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EBERLINE SERVICES

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July 2, 2009

Mr. Michael Neely
CH2M Hill Plateau Remediation Company
P.O. Box 1600
Mail Stop – B6-06
Richland, WA 99352

Reference: **P.O. #33677**
Eberline Analytical R9-06-112-7847, SDG H4012

Dear Mr. Neely:

Enclosed is a data report for four solid (soil) samples designated under SAF No. R09-017 received at Eberline Analytical on June 25, 2009. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

N. Joseph Verville
Senior Program Manager

NJV/jljb

Enclosure: Case Narrative

1.0 GENERAL

CH2M Hill Plateau Remediation Company (CHPRC) Sample Delivery Group H4012 was composed of four solid (soil) samples designated under SAF No. R09-017 with a Project Designation of: ARRA 200-CW-3 – Soil Sampling.

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist.

2.0 ANALYSIS NOTES

2.1 Tritium Analysis

No problems were encountered during the course of the analyses

2.2 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

2.3 Technetium-99 Analysis

No problems were encountered during the course of the analyses.

2.4 Nickel-63 Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Thorium Analysis

The Th-229 tracer yield for sample B20W87 was 114%, which is greater than the upper control limit of 110%. No problems were encountered during the course of the analyses.

2.6 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.7 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.8 Americium-241 Analysis

No problems were encountered during the course of the analyses.

2.9 Gamma Spectroscopy Analysis

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

N. Joseph Verville
Senior Program Manager

7/2/09
Date

E B E R L I N E S E R V I C E S / R I C H M O N D
SAMPLE DELIVERY GROUP H4012

SDG	7847
Contact	N. Joseph Verville

Client	CHPRC
Contract	No. 33677
Case no	SDG_H4012

S U M M A R Y D A T A S E C T I O N

T A B L E O F C O N T E N T S

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Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	07/02/09

SDG 7847
Contact N. Joseph Verville

Client CHPRC
Contract No. 33677
Case no SDG H4012

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/02/09

SDG 7847
Contact N. Joseph Verville

Client CHPRC
Contract No. 33677
Case no SDG_H4012

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

SDG 7847
Contact N. Joseph Verville

LAB SAMPLE SUMMARY

Client CHPRC
Contract No. 33677
Case no SDG H4012

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R906112-01	B20VJ1	UPR-N-2;I-001 Testpit #1	SOLID		R09-017	R09-017-149	06/17/09 13:10
R906112-02	B20VJ2	UPR-N-2;I-001DTestpit #1	SOLID		R09-017	R09-017-151	06/17/09 13:10
R906112-03	B20W87	216-N-6;I-013 Testpit #1	SOLID		R09-017	R09-017-232	06/09/09 10:30
R906112-04	B20W88	216-N-6;I-014 Testpit #1	SOLID		R09-017	R09-017-233	06/10/09 08:30
R906112-05	Lab Control Sample		SOLID		R09-017		
R906112-06	Method Blank		SOLID		R09-017		
R906112-07	Duplicate (R906112-01)	UPR-N-2;I-001 Testpit #1	SOLID		R09-017		06/17/09 13:10
R906112-08	Lab Control Sample		SOLID		R09-017		
R906112-09	Method Blank		SOLID		R09-017		
R906112-10	Duplicate (R906112-01)	UPR-N-2;I-001 Testpit #1	SOLID		R09-017		06/17/09 13:10

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

SDG 7847
Contact N. Joseph Verville

QC SUMMARY

Client CHPRC
Contract No. 33677
Case no SDG H4012

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7847	R09-017-149	B20VJ1	SOLID	91.9	584.8 g		06/25/09	8	R906112-01	7847-001
	R09-017-151	B20VJ2	SOLID	91.8	554.8 g		06/25/09	8	R906112-02	7847-002
	R09-017-232	B20W87	SOLID	96.0	562.1 g		06/25/09	16	R906112-03	7847-003
	R09-017-233	B20W88	SOLID	97.2	697.0 g		06/25/09	15	R906112-04	7847-004
		Method Blank	SOLID						R906112-06	7847-006
		Method Blank	SOLID						R906112-09	7847-009
		Lab Control Sample	SOLID						R906112-05	7847-005
		Lab Control Sample	SOLID						R906112-08	7847-008
		Duplicate (R906112-01)	SOLID	91.9	584.8 g		06/25/09	8	R906112-07	7847-007
		Duplicate (R906112-01)	SOLID	91.9	584.8 g		06/25/09	8	R906112-10	7847-010

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 07/02/09

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SAMPLE DELIVERY GROUP H4012

SDG 7847
Contact N. Joseph Verville

PREP BATCH SUMMARY

Client CHPRC
Contract No. 33677
Case no SDG H4012

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	SOLID	Americium 241 in Solids	7197-186	8.0	4			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	7197-186	8.0	4			1	1	1/1		
TH	SOLID	Thorium, Isotopic in Solids	7197-186	8.0	4			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	7197-186	8.0	4			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	7197-186	10.4	4			1	1	1/1		
TC	SOLID	Technetium 99 in Solids	7197-186	13.2	4			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	7197-186	7.0	4			1	1	1/1		
Liquid Scintillation Counting												
H	SOLID	Tritium in Solids	7197-186	10.0	4			1	1	1/1		
NI_L	SOLID	Nickel 63 in Solids	7197-186	11.2	4			1	1	1/1		

Blank, LCS, Duplicate and Spike planchets are those in the same preparation batch as some Client sample.

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SAMPLE DELIVERY GROUP H4012

SDG 7847
Contact N. Joseph Verville

LAB WORK SUMMARY

Client CHPRC
Contract No. 33677
Case no SDG H4012

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	MATRIX SAF No	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R906112-01	B20VJ1		7847-001	AM		06/29/09	06/29/09	BW	Americium 241 in Solids
06/17/09	UPR-N-2;I-001	Testpit #1 SOLID	7847-001	GAM		06/26/09	06/29/09	CSS	Gamma Scan
06/25/09	R09-017-149	R09-017	7847-001	H		07/01/09	07/02/09	BW	Tritium in Solids
			7847-001	NI_L		06/30/09	07/01/09	BW	Nickel 63 in Solids
			7847-001	PU		06/30/09	06/30/09	BW	Plutonium, Isotopic in Solids
			7847-001	SR		06/29/09	07/02/09	BW	Total Strontium in Solids
			7847-001	TC		06/30/09	07/01/09	BW	Technetium 99 in Solids
			7847-001	TH		06/29/09	06/30/09	BW	Thorium, Isotopic in Solids
			7847-001	U		06/29/09	06/29/09	BW	Uranium, Isotopic in Solids
R906112-02	B20VJ2		7847-002	AM		06/29/09	06/29/09	BW	Americium 241 in Solids
06/17/09	UPR-N-2;I-001D	Testpit #1 SOLID	7847-002	GAM		06/26/09	06/29/09	CSS	Gamma Scan
06/25/09	R09-017-151	R09-017	7847-002	H		07/01/09	07/02/09	BW	Tritium in Solids
			7847-002	NI_L		06/30/09	07/01/09	BW	Nickel 63 in Solids
			7847-002	PU		06/30/09	06/30/09	BW	Plutonium, Isotopic in Solids
			7847-002	SR		06/29/09	07/02/09	BW	Total Strontium in Solids
			7847-002	TC		06/30/09	07/01/09	BW	Technetium 99 in Solids
			7847-002	TH		06/29/09	06/30/09	BW	Thorium, Isotopic in Solids
			7847-002	U		06/29/09	06/29/09	BW	Uranium, Isotopic in Solids
R906112-03	B20W87		7847-003	AM		06/29/09	06/29/09	BW	Americium 241 in Solids
06/09/09	216-N-6;I-013	Testpit #1 SOLID	7847-003	GAM		06/26/09	06/29/09	CSS	Gamma Scan
06/25/09	R09-017-232	R09-017	7847-003	H		07/01/09	07/02/09	BW	Tritium in Solids
			7847-003	NI_L		06/30/09	07/01/09	BW	Nickel 63 in Solids
			7847-003	PU		06/30/09	06/30/09	BW	Plutonium, Isotopic in Solids
			7847-003	SR		06/29/09	07/02/09	BW	Total Strontium in Solids
			7847-003	TC		07/01/09	07/01/09	BW	Technetium 99 in Solids
			7847-003	TH		06/29/09	06/30/09	BW	Thorium, Isotopic in Solids
			7847-003	U		06/29/09	06/29/09	BW	Uranium, Isotopic in Solids
R906112-04	B20W88		7847-004	AM		06/29/09	06/29/09	BW	Americium 241 in Solids
06/10/09	216-N-6;I-014	Testpit #1 SOLID	7847-004	GAM		06/26/09	06/29/09	CSS	Gamma Scan
06/25/09	R09-017-233	R09-017	7847-004	H		07/01/09	07/02/09	BW	Tritium in Solids
			7847-004	NI_L		06/30/09	07/01/09	BW	Nickel 63 in Solids
			7847-004	PU		06/30/09	06/30/09	BW	Plutonium, Isotopic in Solids
			7847-004	SR		06/29/09	07/02/09	BW	Total Strontium in Solids
			7847-004	TC		07/01/09	07/01/09	BW	Technetium 99 in Solids
			7847-004	TH		06/29/09	06/30/09	BW	Thorium, Isotopic in Solids
			7847-004	U		06/29/09	06/29/09	BW	Uranium, Isotopic in Solids

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 07/02/09

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SAMPLE DELIVERY GROUP H4012

SDG 7847
Contact N. Joseph Verville

WORK SUMMARY, cont.

Client CHPRC
Contract No. 33677
Case no SDG H4012

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R906112-05	Lab Control Sample			7847-005	AM		06/29/09	06/29/09	BW	Americium 241 in Solids
			SOLID	7847-005	GAM		06/26/09	06/29/09	CSS	Gamma Scan
		R09-017		7847-005	PU		06/30/09	06/30/09	BW	Plutonium, Isotopic in Solids
				7847-005	SR		06/29/09	07/02/09	BW	Total Strontium in Solids
				7847-005	TC		06/29/09	07/01/09	BW	Technetium 99 in Solids
				7847-005	TH		06/30/09	06/30/09	BW	Thorium, Isotopic in Solids
				7847-005	U		06/29/09	06/29/09	BW	Uranium, Isotopic in Solids
R906112-06	Method Blank			7847-006	AM		06/29/09	06/29/09	BW	Americium 241 in Solids
			SOLID	7847-006	GAM		06/26/09	06/29/09	CSS	Gamma Scan
		R09-017		7847-006	PU		06/30/09	06/30/09	BW	Plutonium, Isotopic in Solids
				7847-006	SR		06/29/09	07/02/09	BW	Total Strontium in Solids
				7847-006	TC		06/30/09	07/01/09	BW	Technetium 99 in Solids
				7847-006	TH		06/29/09	06/30/09	BW	Thorium, Isotopic in Solids
				7847-006	U		06/29/09	06/29/09	BW	Uranium, Isotopic in Solids
R906112-07	Duplicate (R906112-01)			7847-007	AM		06/29/09	06/29/09	BW	Americium 241 in Solids
06/17/09	UPR-N-2;I-001 Testpit #1		SOLID	7847-007	GAM		06/26/09	06/29/09	CSS	Gamma Scan
06/25/09		R09-017		7847-007	PU		06/30/09	06/30/09	BW	Plutonium, Isotopic in Solids
				7847-007	SR		06/29/09	07/02/09	BW	Total Strontium in Solids
				7847-007	TC		06/29/09	07/01/09	BW	Technetium 99 in Solids
				7847-007	TH		06/29/09	06/30/09	BW	Thorium, Isotopic in Solids
				7847-007	U		06/29/09	06/29/09	BW	Uranium, Isotopic in Solids
R906112-08	Lab Control Sample			7847-008	H		07/01/09	07/02/09	BW	Tritium in Solids
			SOLID	7847-008	NI_L		06/30/09	07/01/09	BW	Nickel 63 in Solids
		R09-017								
R906112-09	Method Blank			7847-009	H		07/01/09	07/02/09	BW	Tritium in Solids
			SOLID	7847-009	NI_L		06/30/09	07/01/09	BW	Nickel 63 in Solids
		R09-017								
R906112-10	Duplicate (R906112-01)			7847-010	H		07/01/09	07/02/09	BW	Tritium in Solids
06/17/09	UPR-N-2;I-001 Testpit #1		SOLID	7847-010	NI_L		06/30/09	07/01/09	BW	Nickel 63 in Solids
06/25/09		R09-017								

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 07/02/09

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SAMPLE DELIVERY GROUP H4012

SDG 7847
Contact N. Joseph Verville

WORK SUMMARY, cont.

Client CHPRC
Contract No. 33677
Case no SDG H4012

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
AM	R09-017	Americium 241 in Solids	AMCMISO_IE_PLATE_AEA	4			1	1	1	7
GAM	R09-017	Gamma Scan	GAMMA_GS	4			1	1	1	7
H	R09-017	Tritium in Solids	TRITIUM_COX_LSC	4			1	1	1	7
NI_L	R09-017	Nickel 63 in Solids	NI63_LSC	4			1	1	1	7
PU	R09-017	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	4			1	1	1	7
SR	R09-017	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	4			1	1	1	7
TC	R09-017	Technetium 99 in Solids	TC99_TR_SEP_GPC	4			1	1	1	7
TH	R09-017	Thorium, Isotopic in Solids	THISO_IE_PLATE_AEA	4			1	1	1	7
U	R09-017	Uranium, Isotopic in Solids	UISO_PLATE_AEA	4			1	1	1	7
TOTALS				36			9	9	9	63

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

7847-006 **Method Blank**

METHOD BLANK

SDG	7847	Client/Case no	CHPRC SDG H4012
Contact	N. Joseph Verville	Contract	No. 33677
Lab sample id	R906112-06	Client sample id	Method Blank
Dept sample id	7847-006	Material/Matrix	SOLID
		SAF No	R09-017

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.028	0.21	0.419	1.00	U	SR
Technetium 99	14133-76-7	0.171	0.26	0.428	15.0	U	TC
Thorium 228	14274-82-9	-0.065	0.13	0.358	1.00	U	TH
Thorium 230	14269-63-7	0.129	0.19	0.310	1.00	U	TH
Thorium 232	TH-232	0	0.065	0.247	1.00	U	TH
Uranium 233/234	U-233/234	0	0.068	0.258	1.00	U	U
Uranium 235	15117-96-1	0	0.082	0.313	1.00	U	U
Uranium 238	U-238	0	0.068	0.258	1.00	U	U
Americium 241	14596-10-2	0	0.17	0.321	1.00	U	AM
Plutonium 238	13981-16-3	0	0.054	0.207	1.00	U	PU
Plutonium 239/240	PU-239/240	0.027	0.054	0.207	1.00	U	PU
Beryllium 7	13966-02-4	U		0.406		U	GAM
Potassium 40	13966-00-2	U		1.54		U	GAM
Cobalt 60	10198-40-0	U		0.054	0.050	U	GAM
Ruthenium 106	13967-48-1	U		0.399		U	GAM
Antimony 125	14234-35-6	U		0.126		U	GAM
Cesium 134	13967-70-9	U		0.089		U	GAM
Cesium 137	10045-97-3	U		0.110	0.100	U	GAM
Europium 152	14683-23-9	U		0.157	0.100	U	GAM
Europium 154	15585-10-1	U		0.148	0.100	U	GAM
Europium 155	14391-16-3	U		0.137	0.100	U	GAM
Niobium 94	14681-63-1	U		0.044		U	GAM
Radium 226	13982-63-3	U		0.122		U	GAM
Radium 228	15262-20-1	U		0.256		U	GAM

ARRA 200-CW-3 - Soil Sampling

QC-BLANK #70147

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

7847-009 **Method Blank**

METHOD BLANK

SDG	7847	Client/Case no	CHPRC	SDG_H4012
Contact	N. Joseph Verville	Contract	No. 33677	
Lab sample id	R906112-09	Client sample id	Method Blank	
Dept sample id	7847-009	Material/Matrix		SOLID
		SAF No	R09-017	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.10	3.9	6.60	400	U	H
Nickel 63	13981-37-8	1.61	1.9	3.12	30.0	U	NI_L

ARRA 200-CW-3 - Soil Sampling

QC-BLANK #70172

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

7847-005 Lab Control Sample

LAB CONTROL SAMPLE

SDG 7847 Client/Case no CHPRC SDG H4012

Contact N. Joseph Verville Contract No. 33677

Lab sample id R906112-05 Client sample id Lab Control Sample

Dept sample id 7847-005 Material/Matrix SOLID

SAF No R09-017

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Total Strontium	12.4	0.85	0.434	1.00		SR	11.4	0.46	109	79-121	80-120
Technetium 99	118	2.0	0.544	15.0		TC	109	4.4	108	78-122	80-120
Thorium 230	35.9	4.0	0.327	1.00		TH	37.8	1.5	95	80-120	80-120
Uranium 233/234	20.2	2.5	1.08	1.00		U	18.6	0.74	109	75-125	80-120
Uranium 235	15.2	2.1	0.302	1.00		U	15.1	0.60	101	75-125	80-120
Uranium 238	19.8	2.5	1.04	1.00		U	20.2	0.81	98	77-123	80-120
Americium 241	9.70	1.2	0.193	1.00		AM	10.1	0.40	96	78-122	80-120
Plutonium 238	11.4	1.2	0.192	1.00		PU	11.6	0.46	98	80-120	80-120
Plutonium 239/240	13.3	1.4	0.154	1.00		PU	13.2	0.53	101	79-121	80-120
Cobalt 60	1.37	0.12	0.084	0.050		GAM	1.34	0.054	102	82-118	80-120
Cesium 137	1.69	0.11	0.089	0.100		GAM	1.63	0.065	104	84-116	80-120

ARRA 200-CW-3 - Soil Sampling

QC-LCS #70146

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

7847-008

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7847
Contact N. Joseph Verville

Client/Case no CHPRC SDG H4012
Contract No. 33677

Lab sample id R906112-08
Dept sample id 7847-008

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No R09-017

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	801	18	6.88	400		H	962	38	83	86-114	80-120
Nickel 63	275	7.0	3.14	30.0		NI_L	293	12	94	83-117	80-120

ARRA 200-CW-3 - Soil Sampling

QC-LCS #70171

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

7847-007 B20VJ1

DUPLICATE

SDG	7847	Client/Case no	CHPRC SDG H4012
Contact	N. Joseph Verville	Contract	No. 33677
DUPLICATE		ORIGINAL	
Lab sample id	R906112-07	Lab sample id	R906112-01
Dept sample id	7847-007	Dept sample id	7847-001
		Received	06/25/09
% solids	91.9	% solids	91.9
Client sample id	B20VJ1		
Location/Matrix	UPR-N-2;I-001 Testpit #1 SOLID		
Collected/Weight	06/17/09 13:10 584.8 g		
Custody/SAF No	R09-017-149 R09-017		

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	2σ TOT	PROT LIMIT
Total Strontium	12.8	0.73	0.325	1.00		SR	11.9	0.69	0.302		7	17	35
Technetium 99	0.030	0.26	0.491	15.0	U	TC	0.208	0.25	0.441	U	-		
Thorium 228	0.504	0.29	0.345	1.00		TH	0.653	0.31	0.294		26	74	35
Thorium 230	0.144	0.22	0.275	1.00	U	TH	0.192	0.23	0.293	U	-		
Thorium 232	0.396	0.22	0.275	1.00		TH	0.575	0.31	0.293		37	79	35
Uranium 233/234	0.449	0.23	0.286	1.00		U	0.422	0.23	0.294		6	76	35
Uranium 235	0	0.091	0.346	1.00	U	U	0.046	0.093	0.356	U	-		
Uranium 238	0.486	0.30	0.286	1.00		U	0.538	0.31	0.294		10	85	35
Americium 241	0.076	0.15	0.243	1.00	U	AM	0.100	0.12	0.152	U	-		
Plutonium 238	0.099	0.12	0.219	1.00	U	PU	0.121	0.097	0.186	U	-		
Plutonium 239/240	0.020	0.040	0.152	1.00	U	PU	0.049	0.049	0.186	U	-		
Beryllium 7	U		0.183		U	GAM	U		0.263	U	-		
Potassium 40	11.1	0.49	0.272			GAM	12.2	0.72	0.389		9	12	35
Cobalt 60	U		0.024	0.050	U	GAM	U		0.037	U	-		
Ruthenium 106	U		0.212		U	GAM	U		0.292	U	-		
Antimony 125	U		0.058		U	GAM	U		0.086	U	-		
Cesium 134	U		0.033		U	GAM	U		0.048	U	-		
Cesium 137	U		0.067	0.100	U	GAM	U		0.069	U	-		
Europium 152	U		0.062	0.100	U	GAM	U		0.094	U	-		
Europium 154	U		0.085	0.100	U	GAM	U		0.125	U	-		
Europium 155	U		0.055	0.100	U	GAM	U		0.082	U	-		
Niobium 94	U		0.021		U	GAM	U		0.030	U	-		
Radium 226	0.428	0.055	0.053			GAM	0.405	0.075	0.078		6	24	35
Radium 228	0.686	0.11	0.111			GAM	0.790	0.17	0.168		14	29	35

ARRA 200-CW-3 - Soil Sampling

QC-DUP#1 70148

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

7847-010 B20VJ1

DUPLICATE

SDG	7847			Client/Case no	CHPRC SDG H4012
Contact	N. Joseph Verville			Contract	No. 33677
	DUPLICATE		ORIGINAL		
Lab sample id	R906112-10	Lab sample id	R906112-01	Client sample id	B20VJ1
Dept sample id	7847-010	Dept sample id	7847-001	Location/Matrix	UPR-N-2;I-001 Testpit #1 SOLID
		Received	06/25/09	Collected/Weight	06/17/09 13:10 584.8 g
% solids	91.9	% solids	91.9	Custody/SAF No	R09-017-149 R09-017

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	2σ PROT TOT LIMIT
Tritium	1.12	3.6	6.18	400	U	H	-0.095	3.6	6.26	U	-	
Nickel 63	-0.217	1.9	3.28	30.0	U	NI_L	0.771	1.9	3.24	U	-	

ARRA 200-CW-3 - Soil Sampling

QC-DUP#1 70173

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

7847-001 **B20VJ1**

DATA SHEET

SDG	7847	Client/Case no	CHPRC SDG_H4012
Contact	N. Joseph Verville	Contract	No. 33677
Lab sample id	R906112-01	Client sample id	B20VJ1
Dept sample id	7847-001	Location/Matrix	UPR-N-2;I-001 Testpit #1 SOLID
Received	06/25/09	Collected/Weight	06/17/09 13:10 584.8 g
% solids	91.9	Custody/SAF No	R09-017-149 R09-017

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.095	3.6	6.26	400	U	H
Nickel 63	13981-37-8	0.771	1.9	3.24	30.0	U	NI_L
Total Strontium	SR-RAD	11.9	0.69	0.302	1.00		SR
Technetium 99	14133-76-7	0.208	0.25	0.441	15.0	U	TC
Thorium 228	14274-82-9	0.653	0.31	0.294	1.00		TH
Thorium 230	14269-63-7	0.192	0.23	0.293	1.00	U	TH
Thorium 232	TH-232	0.575	0.31	0.293	1.00		TH
Uranium 233/234	U-233/234	0.422	0.23	0.294	1.00		U
Uranium 235	15117-96-1	0.046	0.093	0.356	1.00	U	U
Uranium 238	U-238	0.538	0.31	0.294	1.00		U
Americium 241	14596-10-2	0.100	0.12	0.152	1.00	U	AM
Plutonium 238	13981-16-3	0.121	0.097	0.186	1.00	U	PU
Plutonium 239/240	PU-239/240	0.049	0.049	0.186	1.00	U	PU
Beryllium 7	13966-02-4	U		0.263		U	GAM
Potassium 40	13966-00-2	12.2	0.72	0.389			GAM
Cobalt 60	10198-40-0	U		0.037	0.050	U	GAM
Ruthenium 106	13967-48-1	U		0.292		U	GAM
Antimony 125	14234-35-6	U		0.086		U	GAM
Cesium 134	13967-70-9	U		0.048		U	GAM
Cesium 137	10045-97-3	U		0.069	0.100	U	GAM
Europium 152	14683-23-9	U		0.094	0.100	U	GAM
Europium 154	15585-10-1	U		0.125	0.100	U	GAM
Europium 155	14391-16-3	U		0.082	0.100	U	GAM
Niobium 94	14681-63-1	U		0.030		U	GAM
Radium 226	13982-63-3	0.405	0.075	0.078			GAM
Radium 228	15262-20-1	0.790	0.17	0.168			GAM

ARRA 200-CW-3 - Soil Sampling

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

7847-002 **B20VJ2**

DATA SHEET

SDG	7847	Client/Case no	CHPRC SDG_H4012
Contact	N. Joseph Verville	Contract	No. 33677
Lab sample id	R906112-02	Client sample id	B20VJ2
Dept sample id	7847-002	Location/Matrix	UPR-N-2;I-001DTestpit #1 SOLID
Received	06/25/09	Collected/Weight	06/17/09 13:10 554.8 g
% solids	91.8	Custody/SAF No	R09-017-151 R09-017

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.04	3.7	6.12	400	U	H
Nickel 63	13981-37-8	-0.086	1.9	3.26	30.0	U	NI_L
Total Strontium	SR-RAD	0.492	0.21	0.312	1.00		SR
Technetium 99	14133-76-7	0.143	0.25	0.417	15.0	U	TC
Thorium 228	14274-82-9	0.772	0.41	0.311	1.00		TH
Thorium 230	14269-63-7	0.081	0.24	0.310	1.00	U	TH
Thorium 232	TH-232	0.365	0.25	0.310	1.00		TH
Uranium 233/234	U-233/234	0.445	0.34	0.426	1.00		U
Uranium 235	15117-96-1	0.067	0.13	0.515	1.00	U	U
Uranium 238	U-238	0.668	0.34	0.426	1.00		U
Americium 241	14596-10-2	0	0.073	0.278	1.00	U	AM
Plutonium 238	13981-16-3	0	0.15	0.409	1.00	U	PU
Plutonium 239/240	PU-239/240	0.074	0.15	0.283	1.00	U	PU
Beryllium 7	13966-02-4	U		0.279		U	GAM
Potassium 40	13966-00-2	13.9	0.83	0.336			GAM
Cobalt 60	10198-40-0	U		0.042	0.050	U	GAM
Ruthenium 106	13967-48-1	U		0.330		U	GAM
Antimony 125	14234-35-6	U		0.088		U	GAM
Cesium 134	13967-70-9	U		0.054		U	GAM
Cesium 137	10045-97-3	U		0.064	0.100	U	GAM
Europium 152	14683-23-9	U		0.105	0.100	U	GAM
Europium 154	15585-10-1	U		0.127	0.100	U	GAM
Europium 155	14391-16-3	U		0.086	0.100	U	GAM
Niobium 94	14681-63-1	U		0.033		U	GAM
Radium 226	13982-63-3	0.512	0.078	0.073			GAM
Radium 228	15262-20-1	0.596	0.16	0.174			GAM

ARRA 200-CW-3 - Soil Sampling

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

7847-003 **B20W87**

DATA SHEET

SDG	7847	Client/Case no	CHPRC SDG_H4012
Contact	N. Joseph Verville	Contract	No. 33677
Lab sample id	R906112-03	Client sample id	B20W87
Dept sample id	7847-003	Location/Matrix	216-N-6;I-013 Testpit #1 SOLID
Received	06/25/09	Collected/Weight	06/09/09 10:30 562.1 g
% solids	96.0	Custody/SAF No	R09-017-232 R09-017

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.685	3.8	6.45	400	U	H
Nickel 63	13981-37-8	7.07	2.3	3.42	30.0		NI_L
Total Strontium	SR-RAD	22.5	0.91	0.294	1.00		SR
Technetium 99	14133-76-7	0.082	0.19	0.436	15.0	U	TC
Thorium 228	14274-82-9	0.472	0.24	0.283	1.00		TH
Thorium 230	14269-63-7	0.265	0.24	0.282	1.00	U	TH
Thorium 232	TH-232	0.560	0.24	0.226	1.00		TH
Uranium 233/234	U-233/234	0.652	0.28	0.262	1.00		U
Uranium 235	15117-96-1	0.083	0.083	0.318	1.00	U	U
Uranium 238	U-238	0.515	0.28	0.262	1.00		U
Americium 241	14596-10-2	1.35	0.44	0.294	1.00		AM
Plutonium 238	13981-16-3	0	0.11	0.269	1.00	U	PU
Plutonium 239/240	PU-239/240	13.1	1.6	0.215	1.00		PU
Beryllium 7	13966-02-4	U		2.16		U	GAM
Potassium 40	13966-00-2	13.6	0.75	0.311			GAM
Cobalt 60	10198-40-0	0.741	0.073	0.065	0.050		GAM
Ruthenium 106	13967-48-1	U		1.18		U	GAM
Antimony 125	14234-35-6	U		0.568		U	GAM
Cesium 134	13967-70-9	U		0.089		U	GAM
Cesium 137	10045-97-3	153	0.60	0.168	0.100		GAM
Europium 152	14683-23-9	18.1	0.61	0.698	0.100		GAM
Europium 154	15585-10-1	U		0.943	0.100	U	GAM
Europium 155	14391-16-3	U		0.442	0.100	U	GAM
Niobium 94	14681-63-1	U		0.084		U	GAM
Radium 226	13982-63-3	0.373	0.19	0.250			GAM
Radium 228	15262-20-1	1.03	0.21	0.265			GAM

ARRA 200-CW-3 - Soil Sampling

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

7847-004 **B20W88**

DATA SHEET

SDG	7847	Client/Case no	CHPRC SDG_H4012
Contact	N. Joseph Verville	Contract	No. 33677
Lab sample id	R906112-04	Client sample id	B20W88
Dept sample id	7847-004	Location/Matrix	216-N-6;I-014 Testpit #1 SOLID
Received	06/25/09	Collected/Weight	06/10/09 08:30 697.0 g
% solids	97.2	Custody/SAF No	R09-017-233 R09-017

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.289	3.7	6.35	400	U	H
Nickel 63	13981-37-8	2.48	2.0	3.30	30.0	U	NI_L
Total Strontium	SR-RAD	3.03	0.35	0.276	1.00		SR
Technetium 99	14133-76-7	0.149	0.21	0.408	15.0	U	TC
Thorium 228	14274-82-9	0.342	0.30	0.509	1.00	U	TH
Thorium 230	14269-63-7	0.265	0.23	0.290	1.00	U	TH
Thorium 232	TH-232	0.531	0.31	0.290	1.00		TH
Uranium 233/234	U-233/234	0.364	0.28	0.348	1.00		U
Uranium 235	15117-96-1	0	0.11	0.422	1.00	U	U
Uranium 238	U-238	0.364	0.28	0.348	1.00		U
Americium 241	14596-10-2	0.112	0.17	0.269	1.00	U	AM
Plutonium 238	13981-16-3	0.051	0.10	0.242	1.00	U	PU
Plutonium 239/240	PU-239/240	0.581	0.26	0.193	1.00		PU
Beryllium 7	13966-02-4	U		0.929		U	GAM
Potassium 40	13966-00-2	10.8	2.4	0.457			GAM
Cobalt 60	10198-40-0	U		0.057	0.050	U	GAM
Ruthenium 106	13967-48-1	U		0.598		U	GAM
Antimony 125	14234-35-6	U		0.241		U	GAM
Cesium 134	13967-70-9	U		0.063		U	GAM
Cesium 137	10045-97-3	25.4	0.23	0.086	0.100		GAM
Europium 152	14683-23-9	1.53	0.18	0.247	0.100		GAM
Europium 154	15585-10-1	U		0.158	0.100	U	GAM
Europium 155	14391-16-3	U		0.179	0.100	U	GAM
Niobium 94	14681-63-1	U		0.051		U	GAM
Radium 226	13982-63-3	0.470	0.12	0.113			GAM
Radium 228	15262-20-1	0.516	0.24	0.225			GAM

ARRA 200-CW-3 - Soil Sampling

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

Test	AM
Matrix	SOLID
SDG	7847
Contact	N. Joseph Verville

LAB METHOD SUMMARY

AMERICIUM 241 IN SOLIDS

ALPHA SPECTROSCOPY

Client	CHPRC
Contract	No. 33677
Contract	SDG H4012

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241
Preparation batch 7197-186					
R906112-01			7847-001	B20VJ1	U
R906112-02			7847-002	B20VJ2	U
R906112-03			7847-003	B20W87	1.35
R906112-04			7847-004	B20W88	U
R906112-05			7847-005	Lab Control Sample	ok
R906112-06			7847-006	Method Blank	U
R906112-07			7847-007	Duplicate (R906112-01)	- U

Nominal values and limits from method RDLs (pCi/g) 1.00

ARRA 200-CW-3 - Soil Sampling

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7197-186			2σ prep error 8.0 %	Reference Lab Notebook No. 7197 pg.186												
R906112-01			B20VJ1	0.152	0.500			97		151			12	06/29/09	06/29	SS-034
R906112-02			B20VJ2	0.278	0.500			66		100			12	06/29/09	06/29	SS-059
R906112-03			B20W87	0.294	0.500			76		100			20	06/29/09	06/29	SS-061
R906112-04			B20W88	0.269	0.500			86		101			19	06/29/09	06/29	SS-062
R906112-05			Lab Control Sample	0.193	0.500			90		102				06/29/09	06/29	SS-063
R906112-06			Method Blank	0.321	0.500			79		102				06/29/09	06/29	SS-064
R906112-07			Duplicate (R906112-01)	0.243	0.500			90		103			12	06/29/09	06/29	SS-066
Nominal values and limits from method				1.00	0.500			30-110		100	100		180			

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 1
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 6
	CP-008	Heavy Element Electroplating, rev 13

AVERAGES ± 2 SD FOR 7 SAMPLES	MDA	0.250	± 0.118
	YIELD	83	± 21

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

Test	PU
Matrix	SOLID
SDG	7847
Contact	N. Joseph Verville

LAB METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client	CHPRC
Contract	No. 33677
Contract	SDG H4012

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238		Plutonium 239/240	
Preparation batch 7197-186								
R906112-01			7847-001	B20VJ1	U		U	
R906112-02			7847-002	B20VJ2	U		U	
R906112-03			7847-003	B20W87	U		13.1	
R906112-04			7847-004	B20W88	U		0.581	
R906112-05			7847-005	Lab Control Sample	ok		ok	
R906112-06			7847-006	Method Blank	U		U	
R906112-07			7847-007	Duplicate (R906112-01)	-	U	-	U
Nominal values and limits from method ARRA 200-CW-3 - Soil Sampling				RDLs (pCi/g)	1.00		1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7197-186			2σ prep error 8.0 %	Reference Lab Notebook No. 7197 pg.186												
R906112-01			B20VJ1	0.186	0.500			78		128			13	06/30/09	06/30	SS-059
R906112-02			B20VJ2	0.409	0.500			76		102			13	06/30/09	06/30	SS-035
R906112-03			B20W87	0.269	0.500			84		103			21	06/30/09	06/30	SS-036
R906112-04			B20W88	0.242	0.500			91		103			20	06/30/09	06/30	SS-038
R906112-05			Lab Control Sample	0.192	0.500			72		161				06/30/09	06/30	SS-063
R906112-06			Method Blank	0.207	0.500			77		161				06/30/09	06/30	SS-064
R906112-07			Duplicate (R906112-01)	0.219	0.500			73		162			13	06/30/09	06/30	SS-066
Nominal values and limits from method				1.00	0.500			30-110		100	100		180			

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 1
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 8
	CP-008	Heavy Element Electroplating, rev 13

AVERAGES ± 2 SD FOR 7 SAMPLES				
MDA	0.246	±	0.155
YIELD	79	±	13

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

Test	TH
Matrix	SOLID
SDG	7847
Contact	N. Joseph Verville

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client	CHPRC
Contract	No. 33677
Contract	SDG H4012

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230	
Preparation batch 7197-186						
R906112-01			7847-001	B20VJ1	U	
R906112-02			7847-002	B20VJ2	U	
R906112-03			7847-003	B20W87	U	
R906112-04			7847-004	B20W88	U	
R906112-05			7847-005	Lab Control Sample	ok	
R906112-06			7847-006	Method Blank	U	
R906112-07			7847-007	Duplicate (R906112-01)	-	U

Nominal values and limits from method RDLs (pCi/g) 1.00

ARRA 200-CW-3 - Soil Sampling

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7197-186			2σ prep error 8.0 %	Reference Lab Notebook No. 7197 pg.186												
R906112-01			B20VJ1	0.294	0.250			101		151			12	06/29/09	06/29	SS-031
R906112-02			B20VJ2	0.311	0.250			90		151			12	06/29/09	06/29	SS-032
R906112-03			B20W87	0.283	0.250			114		151			20	06/29/09	06/29	SS-033
R906112-04			B20W88	0.509	0.250			101		151			19	06/29/09	06/29	SS-035
R906112-05			Lab Control Sample	0.327	0.250			109		151				06/29/09	06/30	SS-064
R906112-06			Method Blank	0.358	0.250			97		151				06/29/09	06/29	SS-038
R906112-07			Duplicate (R906112-01)	0.345	0.250			103		153			12	06/29/09	06/29	SS-054
Nominal values and limits from method				1.00	0.250			30-110		150			180			

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 1
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 13

AVERAGES ± 2 SD FOR 7 SAMPLES				
MDA	0.347	±	0.153
YIELD	102	±	16

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

Test U	Matrix SOLID
SDG 7847	
Contact N. Joseph Verville	

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client CHPRC	
Contract No. 33677	
Contract SDG H4012	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1÷3	2σ	2÷3	2σ
Preparation batch 7197-186											
R906112-01			7847-001	B20VJ1	0.422	U	0.538	78	62	9	18
R906112-02			7847-002	B20VJ2	0.445	U	0.668	67	61	10	20
R906112-03			7847-003	B20W87	0.652	U	0.515	127	88	16	18
R906112-04			7847-004	B20W88	0.364	U	0.364	100	109	0	30
R906112-05			7847-005	Lab Control Sample	ok	ok	ok				
R906112-06			7847-006	Method Blank	U	U	U				
R906112-07			7847-007	Duplicate (R906112-01)	ok	- U	ok	92	74	0	19
Nominal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
ARRA 200-CW-3 - Soil Sampling							Averages	93		7	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7197-186			2σ prep error 8.0 %	Reference Lab Notebook No. 7197 pg.186												
R906112-01			B20VJ1	0.356	0.500			76		100			12	06/27/09	06/29	SS-031
R906112-02			B20VJ2	0.515	0.500			49		100			12	06/27/09	06/29	SS-032
R906112-03			B20W87	0.318	0.500			74		100			20	06/27/09	06/29	SS-033
R906112-04			B20W88	0.422	0.500			64		100			19	06/27/09	06/29	SS-034
R906112-05			Lab Control Sample	1.08	0.500			88		100				06/27/09	06/29	SS-035
R906112-06			Method Blank	0.313	0.500			71		100				06/27/09	06/29	SS-036
R906112-07			Duplicate (R906112-01)	0.346	0.500			63		101			12	06/27/09	06/29	SS-038
Nominal values and limits from method				1.00	0.500			30-110		100	100		180			

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 1
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 13

AVERAGES ± 2 SD	MDA	0.479	± 0.549
FOR 7 SAMPLES	YIELD	69	± 24

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

Test	SR
Matrix	SOLID
SDG	7847
Contact	N. Joseph Verville

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client	CHPRC
Contract	No. 33677
Contract	SDG H4012

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium
Preparation batch 7197-186					
R906112-01			7847-001	B20VJ1	11.9
R906112-02			7847-002	B20VJ2	0.492
R906112-03			7847-003	B20W87	22.5
R906112-04			7847-004	B20W88	3.03
R906112-05			7847-005	Lab Control Sample	ok
R906112-06			7847-006	Method Blank	U
R906112-07			7847-007	Duplicate (R906112-01)	ok

Nominal values and limits from method RDLs (pCi/g) 1.00

ARRA 200-CW-3 - Soil Sampling

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7197-186			2σ prep error 10.4 % Reference Lab Notebook No. 7197 pg.186													
R906112-01			B20VJ1	0.302	0.800			99		100			12	06/29/09	06/29	GRB-218
R906112-02			B20VJ2	0.312	0.800			95		100			12	06/29/09	06/29	GRB-220
R906112-03			B20W87	0.294	0.800			94		100			20	06/29/09	06/29	GRB-217
R906112-04			B20W88	0.276	0.800			96		100			19	06/29/09	06/29	GRB-218
R906112-05			Lab Control Sample	0.434	0.800			68		100				06/29/09	06/29	GRB-222
R906112-06			Method Blank	0.419	0.800			85		100				06/29/09	06/29	GRB-223
R906112-07			Duplicate (R906112-01)	0.325	0.800			93		100			12	06/29/09	06/29	GRB-223
Nominal values and limits from method				1.00	0.800			40-110		100			180			

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 1
	CP-383	Strontium in Dissolved Solid of < 5.0g Aliquot, rev 1

AVERAGES ± 2 SD FOR 7 SAMPLES				
MDA	0.337	±	0.126
YIELD	90	±	21

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

Test	TC
Matrix	SOLID
SDG	7847
Contact	N. Joseph Verville

LAB METHOD SUMMARY

TECHNETIUM 99 IN SOLIDS

BETA COUNTING

Client	CHPRC
Contract	No. 33677
Contract	SDG H4012

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Technetium 99	
Preparation batch 7197-186						
R906112-01			7847-001	B20VJ1	U	
R906112-02			7847-002	B20VJ2	U	
R906112-03			7847-003	B20W87	U	
R906112-04			7847-004	B20W88	U	
R906112-05			7847-005	Lab Control Sample	ok	
R906112-06			7847-006	Method Blank	U	
R906112-07			7847-007	Duplicate (R906112-01)	-	U

Nominal values and limits from method RDLs (pCi/g) 15.0

ARRA 200-CW-3 - Soil Sampling

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7197-186			2σ prep error 13.2 %	Reference Lab Notebook No. 7197 pg.186												
R906112-01			B20VJ1	0.441	1.00			82		100			13	06/26/09	06/30	GRB-223
R906112-02			B20VJ2	0.417	1.00			83		100			13	06/26/09	06/30	GRB-224
R906112-03			B20W87	0.436	1.00			81		100			22	06/26/09	07/01	GRB-202
R906112-04			B20W88	0.408	1.00			86		100			21	06/26/09	07/01	GRB-203
R906112-05			Lab Control Sample	0.544	1.00			71		100				06/26/09	06/29	GRB-201
R906112-06			Method Blank	0.428	1.00			80		100				06/26/09	06/30	GRB-228
R906112-07			Duplicate (R906112-01)	0.491	1.00			71		100			12	06/26/09	06/29	GRB-203
Nominal values and limits from method				15.0	1.00			30-110		50			180			

PROCEDURES	REFERENCE	TC99_TR_SEP_GPC
	SPP-062	Sample Aliquoting, rev 1
	CP-021	Preparation of Tc-99m Tracer, rev 4
	CP-431	Technetium-99 Purification of Soil or Resin by Extraction Chromatography, rev 2
	CP-008	Heavy Element Electroplating, rev 13

AVERAGES ± 2 SD FOR 7 SAMPLES				
MDA	0.452	±	0.097
YIELD	79	±	12

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

Test GAM Matrix SOLID
SDG 7847
Contact N. Joseph Verville

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client CHPRC
Contract No. 33677
Contract SDG H4012

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
Preparation batch 7197-186								
R906112-01			7847-001	B20VJ1	U		U	
R906112-02			7847-002	B20VJ2	U		U	
R906112-03			7847-003	B20W87	0.741		153	
R906112-04			7847-004	B20W88	U		25.4	
R906112-05			7847-005	Lab Control Sample	ok		ok	
R906112-06			7847-006	Method Blank	U		U	
R906112-07			7847-007	Duplicate (R906112-01)	-	U	-	U
Nominal values and limits from method				RDLs (pCi/g)	0.050		0.100	

ARRA 200-CW-3 - Soil Sampling

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7197-186			2σ prep error 7.0 %	Reference Lab Notebook No. 7197 pg.186												
R906112-01			B20VJ1	9.02	187					410			9	06/25/09	06/26	JR,01,00
R906112-02			B20VJ2	8.74	177					406			9	06/25/09	06/26	JR,07,00
R906112-03			B20W87	30.3	145					409			17	06/25/09	06/26	JR,02,00
R906112-04			B20W88	16.5	183					409			16	06/25/09	06/26	JR,04,00
R906112-05			Lab Control Sample	0.084	140					409				06/25/09	06/26	JR,06,00
R906112-06			Method Blank	15.1	140					405				06/25/09	06/26	JR,08,00
R906112-07			Duplicate (R906112-01)	6.23	187					886			9	06/25/09	06/26	JR,01,00
Nominal values and limits from method				0.050	140					100			180			

PROCEDURES REFERENCE GAMMA_GS
SPP-100 Preparation of Sample for Gamma Spectroscopy, rev 0

AVERAGES ± 2 SD FOR 7 SAMPLES
MDA 12.3 ± 19.3
YIELD ____ ± ____

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

Test H	Matrix SOLID
SDG 7847	
Contact N. Joseph Verville	

LAB METHOD SUMMARY

TRITIUM IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client CHPRC	
Contract No. 33677	
Contract SDG H4012	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
Preparation batch 7197-186						
R906112-01			7847-001	B20VJ1	U	
R906112-02			7847-002	B20VJ2	U	
R906112-03			7847-003	B20W87	U	
R906112-04			7847-004	B20W88	U	
R906112-08			7847-008	Lab Control Sample	LOW	
R906112-09			7847-009	Method Blank	U	
R906112-10			7847-010	Duplicate (R906112-01)	-	U

Nominal values and limits from method RDLs (pCi/g) 400

ARRA 200-CW-3 - Soil Sampling

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7197-186			2σ prep error 10.0 % Reference Lab Notebook No. 7197 pg.186													
R906112-01			B20VJ1	6.26	0.254			100		50			14	07/01/09	07/01	LSC-004
R906112-02			B20VJ2	6.12	0.260			100		50			14	07/01/09	07/01	LSC-004
R906112-03			B20W87	6.45	0.247			100		50			22	07/01/09	07/01	LSC-004
R906112-04			B20W88	6.35	0.250			100		50			21	07/01/09	07/01	LSC-004
R906112-08			Lab Control Sample	6.88	0.240			100		50				07/01/09	07/01	LSC-004
R906112-09			Method Blank	6.60	0.240			100		50				07/01/09	07/01	LSC-004
R906112-10			Duplicate (R906112-01)	6.18	0.257			100		50			14	07/01/09	07/01	LSC-004
Nominal values and limits from method				400	0.240					25			180			

PROCEDURES	REFERENCE	TRITIUM_COX_LSC
	CP-251	Tritium/Carbon-14 Oxidation, rev 10

AVERAGES ± 2 SD	MDA	6.41	± 0.530
FOR 7 SAMPLES	YIELD	100	± 0

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	07/02/09

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4012

Test	NI L Matrix SOLID
SDG	7847
Contact	N. Joseph Verville

LAB METHOD SUMMARY

NICKEL 63 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client	CHPRC
Contract	No. 33677
Contract	SDG H4012

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Nickel 63
Preparation batch 7197-186					
R906112-01			7847-001	B20VJ1	U
R906112-02			7847-002	B20VJ2	U
R906112-03			7847-003	B20W87	7.07
R906112-04			7847-004	B20W88	U
R906112-08			7847-008	Lab Control Sample	ok
R906112-09			7847-009	Method Blank	U
R906112-10			7847-010	Duplicate (R906112-01)	- U

Nominal values and limits from method RDLs (pCi/g) 30.0

ARRA 200-CW-3 - Soil Sampling

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7197-186			2σ prep error 11.2 % Reference Lab Notebook No. 7197 pg.186													
R906112-01			B20VJ1	3.24	0.450			92		50			13	06/30/09	06/30	LSC-007
R906112-02			B20VJ2	3.26	0.450			91		50			13	06/30/09	06/30	LSC-007
R906112-03			B20W87	3.42	0.450			87		50			21	06/30/09	06/30	LSC-007
R906112-04			B20W88	3.30	0.450			90		50			20	06/30/09	06/30	LSC-007
R906112-08			Lab Control Sample	3.14	0.450			95		50				06/30/09	06/30	LSC-007
R906112-09			Method Blank	3.12	0.450			96		50				06/30/09	06/30	LSC-007
R906112-10			Duplicate (R906112-01)	3.28	0.450			91		50			13	06/30/09	06/30	LSC-007
Nominal values and limits from method				30.0	0.450			40-110		25			180			

PROCEDURES	REFERENCE	NI63_LSC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 1
	CP-280	Nickel-63 Purification, rev 5

AVERAGES ± 2 SD	MDA	3.25	±	0.202
FOR 7 SAMPLES	YIELD	92	±	6

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	07/02/09

SDG 7847
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG_H4012

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

* LAB SAMPLE ID is the lab's primary identification for a sample.

* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.

* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.

* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

  QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

SDG 7847
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG_H4012

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

* The preparation batches are shown in the same order as the Method Summary Reports are printed.

* Only analyses of planchets relevant to the SDG are included.

* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.

* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

  These qualifiers should be reviewed as follows:

  X Some data has been manually entered or modified. Transcription errors are possible.

  P One or more results are 'preliminary'. The data is not ready for final reporting.

  2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

  Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/02/09

SDG 7847
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4012

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.

* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.

* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.

* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.

* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

SDG 7847
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG_H4012

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

  The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

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DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

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GUIDE, cont.

Client CHPRC
Contract No. 33677
Case no SDG_H4012

DATA SHEET

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.

* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

SDG 7847
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG_H4012

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.

* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

  An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The error of RESULT, including that introduced by rounding the result prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

* The recovery is underlined if it is outside either of these ranges.

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
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SDG 7847
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4012

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

  If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

  For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

  If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

  This value reported for this limit is at most 999.

* The second limit for the RPD is the larger of:

  1. A fixed percentage specified in the protocol.

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

* The RPD is underlined if it is greater than either limit.

* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

  Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

SDG 7847
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4012

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

  An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits

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MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

* The recovery is underlined (out of spec) if it is outside either of these ranges.

SDG 7847
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4012

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

  There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

  The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

  The J and X flags are as on the data sheet.

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.

* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

  MDAs are underlined if greater than the printed RDL.

* Aliquots are underlined if less than the nominal value specified for the method.

* Prepareation factors are underlined if greater than the nominal value specified for the method.

* Dilution factors are underlined if greater than the nominal value specified for the method.

* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.

* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.

* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

METHOD SUMMARY

* Count times are underlined if less than the nominal value specified for the method.

* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.

* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.

* Days Held are underlined if greater than the holding time specified in the protocol.

* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R09-017-149	PAGE 1 OF 1
COLLECTOR KJ Young	COMPANY CONTACT WIDRIG, DL	TELEPHONE NO. 376-2858	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8C AIR QUALITY ☐	DATA TURNAROUND ~~15~~ 7 Days / 15 Days 7 6/24/9
SAMPLING LOCATION UPR-N-2; I-001 Test pit #1 (3')	PROJECT DESIGNATION ARRA 200-CW-3 - Soil Sampling		SAF NO. R09-017		
ICE CHEST NO. GWS-045	FIELD LOGBOOK NO. HNF-N-506-5 17	ACTUAL SAMPLE DEPTH 3'	COA 301972ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 7882 6-24-9 ~~Waste Sampling & Characterization~~ EBERLINE	OFFSITE PROPERTY NO. N/A 00088 H4012 (7847)		BILL OF LADING/AIR BILL NO. N/A 7967 2101 3220		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B20VH9

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B20VJ1		S	6/17/9	1310	1X500mL Square Bottle - Poly	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool~4C
~~B20VJ1~~		S	6-24-09		1X60mL G/P	~~ICP/MS - 200.8 (TAL) {Ba, Cd, Cr, Mn, Sb, Zn} ICP/MS - 200.8~~ (Add-on) {As, Pb} 200.8_HG - ICPMS {Hg}	Cool~4C
~~B20VJ1~~		S			1X60mL G/P	Chromium Hex - 7196;	Cool~4C
~~B20VJ1~~		S			~~1X250mL aG~~	PCBs - 8082;	Cool~4C

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KJ Young	JUN 17 2009 1600	S.S.U #1	JUN 17 2009 1600
S.S.U #1	JUN 24 2009 0700	KC Patterson	JUN 24 2009 0700
KC Patterson	JUN 24 2009		JUN 24 2009
FED EX		R.F. KATAWA	06/25/09 0915

SPECIAL INSTRUCTIONS
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)Gamma Spectroscopy {Co-60, Cs-137, Eu-152, Eu-154, Eu-155} Americium-241; Isotopic Plutonium; Isotopic Uranium {U-233/234, U-235, U-238} Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Thorium {Th-232}

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R09-017-151	PAGE 1 OF 1
COLLECTOR KJ Young	COMPANY CONTACT WIDRIG, DL	TELEPHONE NO. 376-2858	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8C AIR QUALITY ☐	DATA TURNAROUND ~~15~~ 7 Days / 15 Days 6/9/9
SAMPLING LOCATION UPR-N-2; I-001D Test pit #1 (3')	PROJECT DESIGNATION ARRA 200-CW-3 - Soil Sampling		SAF NO. R09-017		
ICE CHEST NO. GWS-046	FIELD LOGBOOK NO. ~~HNF-N-506-~~ 5 / 7	ACTUAL SAMPLE DEPTH 3'	COA 301972ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO ~~Waste Sampling & Characterization~~ EBERLINE KBZ 6-24-09	OFFSITE PROPERTY NO. N/A 00088 H4012 (7847)		BILL OF LADING/AIR BILL NO. N/A 7967 2101 3220		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL W
= WATER

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B20VH9

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B20VJ2		S	6/17/9	1310	1X500mL Square Bottle - Poly	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool~4C
~~B20VJ2~~		~~S~~			~~1X60mL G/P~~	~~ICP/MS - 200.8 (TAL) {Ba, Cd, Cr, Mn, Sb, Zn} ICP/MS - 200.8 (Add-on) {As, Pb} 200.8_HG - ICPMS {Hg}~~	Cool~4C
~~B20VJ2~~		~~S~~			~~1X60mL G/P~~	~~Chromium Hex - 7196;~~	Cool~4C
~~B20VJ2~~		~~S~~			~~1X250mL aG~~	~~PCBs - 8082;~~	Cool~4C

KBZ 6-24-09

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM KJ Young	DATE/TIME JUN 17 2009 / 1600	RECEIVED BY/STORED IN S.S.U #1	DATE/TIME JUN 17 2009 / 1600
RELINQUISHED BY/REMOVED FROM S.S.U #1	DATE/TIME JUN 24 2009 / 0700	RECEIVED BY/STORED IN KC Patterson	DATE/TIME JUN 24 2009 / 0700
RELINQUISHED BY/REMOVED FROM KC Patterson	DATE/TIME JUN 24 2009	RECEIVED BY/STORED IN	DATE/TIME JUN 24 2009
RELINQUISHED BY/REMOVED FROM FED EX	DATE/TIME	RECEIVED BY/STORED IN R.F. MATAWAMAN	DATE/TIME 06/25/09 0915

SPECIAL INSTRUCTIONS
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)Gamma Spectroscopy {Co-60, Cs-137, Eu-152, Eu-154, Eu-155} Americium-241; Isotopic Plutonium; Isotopic Uranium {U-233/234, U-235, U-238} Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Thorium {Th-232}

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R09-017-232	PAGE 1 OF 1
COLLECTOR KJ Young	COMPANY CONTACT CLINTON, R	TELEPHONE NO. 372-1718	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8C	DATA TURNAROUND KT 6/9/9 ~~15~~ 7 Days / 15 Days
SAMPLING LOCATION 216-N-6; I-013 Test pit # 1 (3')	PROJECT DESIGNATION ARRA 200-CW-3 - Soil Sampling		SAF NO. R09-017	AIR QUALITY ☐	
ICE CHEST NO. GWS 096	FIELD LOGBOOK NO. HNF-N-506-5	ACTUAL SAMPLE DEPTH 3'	COA 301972ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO ~~Waste Sampling & Characterization~~ 6-24-09 BERLINE	OFFSITE PROPERTY NO. N/A 00088 H4012 (7847)		BILL OF LADING/AIR BILL NO. ~~N/A~~ 7967 2101 3220		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL W
= WATER

SPECIAL HANDLING AND/OR STORAGE
Radioactive Tie To: B20W75

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B20W87		S	6/9/9	1030	1X500mL Square Bottle - Poly	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool~4C
~~B20W87~~		~~S~~			~~1X60mL G/P~~	~~ICP/MS - 200.8 (TAL) {Ba, Cd, Cr, Mn, Sb, Zn} ICP/MS - 200.8 (Add-on) {As, Pb} 200.8_HG - ICPMS {Hg}~~	Cool~4C
~~B20W87~~		~~S~~			~~1X60mL G/P~~	~~Chromium Hex - 7196;~~	Cool~4C
~~B20W87~~		~~S~~			~~1X250mL aG~~	~~PCBs - 8082;~~	Cool~4C

6-24-09

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KJ Young	6/9/09 / 1600	S.S.U #1	6/9/09 / 1600
S.S.U #1	JUN 24 2009 / 0710	KC Patterson	JUN 24 2009 / 0710
KC Patterson	JUN 24 2009		JUN 24 2009
FED EX		R.F. MATOWAYAN	06/25/09 0915

SPECIAL INSTRUCTIONS
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)Gamma Spectroscopy {Co-60, Cs-137, Eu-152, Eu-154, Eu-155} Americium-241; Isotopic Plutonium; Isotopic Uranium {U-233/234, U-235, U-238} Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Thorium {Th-232}

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R09-017-233	PAGE 1 OF 1
COLLECTOR KJ Young	COMPANY CONTACT CLINTON, R	TELEPHONE NO. 372-1718	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8C	DATA TURNAROUND ~~15 Days~~ / 15 Days 7 6/9/9
SAMPLING LOCATION 216-N-6; I-014 Test pit #2 (4')	PROJECT DESIGNATION ARRA 200-CW-3 - Soil Sampling		SAF NO. R09-017	AIR QUALITY ☐	
ICE CHEST NO. GW5-096	FIELD LOGBOOK NO. HNP-N-506-5	ACTUAL SAMPLE DEPTH 4'	COA 301972ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO ~~Waste Sampling & Characterization~~ 7826 6-24-09 EBERLINE	OFFSITE PROPERTY NO. N/A 00088 H4012 (7847)		BILL OF LADING/AIR BILL NO. ~~N/A~~ 7867 2101 3220		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE
Radioactive Tie To: B20W76

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B20W88		S	6/10/9	0830	1X500mL Square Bottle - Poly	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool~4C
~~B20W88~~		S			1X60mL G/P	~~ICP/MS - 200.8 (TAL) {Ba, Cd, Cr, Mn, Sb, Zn} ICP/MS - 200.8 (Add-on) {As, Pb} 200.8_HG - ICPMS~~ {Hg}	Cool~4C
~~B20W88~~		S			1X60mL G/P	~~Chromium Hex - 7196;~~	Cool~4C
~~B20W88~~		S			1X250mL aG	~~PCBs - 8082;~~	Cool~4C

6-24-09

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KJ Young	6/10/9 / 1600	S.S.U #1	6/10/9 / 1600
SSU-1	JUN 24 2009 / 0700	KC Patterson	JUN 24 2009 / 0700
KC Patterson	JUN 24 2009		JUN 24 2009
FED EX		R.F. MATAWATTAN	06/25/09 0915

SPECIAL INSTRUCTIONS
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)Gamma Spectroscopy {Co-60, Cs-137, Eu-152, Eu-154, Eu-155} Americium-241; Isotopic Plutonium; Isotopic Uranium {U-233/234, U-235, U-238} Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Thorium {Th-232}

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

JK 6/25/09

Client: CHPRC City RICHLAND State WA

Date/Time received 06/25/09 0915 CoC No. 209-017-149, 151, 232, 233

Container I.D. No. GWS-096 Requested TAT (Days) 7 P.O. Received Yes [ ] No [X]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 4 Sample Matrix S
7. Number of containers per sample: 1 (Or see CoC _____)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [X] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH _____ Preservative _____
13. Describe any anomalies:
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by [signature] Date: 06/25/09 Time: 1015

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
All Samples	<60						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 10 Jun 08

Form SCP-02, 07-30-07

"over 55 years of quality nuclear services"

: 1

Eberline Srvces INVOICE
07/02/09 16:06:48

ORD # R9-06-112
GROUP # 7847_NUC
INVOICE # 5146

TERMS NET 30 DAYS

VOICE TO CH2M HILL PLATEAU REMED. CO.
P. O. BOX 1600
MAIL STOP - R3-60
RICHLAND, WA 99352
ATTEN ACCOUNTS PAYABLE

REMIT TO Eberline Analytical Corp.
7021 Pan American Fwy NE
Albuquerque, NM 87109
ATTEN Accounts Receivable
PHONE (510)235-2633

ORK ID SAF# R09-017 SDG# H4012
P.O. # CONTRACT #33677

For proper credit customer's remittance copy is required with payment.
Federal ID No. 85-0327981

REPORT TO CH2M HILL PLATEAU REMED. CO.
P.O. Box 1600
MAIL STOP - R3-60
RICHLAND, WA 99352
ATTEN

Accounting Customer #0007908
7 Day (8B08) TAT prices applied to tests.

ECEIVED 06/25/09 CLIENT CHPRC
EPORTED 07/02/09 PROJECT WHC CH2M

	ID	CODE	DESCRIPTION	REMARK	PRICE	QTY	DISCOUNT	AMOUNT
TESTS		DISPOS-T	Disposal		10.00	4		40.00
		EAM -8B08	Americium-241		353.00	6		2118.00
		EH_OXY-8B08	TRITIUM (FLAME OXIDATION)		148.00	6		888.00
		ENILSC-8B08	Nickel-63		247.00	6		1482.00
		EPU -8B08	Isotopic PU-(AEA) Pu-238,		294.00	6		1764.00
		ESR -8B08	SR-89, 90 - Total Radioact		216.00	6		1296.00
		ETC -8B08	Technetium-99		314.00	6		1884.00
		ETH -8B08	Isotopic Thorium - (AEA)		278.00	6		1668.00
		EU -8B08	Isotopic Uranium - (AEA)		261.00	6		1566.00
		E_GLY -8B08	Gamma Spec (Client List)		194.00	6		1164.00

SUBTOTAL $13,870.00
TOTAL INVOICE AMOUNT $13,870.00

Eberline Srvces BILLING INSTRUCTIONS
07/02/09 16:07:03

ORD # R9-06-112
GROUP # 7847_NUC
INVOICE # 5146

INVOICE CH2M HILL PLATEAU REMED. CO.
TO P. O. BOX 1600
MAIL STOP - R3-60
RICHLAND, WA 99352
ATTEN ACCOUNTS PAYABLE

WORK ID SAF# R09-017 SDG# H4012
P.O. # CONTRACT #33677

REPORT CH2M HILL PLATEAU REMED. CO.
TO P.O. Box 1600
MAIL STOP - R3-60
RICHLAND, WA 99352
ATTEN

REMIT Eberline Analytical Corp. TERMS NET 30 DAYS
TO 7021 Pan American Fwy NE
Albuquerque, NM 87109

ATTEN Accounts Receivable
PHONE (510)235-2633

For proper credit customer's remittance copy is required with payment.
Federal ID No. 85-0327981

Accounting Customer #0007908
7 Day (8B08) TAT prices applied to tests.

RECEIVED 06/25/09 CLIENT CHPRC
REPORTED 07/02/09 PROJECT WHC CH2M
DATE DUE 07/02/09

	ID	CLIENT ID.	CODE	METHOD	DESCRIPTION	PRICE	QTY	DISCOUNT	AMOUNT
TESTS	01A	B20VJ1	DISPOS-T		Disposal	10.00	1		10.00
	02A	B20VJ2	DISPOS-T			10.00	1		10.00
	03A	B20W87	DISPOS-T			10.00	1		10.00
	04A	B20W88	DISPOS-T			10.00	1		10.00
	01A	B20VJ1	EAM -8B08		Americium-241	353.00	1		353.00
	02A	B20VJ2	EAM -8B08		Americium-241	353.00	1		353.00
	03A	B20W87	EAM -8B08		Americium-241	353.00	1		353.00
	04A	B20W88	EAM -8B08		Americium-241	353.00	1		353.00
	05A	QC-LCS 70146	EAM -8B08		Americium-241	353.00	1		353.00
	06A	QC-BLANK 70147	EAM -8B08		Americium-241	0.00	1		0.00
	07A	QC-DUP#1 70148	EAM -8B08		Americium-241	353.00	1		353.00
	01A	B20VJ1	EH_OXY-8B08		TRITIUM (FLAME OXIDATION)	148.00	1		148.00
	02A	B20VJ2	EH_OXY-8B08		TRITIUM (FLAME OXIDATION)	148.00	1		148.00
	03A	B20W87	EH_OXY-8B08		TRITIUM (FLAME OXIDATION)	148.00	1		148.00
	04A	B20W88	EH_OXY-8B08		TRITIUM (FLAME OXIDATION)	148.00	1		148.00
	08A	QC-LCS 70171	EH_OXY-8B08		TRITIUM (FLAME OXIDATION)	148.00	1		148.00
	09A	QC-BLANK 70172	EH_OXY-8B08		TRITIUM (FLAME OXIDATION)	0.00	1		0.00
	10A	QC-DUP#1 70173	EH_OXY-8B08		TRITIUM (FLAME OXIDATION)	148.00	1		148.00
	01A	B20VJ1	ENILSC-8B08		Nickel-63	247.00	1		247.00
	02A	B20VJ2	ENILSC-8B08		Nickel-63	247.00	1		247.00
	03A	B20W87	ENILSC-8B08		Nickel-63	247.00	1		247.00
	04A	B20W88	ENILSC-8B08		Nickel-63	247.00	1		247.00
	08A	QC-LCS 70171	ENILSC-8B08		Nickel-63	247.00	1		247.00
	09A	QC-BLANK 70172	ENILSC-8B08		Nickel-63	0.00	1		0.00
	10A	QC-DUP#1 70173	ENILSC-8B08		Nickel-63	247.00	1		247.00
	01A	B20VJ1	EPU -8B08		Isotopic PU-(AEA) Pu-238,	294.00	1		294.00
	02A	B20VJ2	EPU -8B08		Isotopic PU-(AEA) Pu-238,	294.00	1		294.00
	03A	B20W87	EPU -8B08		Isotopic PU-(AEA) Pu-238,	294.00	1		294.00
	04A	B20W88	EPU -8B08		Isotopic PU-(AEA) Pu-238,	294.00	1		294.00
	05A	QC-LCS 70146	EPU -8B08		Isotopic PU-(AEA) Pu-238,	294.00	1		294.00
	06A	QC-BLANK 70147	EPU -8B08		Isotopic PU-(AEA) Pu-238,	0.00	1		0.00
	07A	QC-DUP#1 70148	EPU -8B08		Isotopic PU-(AEA) Pu-238,	294.00	1		294.00
	01A	B20VJ1	ESR -8B08		SR-89, 90 - Total Radioact	216.00	1		216.00
	02A	B20VJ2	ESR -8B08		SR-89, 90 - Total Radioact	216.00	1		216.00

Eberline Srvces BILLING INSTRUCTIONS

07/02/09 16:07:03

ORD # R9-06-112
GROUP # 7847_NUC
INVOICE # 5146

ID	CLIENT ID.	CODE	METHOD	DESCRIPTION	PRICE	QTY	DISCOUNT	AMOUNT
03A	B20W87	ESR -8B08		SR-89, 90 - Total Radioact	216.00	1		216.00
04A	B20W88	ESR -8B08		SR-89, 90 - Total Radioact	216.00	1		216.00
05A	QC-LCS 70146	ESR -8B08		SR-89, 90 - Total Radioact	216.00	1		216.00
06A	QC-BLANK 70147	ESR -8B08		SR-89, 90 - Total Radioact	0.00	1		0.00
07A	QC-DUP#1 70148	ESR -8B08		SR-89, 90 - Total Radioact	216.00	1		216.00
01A	B20VJ1	ETC -8B08		Technetium-99	314.00	1		314.00
02A	B20VJ2	ETC -8B08		Technetium-99	314.00	1		314.00
03A	B20W87	ETC -8B08		Technetium-99	314.00	1		314.00
04A	B20W88	ETC -8B08		Technetium-99	314.00	1		314.00
05A	QC-LCS 70146	ETC -8B08		Technetium-99	314.00	1		314.00
06A	QC-BLANK 70147	ETC -8B08		Technetium-99	0.00	1		0.00
07A	QC-DUP#1 70148	ETC -8B08		Technetium-99	314.00	1		314.00
01A	B20VJ1	ETH -8B08		Isotopic Thorium - (AEA)	278.00	1		278.00
02A	B20VJ2	ETH -8B08		Isotopic Thorium - (AEA)	278.00	1		278.00
03A	B20W87	ETH -8B08		Isotopic Thorium - (AEA)	278.00	1		278.00
04A	B20W88	ETH -8B08		Isotopic Thorium - (AEA)	278.00	1		278.00
05A	QC-LCS 70146	ETH -8B08		Isotopic Thorium - (AEA)	278.00	1		278.00
06A	QC-BLANK 70147	ETH -8B08		Isotopic Thorium - (AEA)	0.00	1		0.00
07A	QC-DUP#1 70148	ETH -8B08		Isotopic Thorium - (AEA)	278.00	1		278.00
01A	B20VJ1	EU -8B08		Isotopic Uranium - (AEA)	261.00	1		261.00
02A	B20VJ2	EU -8B08		Isotopic Uranium - (AEA)	261.00	1		261.00
03A	B20W87	EU -8B08		Isotopic Uranium - (AEA)	261.00	1		261.00
04A	B20W88	EU -8B08		Isotopic Uranium - (AEA)	261.00	1		261.00
05A	QC-LCS 70146	EU -8B08		Isotopic Uranium - (AEA)	261.00	1		261.00
06A	QC-BLANK 70147	EU -8B08		Isotopic Uranium - (AEA)	0.00	1		0.00
07A	QC-DUP#1 70148	EU -8B08		Isotopic Uranium - (AEA)	261.00	1		261.00
01A	B20VJ1	E_GLY -8B08		Gamma Spec (Client List)	194.00	1		194.00
02A	B20VJ2	E_GLY -8B08		Gamma Spec (Client List)	194.00	1		194.00
03A	B20W87	E_GLY -8B08		Gamma Spec (Client List)	194.00	1		194.00
04A	B20W88	E_GLY -8B08		Gamma Spec (Client List)	194.00	1		194.00
05A	QC-LCS 70146	E_GLY -8B08		Gamma Spec (Client List)	194.00	1		194.00
06A	QC-BLANK 70147	E_GLY -8B08		Gamma Spec (Client List)	0.00	1		0.00
07A	QC-DUP#1 70148	E_GLY -8B08		Gamma Spec (Client List)	194.00	1		194.00

SUBTOTAL $13,870.00

TOTAL INVOICE AMOUNT $13,870.00