</u>
Date Collected (MM/DD/YYYY):	<u>10/24/2017</u>	<u>OK</u>	FIELD MATRIX:	<u>WG</u>	<u>OK</u>
TIME COLLECTED (HH:MM):	<u>1256</u>		MEDIA:	<u>OK</u>	
PRS ID:	<u>OK</u>		SAMPLE TECH CODE:	<u>GS-RSP</u> <u>10/24/17</u> <u>UF</u>	
LOCATION ID:	<u>R-23i S2</u>		FIELD PREP:		
LOCATION TYPE:	<u>OK</u>		FIELD QC TYPE:	<u>REG</u>	
TOP DEPTH:			SAMPLE USAGE:	<u>INV</u>	
BOTTOM DEPTH:			EXCAVATED:		<u>YES / NO / NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
<u>MA</u>	MSGP-Hg	500 ML POLY	1	HNO3	<u>Y</u>	<u>MA</u>
	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL		
	WSP-8270C-SVOA	1 LITER AMBER GLASS	2	ICE		
	WSP-CN(T)	250 ML POLY	1	NAOH		
	WSP-GrossA/B	1 LITER POLY	1	HNO3		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-RAD	1 GAL POLY	1	HNO3		
	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4		

SAMPLE COMMENTS: MALOCATION COMMENTS: MA

FIELD PARAMETERS:

Sample Time	<u>1256</u>	HH:MM	Dissolved Oxygen	<u>6.19</u>	Flow (in gpm)	<u>1.03</u>
Oxidation-Reduction Potential	<u>182.5</u>		pH	<u>8.13</u>	Specific Conductance	<u>201.3</u>
Temperature	<u>15.4</u>		Turbidity	<u>1.20</u>		

COLLECTED BY (PRINT): T. Barham

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY**EVENT ID:** 11508**EVENT NAME:** Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1**SAMPLE ID:** CAPA-18-147578**WORK ORDER:**

RELINQUISHED BY (Printed Name) <i>Tanner Bonham</i> (Signature) <i>[Signature]</i>	Date/Time <i>10/24/2017</i> <i>1350</i>	RECEIVED BY (Printed Name) <i>M. Martin</i> (Signature) <i>[Signature]</i>	Date/Time <i>10/24/17</i> <i>1300</i>
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147579

WORK ORDER:

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>		<u>AS PLANNED</u>	<u>AS COLLECTED</u>
Date Collected (MM/DD/YYYY):	10-19-17	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1310		MEDIA:		
PRS ID:	NA		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-23i S3		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	REG	
TOP DEPTH:			SAMPLE USAGE:	INV	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / <u>NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	MSGP-Hg	500 ML POLY	1	HNO3	Y	NA
	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL		
	WSP-8270C-SVOA	1 LITER AMBER GLASS	2	ICE		
	WSP-CN(T)	250 ML POLY	1	NAOH		
	WSP-GrossA/B	1 LITER POLY	1	HNO3		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-RAD	1 GAL POLY	1	HNO3		
	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4		

SAMPLE COMMENTS: Sampled with running diesel generator ~30 ft away.

LOCATION COMMENTS: none

FIELD PARAMETERS:

Sample Time	1310	HH:MM	Dissolved Oxygen	6.50 mg/L	Flow (in gpm)	1.61
Oxidation-Reduction Potential	168.3mV		pH	8.26	Specific Conductance	196.6 μ S/cm
Temperature	17.7°C		Turbidity	1.74 NTU		

COLLECTED BY (PRINT): A. Vigil, D. Jaramillo

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY**EVENT ID:** 11508**EVENT NAME:** Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1**SAMPLE ID:** CAPA-18-147579**WORK ORDER:**

RELINQUISHED BY (Printed Name) Tanya Vander Vis (Signature) <i>Tanya Vander Vis</i>	Date/Time 10-19-17 1350	RECEIVED BY (Printed Name) <i>S. Sherwood</i> (Signature) <i>S. Sherwood</i>	Date/Time 10/19/17 1350
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147580

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	10-24-2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	11:42		MEDIA:	OK	
PRS ID:	NA		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-32 S1		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	REG	
TOP DEPTH:			SAMPLE USAGE:	INV	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / (NA)

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	MSGP-Hg	500 ML POLY	1	HNO3	Y	NA
	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL		
	WSP-8270C-SVOA	1 LITER AMBER GLASS	2	ICE		
	WSP-CN(T)	250 ML POLY	1	NAOH		
	WSP-GrossA/B	1 LITER POLY	1	HNO3		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-RAD	1 GAL POLY	1	HNO3		
Y	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4	Y	

SAMPLE COMMENTS:

Sampled 50' from running diesel generator

LOCATION COMMENTS:

None

FIELD PARAMETERS:

Sample Time	11:42	HH:MM	Dissolved Oxygen	4.41	Flow (in gpm)	2.16
Oxidation-Reduction Potential	282.4		pH	7.10	Specific Conductance	163.7
Temperature	18.7		Turbidity	0.61		

DJH 10-24-17

COLLECTED BY (PRINT): T. VanderVis, D. Hughes

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY**EVENT ID:** 11508**EVENT NAME:** Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1**SAMPLE ID:** CAPA-18-147580**WORK ORDER:**

RELINQUISHED BY (Printed Name) <i>Darren Hughes</i> (Signature) <i>[Signature]</i>	Date/Time <i>10-24-2017</i> <i>12:35</i>	RECEIVED BY <i>MATT ENGERT</i> (Printed Name) (Signature) <i>[Signature]</i>	Date/Time <i>10-24-17</i> <i>1235</i>
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147581

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	10-25-17	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1151		MEDIA:		
PRS ID:	NA		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-39		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	REG	
TOP DEPTH:			SAMPLE USAGE:	INV	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / <u>NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	MSGP-Hg	500 ML POLY	1	HNO3	Y	NA
	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL		
	WSP-8270C-SVOA	1 LITER AMBER GLASS	2	ICE		
	WSP-CN(T)	250 ML POLY	1	NAOH		
	WSP-GrossA/B	1 LITER POLY	1	HNO3		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-RAD	1 GAL POLY	1	HNO3		
	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4		

SAMPLE COMMENTS: Sampled with running diesel generator ~30ft away

LOCATION COMMENTS: none

FIELD PARAMETERS:

Sample Time	1151	HH:MM	Dissolved Oxygen	5.66 mg/L	Flow (in gpm)	2.31
Oxidation-Reduction Potential	196.6mV		pH	6.80	Specific Conductance	138.
Temperature	19.7°C		Turbidity	2.10 NTU		

COLLECTED BY (PRINT): D. Hughes

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147581

WORK ORDER:

RELINQUISHED BY (Printed Name) Tanya Vander Vis (Signature) <i>Tanya Vander Vis</i>	Date/Time 10-25-17 1235	RECEIVED BY MATT ENGELT (Printed Name) (Signature) <i>M-Engelt</i>	Date/Time 10-25-17 1235
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147584

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	10-20-17	OK	FIELD MATRIX:	W	OK
TIME COLLECTED (HH:MM):	1250		MEDIA:		
PRS ID:	NA		SAMPLE TECH CODE:	RSP	
LOCATION ID:	R-40 SI		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	TEST	
TOP DEPTH:			SAMPLE USAGE:	TEST	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	MSGP-Hg	500 ML POLY	1	HNO3	Y	NA
	WSP-CN(T)	250 ML POLY	1	NAOH		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4		

SAMPLE COMMENTS: Breezy while sampling

LOCATION COMMENTS: none

FIELD PARAMETERS:

Sample Time	1250	HH:MM	Dissolved Oxygen	0.09 mg/L	Flow (in gpm)	0.66
Oxidation-Reduction Potential	-138.4 mV		pH	7.57	Specific Conductance	253.1 $\mu S/cm$
Temperature	16.7°C		Turbidity	0.49 NTU		

COLLECTED BY (PRINT): W. Pryce, D. Hughes

RELINQUISHED BY (Printed Name) Tanya VanderVis (Signature) <i>Tanya VanderVis</i>	Date/Time 10-20-17 1335	RECEIVED BY MATT ENGLERT (Printed Name) (Signature) <i>M-Englert</i>	Date/Time 10-20-17 1335
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147585

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	10-19-2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	10:55		MEDIA:	OK	
PRS ID:	NA		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-41 S2		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	REG	
TOP DEPTH:			SAMPLE USAGE:	INV	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / <u>NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	MSGP-Hg	500 ML POLY	1	HNO3	Y	NA
	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL		
	WSP-8270C-SVOA	1 LITER AMBER GLASS	2	ICE		
	WSP-CN(T)	250 ML POLY	1	NAOH		
	WSP-GrossA/B	1 LITER POLY	1	HNO3		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-RAD	1 GAL POLY	1	HNO3		
X	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4	X	X

SAMPLE COMMENTS:

Sampled 50' from running diesel generator

LOCATION COMMENTS:

None

FIELD PARAMETERS:

Sample Time	10:55	HH:MM	Dissolved Oxygen	6.16	Flow (in gpm)	2.78
Oxidation-Reduction Potential	146.5		pH	8.07	Specific Conductance	158.9
Temperature	21.7		Turbidity	0.76		

COLLECTED BY (PRINT): D. Hughes, W. Pope

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY**EVENT ID:** 11508**EVENT NAME:** Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1**SAMPLE ID:** CAPA-18-147585**WORK ORDER:**

RELINQUISHED BY (Printed Name) <i>Darren Hughes</i> (Signature) <i>[Signature]</i>	Date/Time <i>10-19-2017</i> <i>15:10</i>	RECEIVED BY <i>M. Martin</i> (Printed Name) (Signature) <i>[Signature]</i>	Date/Time <i>10/19/17</i> <i>1510</i>
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY**EVENT ID:** 11508**EVENT NAME:** Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1**SAMPLE ID:** CAPA-18-147595**WORK ORDER:**

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>		<u>AS PLANNED</u>	<u>AS COLLECTED</u>
Date Collected (MM/DD/YYYY):	10/23/17	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1240		MEDIA:	OK	
PRS ID:	OK		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-54 S2		FIELD PREP:	UF	
LOCATION TYPE:	OK		FIELD QC TYPE:	REG	
TOP DEPTH:	↓	↓	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	↓	↓	EXCAVATED:		YES / NO / <u>NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	MSGP-Hg	500 ML POLY	1	HNO3	Y	NA
↓	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL	↓	↓
↓	WSP-8270C-SVOA	1 LITER AMBER GLASS	2	ICE	↓	↓
↓	WSP-CN(T)	250 ML POLY	1	NAOH	↓	↓
↓	WSP-GrossA/B	1 LITER POLY	1	HNO3	↓	↓
↓	WSP-LL-H-3	1 LITER POLY	1	NONE	↓	↓
↓	WSP-RAD	1 GAL POLY	1	HNO3	↓	↓
↓	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4	↓	↓

SAMPLE COMMENTS: Sampled about 50 ft. from running diesel generator**LOCATION COMMENTS:** None**FIELD PARAMETERS:**

Sample Time	1240	HH:MM	Dissolved Oxygen	6.52	Flow (in gpm)	3.03
Oxidation-Reduction Potential	146.6		pH	8.04	Specific Conductance	125.2
Temperature	21.5		Turbidity	0.20		

COLLECTED BY (PRINT): D. Jaramillo, D. Hughes

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY**EVENT ID:** 11508**EVENT NAME:** Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1**SAMPLE ID:** CAPA-18-147595**WORK ORDER:**

RELINQUISHED BY (Printed Name) <i>Allison Stanford</i> (Signature) <i>[Signature]</i>	Date/Time <i>10/23/17</i> <i>1350</i>	RECEIVED BY <i>MATT ENGLERT</i> (Printed Name) <i>[Signature]</i> (Signature) <i>[Signature]</i>	Date/Time <i>10-23-17</i> <i>1350</i>
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147599

WORK ORDER:

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>		<u>AS PLANNED</u>	<u>AS COLLECTED</u>
Date Collected (MM/DD/YYYY):	10/20/2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1212	OK	MEDIA:		
PRS ID:	NA		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-57 S2		FIELD PREP:	UF	
LOCATION TYPE:	M		FIELD QC TYPE:	REG	
TOP DEPTH:			SAMPLE USAGE:	INV	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	MSGP-Hg	500 ML POLY	1	HNO3	Y	NA
	WSP-8082-PCB	1 LITER AMBER GLASS	3	ICE		
	WSP-8260B- VOA	40 ML SEPTUM AMBER GLASS	2	HCL		
	WSP-8270C- SVOA	1 LITER AMBER GLASS	2	ICE		
	WSP-8290-D/F	1 LITER AMBER GLASS	2	ICE		
	WSP-CN(T)	250 ML POLY	1	NAOH		
	WSP-GrossA/B	1 LITER POLY	1	HNO3		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-RAD	1 GAL POLY	1	HNO3		
	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4		

SAMPLE COMMENTS: none

LOCATION COMMENTS: Sampled 50 ft from running diesel generator

FIELD PARAMETERS:

Sample Time

NA

HH:MM

Dissolved Oxygen

5.89

Flow (in gpm)

3.65

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147599

WORK ORDER:

Oxidation-Reduction Potential	<u>210.2</u>	pH	<u>7.88</u>	Specific Conductance	<u>134.4</u>
Temperature	<u>22.3</u>	Turbidity	<u>0.5</u>		

COLLECTED BY (PRINT): A.V. Gil

RELINQUISHED BY (Printed Name) <u>Daniel Jarama</u> (Signature) <u>[Signature]</u>	Date/Time <u>10/20/17</u> <u>1305</u>	RECEIVED BY (Printed Name) <u>Shenwood</u> (Signature) <u>[Signature]</u>	Date/Time <u>10/26/17</u> <u>1305</u>
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147594

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	10/23/17	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1105		MEDIA:	OK 10/23/17 GSP	
PRS ID:	OK		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-54 S1		FIELD PREP:	UF	
LOCATION TYPE:	OK		FIELD QC TYPE:	REG	
TOP DEPTH:	↓		SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	↓	↓	EXCAVATED:		YES / NO / <u>NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-LL-H-3	1 LITER POLY	1	NONE	Y	NA

SAMPLE COMMENTS: Sampled about 50 ft. from running diesel generator

LOCATION COMMENTS: None

FIELD PARAMETERS:

Sample Time	1105	HH:MM	Dissolved Oxygen	0.92	Flow (in gpm)	2.85
Oxidation-Reduction Potential	-84.4		pH	6.83	Specific Conductance	138.9
Temperature	19.8		Turbidity	0.78		

COLLECTED BY (PRINT): D. Jaramillo

RELINQUISHED BY (Printed Name) Allizyn Stanford (Signature) <i>[Signature]</i>	Date/Time 10/23/17 1350	RECEIVED BY MATT ENGELT (Printed Name) (Signature) <i>[Signature]</i>	Date/Time 10-23-17 1350
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147598

WORK ORDER:

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>		<u>AS PLANNED</u>	<u>AS COLLECTED</u>
Date Collected (MM/DD/YYYY):	<u>10/20/2017</u>	<u>OK</u>	FIELD MATRIX:	<u>WG</u>	<u>OK</u>
TIME COLLECTED (HH:MM):	<u>1036</u>	<u>OK</u>	MEDIA:		
PRS ID:	<u>Wh</u>		SAMPLE TECH CODE:	<u>628</u>	
LOCATION ID:	<u>R-57 S1</u>		FIELD PREP:	<u>UF</u>	
LOCATION TYPE:	<u>NA</u>		FIELD QC TYPE:	<u>REG</u>	
TOP DEPTH:	<u>↓</u>		SAMPLE USAGE:	<u>INV</u>	<u>↓</u>
BOTTOM DEPTH:	<u>↓</u>	<u>↓</u>	EXCAVATED:		YES / NO / <u>(NA)</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
<u>NA</u>	MSGP-Hg	500 ML POLY	1	HNO3	<u>Y</u>	<u>NA</u>
<u>↓</u>	WSP-8082-PCB	1 LITER AMBER GLASS	3	ICE	<u>↓</u>	<u>↓</u>
	WSP-8260B- VOA	40 ML SEPTUM AMBER GLASS	2	HCL		
	WSP-8270C- SVOA	1 LITER AMBER GLASS	2	ICE		
	WSP-8290-D/F	1 LITER AMBER GLASS	2	ICE		
	WSP-CN(T)	250 ML POLY	1	NAOH		
	WSP-GrossA/B	1 LITER POLY	1	HNO3		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-RAD	1 GAL POLY	1	HNO3		
<u>↓</u>	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4	<u>↓</u>	<u>↓</u>

SAMPLE COMMENTS: NoneLOCATION COMMENTS: Sampled 50ft from running diesel generator

FIELD PARAMETERS:

Sample Time

NA

HH:MM

Dissolved Oxygen

5.67

Flow (in gpm)

3.7

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAPA-18-147598

WORK ORDER:

Oxidation-Reduction Potential	<u>176.3</u>	pH	<u>7.83</u>	Specific Conductance	<u>138.3</u>
Temperature	<u>21.4</u>	Turbidity	<u>0.1</u>		

COLLECTED BY (PRINT): A. Vigil

RELINQUISHED BY (Printed Name) <u>Daniel Scrunk</u> (Signature) <u>DS</u>	Date/Time <u>10/20/17</u> <u>1305</u>	RECEIVED BY <u>MATT ENGLERT</u> (Printed Name) (Signature) <u>[Signature]</u>	Date/Time <u>10-20-17</u> <u>1305</u>
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAMO-18-147661

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	10-20-17	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1038		MEDIA:		
PRS ID:	NA		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-55i		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	REG	
TOP DEPTH:			SAMPLE USAGE:	INV	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-LL-H-3	1 LITER POLY	1	NONE	Y	NA

SAMPLE COMMENTS: Sampled with running diesel generator ~30ft. away
breezy while sampling.

LOCATION COMMENTS: none

FIELD PARAMETERS:

Sample Time	1038	HH:MM	Dissolved Oxygen	3.83 mg/L	Flow (in gpm)	2.48
Oxidation-Reduction Potential	16.6mV		pH	7.51	Specific Conductance	301.1 μ S/cm
Temperature	17.9°C		Turbidity	0.44 NTU		

COLLECTED BY (PRINT): W. Pryce

RELINQUISHED BY (Printed Name) Tanya VanderVis (Signature) <i>Tanya VanderVis</i>	Date/Time 10-20-17 1335	RECEIVED BY MATT ENGLERT (Printed Name) (Signature) <i>Matt Englert</i>	Date/Time 10-20-17 1335
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAMO-18-147650

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	10/25/2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1350		MEDIA:		
PRS ID:	NA		SAMPLE TECH CODE:	PSP GS DS-10-25-11	
LOCATION ID:	R-37 S1		FIELD PREP:	UF	
LOCATION TYPE:	M		FIELD QC TYPE:	REG	
TOP DEPTH:	↓		SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	↓	↓	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	MSGP-Hg	500 ML POLY	1	HNO3	Y	NA
↓	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL	↓	↓
	WSP-8270C-SVOA	1 LITER AMBER GLASS	2	ICE		
	WSP-CN(T)	250 ML POLY	1	NAOH		
	WSP-GrossA/B	1 LITER POLY	1	HNO3		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-RAD	1 GAL POLY	1	HNO3		
↓	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4	↓	↓

SAMPLE COMMENTS: None

LOCATION COMMENTS: None

FIELD PARAMETERS:

Sample Time	NA	HH:MM	Dissolved Oxygen	1.77	Flow (in gpm)	.69
Oxidation-Reduction Potential	159.6		pH	8.37	Specific Conductance	235.7
Temperature	17.7		Turbidity	0.19		

COLLECTED BY (PRINT): T. Bunhen

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY**EVENT ID:** 11508**EVENT NAME:** Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1**SAMPLE ID:** CAMO-18-147650**WORK ORDER:**

RELINQUISHED BY (Printed Name) <i>David Scrub</i> (Signature) <i>[Signature]</i>	Date/Time <i>10/25/17</i> <i>1500</i>	RECEIVED BY (Printed Name) <i>[Signature]</i> (Signature) <i>[Signature]</i>	Date/Time <i>10/25/17</i> <i>1500</i>
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11508

EVENT NAME: Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1

SAMPLE ID: CAMO-18-147683

WORK ORDER:

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>		<u>AS PLANNED</u>	<u>AS COLLECTED</u>
Date Collected (MM/DD/YYYY):	10/25/2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1350	OK	MEDIA:		
PRS ID:	NA		SAMPLE TECH CODE:	RSP	
LOCATION ID:	R-37 S1		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	FD	
TOP DEPTH:	1		SAMPLE USAGE:	QC	
BOTTOM DEPTH:	1		EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	MSGP-Hg	500 ML POLY	1	HNO3	Y	NA
	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL		
	WSP-8270C-SVOA	1 LITER AMBER GLASS	2	ICE		
	WSP-CN(T)	250 ML POLY	1	NAOH		
	WSP-GrossA/B	1 LITER POLY	1	HNO3		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-RAD	1 GAL POLY	1	HNO3		
	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4		

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time _____ HH:MM _____ Dissolved Oxygen _____ Flow (in gpm) _____
 Oxidation-Reduction Potential _____ pH _____ Specific Conductance _____
 Temperature _____ Turbidity _____

COLLECTED BY (PRINT): T. Benham

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY**EVENT ID:** 11508**EVENT NAME:** Pajarito (TA-54) & Chromium October
Monthly MY2018 Q1**SAMPLE ID:** CAMO-18-147683**WORK ORDER:**

RELINQUISHED BY (Printed Name) <i>Samuel Sanchez</i> (Signature) <i>[Signature]</i>	Date/Time 10/25/17 1500	RECEIVED BY <i>U. Montoya</i> (Printed Name) (Signature) <i>[Signature]</i>	Date/Time 10/25/17 1500
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 10/05/2017

2018-585		TEST - Explosives		YES	NO
Samples collected from a WFO area?					<input checked="" type="checkbox"/>
Field Test for Explosives Results				YES	NO
Spot test shows presence of explosives residues. If YES - Do not ship.				<input checked="" type="checkbox"/>	

TEST - Chemical Preservation		YES	NO
Samples are chemically preserved?			<input checked="" type="checkbox"/>
Field Team Member Statement		YES	NO
Chemical preservation exceeds limits given 40 CFR 136, Table II - Required Containers, Preservation Techniques and Holding Times (footnote 3). If YES - Do not ship.			<input checked="" type="checkbox"/>

TEST - Field Screen			YES	NO
The sample has field screening measurements of alpha activity and beta activity?				<input checked="" type="checkbox"/>
Sample Activity (dpm/100cm ²)	Shipment Activity (dpm*g/100cm ²)	Sampled Location	YES	NO
Alpha detectable	Alpha >160,000	TA-1 and adjacent hillsides, TA-21, Acid Canyon, MDA C at TA-50, Area G at TA-54, TA-48, or TA-49		<input checked="" type="checkbox"/>
Alpha > 125	Alpha >1,250,000	other locations		
Beta > 1,500	Beta >15,000,000	any location		
The sample Alpha >16,000,000 dpm*g/100cm ² or Beta > 160,000,000 dpm*g/100cm ² . If YES - Do not ship.				
On the external surface of the sample container, alpha activity ≥ 24 dpm/cm ² , beta activity ≥ 240 dpm/cm ² , or surface activity ≥ 0.5 mR/hr. If YES - Do not ship.				
The sample is tentatively identified as DOT Hazard Class 7 (Radioactive). The shipment is labeled Radioactive Material, Excepted Package - Limited Quantity of Material - UN2910, based on field screening measurements of alpha and beta activity.				

TEST - Location		YES	NO
Prior analytical measurements of radioactive isotopes are available?		<input checked="" type="checkbox"/>	
Sample Activity (pCi/g)	Shipment Activity (pCi)	YES	NO
<ul style="list-style-type: none"> Am-241 > 27 Cs-137 > 270 Pu-238 > 27 Pu-239/240 > 27 Th-228 > 27 U-234 > 270 U-238 > 270 H-3 > 27,000,000 	<ul style="list-style-type: none"> Am-241 > 270,000 Cs-137 > 270,000 Pu-238 > 270,000 Pu-239/240 > 270,000 Th-228 > 270,000 U-234 > 1,600,000,000 U-238 > unlimited H-3 > 27,000,000,000 		<input checked="" type="checkbox"/>
Am-241, Pu-238, Pu-239/240, or Th-228 > 27,000,000 pCi; or Cs-137 > 270,000,000 pCi or U-234 ≥ 160,000,000 pCi; or H-3 ≥ 1 Ci. If YES - Do not ship.			<input checked="" type="checkbox"/>
The sample is tentatively identified as DOT Hazard Class 7 (Radioactive). The shipment is labeled Radioactive Material, Excepted Package - Limited Quantity of Material - UN2910, based on prior analytical measurements of radioactive isotopes.			<input checked="" type="checkbox"/>

TEST - AK		YES	NO	NA
The shippers documented knowledge of the sample positively identifies appropriate labeling.				<input checked="" type="checkbox"/>
The sample is tentatively identified as DOT Hazard Class 7 (Radioactive). The shipment is labeled Radioactive Material, Excepted Package - Limited Quantity of Material - UN2910, and the sample is submitted to ARS or RP for hazard classification analysis.				<input checked="" type="checkbox"/>

HOLD SAMPLES FOR ANALYSIS	
The samples are held per ER-SOP-10094, Rev. 1, 5.2.2 [7]	

These samples do not meet the criteria for classification in any hazard class according to regulation OSHA 29 CFR 1910.1200. The sample(s) contained in this shipment have been assigned a tentative proper DOT shipping name, hazard class, identification number, and packing group, based on the shipper's knowledge of the sample:

Hazard Assessment Completed By:	Date/Time
(Printed Name) <i>Miss. M...</i>	10/26/17
(Signature) <i>[Signature]</i>	3:00

Hazard Assessment Reviewed By:	Date/Time
(Printed Name) MATT ENGLERT	10-26-17
(Signature) <i>[Signature]</i>	1500

DATA VALIDATION REPORT

Chain Of Custody No. 2018-585

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
ARS1-17-03177	Generic:Low_Level_Tritium	3				
ARS1-17-03177	Generic:Low_Level_Tritium	3				
ARS1-17-03177	Generic:Low_Level_Tritium	3				
ARS1-17-03177	Generic:Low_Level_Tritium	3				
ARS1-17-03177	Generic:Low_Level_Tritium	3	1			

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups	Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spike	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
ARS1-17-03177	Generic:Low_Level_Tritium	ARS1-B17-	ARS1-B17-	15	1				1					1	1						

2. Distribution Of Analytes In EDD.

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
Generic:Low_Level_Tritium	RAD	CAMO-18-147650	ARS1-B17-02479-11	REG	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAMO-18-147661	ARS1-B17-02479-18	REG	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAMO-18-147683	ARS1-B17-02479-12	FD	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAPA-18-147574	ARS1-B17-02479-04	REG	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAPA-18-147575	ARS1-B17-02479-05	REG	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAPA-18-147576	ARS1-B17-02479-06	REG	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAPA-18-147577	ARS1-B17-02479-07	REG	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAPA-18-147578	ARS1-B17-02479-08	REG	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAPA-18-147579	ARS1-B17-02479-09	REG	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAPA-18-147580	ARS1-B17-02479-10	REG	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAPA-18-147581	ARS1-B17-02479-13	REG	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAPA-18-147584	ARS1-B17-02479-14	TEST	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAPA-18-147585	ARS1-B17-02479-15	REG	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAPA-18-147594	ARS1-B17-02479-16	REG	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAPA-18-147595	ARS1-B17-02479-17	REG	1	0	0	0
Generic:Low_Level_Tritium	RAD	CAPA-18-147598	ARS1-B17-02479-19	REG	1	0	0	0

DATA VALIDATION REPORT

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
Generic:Low_Level_Tritium	RAD	CAPA-18-147599	ARS1-B17-02479-20	REG	1	0	0	0
Generic:Low_Level_Tritium	RAD	LCS	ARS1-B17-02479-01	LCS	0	0	1	0
Generic:Low_Level_Tritium	RAD	LCSD	ARS1-B17-02479-02	LCSD	0	0	1	0
Generic:Low_Level_Tritium	RAD	MB	ARS1-B17-02479-03	MB	1	0	0	0

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

No.

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

No.

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

No.

9. Any Field Duplicate RPDs outside the desired limits?

DATA VALIDATION REPORT

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

13. Display Flagged Data.

Location ID	COC Number	Field Sample ID	Sample Purpose	Analysis Type Code	Analytical Suite	Analytical Method	Parameter Name	Lab Qualifier	Validation Qualifier	Validation Reason Codes	Detect Flag	Lab Result	Lab Units	Report Result	Report Units	Report MDA	Report Uncertainty	Lab Matrix	Sample Date	Percent	Analysis Lot ID	Validation Status Code	Use Flag
R-55i	2018-585	CAMO-18-147661	REG	INIT	RAD	Generic:Low_Level_Tritium	Tritium	U	U	R5	N	0.075	pCi/L	0.075	pCi/L	2.646	0.782	W	10/20/2017		ARS1-B17-02479		Y
R-20 S1	2018-585	CAPA-18-147574	REG	INIT	RAD	Generic:Low_Level_Tritium	Tritium	U	U	R5	N	0.948	pCi/L	0.948	pCi/L	2.838	0.866	W	10/23/2017		ARS1-B17-02479		Y
R-20 S2	2018-585	CAPA-18-147575	REG	INIT	RAD	Generic:Low_Level_Tritium	Tritium	U	U	R5	N	-0.374	pCi/L	-0.374	pCi/L	2.342	0.687	W	10/19/2017		ARS1-B17-02479		Y
R-23	2018-585	CAPA-18-147576	REG	INIT	RAD	Generic:Low_Level_Tritium	Tritium	U	U	R5	N	2.347	pCi/L	2.347	pCi/L	2.873	0.957	W	10/25/2017		ARS1-B17-02479		Y
R-32 S1	2018-585	CAPA-18-147580	REG	INIT	RAD	Generic:Low_Level_Tritium	Tritium	U	U	R5	N	2.081	pCi/L	2.081	pCi/L	2.816	0.923	W	10/24/2017		ARS1-B17-02479		Y
R-40 Si	2018-585	CAPA-18-147584	TEST	INIT	RAD	Generic:Low_Level_Tritium	Tritium	U	U	R5	N	2.078	pCi/L	2.078	pCi/L	2.648	0.876	W	10/20/2017		ARS1-B17-02479		Y
R-54 S1	2018-585	CAPA-18-147594	REG	INIT	RAD	Generic:Low_Level_Tritium	Tritium	U	U	R5	N	-1.299	pCi/L	-1.299	pCi/L	2.632	0.777	W	10/23/2017		ARS1-B17-02479		Y
R-54 S2	2018-585	CAPA-18-147595	REG	INIT	RAD	Generic:Low_Level_Tritium	Tritium	U	U	R5	N	-0.610	pCi/L	-0.610	pCi/L	2.817	0.825	W	10/23/2017		ARS1-B17-02479		Y
R-57 S1	2018-585	CAPA-18-147598	REG	INIT	RAD	Generic:Low_Level_Tritium	Tritium	U	U	R5	N	-1.731	pCi/L	-1.731	pCi/L	2.801	0.836	W	10/20/2017		ARS1-B17-02479		Y
R-57 S2	2018-585	CAPA-18-147599	REG	INIT	RAD	Generic:Low_Level_Tritium	Tritium	U	U	R5	N	0.852	pCi/L	0.852	pCi/L	2.638	0.804	W	10/20/2017		ARS1-B17-02479		Y

Reason Code

Description

- NQ The analytical laboratory did not qualify the analyte as not detected and/or any other standard qualify. The analyte is detected in the sample.
- R5 Analyte is not detected because the amount reported is less than the MDC.

14. Usable Result Count.

DATA VALIDATION REPORT

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAMO-18-147650	R-37 S1	REG	Generic:Low_Level_Tritium	0	1
CAMO-18-147661	R-55i	REG	Generic:Low_Level_Tritium	0	1
CAMO-18-147683	R-37 S1	FD	Generic:Low_Level_Tritium	0	1
CAPA-18-147574	R-20 S1	REG	Generic:Low_Level_Tritium	0	1
CAPA-18-147575	R-20 S2	REG	Generic:Low_Level_Tritium	0	1
CAPA-18-147576	R-23	REG	Generic:Low_Level_Tritium	0	1
CAPA-18-147577	R-23i S1	REG	Generic:Low_Level_Tritium	0	1
CAPA-18-147578	R-23i S2	REG	Generic:Low_Level_Tritium	0	1
CAPA-18-147579	R-23i S3	REG	Generic:Low_Level_Tritium	0	1
CAPA-18-147580	R-32 S1	REG	Generic:Low_Level_Tritium	0	1
CAPA-18-147581	R-39	REG	Generic:Low_Level_Tritium	0	1
CAPA-18-147584	R-40 Si	TEST	Generic:Low_Level_Tritium	0	1
CAPA-18-147585	R-41 S2	REG	Generic:Low_Level_Tritium	0	1
CAPA-18-147594	R-54 S1	REG	Generic:Low_Level_Tritium	0	1
CAPA-18-147595	R-54 S2	REG	Generic:Low_Level_Tritium	0	1
CAPA-18-147598	R-57 S1	REG	Generic:Low_Level_Tritium	0	1
CAPA-18-147599	R-57 S2	REG	Generic:Low_Level_Tritium	0	1



ARS International, LLC

Laboratory Analysis Report

ARS1-17-03177

Prepared for:

Los Alamos National Laboratory

**Nita Patel
P.O. Box 1663
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Los Alamos, NM 87545**

**npatel@lanl.gov
sherwoods@lanl.gov**

**Phone: 505-665-9273
Fax: 505-665-9972**

A handwritten signature in black ink, appearing to read "Susan Reese", is written over a horizontal line.

Project Manager Review

Notes: ARS International, LLC assumes no liability for the use or the interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Contact Person: Questions regarding this analytical report should be addressed to:

**Project Manager
ProjectManagers@amrad.com**

**Phone: 225.381.2991
Fax: 225.381.2996**



December 28, 2017

Nita Patel
Sherri Sherwood
Los Alamos National Laboratory
505-665-9273
npatel@lanl.gov

ARS SDG: **ARS1-17-03177**
COC Number: 2018-585
Charge Code: ADEP

Dear Nita,

On October 27, 2017, ARS International received seventeen (17) samples to be analyzed for Enriched H-3.

The samples were processed and counted using the appropriate equipment and techniques for these types of analyses. Results of all the analyses are attached in the data package.

The client and QA/QC samples were counted with a count time sufficient to meet quality control parameters for counting equipment and were within acceptance criteria and statistical sound detection limits.

If you have any questions, please do not hesitate to call at 255.381.2991 or email ProjectManagers@amrad.com.

Sincerely,

Susan Leese
Project Management
ARS International



**PROJECT SAMPLE IDENTIFICATION
CROSS-REFERENCE
TO ARS SAMPLE LABORATORY IDs**

Client Sample ID NUMBER	American Radiation Services SAMPLE ID NUMBER(S)
CAPA-18-147574	ARS1-17-03177-001
CAPA-18-147575	ARS1-17-03177-002
CAPA-18-147576	ARS1-17-03177-003
CAPA-18-147577	ARS1-17-03177-004
CAPA-18-147578	ARS1-17-03177-005
CAPA-18-147579	ARS1-17-03177-006
CAPA-18-147580	ARS1-17-03177-007
CAMO-18-147650	ARS1-17-03177-008
CAMO-18-147683	ARS1-17-03177-009
CAPA-18-147581	ARS1-17-03177-010
CAPA-18-147584	ARS1-17-03177-011
CAPA-18-147585	ARS1-17-03177-012
CAPA-18-147594	ARS1-17-03177-013
CAPA-18-147595	ARS1-17-03177-014
CAMO-18-147661	ARS1-17-03177-015
CAPA-18-147598	ARS1-17-03177-016
CAPA-18-147599	ARS1-17-03177-017

SAMPLE RECEIPT/PREP

The samples arrived in good condition. The samples were screened for radioactive contamination as per procedure ARS-062 "Sample Receiving". Turnaround time was set at 40 calendar days.

ANALYTICAL METHODS

Enriched H-3 analysis was performed using ARS-040, "Tritium Assay in Water Samples Using Electrolytic Enrichment".

H-3 screening analysis was performed using ARS-054, "Tritium in Water (EPA 906.0)".

ANALYTICAL RESULTS

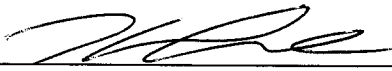
All QC criteria were met.



American Radiation Services Laboratory Management's Comments:

"I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this sample data package and the computer-readable EDD, as applicable, submitted on diskette or by modem, has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature."

"I certify that this electronic image and all hardcopies produced from this image accurately represent the data and is in compliance with client specific requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package narrative. Release, by submission through email, the data contained in this electronic image and the computer-readable EDD (as applicable), has been authorized by the laboratory Manager/Technical Director or the Manager's designee."



Signature

Laboratory Management, ARS International

Title

12-28-17

Date



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1 (800) 401-4277 • FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAPA-18-147574

Sample Collection Date: 10/23/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-001

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	0.948	0.866	2.838	1.378	3.221	U	pCi/L	ARS-040/	12/14/17 0:34	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAPA-18-147575

Sample Collection Date: 10/19/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-002

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	-0.374	0.687	2.342	1.137	3.221	U	pCi/L	ARS-040/	12/14/17 6:16	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAPA-18-147576

Sample Collection Date: 10/25/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-003

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	2.347	0.957	2.873	1.395	3.221	U	pCi/L	ARS-040/	12/14/17 11:59	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAPA-18-147577

Sample Collection Date: 10/24/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-004

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	66.083	10.021	2.361	1.146	3.221		pCi/L	ARS-040/	12/14/17 17:42	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAPA-18-147578

Sample Collection Date: 10/24/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-005

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	14.382	2.326	2.189	1.063	3.221		pCi/L	ARS-040/	12/14/17 23:25	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAPA-18-147579

Sample Collection Date: 10/19/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-006

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	15.821	2.660	3.207	1.557	3.221		pCi/L	ARS-040/	12/15/17 5:07	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAPA-18-147580

Sample Collection Date: 10/24/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-007

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	2.081	0.923	2.816	1.367	3.221	U	pCi/L	ARS-040/	12/15/17 10:49	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAMO-18-147650

Sample Collection Date: 10/25/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-008

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	30.638	4.753	2.636	1.279	3.221		pCi/L	ARS-040/	12/15/17 16:31	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAMO-18-147683

Sample Collection Date: 10/25/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-009

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	26.755	4.199	2.852	1.385	3.221		pCi/L	ARS-040/	12/15/17 22:13	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAPA-18-147581

Sample Collection Date: 10/25/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-010

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	131.572	19.850	2.736	1.328	3.221		pCi/L	ARS-040/	12/16/17 3:56	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAPA-18-147584

Sample Collection Date: 10/20/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-011

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	2.078	0.876	2.648	1.285	3.221	U	pCi/L	ARS-040/	12/16/17 9:38	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAPA-18-147585

Sample Collection Date: 10/19/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-012

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	2.796	0.909	2.564	1.245	3.221		pCi/L	ARS-040/	12/16/17 15:21	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAPA-18-147594

Sample Collection Date: 10/23/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-013

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	-1.299	0.777	2.632	1.278	3.221	U	pCi/L	ARS-040/	12/16/17 21:04	MMORGAN	N/A

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2609 North River Road • Port Allen, Louisiana 70767

1 (800) 401-4277 • FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAPA-18-147595

Sample Collection Date: 10/23/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-014

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	-0.610	0.825	2.817	1.367	3.221	U	pCi/L	ARS-040/	12/17/17 2:46	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAMO-18-147661

Sample Collection Date: 10/20/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-015

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	0.075	0.782	2.646	1.284	3.221	U	pCi/L	ARS-040/	12/17/17 8:29	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAPA-18-147598

Sample Collection Date: 10/20/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-016

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	-1.731	0.836	2.801	1.360	3.221	U	pCi/L	ARS-040/	12/17/17 14:11	MMORGAN	N/A

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ARS Sample Delivery Group: ARS1-17-03177

Client Sample ID: CAPA-18-147599

Sample Collection Date: 10/20/17

Sample Matrix: Aqueous

Percent Solids: N/A

Request or PO Number: 2018-585

ARS Sample ID: ARS1-17-03177-017

Date Received: 10/27/17

Report Date: 12/18/17

Radiochemistry

Analysis Description	Analysis Results	CSU +/-1s	MDC	DLC	CRDL	Qual	Analysis Units	Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Enriched H-3	0.852	0.804	2.638	1.280	3.221	U	pCi/L	ARS-040/	12/17/17 19:54	MMORGAN	N/A

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QC Results per Analytical Batch

Analytical Batch	ARS1-B17-02479
SDG	ARS1-17-03177
Analysis	Low Level Tritium by Electrolytic Enrichment
Analysis Test Method	ARS-040/
Analysis Code	LSC-LLH3-AQ
Report Units	pCi/L

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	Recovery (%):	> 80	< 120
Matrix Spike	Recovery (%):	> 60	< 140
Duplicate	Replicate Error Ratio (RER):	< 1	
	Duplicate Error Ratio (DER):	< 3	
	Relative Percent Difference (RPD %):	≤ 25	

Laboratory Control Sample			Analysis Date	12/13/17 07:26	Analysis Technician	MMORGAN	
Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (1s)	Expected Value	LCS Rec (%)	MDC
ARS1-B17-02479-01	LCS	ENRICHED H-3	27.264	4.236	32.789	83.2	2.420

Duplicate RER/DER/RPD			Analysis Date	12/13/17 13:08	Analysis Technician	MMORGAN	
Analyte	Results LCS	CSU LCS (1s)	Results LCSD	CSU LCSD (1s)	RER	DER	RPD
ENRICHED H-3	27.264	4.236	33.630	5.209	0.674	0.948	20.9

Method Blank			Analysis Date	12/13/17 18:51	Analysis Technician	MMORGAN	
Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (1s)	MDC	Qual	
ARS1-B17-02479-03	MBL	ENRICHED H-3	0.402	0.752	2.515	U	

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Notes (Case Narrative):

General Comments:

- 1.0) Soil and Sludge analysis are reported on a wet basis or an as received basis unless otherwise indicated.
- 2.0) Modified analysis procedures are procedures that are modified to meet the certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix. Modified analyses are indicated by the subsequent addition of "m" to the procedure number (i.e. 900.0M).

Radiochemistry Comments:

- 1.0) All MDA/MDC values are calculated on a sample specific basis.
- 2.0) Data in this report are within the limits of uncertainty specified in the reference method unless otherwise specified.
- 3.0) Total activity is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than the actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.
- 4.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228 (Gamma Spectroscopy only).
- 5.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234 (Gamma Spectroscopy only).
- 6.0) All gamma spectroscopy was performed utilizing high purity germanium detectors (HPGe).
- 7.0) ARS makes every attempt to match sample density to calibrated density; however, in some cases, it is not practical or possible to do so and data results may be affected (Gamma Spectroscopy only).
- 8.0) Gamma spectroscopy results are calculated values based on the ORTEC® GammaVision ENV32 Analysis Engine.
- 9.0) ACLASS DOD and ISO 17025 certification applies only to the following analytes and methods: Gross Alpha and Gross Beta (EPA 900, SM7110B&C, SW846 9310); Radium 226 (EPA 903, EPA 903.1, SM 7500 Ra-B, SW846 9315); Radium 228 (EPA 904, SM 7500 Ra-B SW846 9320); Iodine-131(EPA 901.1); Uranium by ICPMS (EPA 200.8); Strontium 89/90 (EPA 905, Eichrom SRW01, HASL 300 Sr-03-RC); Tritium (EPA 906, EPA 906M); Gamma Emitters (EPA 901.1, SM7120B, HASL 300 Ga-01-R); Americium-241, Curium 242/244, Plutonium 239/240 and 241, Thorium 228/230/232, Uranium 234/233 and 238 (Eichrom ACW03 VBS); Lead 210 (HASL 300 Pb-01-RC, Eichrom OTW01); Polonium 210 (HASL 300 Po-01-RC, HASL 300 Po-02-RC); Technetium-99 (Eichrom TCW02, Eichrom TCS01M).

Definitions:

CRDL	Contract Required Detection Limit
CSU	Combined Standard Uncertainty
DLC	Decision Level Concentration (ANSI N42.23) or critical level
DO	Duplicate Original
DUP	Method Duplicate
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MDA	Minimum Detectable Activity
MDC	(Minimum Detectable Concentration) minimum concentration of the analyte that ARS can detect utilizing the specific analysis
MBL	Method Blank
MS/MSD	Matrix Spike/Matrix Spike Duplicate
N/A	Not Applicable
NP	Not Provided
NR	Not Referenced
LOD	Limit of Detection
LOQ	Limit of Quantitation

Data Qualifiers:

B	The analyte is found in both the associated method blank and the sample. This flag indicates probable blank contamination.
D	Sample analysis accomplished through dilution.
J	The reported result is an estimated value above the limit of detection but outside of quantitation range (e.g., matrix interference was observed).
Q	One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery, or CCV recovery).
U	Activity is below the MDC, MDA, MDL, or LOD
N	The analyte is a tentatively identified compound using mass spectrometry or any non-customer requested compounds that are tentatively identified.
*	LCS/LCSD or MS/MSD fails RPD criteria.
S	Spike
SC	Subcontracted out to another qualified laboratory
H	Holding time exceeded

