



EBERLINE SERVICES

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EBERLINE ANALYTICAL CORPORATION

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April 16, 2010

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 S0-04-004-7812, SDG H4195

Dear Mr. Neely:

Enclosed is a data report for three solid (soil) samples designated under SAF No. F10-102. The samples were received at Eberline Analytical on April 2, 2010. The samples were analyzed according to the accompanying chain-of-custody documents.

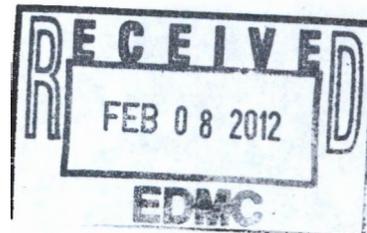
Please call if you have any questions concerning this report.

Sincerely,

N. Joseph Verville
Client Services Manager

NJV/ljb

Enclosure: Data Package



1.0 GENERAL

CH2M Hill Plateau Remediation Company (CHPRC) Sample Delivery Group H4195 was composed of three solid (soil) samples designated under SAF No. F10-102 with a Project Designation of: 200-E-127 Pipeline – Soil.

The samples were received as stated on the chain-of-custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist.

2.0 ANALYSIS NOTES

2.1 Tritium Analysis

The results for both the original and duplicate analyses were less than their respective MDA's, therefore no RPD is calculated, and there is no associated control limit. No problems were encountered during the course of the analyses.

2.2 Carbon-14 Analysis

The results for both the original and duplicate analyses were less than their respective MDA's, therefore no RPD is calculated, and there is no associated control limit. No problems were encountered during the course of the analyses.

2.3 Nickel-63 Analysis

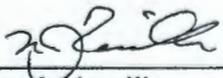
The results for both the original and duplicate analyses were less than their respective MDA's, therefore no RPD is calculated, and there is no associated control limit. No problems were encountered during the course of the analyses.

2.4 Neptunium-237 Analysis

Tracer yield for the QC LCS was 27%, less than the lower control limit of 30%. All field samples' results were less than their respective MDA's and all MDA's were less than the RDL of 1.0 pCi/g. Please see attached IRF. The results for both the original and duplicate analyses were less than their respective MDA's, therefore no RPD is calculated, and there is no associated control limit. 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
Client Services Manager

4/16/10

Date

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 00-xxx

Date : April 13, 2010 SAF No. F10-102

SDG: H4195

LOGIN No.:

TEST: Np-237

Sample No.(s) **B247Y2, B247Y3, B247Y4, QC LCS**

Submitted By: J. Verville

Submitted To: CHPRC Sample Management

Phone No. 510-235-2633 x264

Phone No.

Fax No.

Fax No.

ISSUE

Tracer yield for the QC LCS was 27%, less than the lower control limit of 30%. All filed samples' results were less than their respective sample specific MDA's and all MDA's were less than the RDL (1.0 pCi/L)

PROPOSED RESOLUTION

Since all sample results were non-detect and a preliminary look at the spike recovery indicates an acceptable F/A ratio report results "as is".

CHPRC/BHI/WMH/PNNL COMMENTS

Signature and Date

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4195

SDG 7812
Contact N. Joseph Verville

Client CHPRC
Contract No. 33677
Case no SDG H4195

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

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UB

Prepared by

Reviewed by

N. Joseph Verville

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 04/16/10

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4195

SDG 7812
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4195

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.

REPORT GUIDES

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SUMMARY DATA SECTION

Page 1

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/16/10

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H4195

SDG 7812
Contact N. Joseph Verville

GUIDE, cont.

Client CHPRC
Contract No. 33677
Case no SDG H4195

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.

REPORT GUIDES

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SUMMARY DATA SECTION

Page 2

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/16/10

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4195

SDG 7812
 Contact N. Joseph Verville

LAB SAMPLE SUMMARY

Client CHPRC
 Contract No. 33677
 Case no SDG H4195

LAB						CHAIN OF	
SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CUSTODY	COLLECTED
S004004-01	B247Y2	C6726 (Near Diversion Box	SOLID		F10-102	F10-102-056	03/30/10 13:00
S004004-02	B247Y3	C6726 (Near Diversion Box	SOLID		F10-102	F10-102-057	03/26/10 10:25
S004004-03	B247Y4	C6726 (Near Diversion Box	SOLID		F10-102	F10-102-058	03/30/10 12:20
S004004-04	Lab Control Sample		SOLID		F10-102		
S004004-05	Method Blank		SOLID		F10-102		
S004004-06	Duplicate (S004004-01)	C6726 (Near Diversion Box	SOLID		F10-102		03/30/10 13:00

LAB SUMMARY

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SUMMARY DATA SECTION

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Lab id EBRLNE
 Protocol CHPRC
 Version Ver 1.0
 Form DVD-LS
 Version 3.06
 Report date 04/16/10

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4195

QC SUMMARY

SDG 7812
 Contact N. Joseph Verville

Client CHPRC
 Contract No. 33677
 Case no SDG H4195

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	DEPARTMENT SAMPLE ID
7812	F10-102-056	B247Y2	SOLID	97.1	38.5 g		04/02/10 3	S004004-01	7812-001
	F10-102-057	B247Y3	SOLID	96.3	64.1 g		04/02/10 7	S004004-02	7812-002
	F10-102-058	B247Y4	SOLID	96.7	58.0 g		04/02/10 3	S004004-03	7812-003
		Method Blank	SOLID					S004004-05	7812-005
		Lab Control Sample	SOLID					S004004-04	7812-004
		Duplicate (S004004-01)	SOLID	97.1	38.5 g		04/02/10 3	S004004-06	7812-006

Lab id EBRLINE
 Protocol CHPRC
 Version Ver 1.0
 Form DVD-QS
 Version 3.06
 Report date 04/16/10

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4195

SDG 7812
 Contact N. Joseph Verville

PREP BATCH SUMMARY

Client CHPRC
 Contract No. 33677
 Case no SDG H4195

TEST	MATRIX	METHOD	PREPARATION ERROR			PLANCHETS ANALYZED			QUALI-
			BATCH	2σ %	CLIENT MORE	RE BLANK	LCS	DUP/ORIG MS/ORIG	
Alpha Spectroscopy									
NP	SOLID	Neptunium in Solids	7252-008	14.8	3	1	1	1/1	
Liquid Scintillation Counting									
C	SOLID	Carbon 14 in Solids	7252-008	10.0	3	1	1	1/1	
H	SOLID	Tritium in Solids	7252-008	10.0	3	1	1	1/1	
NI_L	SOLID	Nickel 63 in Solids	7252-008	11.2	3	1	1	1/1	

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.
 Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id EBRLNE
 Protocol CHPRC
 Version Ver 1.0
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 Version 3.06
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4195

SDG 7812
Contact N. Joseph Verville

LAB WORK SUMMARY

Client CHPRC
Contract No. 33677
Case no SDG H4195

LAB SAMPLE	CLIENT SAMPLE ID				SUF-					
COLLECTED	LOCATION	MATRIX			FIX	ANALYZED	REVIEWED	BY	METHOD	
RECEIVED	CUSTODY	SAP No	PLANCHET	TEST						
S004004-01	B247Y2		7812-001	C		04/05/10	04/07/10	BW	Carbon 14 in Solids	
03/30/10	C6726 (Near Diversion Box	SOLID	7812-001	H		04/06/10	04/08/10	BW	Tritium in Solids	
04/02/10	F10-102-056	F10-102	7812-001	NI_L		04/09/10	04/13/10	BW	Nickel 63 in Solids	
			7812-001	NP		04/13/10	04/15/10	BW	Neptunium in Solids	
S004004-02	B247Y3		7812-002	C		04/05/10	04/07/10	BW	Carbon 14 in Solids	
03/26/10	C6726 (Near Diversion Box	SOLID	7812-002	H		04/06/10	04/08/10	BW	Tritium in Solids	
04/02/10	F10-102-057	F10-102	7812-002	NI_L		04/09/10	04/13/10	BW	Nickel 63 in Solids	
			7812-002	NP		04/13/10	04/15/10	BW	Neptunium in Solids	
S004004-03	B247Y4		7812-003	C		04/05/10	04/07/10	BW	Carbon 14 in Solids	
03/30/10	C6726 (Near Diversion Box	SOLID	7812-003	H		04/06/10	04/08/10	BW	Tritium in Solids	
04/02/10	F10-102-058	F10-102	7812-003	NI_L		04/09/10	04/13/10	BW	Nickel 63 in Solids	
			7812-003	NP		04/13/10	04/15/10	BW	Neptunium in Solids	
S004004-04	Lab Control Sample		7812-004	C		04/06/10	04/07/10	BW	Carbon 14 in Solids	
		SOLID	7812-004	H		04/06/10	04/08/10	BW	Tritium in Solids	
		F10-102	7812-004	NI_L		04/09/10	04/13/10	BW	Nickel 63 in Solids	
			7812-004	NP		04/13/10	04/15/10	BW	Neptunium in Solids	
S004004-05	Method Blank		7812-005	C		04/05/10	04/07/10	BW	Carbon 14 in Solids	
		SOLID	7812-005	H		04/06/10	04/08/10	BW	Tritium in Solids	
		F10-102	7812-005	NI_L		04/09/10	04/13/10	BW	Nickel 63 in Solids	
			7812-005	NP		04/13/10	04/15/10	BW	Neptunium in Solids	
S004004-06	Duplicate (S004004-01)		7812-006	C		04/05/10	04/07/10	BW	Carbon 14 in Solids	
03/30/10	C6726 (Near Diversion Box	SOLID	7812-006	H		04/06/10	04/08/10	BW	Tritium in Solids	
04/02/10		F10-102	7812-006	NI_L		04/09/10	04/13/10	BW	Nickel 63 in Solids	
			7812-006	NP		04/13/10	04/15/10	BW	Neptunium in Solids	

WORK SUMMARY

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4195

SDG 7812
 Contact N. Joseph Verville

WORK SUMMARY, cont.

Client CHPRC
 Contract No. 33677
 Case no SDG H4195

COUNTS OF TESTS BY SAMPLE TYPE										
TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
C	F10-102	Carbon 14 in Solids	C14_COX_LSC	3			1	1	1	6
H	F10-102	Tritium in Solids	TRITIUM_COX_LSC	3			1	1	1	6
NI_L	F10-102	Nickel 63 in Solids	NI63_LSC	3			1	1	1	6
NP	F10-102	Neptunium in Solids	NP237_LLE_PLATE_AEA	3			1	1	1	6
TOTALS				12			4	4	4	24

WORK SUMMARY

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Lab id EBRLNE
 Protocol CHPRC
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EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4195

7812-005

Method Blank

METHOD BLANK

SDG <u>7812</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4195</u>
Contact <u>N. Joseph Verville</u>	Contract <u>No. 33677</u>	
Lab sample id <u>S004004-05</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7812-005</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>F10-102</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	4.57	5.0	8.21	400	U	H
Carbon 14	14762-75-5	3.94	4.2	6.83	50.0	U	C
Nickel 63	13981-37-8	-0.246	1.4	2.43	30.0	U	NI_L
Neptunium 237	13994-20-2	0	0.16	0.244	1.00	U	NP

QC-BLANK #72877

Lab id <u>EBRLNE</u>
Protocol <u>CHPRC</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/16/10</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4195

7812-004

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7812</u>	Client/Case no <u>CHPRC</u> SDG H4195
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>
Lab sample id <u>S004004-04</u>	Client sample id <u>Lab Control Sample</u>
Dept sample id <u>7812-004</u>	Material/Matrix <u>SOLID</u>
	SAF No <u>F10-102</u>

ANALYTE	RESULT	2σ ERR	MDA	RDL	QUALI-	ADDED	2σ ERR	REC	3σ LMTS	PROTOCOL
	pCi/g	(COUNT)	pCi/g	pCi/g	FIERS TEST	pCi/g	pCi/g	‡	(TOTAL)	LIMITS
Tritium	1070	25	8.43	400	H	1110	44	96	84-116	80-120
Carbon 14	3170	29	6.76	50.0	C	3190	130	99	84-116	80-120
Nickel 63	192	5.4	2.47	30.0	NI_L	218	8.7	88	84-116	80-120
Neptunium 237	9.29	2.0	0.739	1.00	NP	9.92	0.40	94	63-137	80-120

QC-LCS #72876

Lab id <u>EBRLNE</u>
Protocol <u>CHPRC</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date: <u>04/16/10</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4195

7812-006

B247Y2

DUPLICATE

SDG <u>7812</u> Contact <u>N. Joseph Verville</u> DUPLICATE Lab sample id <u>S004004-06</u> Dept sample id <u>7812-006</u> % solids <u>97.1</u>	ORIGINAL Lab sample id <u>S004004-01</u> Dept sample id <u>7812-001</u> Received <u>04/02/10</u> % solids <u>97.1</u>	Client/Case no <u>CHPRC</u> SDG <u>H4195</u> Contract <u>No. 33677</u> Client sample id <u>B247Y2</u> Location/Matrix <u>C6726(Near Diversion Box SOLID)</u> Collected/Weight <u>03/30/10 13:00 38.5 g</u> Custody/SAF No <u>F10-102-056</u> <u>F10-102</u>
--	---	--

ANALYTE	DUPLICATE		MDA		RDL		QUALI- FIERS	TEST	ORIGINAL		MDA		QUALI- FIERS	RPD %	3σ TOT	DER %
	pCi/g	2σ ERR (COUNT)	pCi/g		pCi/g				pCi/g	2σ ERR (COUNT)	pCi/g					
Tritium	0.797	3.8	6.54	400	U	H		2.00	3.8	6.39	U	-			0.4	
Carbon 14	0.725	3.3	5.61	50.0	U	C		-1.74	3.2	5.49	U	-			1.1	
Nickel 63	-1.00	1.4	2.57	30.0	U	NI_L		0.535	1.5	2.47	U	-			1.5	
Neptunium 237	0.043	0.086	0.128	1.00	U	NP		-0.043	0.086	0.328	U	-			1.4	

QC-DUP#1 72878

200-E-127 Pipeline - Soil

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4195

7812-001

B247Y2

DATA SHEET

SDG <u>7812</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4195</u>
Contact <u>N. Joseph Verville</u>	Contract <u>No. 33677</u>	
Lab sample id <u>S004004-01</u>	Client sample id <u>B247Y2</u>	
Dept sample id <u>7812-001</u>	Location/Matrix <u>C6726 (Near Diversion Box SOLID</u>	
Received <u>04/02/10</u>	Collected/Weight <u>03/30/10 13:00 38.5 g</u>	
% solids <u>97.1</u>	Custody/SAF No <u>F10-102-056 F10-102</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	2.00	3.8	6.39	400	U	H
Carbon 14	14762-75-5	-1.74	3.2	5.49	50.0	U	C
Nickel 63	13981-37-8	0.535	1.5	2.47	30.0	U	NI_L
Neptunium 237	13994-20-2	-0.043	0.086	0.328	1.00	U	NP

200-E-127 Pipeline - Soil

Lab id <u>EBRLNE</u>
Protocol <u>CHPRC</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/16/10</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4195

7812-002

B247Y3

DATA SHEET

SDG <u>7812</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4195</u>
Contact <u>N. Joseph Verville</u>	Contract <u>No. 33677</u>	
Lab sample id <u>S004004-02</u>	Client sample id <u>B247Y3</u>	
Dept sample id <u>7812-002</u>	Location/Matrix <u>C6726 (Near Diversion Box SOLID)</u>	
Received <u>04/02/10</u>	Collected/Weight <u>03/26/10 10:25 64.1 g</u>	
% solids <u>96.3</u>	Custody/SAF No <u>F10-102-057 F10-102</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	0.949	4.0	6.81	400	U	H
Carbon 14	14762-75-5	1.35	3.5	5.89	50.0	U	C
Nickel 63	13981-37-8	-0.297	1.5	2.57	30.0	U	NI_L
Neptunium 237	13994-20-2	0.053	0.11	0.159	1.00	U	NP

200-E-127 Pipeline - Soil

Lab id <u>EBRLNE</u>
Protocol <u>CHPRC</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/16/10</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4195

7812-003

B247Y4

DATA SHEET

SDG <u>7812</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4195</u>
Contact <u>N. Joseph Verville</u>	Contract <u>No. 33677</u>	
Lab sample id <u>S004004-03</u>	Client sample id <u>B247Y4</u>	
Dept sample id <u>7812-003</u>	Location/Matrix <u>C6726 (Near Diversion Box SOLID)</u>	
Received <u>04/02/10</u>	Collected/Weight <u>03/30/10 12:20 58.0 g</u>	
% solids <u>96.7</u>	Custody/SAF No <u>F10-102-058 F10-102</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	2.21	4.4	7.46	400	U	H
Carbon 14	14762-75-5	-3.22	3.6	6.35	50.0	U	C
Nickel 63	13981-37-8	-0.256	1.5	2.53	30.0	U	NI_L
Neptunium 237	13994-20-2	0	0.13	0.506	1.00	U	NP

200-E-127 Pipeline - Soil

Lab id <u>EBRLNE</u>
Protocol <u>CHPRC</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/16/10</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4195

Test NP Matrix SOLID
 SDG 7812
 Contact N. Joseph Verville

LAB METHOD SUMMARY

NEPTUNIUM IN SOLIDS
 ALPHA SPECTROSCOPY

Client CHPRC
 Contract No. 33677
 Contract SDG H4195

RESULTS

LAB	RAW SUP-			Neptunium
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	237
Preparation batch 7252-008				
S004004-01	7812-001		B247Y2	U
S004004-02	7812-002		B247Y3	U
S004004-03	7812-003		B247Y4	U
S004004-04	7812-004		Lab Control Sample	ok
S004004-05	7812-005		Method Blank	U
S004004-06	7812-006		Duplicate (S004004-01)	- U

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

METHOD PERFORMANCE

LAB	RAW SUP-	MDA	ALIQ	PREP	DILU-	YIELD	BFF	COUNT	FWHM	DRIFT	DAYS	ANAL-			
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/g	g	PAC	TION	%	%	min keV	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7252-008 2σ prep error 14.8 % Reference Lab Notebook No. 7252 pg.008															
S004004-01		B247Y2	0.328	0.500			49	102			14	04/12/10	04/13	SS-028	
S004004-02		B247Y3	0.159	0.500			41	102			18	04/12/10	04/13	SS-029	
S004004-03		B247Y4	0.506	0.500			41	104			14	04/12/10	04/13	SS-031	
S004004-04		Lab Control Sample	0.739	0.500			27	104				04/12/10	04/13	SS-032	
S004004-05		Method Blank	0.244	0.500			33	104				04/12/10	04/13	SS-034	
S004004-06		Duplicate (S004004-01)	0.128	0.500			52	104			14	04/12/10	04/13	SS-035	

Nominal values and limits from method 1.00 0.500 30-110 100 180

PROCEDURES	REFERENCE	NP237_LLE_PLATE_AEA
SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 1	
CP-930	Neptunium from Solids and Water by Extraction Chromatography, rev 5	
CP-008	Heavy Element Electroplating, rev 13	

AVERAGES ± 2 SD	MDA <u>0.351 ± 0.467</u>
FOR 6 SAMPLES	YIELD <u>40 ± 19</u>

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SAMPLE DELIVERY GROUP H4195

Test H Matrix SOLID
 SDG 7812
 Contact N. Joseph Verville

LAB METHOD SUMMARY

TRITIUM IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client CHPRC
 Contract No. 33677
 Contract SDG H4195

RESULTS

LAB	RAW	SUF-		
SAMPLE ID	TEST FLX	PLANCHET	CLIENT SAMPLE ID	Tritium
Preparation batch 7252-008				
S004004-01		7812-001	B247Y2	U
S004004-02		7812-002	B247Y3	U
S004004-03		7812-003	B247Y4	U
S004004-04		7812-004	Lab Control Sample	ok
S004004-05		7812-005	Method Blank	U
S004004-06		7812-006	Duplicate (S004004-01)	- U

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

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FLX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7252-008 2g prep error 10.0 % Reference Lab Notebook No. 7252 pg.008															
S004004-01		B247Y2	6.39	0.248			100		50		7	04/05/10	04/06	LSC-004	
S004004-02		B247Y3	6.81	0.233			100		50		11	04/05/10	04/06	LSC-004	
S004004-03		B247Y4	7.46	0.220			100		50		7	04/05/10	04/06	LSC-004	
S004004-04		Lab Control Sample	8.43	0.200			100		50			04/05/10	04/06	LSC-004	
S004004-05		Method Blank	8.21	0.200			100		50			04/05/10	04/06	LSC-004	
S004004-06		Duplicate (S004004-01)	6.54	0.244			100		50		7	04/05/10	04/06	LSC-004	

Nominal values and limits from method 400 0.200 25 180

PROCEDURES REFERENCE TRITIUM_COX_LSC
 CP-251 Tritium/Carbon-14 Oxidation, rev 11

AVERAGES ± 2 SD MDA 7.31 ± 1.74
 FOR 6 SAMPLES YIELD 100 ± 0

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SAMPLE DELIVERY GROUP H4195

Test NI L Matrix SOLID
 SDG 7812
 Contact N. Joseph Verville

LAB METHOD SUMMARY

NICKEL 63 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client CHPRC
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RESULTS

LAB RAW SUP-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Nickel 63

Preparation batch 7252-008

S004004-01	7812-001	B247Y2	U
S004004-02	7812-002	B247Y3	U
S004004-03	7812-003	B247Y4	U
S004004-04	7812-004	Lab Control Sample	ok
S004004-05	7812-005	Method Blank	U
S004004-06	7812-006	Duplicate (S004004-01)	- U

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

METHOD PERFORMANCE

LAB RAW SUP- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/g g FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7252-008 2σ prep error 11.2 % Reference Lab Notebook No. 7252 pg.008

S004004-01	B247Y2	2.47	0.500	99	50	10	04/09/10	04/09	LSC-005
S004004-02	B247Y3	2.57	0.500	96	50	14	04/09/10	04/09	LSC-005
S004004-03	B247Y4	2.53	0.500	97	50	10	04/09/10	04/09	LSC-005
S004004-04	Lab Control Sample	2.47	0.500	101	50		04/09/10	04/09	LSC-005
S004004-05	Method Blank	2.43	0.500	101	50		04/09/10	04/09	LSC-005
S004004-06	Duplicate (S004004-01)	2.57	0.500	98	50	10	04/09/10	04/09	LSC-005

Nominal values and limits from method 30.0 0.500 40-110 25 180

PROCEDURES REFERENCE NI63_LSC
 SPP-070 Soil Dissolution, < 1.0g Aliquot, rev 1
 CP-281 Nickel-63 Purification By Extraction
 Chromatography, rev 5

AVERAGES ± 2 SD MDA 2.51 ± 0.117
 FOR 6 SAMPLES YIELD 99 ± 4

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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.

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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.

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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.

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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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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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- * 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.

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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.

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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.

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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.

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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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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.

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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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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.
 - * Preparation 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.

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- * 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

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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.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/16/10

COLLECTOR: *Scates* COMPANY CONTACT: BAMBERGER, MACHELLE *H4195* TELEPHONE NO.: 373-0880 (7812) PROJECT COORDINATOR: WIDRIG, DL PRICE CODE: 8C DATA TURNAROUND: 15 Days / 15 Days

SAMPLING LOCATION: C6726 (Near Diversion Box) I-002 PROJECT DESIGNATION: 200-E-127 Pipeline - Soil SAF NO.: F10-102 AIR QUALITY: METHOD OF SHIPMENT: FEDERAL EXPRESS

ICE CHEST NO.: *GWS-090* FIELD LOGBOOK NO.: *HNF-N-507-5* ACTUAL SAMPLE DEPTH: *11-15 ft* COA: 302427ES10

SHIPPED TO: Eberline Services OFFSITE PROPERTY NO.: SEE PTR BILL OF LADING/AIR BILL NO.: *SEE PTR 2/20/10 7934 0994 6869*

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other	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)	PRESERVATION	None
		TYPE OF CONTAINER	G/P
		NO. OF CONTAINER(S)	1
		VOLUME	60mL
SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO: B247XB		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B247Y2	SOIL	<i>3/30/10</i>	<i>1300</i>	<i>X</i>

CHAIN OF POSSESSION	SIGN/ PRINT NAMES
RELINQUISHED BY/REMOVED FROM: <i>J Scates</i>	RECEIVED BY/STORED IN: <i>SSU #1</i>
DATE/TIME: <i>3/20/10 1334</i>	DATE/TIME: <i>3/20/10 1334</i>
RELINQUISHED BY/REMOVED FROM: <i>SSU-1</i>	RECEIVED BY/STORED IN: <i>LB. Wall</i>
DATE/TIME: <i>APR 01 2010 1030</i>	DATE/TIME: <i>APR 01 2010 1030</i>
RELINQUISHED BY/REMOVED FROM: <i>LD. Wall</i>	RECEIVED BY/STORED IN: <i>FEDEX</i>
DATE/TIME: <i>APR 01 2010 1430</i>	DATE/TIME: <i>APR 01 2010 1430</i>
RELINQUISHED BY/REMOVED FROM: <i>Fed ex</i>	RECEIVED BY/STORED IN: <i>Southern</i>
DATE/TIME: <i>04/02/10 9:30</i>	DATE/TIME: <i>04/02/10 10:00</i>
RELINQUISHED BY/REMOVED FROM:	RECEIVED BY/STORED IN:
DATE/TIME:	DATE/TIME:
RELINQUISHED BY/REMOVED FROM:	RECEIVED BY/STORED IN:
DATE/TIME:	DATE/TIME:

SPECIAL INSTRUCTIONS
 ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
 (1) Tritium - H3 (Tritium) C14 - LOW LEVEL; Neptunium-237; Nickel-63;

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				F10-102-057	PAGE 1 OF 1		
COLLECTOR Grates		COMPANY CONTACT BAMBERGER, MACHELLE H4195		TELEPHONE NO. 373-0880 (7812)	PROJECT COORDINATOR WIDRIG, DL		PRICE CODE 8C AIR QUALITY <input type="checkbox"/>	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION C6726 (Near Diversion Box) 1-003		PROJECT DESIGNATION 200-E-127 Pipeline - Soil			SAF NO. F10-102				
ICE CHEST NO. 6WS-090		FIELD LOGBOOK NO. HNF-N-507-5		ACTUAL SAMPLE DEPTH 15.21 ft	COA 302427ES10		METHOD OF SHIPMENT FEDERAL EXPRESS		
SHIPPED TO Eberline Services		OFFSITE PROPERTY NO. SEE PTR			BILL OF LADING/AIR BILL NO. SEE PTR 79340994 6869				
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	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)	PRESERVATION		None		<div style="position: absolute; top: 0; left: 0; right: 0; bottom: 0; border: 1px solid black; transform: rotate(45deg); opacity: 0.5;"> JS 3/30/10 </div>			
		TYPE OF CONTAINER		G/P					
		NO. OF CONTAINER(S)		1					
	VOLUME		60ml						
SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO: B247X9		SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS					
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B247Y3	SOIL	3/26/10	1025						
CHAIN OF POSSESSION		SIGN/ PRINT NAMES				SPECIAL INSTRUCTIONS			
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
J Grates		3/30/10 1330		SSU # 1		3/30/10 1330			
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
SSU-1		APR 01 2010 1030		L.D. Wall		APR 01 2010 1030			
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
L.D. Wall		APR 01 2010 1430		FEDEX					
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
Fed Ex		04/02/10 9:30		Smither		04/02/10 10:00			
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
LABORATORY SECTION		RECEIVED BY				TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION		DISPOSAL METHOD				DISPOSED BY		DATE/TIME	

 ORIGINAL

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F10-102-058	PAGE 1 OF 1
COLLECTOR <i>Scales</i>		COMPANY CONTACT BAMBERGER, MACHELLE <i>44195</i>		TELEPHONE NO. 373-0880 <i>(7812)</i>	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION C6726 (Near Diversion Box) I-004 <i>7885, 7886</i>		PROJECT DESIGNATION 200-E-127 Pipeline - Soil			SAF NO. F10-102	AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>6WS-090</i>		FIELD LOGBOOK NO. <i>HNF-N-507-5</i>	ACTUAL SAMPLE DEPTH <i>21.0' - 25.0'</i>		COA 302427ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Eberline Services		OFFSITE PROPERTY NO. SEE PTR			BILL OF LADING/AIR BILL NO. <i>SEE PTR 2w 4/1/10</i> <i>793409946869</i>		
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	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)	PRESERVATION	None		<i>DS</i> <i>3/30/10</i>		
		TYPE OF CONTAINER	G/P				
		NO. OF CONTAINER(S)	1				
		VOLUME	60mL				
SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO: B247Y0		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS				
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B247Y4	SOIL	<i>3-30-10</i>	<i>1220</i>	<i>✓</i>			
CHAIN OF POSSESSION				SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>J. Scales</i>	DATE/TIME <i>3/30/10 1334</i>	RECEIVED BY/STORED IN <i>SSU # 1</i>	DATE/TIME <i>3/30/10 1334</i>	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. (1) Tritium - H3 (Tritium) C14 - LOW LEVEL; Neptunium-237; Nickel-63;			
RELINQUISHED BY/REMOVED FROM <i>SSU- 1</i>	DATE/TIME <i>APR 01 2010 1030</i>	RECEIVED BY/STORED IN <i>LD. Wall</i>	DATE/TIME <i>APR 01 2010 1030</i>				
RELINQUISHED BY/REMOVED FROM <i>P.D. Wall</i>	DATE/TIME <i>APR 01 2010 1430</i>	RECEIVED BY/STORED IN <i>FEDEX</i>	DATE/TIME				
RELINQUISHED BY/REMOVED FROM <i>FEDEX</i>	DATE/TIME <i>04/02/10 9:30</i>	RECEIVED BY/STORED IN <i>Contai</i>	DATE/TIME <i>04/02/10 10:00</i>				
RELINQUISHED BY/REMOVED FROM <i>G</i>	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME				
RELINQUISHED BY/REMOVED FROM <i>of</i>	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME				
RELINQUISHED BY/REMOVED FROM <i>of</i>	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME				
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME			
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME			

 ORIGINAL



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: CHPRC City Richland State WA

Date/Time received 04/02/10 9:30 AM CoC No. F10-102-056, F10-102-057, F10-102-058

Container I.D. No. 6WS-090 Requested TAT (Days) 15 day P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [] No [] N/A []
2. Custody seals on shipping container dated & signed? Yes [] No [] N/A []
3. Custody seals on sample containers intact? Yes [] No [] N/A []
4. Custody seals on sample containers dated & signed? Yes [] No [] N/A []
5. Packing material is: Wet [] Dry []
6. Number of samples in shipping container: 3 Sample Matrix Soil
7. Number of containers per sample: 1 (Or see CoC _____)
8. Samples are in correct container Yes [] No []
9. Paperwork agrees with samples? Yes [] No []
10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels []
11. Samples are: In good condition [] 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 Sonthon Date: 04/02/10 Time: 11:15

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>all sample</u>	<u>260</u>						

Ion Chamber Ser. No. _____

Calibration date _____

Alpha Meter Ser. No. _____

Calibration date _____

Beta/Gamma Meter Ser. No. 100488

Calibration date 04/02/10