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September 1, 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 S0-08-144-7874, SDG H4321

Dear Mr. Neely:

Enclosed is a data report for eight solid (soil) samples designated under SAF No. F10-258. The samples were received at Eberline Analytical on August 17, 2010. The samples were analyzed according to the accompanying chain-of-custody documents.

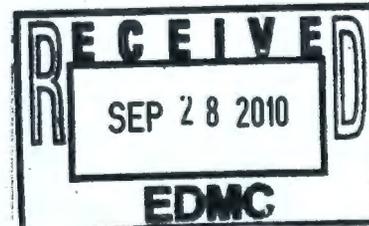
Please call if you have any questions concerning this report.

Sincerely,

N. Joseph Verville
Client Services Manager

NJV/jag

Enclosure: Data Package



1.0 GENERAL

CH2M Hill Plateau Remediation Company (CHPRC) Sample Delivery Group H4321 was composed of eight solid (soil) samples designated under SAF No. F10-258 with a Project Designation of: 216-N-4 Sampling and Analysis – Verification - Surface.

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

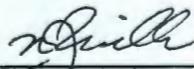
The results for both the original and duplicate analyses were less than their respective MDA's, therefore no RPD, or statistical control limit is calculated. No problems were encountered during the course of the analyses.

2.2 Nickel-63 Analysis

The results for both the original and duplicate analyses were less than their respective MDA's, therefore no RPD, or statistical control limit is calculated. 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

9/1/10

Date

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4321

SDG 7874
Contact N. Joseph Verville

Client CHPRC
Contract No. 33677
Case no SDG_H4321

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

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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 09/01/10

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H4321

SDG 7874
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4321

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

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Lab id EBRLNE
Protocol CHPRC
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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H4321

SDG 7874

Contact N. Joseph Verville

GUIDE, cont.

Client CHPRC

Contract No. 33677

Case no SDG H4321

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

Page 2

SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol CHPRC

Version Ver 1.0

Form DVD-RG

Version 3.06

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4321

SDG 7874
 Contact N. Joseph Verville

LAB SAMPLE SUMMARY

Client CHPRC
 Contract No. 33677
 Case no SDG H4321

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
S008144-01	B271W9	216-N-4-V-13	SOLID		F10-258	F10-258-034	08/11/10 13:30
S008144-02	B271X1	216-N-4-V-15 Surface	SOLID		F10-258	F10-258-036	08/11/10 13:16
S008144-03	B271X2	216-N-4-V-16	SOLID		F10-258	F10-258-037	08/11/10 12:40
S008144-04	B271X3	216-N-4-V-17	SOLID		F10-258	F10-258-038	08/11/10 12:56
S008144-05	B271X4	216-N-4-V-18 Surface	SOLID		F10-258	F10-258-039	08/11/10 12:38
S008144-06	B271X5	216-N-4-V-19	SOLID		F10-258	F10-258-040	08/11/10 12:58
S008144-07	B271X6	216-N-4-V-20	SOLID		F10-258	F10-258-041	08/11/10 13:17
S008144-08	B271X7	216-N-4-V-20 D	SOLID		F10-258	F10-258-042	08/11/10 13:17
S008144-09	Lab Control Sample		SOLID		F10-258		
S008144-10	Method Blank		SOLID		F10-258		
S008144-11	Duplicate (S008144-01)	216-N-4-V-13	SOLID		F10-258		08/11/10 13:30

Lab id EBRLNE
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4321

QC SUMMARY

SDG 7874
Contact N. Joseph Verville

Client CHPRC
Contract No. 33677
Case no SDG H4321

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7874	F10-258-034	B271W9	SOLID	98.6	209.8 g		08/17/10	6	S008144-01	7874-001
	F10-258-036	B271X1	SOLID	98.4	205.3 g		08/17/10	6	S008144-02	7874-002
	F10-258-037	B271X2	SOLID	96.1	206.3 g		08/17/10	6	S008144-03	7874-003
	F10-258-038	B271X3	SOLID	97.2	202.5 g		08/17/10	6	S008144-04	7874-004
	F10-258-039	B271X4	SOLID	96.5	190.7 g		08/17/10	6	S008144-05	7874-005
	F10-258-040	B271X5	SOLID	98.7	217.5 g		08/17/10	6	S008144-06	7874-006
	F10-258-041	B271X6	SOLID	98.6	190.3 g		08/17/10	6	S008144-07	7874-007
	F10-258-042	B271X7	SOLID	98.5	195.9 g		08/17/10	6	S008144-08	7874-008
		Method Blank	SOLID						S008144-10	7874-010
		Lab Control Sample	SOLID						S008144-09	7874-009
		Duplicate (S008144-01)	SOLID	98.6	209.8 g		08/17/10	6	S008144-11	7874-011

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SAMPLE DELIVERY GROUP H4321

SDG 7874
 Contact N. Joseph Verville

PREP BATCH SUMMARY

Client CHPRC
 Contract No. 33677
 Case no SDG H4321

TEST MATRIX	METHOD	PREPARATION ERROR			PLANCHETS ANALYZED			QUALIFIERS
		BATCH	2σ %	CLIENT MORE	RE BLANK	LCS	DUP/ORIG MS/ORIG	
Liquid Scintillation Counting								
H	SOLID	Tritium in Solids	7253-204	10.0	8	1	1	1/1
NI_L	SOLID	Nickel 63 in Solids	7253-204	11.2	8	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.

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SAMPLE DELIVERY GROUP H4321

SDG 7874
Contact N. Joseph Verville

LAB WORK SUMMARY

Client CHPRC
Contract No. 33677
Case no SDG H4321

LAB SAMPLE	CLIENT SAMPLE ID									
COLLECTED	LOCATION	MATRIX		SUP-						
RECEIVED	CUSTODY	SAF No	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
S008144-01	B271W9		7874-001	H		08/30/10	09/01/10	BW	Tritium in Solids	
08/11/10	216-N-4-V-13	SOLID	7874-001	NI_L		08/23/10	08/27/10	BW	Nickel 63 in Solids	
08/17/10	F10-258-034	F10-258								
S008144-02	B271X1		7874-002	H		08/27/10	09/01/10	BW	Tritium in Solids	
08/11/10	216-N-4-V-15 Surface	SOLID	7874-002	NI_L		08/23/10	08/27/10	BW	Nickel 63 in Solids	
08/17/10	F10-258-036	F10-258								
S008144-03	B271X2		7874-003	H		08/27/10	09/01/10	BW	Tritium in Solids	
08/11/10	216-N-4-V-16	SOLID	7874-003	NI_L		08/23/10	08/27/10	BW	Nickel 63 in Solids	
08/17/10	F10-258-037	F10-258								
S008144-04	B271X3		7874-004	H		08/27/10	09/01/10	BW	Tritium in Solids	
08/11/10	216-N-4-V-17	SOLID	7874-004	NI_L		08/23/10	08/27/10	BW	Nickel 63 in Solids	
08/17/10	F10-258-038	F10-258								
S008144-05	B271X4		7874-005	H		08/27/10	09/01/10	BW	Tritium in Solids	
08/11/10	216-N-4-V-18 Surface	SOLID	7874-005	NI_L		08/23/10	08/27/10	BW	Nickel 63 in Solids	
08/17/10	F10-258-039	F10-258								
S008144-06	B271X5		7874-006	H		08/27/10	09/01/10	BW	Tritium in Solids	
08/11/10	216-N-4-V-19	SOLID	7874-006	NI_L		08/23/10	08/27/10	BW	Nickel 63 in Solids	
08/17/10	F10-258-040	F10-258								
S008144-07	B271X6		7874-007	H		08/27/10	09/01/10	BW	Tritium in Solids	
08/11/10	216-N-4-V-20	SOLID	7874-007	NI_L		08/23/10	08/27/10	BW	Nickel 63 in Solids	
08/17/10	F10-258-041	F10-258								
S008144-08	B271X7		7874-008	H		08/27/10	09/01/10	BW	Tritium in Solids	
08/11/10	216-N-4-V-20 D	SOLID	7874-008	NI_L		08/23/10	08/27/10	BW	Nickel 63 in Solids	
08/17/10	F10-258-042	F10-258								
S008144-09	Lab Control Sample		7874-009	H		08/27/10	09/01/10	BW	Tritium in Solids	
		SOLID	7874-009	NI_L		08/23/10	08/27/10	BW	Nickel 63 in Solids	
		F10-258								
S008144-10	Method Blank		7874-010	H		08/30/10	09/01/10	BW	Tritium in Solids	
		SOLID	7874-010	NI_L		08/23/10	08/27/10	BW	Nickel 63 in Solids	
		F10-258								

WORK SUMMARY

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SAMPLE DELIVERY GROUP H4321

SDG 7874
Contact N. Joseph Verville

WORK SUMMARY, cont.

Client CHPRC
Contract No. 33677
Case no SDG H4321

LAB SAMPLE	CLIENT SAMPLE ID									
COLLECTED	LOCATION	MATRIX		SUP-						
RECEIVED	CUSTODY	SAF No	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
S008144-11	Duplicate (S008144-01)		7874-011	H		08/30/10	09/01/10	BW	Tritium in Solids	
08/11/10	216-N-4-V-13	SOLID	7874-011	NI_L		08/23/10	08/27/10	BW	Nickel 63 in Solids	
08/17/10		F10-258								

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
H	F10-258	Tritium in Solids	TRITIUM_COX_LSC	8			1	1	1		11
NI_L	F10-258	Nickel 63 in Solids	NI63_LSC	8			1	1	1		11
TOTALS				16			2	2	2		22

WORK SUMMARY

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Lab id EBRINE
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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H4321

7874-010

Method Blank

METHOD BLANK

SDG <u>7874</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4321</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S008144-10</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7874-010</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>F10-258</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	0.707	3.0	5.09	400	U	H
Nickel 63	13981-37-8	0.657	1.5	2.51	30.0	U	NI_L

QC-BLANK #74483

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>09/01/10</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4321

7874-009

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7874</u> Contact <u>N. Joseph Verville</u> Lab sample id <u>S008144-09</u> Dept sample id <u>7874-009</u>	Client/Case no <u>CHPRC</u> <u>SDG H4321</u> Contract <u>No. 33677</u> Client sample id <u>Lab Control Sample</u> Material/Matrix <u>SOLID</u> SAF No <u>F10-258</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	712	16	5.10	400	H	723	29	98	84-116	80-120
Nickel 63	182	5.3	2.43	30.0	NI_L	218	8.7	<u>83</u>	84-116	80-120

QC-LCS #74482

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>09/01/10</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4321

7874-011

B271W9

DUPLICATE

SDG <u>7874</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4321</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
DUPLICATE	ORIGINAL	
Lab sample id <u>S008144-11</u>	Lab sample id <u>S008144-01</u>	Client sample id <u>B271W9</u>
Dept sample id <u>7874-011</u>	Dept sample id <u>7874-001</u>	Location/Matrix <u>216-N-4-V-13</u> SOLID
	Received <u>08/17/10</u>	Collected/Weight <u>08/11/10 13:30</u> <u>209.8 g</u>
% solids <u>98.6</u>	% solids <u>98.6</u>	Custody/SAF No <u>F10-258-034</u> <u>F10-258</u>

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 %	3σ TOT	DER σ
Tritium	1.48	2.8	4.76	400	U	H	2.25	2.9	4.80	U	-		0.4
Nickel 63	-0.039	1.6	2.68	30.0	U	NI_L	-0.712	1.5	2.58	U	-		0.6

QC-DUP#1 74484

216-N-4 Sampling and Analysis - Verification - Surface

Lab id <u>EBRLNE</u>
Protocol <u>CHPRC</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.05</u>
Report date <u>09/01/10</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4321

7874-001

B271W9

DATA SHEET

SDG <u>7874</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4321</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S008144-01</u>	Client sample id <u>B271W9</u>	
Dept sample id <u>7874-001</u>	Location/Matrix <u>216-N-4-V-13</u>	<u>SOLID</u>
Received <u>08/17/10</u>	Collected/Weight <u>08/11/10 13:30</u>	<u>209.8 g</u>
% solids <u>98.6</u>	Custody/SAF No <u>F10-258-034</u>	<u>F10-258</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	2.25	2.9	4.80	400	U	H
Nickel 63	13981-37-8	-0.712	1.5	2.58	30.0	U	NI_L

216-N-4 Sampling and Analysis - Verification - Surface

Lab id <u>EBRLNE</u>
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Version <u>Ver 1.0</u>
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EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4321

7874-002

B271X1

D A T A S H E E T

SDG <u>7874</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4321</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S008144-02</u>	Client sample id <u>B271X1</u>	
Dept sample id <u>7874-002</u>	Location/Matrix <u>216-N-4-V-15 Surface</u>	<u>SOLID</u>
Received <u>08/17/10</u>	Collected/Weight <u>08/11/10 13:16</u>	<u>205.3 g</u>
% solids <u>98.4</u>	Custody/SAF No <u>F10-258-036</u>	<u>F10-258</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	0.320	2.7	4.61	400	U	H
Nickel 63	13981-37-8	-0.122	1.6	2.79	30.0	U	NI_L

216-N-4 Sampling and Analysis - Verification - Surface

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>09/01/10</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4321

7874-003

B271X2

D A T A S H E E T

SDG <u>7874</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4321</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S008144-03</u>	Client sample id <u>B271X2</u>	
Dept sample id <u>7874-003</u>	Location/Matrix <u>216-N-4-V-16</u>	<u>SOLID</u>
Received <u>08/17/10</u>	Collected/Weight <u>08/11/10 12:40</u>	<u>206.3 g</u>
% solids <u>96.1</u>	Custody/SAF No <u>F10-258-037</u>	<u>F10-258</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	0.554	2.7	4.56	400	U	H
Nickel 63	13981-37-8	-0.901	1.6	2.82	30.0	U	NI_L

216-N-4 Sampling and Analysis - Verification - Surface

Lab id <u>EBRLNE</u>
Protocol <u>CHPRC</u>
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EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4321

7874-004

B271X3

DATA SHEET

SDG <u>7874</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4321</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S008144-04</u>	Client sample id <u>B271X3</u>	
Dept sample id <u>7874-004</u>	Location/Matrix <u>216-N-4-V-17</u>	<u>SOLID</u>
Received <u>08/17/10</u>	Collected/Weight <u>08/11/10 12:56</u>	<u>202.5 g</u>
% solids <u>97.2</u>	Custody/SAP No <u>F10-258-038</u>	<u>F10-258</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	0.862	2.7	4.52	400	U	H
Nickel 63	13981-37-8	0.362	1.6	2.77	30.0	U	NI_L

216-N-4 Sampling and Analysis - Verification - Surface

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>09/01/10</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4321

7874-005

B271X4

D A T A S H E E T

SDG <u>7874</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4321</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S008144-05</u>	Client sample id <u>B271X4</u>	
Dept sample id <u>7874-005</u>	Location/Matrix <u>216-N-4-V-18 Surface</u>	<u>SOLID</u>
Received <u>08/17/10</u>	Collected/Weight <u>08/11/10 12:38</u>	<u>190.7 g</u>
% solids <u>96.5</u>	Custody/SAF No <u>F10-258-039</u>	<u>F10-258</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	2.93	2.9	4.69	400	U	H
Nickel 63	13981-37-8	-1.08	1.5	2.75	30.0	U	NI_L

216-N-4 Sampling and Analysis - Verification - Surface

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>09/01/10</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4321

7874-006

B271X5

DATA SHEET

SDG <u>7874</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4321</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S008144-06</u>	Client sample id <u>B271X5</u>	
Dept sample id <u>7874-006</u>	Location/Matrix <u>216-N-4-V-19</u>	<u>SOLID</u>
Received <u>08/17/10</u>	Collected/Weight <u>08/11/10 12:58</u>	<u>217.5 g</u>
* solids <u>98.7</u>	Custody/SAF No <u>F10-258-040</u>	<u>F10-258</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	2.24	2.9	4.79	400	U	H
Nickel 63	13981-37-8	-0.511	1.5	2.70	30.0	U	NI_L

216-N-4 Sampling and Analysis - Verification - Surface

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>09/01/10</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4321

7874-007

B271X6

DATA SHEET

SDG <u>7874</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4321</u>
Contact <u>N. Joseph Verville</u>	Contract <u>No. 33677</u>	
Lab sample id <u>S008144-07</u>	Client sample id <u>B271X6</u>	
Dept sample id <u>7874-007</u>	Location/Matrix <u>216-N-4-V-20</u>	<u>SOLID</u>
Received <u>08/17/10</u>	Collected/Weight <u>08/11/10 13:17</u>	<u>190.3 g</u>
% solids <u>98.6</u>	Custody/SAF No <u>F10-258-041</u>	<u>F10-258</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	0.075	2.5	4.34	400	U	H
Nickel 63	13981-37-8	0.330	1.5	2.52	30.0	U	NI_L

216-N-4 Sampling and Analysis - Verification - Surface

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>09/01/10</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H4321

7874-008

B271X7

D A T A S H E E T

SDG <u>7874</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4321</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S008144-08</u>	Client sample id <u>B271X7</u>	
Dept sample id <u>7874-008</u>	Location/Matrix <u>216-N-4-V-20 D</u>	<u>SOLID</u>
Received <u>08/17/10</u>	Collected/Weight <u>08/11/10 13:17</u>	<u>195.9 g</u>
% solids <u>98.5</u>	Custody/SAF No <u>F10-258-042</u>	<u>F10-258</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	1.50	3.0	5.10	400	U	H
Nickel 63	13981-37-8	0.235	1.6	2.69	30.0	U	NI_L

216-N-4 Sampling and Analysis - Verification - Surface

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>09/01/10</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4321

Test H Matrix SOLID
SDG 7874
Contact N. Joseph Verville

LAB METHOD SUMMARY

TRITIUM IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client CHPRC
Contract No. 33677
Contract SDG H4321

RESULTS

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID		Tritium
Preparation batch 7253-204					
S008144-01		7874-001	B271W9		U
S008144-02		7874-002	B271X1		U
S008144-03		7874-003	B271X2		U
S008144-04		7874-004	B271X3		U
S008144-05		7874-005	B271X4		U
S008144-06		7874-006	B271X5		U
S008144-07		7874-007	B271X6		U
S008144-08		7874-008	B271X7		U
S008144-09		7874-009	Lab Control Sample		ok
S008144-10		7874-010	Method Blank		U
S008144-11		7874-011	Duplicate (S008144-01)		- 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 FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7253-204 2σ prep error 10.0 % Reference Lab Notebook No. 7253 pg.204															
S008144-01		B271W9	4.80	0.324			100		50			19	08/25/10	08/30	LSC-007
S008144-02		B271X1	4.61	0.334			100		50			16	08/25/10	08/27	LSC-007
S008144-03		B271X2	4.56	0.340			100		50			16	08/25/10	08/27	LSC-007
S008144-04		B271X3	4.52	0.341			100		50			16	08/25/10	08/27	LSC-007
S008144-05		B271X4	4.69	0.330			100		50			16	08/25/10	08/27	LSC-007
S008144-06		B271X5	4.79	0.322			100		50			16	08/25/10	08/27	LSC-007
S008144-07		B271X6	4.34	0.349			100		50			16	08/25/10	08/27	LSC-007
S008144-08		B271X7	5.10	0.305			100		50			16	08/25/10	08/27	LSC-007
S008144-09		Lab Control Sample	5.10	0.300			100		50				08/25/10	08/27	LSC-007
S008144-10		Method Blank	5.09	0.300			100		50				08/25/10	08/30	LSC-007
S008144-11		Duplicate (S008144-01)	4.76	0.326			100		50			19	08/25/10	08/30	LSC-007

Nominal values and limits from method 400 0.300 25 180

METHOD SUMMARIES

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Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/01/10

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4321

LAB METHOD SUMMARY, cont.

TRITIUM IN SOLIDS

LIQUID SCINTILLATION COUNTING

Test H Matrix SOLID
SDG 7874
Contact N. Joseph Verville

Client CHPRC
Contract No. 33677
Contract SDG H4321

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

AVERAGES \pm 2 SD	MDA	<u>4.76</u> \pm <u>0.508</u>
FOR 11 SAMPLES	YIELD	<u>100</u> \pm <u>0</u>

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/01/10

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4321

Test NI L Matrix SOLID
 SDG 7874
 Contact N. Joseph Verville

LAB METHOD SUMMARY

NICKEL 63 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client CHPRC
 Contract No. 33677
 Contract SDG H4321

RESULTS

LAB	RAW	SUF-		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Nickel 63
Preparation batch 7253-204				
S008144-01	7874-001		B271W9	U
S008144-02	7874-002		B271X1	U
S008144-03	7874-003		B271X2	U
S008144-04	7874-004		B271X3	U
S008144-05	7874-005		B271X4	U
S008144-06	7874-006		B271X5	U
S008144-07	7874-007		B271X6	U
S008144-08	7874-008		B271X7	U
S008144-09	7874-009		Lab Control Sample	<u>LOW</u>
S008144-10	7874-010		Method Blank	U
S008144-11	7874-011		Duplicate (S008144-01)	- U

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

METHOD PERFORMANCE

LAB	RAW	SUF-	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 7253-204 2σ prep error 11.2 % Reference Lab Notebook No. 7253 pg.204															
S008144-01		B271W9	2.58	0.500			97	50				12	08/23/10	08/23	LSC-005
S008144-02		B271X1	2.79	0.500			90	50				12	08/23/10	08/23	LSC-005
S008144-03		B271X2	2.82	0.500			90	50				12	08/23/10	08/23	LSC-005
S008144-04		B271X3	2.77	0.500			91	50				12	08/23/10	08/23	LSC-005
S008144-05		B271X4	2.75	0.500			91	50				12	08/23/10	08/23	LSC-005
S008144-06		B271X5	2.70	0.500			94	50				12	08/23/10	08/23	LSC-005
S008144-07		B271X6	2.52	0.500			98	50				12	08/23/10	08/23	LSC-005
S008144-08		B271X7	2.69	0.500			92	50				12	08/23/10	08/23	LSC-005
S008144-09		Lab Control Sample	2.43	0.500			101	50					08/23/10	08/23	LSC-005
S008144-10		Method Blank	2.51	0.500			100	50					08/23/10	08/23	LSC-005
S008144-11		Duplicate (S008144-01)	2.68	0.500			92	50				12	08/23/10	08/23	LSC-005

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

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 Protocol CHPRC
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SAMPLE DELIVERY GROUP H4321

Test NI L Matrix SOLID
SDG 7874
Contact N. Joseph Verville

LAB METHOD SUMMARY, cont.

NICKEL 63 IN SOLIDS
LIQUID SCINTILLATION COUNTING

Client CHPRC
Contract No. 33677
Contract SDG H4321

PROCEDURES REFERENCE NI63_LSC
SPP-071 Soil Dissolution, > 1.0g Aliquot, rev 1
CP-281 Nickel-63 Purification By Extraction
Chromatography, rev 5

AVERAGES ± 2 SD MDA 2.66 ± 0.258
FOR 11 SAMPLES YIELD 94 ± 8

METHOD SUMMARIES

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Lab id EBRLINE
Protocol CHPRC
Version Ver 1.0
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Version 3.06
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SAMPLE DELIVERY GROUP H4321

SDG 7874
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4321

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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SAMPLE DELIVERY GROUP H4321

SDG 7874
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4321

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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SAMPLE DELIVERY GROUP H4321

SDG 7874
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4321

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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SAMPLE DELIVERY GROUP H4321

SDG 7874
 Contact N. Joseph Verville

REPORT GUIDE

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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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SAMPLE DELIVERY GROUP H4321

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GUIDE, cont.

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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SAMPLE DELIVERY GROUP H4321

SDG 7874
 Contact N. Joseph Verville

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Client CHPRC
 Contract No. 33677
 Case no SDG H4321

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.

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SAMPLE DELIVERY GROUP H4321

SDG 7874
Contact N. Joseph Verville

REPORT GUIDE

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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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Contact N. Joseph Verville

REPORT GUIDE

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Contract No. 33677
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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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SAMPLE DELIVERY GROUP H4321

SDG 7874
Contact N. Joseph Verville

GUIDE, cont.

Client CHPRC
Contract No. 33677
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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.

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H4321

SDG 7874
 Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
 Contract No. 33677
 Case no SDG H4321

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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Lab id EBRLNE
 Protocol CHPRC
 Version Ver 1.0
 Form DVD-RG
 Version 3.06
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SAMPLE DELIVERY GROUP H4321

SDG 7874
Contact N. Joseph Verville

GUIDE, cont.

Client CHPRC
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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.

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SUMMARY DATA SECTION

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Version 3.06
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 Contact N. Joseph Verville

REPORT GUIDE

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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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 Protocol CHPRC
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 Report date 09/01/10

EBERLINE SERVICES / RICHMOND

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GUIDE, cont.

Client CHPRC
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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.
- * 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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SAMPLE DELIVERY GROUP H4321

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Contact N. Joseph Verville

GUIDE, cont.

Client CHPRC
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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

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SAMPLE DELIVERY GROUP H4321

SDG 7874
Contact N. Joseph Verville

GUIDE, cont.

Client CHPRC
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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.

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/01/10

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F10-258-034	PAGE 1 OF 1
COLLECTOR <i>Scates</i>		COMPANY CONTACT WIDRIG, DL <i>H4321</i>	TELEPHONE NO. 376-2858 <i>(7874)</i>	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 216-N-4-V-13		PROJECT DESIGNATION 216-N-4 Sampling and Analysis - Verification - Surface		SAF NO. F10-258	AIR QUALITY <input type="checkbox"/>	15 Days / 15 Days
ICE CHEST NO. <i>GWS-225</i>		FIELD LOGBOOK NO. <i>HNF-N-507-14 pg 45</i>	ACTUAL SAMPLE DEPTH <i>Surface</i>	COA 302222ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Eberline Services		OFFSITE PROPERTY NO. <i>SEE PTR bb 8/16/10</i>	<i>01778</i>	BILL OF LADING/AIR BILL NO. <i>SEE PTR bb 8/16/10 7989 4860 3871</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			
		HOLDING TIME	6 Months			
		TYPE OF CONTAINER	G/P			
		NO. OF CONTAINER(S)	1			
		VOLUME	120mL			
	SPECIAL HANDLING AND/OR STORAGE RAD TIE TO: B271N8	SAMPLE ANALYSIS	Nickel-63; Tritium - H3 (Tritium);			
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B271W9	SOIL	<i>8/11/10</i>	<i>1330</i>			<i>X</i>

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Scates</i>	DATE/TIME <i>8/11/10 1540</i>	RECEIVED BY/STORED IN <i>SSU J</i>	DATE/TIME <i>8-11-10 1540</i>	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> ** The laboratory shall report only the requested constituents of concern in all final data reports, and EDDs. QC results for non-requested constituents need not be reported, but samples chosen for matrix spike, and all spike compounds shall be identified in the final data report case narrative. No TICs shall be reported.	
RELINQUISHED BY/REMOVED FROM <i>SSU #1</i>	DATE/TIME <i>8/16/10 0900</i>	RECEIVED BY/STORED IN <i>ED. Wall</i>	DATE/TIME <i>8/16/10 0900</i>		
RELINQUISHED BY/REMOVED FROM <i>ED. Wall</i>	DATE/TIME <i>8/16/10 1400</i>	RECEIVED BY/STORED IN <i>FEDEX</i>	DATE/TIME		
RELINQUISHED BY/REMOVED FROM <i>FEDEX</i>	DATE/TIME	RECEIVED BY/STORED IN <i>RF. MATAWANA</i>	DATE/TIME <i>08/17/10 0930</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		

 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			F10-258-036	PAGE 1 OF 1
COLLECTOR <i>Scales</i>		COMPANY CONTACT WIDRIG, DL <i>H4321</i>	TELEPHONE NO. 376-2858 <i>(7874)</i>	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 216-N-4-V-15 Surface		PROJECT DESIGNATION 216-N-4 Sampling and Analysis - Verification - Surface		SAF NO. F10-258	AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>10/18/10/10 GWS-225</i>		FIELD LOGBOOK NO. <i>HNF-N-507-14 pg 45</i>	ACTUAL SAMPLE DEPTH <i>Surface</i>	COA 302222ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Eberline Services		OFFSITE PROPERTY NO. <i>SEE PTR bb811610 01778</i>		BILL OF LADING/AIR BILL NO. <i>SEE PTR bb811610 7989 4860 3871</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	HOLDING TIME 6 Months	TYPE OF CONTAINER G/P	NO. OF CONTAINER(S) 1	VOLUME 120mL
SPECIAL HANDLING AND/OR STORAGE RAD TIE TO: B271P0		SAMPLE ANALYSIS Nickel-63; Tritium - H3 (Tritium);				
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B271X1	SOIL	<i>8/11/10</i>	<i>1316</i>	<i>X</i>		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Joe Scales</i>	DATE/TIME <i>8/11/10 1540</i>	RECEIVED BY/STORED IN <i>SSU 1</i>	DATE/TIME <i>8-11-10 / 1540</i>	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> ** The laboratory shall report only the requested constituents of concern in all final data reports, and EDDs. QC results for non-requested constituents need not be reported, but samples chosen for matrix spike, and all spike compounds shall be identified in the final data report case narrative. No TICs shall be reported.	
RELINQUISHED BY/REMOVED FROM <i>SSU #1</i>	DATE/TIME <i>8/16/10 0900</i>	RECEIVED BY/STORED IN <i>L.D. Wall</i>	DATE/TIME <i>8/16/10 0900</i>		
RELINQUISHED BY/REMOVED FROM <i>L.D. Wall</i>	DATE/TIME <i>8/16/10 1400</i>	RECEIVED BY/STORED IN <i>FEDEX</i>	DATE/TIME		
RELINQUISHED BY/REMOVED FROM <i>CHRC</i>	DATE/TIME <i>Fed Ex</i>	RECEIVED BY/STORED IN <i>F. KATAWIT</i>	DATE/TIME <i>8/17/10 0900</i>		
RELINQUISHED BY/REMOVED FROM <i>N</i>	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM <i>8</i>	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		

 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			F10-258-037	PAGE 1 OF 1
COLLECTOR Chamberlain		COMPANY CONTACT WIDRIG, DL H4321	TELEPHONE NO. 376-2858 (7874)	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 216-N-4-V-16		PROJECT DESIGNATION 216-N-4 Sampling and Analysis - Verification - Surface		SAF NO. F10-258	AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. GWS-225		FIELD LOGBOOK NO. HNF-N-507-14-Pg45	ACTUAL SAMPLE DEPTH Surface	COA 302222ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Eberline Services		OFFSITE PROPERTY NO. SEE PTR 8116110 01778		BILL OF LADING/AIR BILL NO. SEE PTR 668116110 79894860 3871		
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			
		HOLDING TIME	6 Months			
		TYPE OF CONTAINER	G/P			
		NO. OF CONTAINER(S)	1			
		VOLUME	120mL			
		SPECIAL HANDLING AND/OR STORAGE RAD TIE TO: B271P1	SAMPLE ANALYSIS	Nickel-63; Tritium - H3 (Tritium);		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B271X2	SOIL	8-11-10	1240	✓		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM Cindy Chamberlain/My DL	DATE/TIME 8-11-10/1540	RECEIVED BY/STORED IN SSU A	DATE/TIME 8-11-10/1540	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> ** The laboratory shall report only the requested constituents of concern in all final data reports, and EDDs. QC results for non-requested constituents need not be reported, but samples chosen for matrix spike, and all spike compounds shall be identified in the final data report case narrative. No TICs shall be reported.	
RELINQUISHED BY/REMOVED FROM SSU #1	DATE/TIME 8/16/10 0900	RECEIVED BY/STORED IN L.D. Wall	DATE/TIME 8/16/10 0900		
RELINQUISHED BY/REMOVED FROM L.D. Wall	DATE/TIME 8/16/10 1400	RECEIVED BY/STORED IN CHPRC	DATE/TIME 8/16/10 0900		
RELINQUISHED BY/REMOVED FROM CHPRC	DATE/TIME 8/16/10 1400	RECEIVED BY/STORED IN FEDEX	DATE/TIME 8/16/10 0900		
RELINQUISHED BY/REMOVED FROM FEDEX	DATE/TIME 8/16/10 1400	RECEIVED BY/STORED IN JF-MATHIAS	DATE/TIME 8/17/10 0920		
RELINQUISHED BY/REMOVED FROM JF-MATHIAS	DATE/TIME 8/17/10 0920	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

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F10-258-038	PAGE 1 OF 1
COLLECTOR <i>Scales</i>		COMPANY CONTACT WIDRIG, DL <i>H4321</i>	TELEPHONE NO. 376-2858 <i>(7874)</i>	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE <input checked="" type="checkbox"/> 8C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 216-N-4-V-17		PROJECT DESIGNATION 216-N-4 Sampling and Analysis - Verification - Surface		SAF NO. F10-258	AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>6WS-225</i>		FIELD LOGBOOK NO. <i>HNA-N-507-14 pg 45</i>	ACTUAL SAMPLE DEPTH <i>Surface</i>	COA 302222ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Eberline Services		OFFSITE PROPERTY NO. <i>SEE PTR 8/16/10 01778</i>		BILL OF LADING/AIR BILL NO. <i>SEE PTR 8/16/10 7989 4860 3871</i>		
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water W1=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			
		HOLDING TIME	6 Months			
		TYPE OF CONTAINER	G/P			
		NO. OF CONTAINER(S)	1			
		VOLUME	120mL			
	SPECIAL HANDLING AND/OR STORAGE RAD TIE TO: B271P2	SAMPLE ANALYSIS	Nickel-63; Tritium - H3 (Tritium);			
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B271X3	SOIL	<i>8/11/10</i>	<i>1256</i>	<i>X</i>		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM <i>Joe Scales</i>	DATE/TIME <i>8/11/10/1540</i>	RECEIVED BY/STORED IN <i>SSU 1</i>	DATE/TIME <i>8-11-10/1540</i>	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> ** The laboratory shall report only the requested constituents of concern in all final data reports, and EDDs. QC
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
<i>Fed Ex</i>		<i>JF Madsen</i>	<i>08/12/10 0920</i>
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

 ORIGINAL

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

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CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F10-258-039	PAGE 1 OF 1
COLLECTOR <i>Scales</i>		COMPANY CONTACT WIDRIG, DL <i>H4321</i>	TELEPHONE NO. 376-2858 <i>(7874)</i>	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 216-N-4-V-18 Surface		PROJECT DESIGNATION 216-N-4 Sampling and Analysis - Verification - Surface		SAF NO. F10-258	AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>GWS-225</i>		FIELD LOGBOOK NO. <i>HNP-N-507-14 pg 45</i>	ACTUAL SAMPLE DEPTH <i>Surface</i>	COA 302222ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Eberline Services		OFFSITE PROPERTY NO. <i>SEE PTR 8/11/10 01778</i>		BILL OF LADING/AIR BILL NO. <i>SEE PTR 8/11/10 798948603871</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 S400.5 (1990/1993)	PRESERVATION None	HOLDING TIME 6 Months	TYPE OF CONTAINER G/P	NO. OF CONTAINER(S) 1	VOLUME 120mL
SPECIAL HANDLING AND/OR STORAGE RAD TIE TO: B271P3		SAMPLE ANALYSIS Nickel-63; Tritium - H3 (Tritium);				
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B271X4	SOIL	<i>8/11/10</i>	<i>1238</i>	<i>X</i>		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKT applies to this SAF. <input type="checkbox"/> ** The laboratory shall report only the results for non-requested constituents need not be reported, but samples chosen for matrix spike, and all spike compounds shall be identified in the final data report case narrative. No TICs shall be reported.
<i>SSU #1</i>	<i>8/16/10 0900</i>	<i>L.D. Wall</i>	<i>8/16/10 0900</i>	
<i>WLD. Wall</i>	<i>8/16/10 1400</i>	<i>FEDEX</i>		
<i>CH2M</i>		<i>IF MATCH WITH 08/17/10 0920</i>		
<i>FEDEX</i>				
<i>SI</i>				
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
<i>SI</i>				
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
<i>SI</i>				

 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			F10-258-040	PAGE 1 OF 1
COLLECTOR <i>Chamberlain</i>		COMPANY CONTACT WIDRIG, DL <i>H4321</i>	TELEPHONE NO. 376-2858 <i>(787A)</i>	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE <input checked="" type="checkbox"/> BC	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 216-N-4-V-19		PROJECT DESIGNATION 216-N-4 Sampling and Analysis - Verification - Surface		SAF NO. F10-258	AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>GWS-225</i>		FIELD LOGBOOK NO. <i>HWF-N-507-14 R45</i>	ACTUAL SAMPLE DEPTH <i>Surface</i>	COA 302222ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Eberline Services		OFFSITE PROPERTY NO. SEE PTR <i>608116110 01778</i>		BILL OF LADING/AIR BILL NO. SEE PTR <i>608116110 798948603871</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			
		HOLDING TIME	6 Months			
		TYPE OF CONTAINER	G/P			
		NO. OF CONTAINER(S)	1			
		VOLUME	120mL			
	SPECIAL HANDLING AND/OR STORAGE RAD TIE TO: B271P4	SAMPLE ANALYSIS		Nickel-63; Tritium - H3 (Tritium);		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B271X5	SOIL	8-11-10	1258			✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Craig Chamberlain / by John</i>	DATE/TIME <i>8-11-10/1540</i>	RECEIVED BY/STORED IN <i>SSU I</i>	DATE/TIME <i>8-11-10/1540</i>	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> ** The laboratory shall report only the requested constituents of concern in all final data reports, and EDDs. QC results for non-requested constituents need not be reported, but samples chosen for matrix spike, and all spike compounds shall be identified in the final data report case narrative. No TICs shall be reported.	
RELINQUISHED BY/REMOVED FROM <i>SSU #1</i>	DATE/TIME <i>8/16/10 0900</i>	RECEIVED BY/STORED IN <i>L.D. Wall</i>	DATE/TIME <i>8/16/10 0900</i>		
RELINQUISHED BY/REMOVED FROM <i>L.D. Wall</i>	DATE/TIME <i>8/16/10 1400</i>	RECEIVED BY/STORED IN <i>FEDEX</i>	DATE/TIME		
RELINQUISHED BY/REMOVED FROM <i>FEDEX</i>	DATE/TIME	RECEIVED BY/STORED IN <i>FEDEX</i>	DATE/TIME <i>08/17/10 0920</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		

 ORIGINAL

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

CH2MHIII Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F10-258-041	PAGE 1 OF 1
COLLECTOR <i>Chamberlain</i>		COMPANY CONTACT WIDRIG, DL <i>H4321</i>	TELEPHONE NO. 376-2858 (7274)	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 216-N-4-V-20		PROJECT DESIGNATION 216-N-4 Sampling and Analysis - Verification - Surface		SAF NO. F10-258	AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>GWS-225</i>		FIELD LOGBOOK NO. <i>INF-N-507-14 P. 45</i>	ACTUAL SAMPLE DEPTH <i>Surface</i>	COA 30222ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Eberline Services		OFFSITE PROPERTY NO. <i>SEE PTR 608116110 01778</i>		BILL OF LADING/AIR BILL NO. <i>SEE PTR 608116110 7989 4860 3871</i>		
MATRIX* A=Air D1=Drum L=Liquids DS=Drum S=Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WZ=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			
		HOLDING TIME	6 Months			
		TYPE OF CONTAINER	G/P			
		NO. OF CONTAINER(S)	1			
		VOLUME	120mL			
	SPECIAL HANDLING AND/OR STORAGE RAD TIE TO: B271P5	SAMPLE ANALYSIS	Nickel-63; Tritium - H3 (Tritium);			
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B271X6	SOIL	<i>8-11-10</i>	<i>1317</i>	<i>✓</i>		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Chris Chamberlain / by dlh</i>	DATE/TIME <i>8-11-10 / 1540</i>	RECEIVED BY/STORED IN <i>BSU 1</i>	DATE/TIME <i>8-11-10 / 1540</i>	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> ** The laboratory shall report only the requested constituents of concern in all final data reports, and EDDs. QC results for non-requested constituents need not be reported, but samples chosen for matrix spike, and all spike compounds shall be identified in the final data report case narrative. No TICs shall be reported.	
RELINQUISHED BY/REMOVED FROM <i>SSU #1</i>	DATE/TIME <i>8/16/10 0900</i>	RECEIVED BY/STORED IN <i>L.D. Wall</i>	DATE/TIME <i>8/16/10 0900</i>		
RELINQUISHED BY/REMOVED FROM <i>L.D. Wall</i>	DATE/TIME <i>8/16/10 1400</i>	RECEIVED BY/STORED IN <i>CH2M HILL</i>	DATE/TIME		
RELINQUISHED BY/REMOVED FROM <i>CH2M HILL</i>	DATE/TIME <i>Fed Ex</i>	RECEIVED BY/STORED IN <i>FEDEX</i>	DATE/TIME		
RELINQUISHED BY/REMOVED FROM <i>7</i>	DATE/TIME	RECEIVED BY/STORED IN <i>F. N. ...</i>	DATE/TIME <i>08/17/10 0900</i>		
RELINQUISHED BY/REMOVED FROM <i>8</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

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F10-258-042	PAGE 1 OF 1
COLLECTOR <i>Chambertain</i>	COMPANY CONTACT WIDRIG, DL <i>H4321</i>	TELEPHONE NO. 376-2858 <i>(7874)</i>	PROJECT COORDINATOR WIDRIG, DL		PRICE CODE 8C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 216-N-4-V-20 D	PROJECT DESIGNATION 216-N-4 Sampling and Analysis - Verification - Surface		SAF NO. F10-258		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>605-225</i>	FIELD LOGBOOK NO. <i>ANF-N-507-14 Pg 45</i>	ACTUAL SAMPLE DEPTH <i>Surface</i>	COA 302222ES10		METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Eberline Services	OFFSITE PROPERTY NO. SEE PTR <i>608116110 01778</i>		BILL OF LADING/AIR BILL NO. SEE PTR <i>608116110 7989 4860 3871</i>			

MATRIX* A=Air DL=Drum L=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
		HOLDING TIME	6 Months
		TYPE OF CONTAINER	G/P
		NO. OF CONTAINER(S)	1
		VOLUME	120mL
SPECIAL HANDLING AND/OR STORAGE RAD TIE TO: B271P6		SAMPLE ANALYSIS Nickel-63; Tritium - H3 (Tritium);	
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B271X7	SOIL	8-11-10	1317 ✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Chris Chambertain / Eberline</i>	DATE/TIME <i>8-11-10 / 1540</i>	RECEIVED BY/STORED IN <i>SSU</i>	DATE/TIME <i>8-11-10 / 1540</i>	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> ** The laboratory shall report only the requested constituents of concern in all final data reports, and EDDs. QC results for non-requested constituents need not be reported, but samples chosen for matrix spike, and all spike compounds shall be identified in the final data report case narrative. No TICs shall be reported.	
RELINQUISHED BY/REMOVED FROM <i>SSU #1</i>	DATE/TIME <i>8/16/10 0900</i>	RECEIVED BY/STORED IN <i>L.D. Wall</i>	DATE/TIME <i>8/16/10 0900</i>		
RELINQUISHED BY/REMOVED FROM <i>L.D. Wall</i>	DATE/TIME <i>8/16/10 1400</i>	RECEIVED BY/STORED IN <i>CHPRC</i>	DATE/TIME		
RELINQUISHED BY/REMOVED FROM <i>CHPRC</i>	DATE/TIME <i>FedEx</i>	RECEIVED BY/STORED IN <i>FEDEX</i>	DATE/TIME <i>8/17/10 0920</i>		
RELINQUISHED BY/REMOVED FROM <i>48</i>	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM <i>01</i>	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM <i>1</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: CHPnc City MCHAND State WA
 Date/Time received 08/17/10 0920 CoC No. F10-258-034, 036, 037, 038, 039, 040, 041, 042
 Container I.D. No. QWS-225 Requested TAT (Days) 15 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: 8 Sample Matrix: S
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 N/A Preservative _____
13. Describe any anomalies:

14. Was P.M. notified of any anomalies? Yes [] No [] Date _____
 15. Inspected by J. H. H. Date: 08/17/10 Time: 1045

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>See shipping list</u>	<u>260</u>						

Ion Chamber Ser. No. _____ Calibration date _____
 Alpha Meter Ser. No. _____ Calibration date _____
 Beta/Gamma Meter Ser. No. 99574 Calibration date 23 JUN 10