



**EBERLINE**  
SERVICES

RECEIVED MAY 26, 2010

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May 26, 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 S0-04-063-7641, SDG H4207**

Dear Mr. Neely:

Enclosed is a data report for three water samples designated under SAF No. X10-039 received at Eberline Analytical on April 14, 2010. The samples were analyzed according to the accompanying chain-of-custody documents.

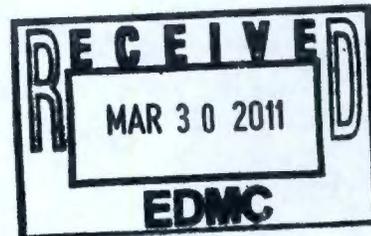
Please call if you have any questions concerning this report.

Sincerely,

N. Joseph Verville  
Client Services Manager

NJV/ljb

Enclosure: Data Package



**1.0 GENERAL**

CH2M Hill Plateau Remediation Company (CHPRC) Sample Delivery Group H4207 was composed of five water samples designated under SAF No. X10-039 with a Project Designation of: IU2, IU6DURA, APRIL 2010.

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

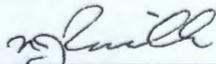
**2.0 ANALYSIS NOTES**

**2.1 Total Radium Analysis**

The QC LCS recovery was 68%, less than the control limit of 80%, but within the warning limit of 65%. All sample results were less than their respective sample specific MDA and all MDA's were less than the RDL (1.0 pCi/L). 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.

**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

5/26/10

\_\_\_\_\_  
Date

**ISSUE RESOLUTION FORM**

**CHPRC TRACKING NUMBER:** 10-138

Date : May 21, 2010

SAF No. X10-039

SDG: H4207

LOGIN No.: TEST: Total Radium

Sample No.(s) **B24M51, B24M52, B24M53, B24M54, B25025**

Submitted By: J. Verville, EAC

Submitted To: Heidi Hampt

Phone No. 510-235-2633 x264

Phone No. 509-376-4319

Fax No. 510-235-0438

Fax No.

**ISSUE**

QC LCS recovery = 68%. Eberline's QAPM allows for a lower limit of 80%, with a warning low limit of 65%. All sample results are less than their respective sample specific MDA's and all MDA's are less than the RDL (1.0 pCi/L)

**PROPOSED RESOLUTION**

Report data "as is", no reanalysis.

**CHPRC/BHI/WMH/PNNL COMMENTS**

Accept proposed resolution.

Heidi Hampt 5/25/10

Signature and Date

IU2\_IU6DURA, APRIL 2010

EBERLINE ANALYTICAL / RICHMOND  
SAMPLE DELIVERY GROUP H4207

SDG 7641  
Contact N. Joseph Verville

Client CHPRC  
Contract No. 33677  
Case no SDG\_H4207

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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 05/21/10

EBERLINE ANALYTICAL / RICHMOND

SAMPLE DELIVERY GROUP H4207

SDG 7641  
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC  
Contract No. 33677  
Case no SDG H4207

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

Page 1

SUMMARY DATA SECTION

Page 1

Lab id EBRLNE  
Protocol CHPRC  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 05/21/10

EBERLINE ANALYTICAL / RICHMOND

SAMPLE DELIVERY GROUP H4207

SDG 7641  
Contact N. Joseph Verville

GUIDE, cont.

Client CHPRC  
Contract No. 33677  
Case no SDG\_H4207

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.

**EBERLINE ANALYTICAL/RICHMOND**

SAMPLE DELIVERY GROUP H4207

SDG 7641  
 Contact N. Joseph Verville

**LAB SAMPLE SUMMARY**

Client CHPRC  
 Contract No. 33677  
 Case no SDG H4207

LAB						CHAIN OF	
SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CUSTODY	COLLECTED
S004063-01	B24M51	HNF-N-506 27/77	WATER		X10-039	X10-039-296	04/12/10 09:08
S004063-02	B24M52	HNF-N-506 27/77	WATER		X10-039	X10-039-298	04/12/10 10:16
S004063-03	B24M53	HNF-N-506 27/77	WATER		X10-039	X10-039-300	04/12/10 13:14
S004063-04	B24M54	HNF-N-506 27/77	WATER		X10-039	X10-039-302	04/12/10 11:56
S004063-05	B25025	HNF-N-506 28/79	WATER		X10-039	X10-039-289	04/12/10 11:42
S004063-06	Lab Control Sample		WATER		X10-039		
S004063-07	Method Blank		WATER		X10-039		
S004063-08	Duplicate (S004063-01)	HNF-N-506 27/77	WATER		X10-039		04/12/10 09:08

LAB SUMMARY

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SUMMARY DATA SECTION

Page 3

Lab id EBRLNE  
 Protocol CHPRC  
 Version Ver 1.0  
 Form DVD-LS  
 Version 3.06  
 Report date 05/21/10

**EBERLINE ANALYTICAL/RICHMOND**

SAMPLE DELIVERY GROUP H4207

SDG 7641  
 Contact N. Joseph Verville

**QC SUMMARY**

Client CHPRC  
 Contract No. 33677  
 Case no SDG H4207

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL. SAMPLE ID	DEPARTMENT SAMPLE ID
7641	X10-039-289	B25025	WATER		1.020 L		04/14/10 2	S004063-05	7641-005
	X10-039-296	B24M51	WATER		1.020 L		04/14/10 2	S004063-01	7641-001
	X10-039-298	B24M52	WATER		1.020 L		04/14/10 2	S004063-02	7641-002
	X10-039-300	B24M53	WATER		1.020 L		04/14/10 2	S004063-03	7641-003
	X10-039-302	B24M54	WATER		1.020 L		04/14/10 2	S004063-04	7641-004
		Method Blank	WATER					S004063-07	7641-007
		Lab Control Sample	WATER					S004063-06	7641-006
		Duplicate (S004063-01)	WATER		1.020 L		04/14/10 2	S004063-08	7641-008

QC SUMMARY

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SUMMARY DATA SECTION

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Lab id EBRLNE  
 Protocol CHPRC  
 Version Ver 1.0  
 Form DVD-QS  
 Version 3.06  
 Report date 05/21/10

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4207

SDG 7641  
 Contact N. Joseph Verville

PREP BATCH SUMMARY

Client CHPRC  
 Contract No. 33677  
 Case no SDG H4207

TEST	MATRIX	METHOD	PREPARATION ERROR				PLANCHETS ANALYZED				QUALI-
			BATCH	2σ ‡	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG MS/ORIG	
Gas Proportional Counting											
RAT	WATER	Total Alpha Radium in Water	7251-047	12.8	5		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.

PREP BATCH SUMMARY  
 Page 1  
 SUMMARY DATA SECTION  
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Lab id EBRLNE  
 Protocol CHPRC  
 Version Ver 1.0  
 Form DVD-PBS  
 Version 3.06  
 Report date 05/21/10

**EBERLINE ANALYTICAL/RICHMOND**

SAMPLE DELIVERY GROUP H4207

SDG 7641  
 Contact N. Joseph Verville

**LAB WORK SUMMARY**

Client CHPRC  
 Contract No. 33677  
 Case no SDG H4207

LAB SAMPLE	CLIENT SAMPLE ID	MATRIX	SUF-	RECEIVED	LOCATION	SAF No	PLANCHET	TEST	ANALYZED	REVIEWED	BY	METHOD
S004063-01	B24M51						7641-001	RAT	05/19/10	05/20/10	BW	Total Alpha Radium in Water
	04/12/10 HNF-N-506 27/77	WATER										
	04/14/10 X10-039-296					X10-039						
S004063-02	B24M52						7641-002	RAT	05/19/10	05/20/10	BW	Total Alpha Radium in Water
	04/12/10 HNF-N-506 27/77	WATER										
	04/14/10 X10-039-298					X10-039						
S004063-03	B24M53						7641-003	RAT	05/19/10	05/20/10	BW	Total Alpha Radium in Water
	04/12/10 HNF-N-506 27/77	WATER										
	04/14/10 X10-039-300					X10-039						
S004063-04	B24M54						7641-004	RAT	05/20/10	05/20/10	BW	Total Alpha Radium in Water
	04/12/10 HNF-N-506 27/77	WATER										
	04/14/10 X10-039-302					X10-039						
S004063-05	B25025						7641-005	RAT	05/20/10	05/20/10	BW	Total Alpha Radium in Water
	04/12/10 HNF-N-506 28/79	WATER										
	04/14/10 X10-039-289					X10-039						
S004063-06	Lab Control Sample						7641-006	RAT	05/19/10	05/20/10	BW	Total Alpha Radium in Water
		WATER										
						X10-039						
S004063-07	Method Blank						7641-007	RAT	05/19/10	05/20/10	BW	Total Alpha Radium in Water
		WATER										
						X10-039						
S004063-08	Duplicate (S004063-01)						7641-008	RAT	05/19/10	05/20/10	BW	Total Alpha Radium in Water
	04/12/10 HNF-N-506 27/77	WATER										
	04/14/10					X10-039						

WORK SUMMARY

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SUMMARY DATA SECTION

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Lab id EBRLNE  
 Protocol CHPRC  
 Version Ver 1.0  
 Form DVD-LWS  
 Version 3.06  
 Report date 05/21/10

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4207

SDG 7641  
 Contact N. Joseph Verville

WORK SUMMARY, cont.

Client CHPRC  
 Contract No. 33677  
 Case no SDG H4207

COUNTS OF TESTS BY SAMPLE TYPE											
TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
RAT	X10-039	Total Alpha Radium in Water	RATOT_GPC	5			1	1	1		8
TOTALS				5			1	1	1		8

WORK SUMMARY

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SUMMARY DATA SECTION

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Lab id EBRLNE  
 Protocol CHPRC  
 Version Ver 1.0  
 Form DVD-LWS  
 Version 3.06  
 Report date 05/21/10

EBERLINE ANALYTICAL / RICHMOND  
SAMPLE DELIVERY GROUP H4207

7641-007

Method Blank

METHOD BLANK

SDG <u>7641</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4207</u>
Contact <u>N. Joseph Verville</u>	Contract <u>No. 33677</u>	
Lab sample id <u>S004063-07</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7641-007</u>	Material/Matrix _____	<u>WATER</u>
	SAF No <u>X10-039</u>	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Total Radium	ALPHA-RA	0.100	0.13	0.394	1.00	U	RAT

QC-BLANK #73101

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>05/21/10</u>

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4207

7641-006

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7641</u>	Client/Case no <u>CHPRC</u>	<u>SDG H4207</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S004063-06</u>	Client sample id <u>Lab Control Sample</u>	
Dept sample id <u>7641-006</u>	Material/Matrix <u>WATER</u>	
	SAF No <u>X10-039</u>	

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	3σ LMDS (TOTAL)	PROTOCOL LIMITS
Total Radium	41.9	2.9	0.402	1.00		RAT	61.5	2.5	<u>68</u>	84-116	80-120

QC-LCS #73100

LAB CONTROL SAMPLES

Page 1

SUMMARY DATA SECTION

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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>05/21/10</u>

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4207

7641-008

B24M51

DUPLICATE

SDG <u>7641</u>	Client/Case no <u>CHPRC</u>	<u>SDG H4207</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
DUPLICATE	ORIGINAL	
Lab sample id <u>S004063-08</u>	Lab sample id <u>S004063-01</u>	Client sample id <u>B24M51</u>
Dept sample id <u>7641-008</u>	Dept sample id <u>7641-001</u>	Location/Matrix <u>HNF-N-506 27/77</u> <u>WATER</u>
	Received <u>04/14/10</u>	Collected/Volume <u>04/12/10 09:08</u> <u>1.020 L</u>
		Custody/SAP No <u>X10-039-296</u> <u>X10-039</u>

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	3σ TOT	DER σ
Total Radium	-0.004	0.070	0.295	1.00	U	RAT	0.069	0.17	0.431	U	-	0.8	

QC-DUP#1 73102

IU2 IU6DURA, APRIL 2010

Lab id <u>EBRLNE</u>
Protocol <u>CHPRC</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>05/21/10</u>

EBERLINE ANALYTICAL / RICHMOND  
SAMPLE DELIVERY GROUP H4207

7641-001

B24M51

DATA SHEET

SDG <u>7641</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4207</u>
Contact <u>N. Joseph Verville</u>	Contract <u>No. 33677</u>	
Lab sample id <u>S004063-01</u>	Client sample id <u>B24M51</u>	
Dept sample id <u>7641-001</u>	Location/Matrix <u>HNF-N-506 27/77</u>	<u>WATER</u>
Received <u>04/14/10</u>	Collected/Volume <u>04/12/10 09:08</u>	<u>1.020 L</u>
	Custody/SAF No <u>X10-039-296</u>	<u>X10-039</u>

ANALYTE	CAS NO	RESULT pCi/L	2 $\sigma$ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Total Radium	ALPHA-RA	0.069	0.17	0.431	1.00	U	RAT

IU2 IU6DURA, APRIL 2010

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>05/21/10</u>

EBERLINE ANALYTICAL / RICHMOND  
SAMPLE DELIVERY GROUP H4207

7641-002

B24M52

DATA SHEET

SDG <u>7641</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4207</u>
Contact <u>N. Joseph Verville</u>	Contract <u>No. 33677</u>	
Lab sample id <u>S004063-02</u>	Client sample id <u>B24M52</u>	
Dept sample id <u>7641-002</u>	Location/Matrix <u>HNF-N-506 27/77</u>	<u>WATER</u>
Received <u>04/14/10</u>	Collected/Volume <u>04/12/10 10:16</u>	<u>1.020 L</u>
	Custody/SAF No <u>X10-039-298</u>	<u>X10-039</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Total Radium	ALPHA-RA	0.167	0.16	0.393	1.00	U	RAT

IU2 IU6DURA, APRIL 2010

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>05/21/10</u>

EBERLINE ANALYTICAL / RICHMOND  
SAMPLE DELIVERY GROUP H4207

7641-003

B24M53

DATA SHEET

SDG <u>7641</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4207</u>
Contact <u>N. Joseph Verville</u>	Contract <u>No. 33677</u>	
Lab sample id <u>S004063-03</u>	Client sample id <u>B24M53</u>	
Dept sample id <u>7641-003</u>	Location/Matrix <u>HNF-N-506 27/77</u>	<u>WATER</u>
Received <u>04/14/10</u>	Collected/Volume <u>04/12/10 13:14 1.020 L</u>	
	Custody/SAF No <u>X10-039-300</u>	<u>X10-039</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Total Radium	ALPHA-RA	-0.003	0.096	0.412	1.00	U	RAT

IU2 IU6DURA, APRIL 2010

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>05/21/10</u>

EBERLINE ANALYTICAL / RICHMOND  
 SAMPLE DELIVERY GROUP H4207

7641-004

B24M54

DATA SHEET

SDG <u>7641</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4207</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S004063-04</u>	Client sample id <u>B24M54</u>	
Dept sample id <u>7641-004</u>	Location/Matrix <u>HNF-N-506 27/77</u>	<u>WATER</u>
Received <u>04/14/10</u>	Collected/Volume <u>04/12/10 11:56</u>	<u>1.020 L</u>
	Custody/SAF No <u>X10-039-302</u>	<u>X10-039</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST
Total Radium	ALPHA-RA	0.286	0.17	0.375	1.00	U	RAT

IU2 IU6DURA, APRIL 2010

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>05/21/10</u>

EBERLINE ANALYTICAL / RICHMOND

SAMPLE DELIVERY GROUP H4207

7641-005

B25025

DATA SHEET

SDG <u>7641</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4207</u>
Contact <u>N. Joseph Verville</u>	Contract <u>No. 33677</u>	
Lab sample id <u>S004063-05</u>	Client sample id <u>B25025</u>	
Dept sample id <u>7641-005</u>	Location/Matrix <u>HNF-N-506 28/79</u>	<u>WATER</u>
Received <u>04/14/10</u>	Collected/Volume <u>04/12/10 11:42</u>	<u>1.020 L</u>
	Custody/SAF No <u>X10-039-289</u>	<u>X10-039</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Total Radium	ALPHA-RA	0.018	0.079	0.402	1.00	U	RAT

IU2 IU6DURA, APRIL 2010

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>05/21/10</u>

**EBERLINE ANALYTICAL/RICHMOND**

SAMPLE DELIVERY GROUP H4207

**LAB METHOD SUMMARY**

TOTAL ALPHA RADIUM IN WATER  
GAS PROPORTIONAL COUNTING

Test RAT Matrix WATER  
SDG 7641  
Contact N. Joseph Verville

Client CHPRC  
Contract No. 33677  
Contract SDG H4207

**RESULTS**

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Total Radium	
Preparation batch 7251-047					
S004063-01		7641-001	B24M51	U	
S004063-02		7641-002	B24M52	U	
S004063-03		7641-003	B24M53	U	
S004063-04		7641-004	B24M54	U	
S004063-05		7641-005	B25025	U	
S004063-06		7641-006	Lab Control Sample	LOW	
S004063-07		7641-007	Method Blank	U	
S004063-08		7641-008	Duplicate (S004063-01)	-	U

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

**METHOD PERFORMANCE**

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	Y2ED	DETECTOR
Preparation batch 7251-047      2σ prep error 12.8 %      Reference Lab Notebook No. 7251 pg.047															
S004063-01		B24M51	0.431	0.200			97		100			37	05/14/10	05/19	GAW-103
S004063-02		B24M52	0.393	0.200			97		100			37	05/14/10	05/19	GAW-104
S004063-03		B24M53	0.412	0.200			97		100			37	05/14/10	05/19	GAW-105
S004063-04		B24M54	0.375	0.200			95		100			38	05/14/10	05/20	GAW-101
S004063-05		B25025	0.402	0.200			96		100			38	05/14/10	05/20	GAW-103
S004063-06		Lab Control Sample	0.402	0.200			96		100				05/14/10	05/19	GAW-101
S004063-07		Method Blank	0.394	0.200			96		100				05/14/10	05/19	GAW-214
S004063-08		Duplicate (S004063-01)	0.295	0.200			96		100			37	05/14/10	05/19	GAW-216

Nominal values and limits from method      1.00      0.200      40-110      100      180

PROCEDURES    REFERENCE    RATOT\_GPC  
SPP-062      Sample Aliquoting, rev 1  
CP-880      Total Radium in Water, rev 2

AVERAGES ± 2 SD      MDA 0.388 ± 0.082  
FOR 8 SAMPLES      YIELD 96 ± 1

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Form DVD-LMS  
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EBERLINE ANALYTICAL / RICHMOND

SAMPLE DELIVERY GROUP H4207

SDG 7641  
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC  
Contract No. 33677  
Case no SDG H4207

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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SDG 7641  
 Contact N. Joseph Verville

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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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SDG 7641  
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DATA SHEET

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

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
  - B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.
- Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.
- For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.
- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
  - H Similar to 'L' except the recovery was high.
  - P The RESULT is 'preliminary'.
  - X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
  - 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

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

The following values are underlined to indicate possible problems:

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

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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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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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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.

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R E P O R T   G U I D E

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M A T R I X   S P I K E

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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SDG 7641  
Contact N. Joseph Verville

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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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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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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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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.

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Collector <b>RA Shepard</b>	Contact/Requester <b>Karen Waters-Husted</b> <span style="float: right;"><i>H/207 (7641)</i></span>	Telephone No. <b>376-4650</b>
SAF No. <b>CHPRC X10-039</b>	Sampling Origin <b>Hanford Site</b>	Purchase Order/Charge Code <b>300118ES20</b>
Project Title <b>II2 II6DURA APRIL 2010</b>	Logbook No: <b>HNF-N-506 27177</b>	Ice Chest No. <b>SML-495</b>
Shipped To (Lab) <b>Eberline Services</b>	Method of Shipment <b>Commercial Carrier</b>	Bill of Lading/Air Bill No. <b>7934 4232 9384</b>
Protocol <b>CERCLA</b>	Priority: 45 Days	Offsite Property No.

**POSSIBLE SAMPLE HAZARDS/REMARKS**  
 \*\* \*\* Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS**      Hold Time      Total Activity Exemption: Yes  No   
 Do not combine samples from this SAF with other data sets. Need SDG to be stand alone.  
 100 Area Generator Knowledge Information Form applies.  
 The CACN for all analytical work at WSCF is 300118.  
 TICs are required 8260\_VOA method.  
 Do not combine samples

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B24M52	N	W	4/12/10	1016	1x20-mL P	Activity Scan	6 Months	None
B24M52	N	W	4/12/10	1016	1x1000-mL G/P	Total Radium	6 Months	HNO3 to pH <2
<i>N/A 4/12/10 HA</i>								

Relinquished By <b>RA Shepard</b> CHPRC	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <b>APR 12 2010 1130</b>	Received By <b>SSU #1</b>	Print	Sign	Date/Time <b>APR 12 2010 1130</b>	<b>Matrix *</b> S = Soil      DS = Drum Solid SE = Sediment      DI = Drum Liquid SO = Solid      T = Tissue SL = Sludge      WT = Wine W = Water      L = Liquid O = Oil      V = Vegetation A = Air      X = Other
Relinquished By <b>SSU #1</b>			Date/Time <b>4/13/10 1130</b>	Received By <b>L.D. Wall</b> CHPRC			Date/Time <b>APR 13 2010 1130</b>	
Relinquished By <b>CHPRC</b>		<b>R. O. Wall</b>	Date/Time <b>APR 13 2010 1130</b>	Received By <b>FEDEX</b>			Date/Time	
Relinquished By <b>FEDEX</b>			Date/Time	Received By <b>Alex Kelown</b> KELEWON			Date/Time <b>4/14/10 10:00</b>	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time	

Collector <b>RA Shepard CHPRC</b>	Contact/Requester Karen Waters-Husted <b>H4207 (7641)</b>	Telephone No. 376-4650
SAF No. X10-039	Sampling Origin Hanford Site	Purchase Order/Charge Code 300118ES20
Project Title IU2 IU6DURA APRIL 2010	Logbook No. <b>HNF-N-506 27,77</b>	Ice Chest No. <b>SML-495</b>
Shipped To (Lab) Eberline Services	Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No. <b>7934 4222 9384</b>
Protocol CERCLA	Priority: 45 Days	Offsite Property No.

**Possible Sample Hazards/Remarks**  
 \*\* \*\* Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**Special Instructions**      Hold Time      Total Activity Exemption: Yes  No   
 Do not combine samples from this SAF with other data sets. Need SDG to be stand alone.  
 100 Area Generator Knowledge Information Form applies.  
 The CACN for all analytical work at WSCF is 300118.  
 TICs are required 8260\_VOA method.  
 Do not combine samples

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B24M53	N	W	4/12/10	1314	1x20-mL P	Activity Scan	6 Months	None
B24M53	N	W	4/12/10	1314	1x1000-mL G/P	Total Radium	6 Months	HNO3 to pH <2
<i>NA 4/12/10</i>								

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Relinquished By <b>RA Shepard CHPRC</b>	Print <i>[Signature]</i>	Sign	Date/Time <b>APR 12 2010 1130</b>	Received By <b>SSU #1</b>	Print <i>[Signature]</i>	Sign	Date/Time <b>APR 12 2010 1130</b>		
Relinquished By <b>SSU #1</b>	Print <i>[Signature]</i>	Sign	Date/Time <b>4/13/10 1130</b>	Received By <b>L.D. Wall CHPRC</b>	Print <i>[Signature]</i>	Sign	Date/Time <b>APR 13 2010 1130</b>	Matrix *	
Relinquished By <b>L.D. Wall CHPRC</b>	Print <i>[Signature]</i>	Sign	Date/Time <b>APR 13 2010 1430</b>	Received By <b>FEDEX</b>	Print <i>[Signature]</i>	Sign	Date/Time	S = Soil      DS = Drum Solid SE = Sediment      DI = Drum Liquid SO = Solid      T = Tissue SL = Sludge      WI = Wine W = Water      L = Limid O = Oil      V = Vegetation A = Air      X = Other	
Relinquished By <b>FED EX</b>	Print <i>[Signature]</i>	Sign	Date/Time	Received By <b>flex kelend KELENBON</b>	Print <i>[Signature]</i>	Sign	Date/Time <b>4/14/10 10:00</b>		

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

Collector <b>RA Shepard CHPRC</b>	Contact/Requester Karen Waters-Husted <b>H4207 (7641)</b>	Telephone No. 376-4650
SAF No. X10-039	Sampling Origin Hanford Site	Purchase Order/Charge Code 300118ES20
Project Title IU2 IU6DURA APRIL 2010	Logbook No: <b>HNF-N-506 27177</b>	Ice Chest No. <b>SML-495</b>
Shipped To (Lab) Eberline Services	Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No. <b>7934 4222 9384</b>
Protocol CERCLA	Priority: 45 Days	Offsite Property No.

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)	<b>SPECIAL INSTRUCTIONS</b> Hold Time      Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Do not combine samples from this SAF with other data sets. Need SDG to be stand alone. 100 Area Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 300118. TICs are required 8260_VOA method. <small>Do not combine samples</small>
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Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B24M54	N	W	4/12/10	1156	1x20-mL P	Activity Scan	6 Months	None
B24M54	N	W	4/12/10	1156	1x1000-mL G/P	Total Radium	6 Months	HNO3 to pH <2
<div style="font-size: 2em; transform: rotate(-15deg); opacity: 0.5;">             N/A 4/12/10 AW           </div>								

Relinquished By <b>RA Shepard CHPRC</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <b>APR 12 2010 1130</b>	Received By <b>SSU #1</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <b>APR 12 2010 1130</b>	Matrix * S = Soil                      DS = Drum Solid SF = Sediment              DL = Drum Liquid SO = Solid                    T = Tissue SL = Sludge                 WI = Wine W = Water                    L = Liquid O = Oil                        V = Vegetation A = Air                         X = Other
Relinquished By <b>SSU #1</b>			Date/Time <b>4/13/10 1130</b>	Received By <b>L.D. Wall CHPRC</b>			Date/Time <b>APR 13 2010 1130</b>	
Relinquished By <b>L.D. Wall CHPRC</b>		<i>[Signature]</i>	Date/Time <b>APR 13 2010 1430</b>	Received By <b>FEDEX</b>			Date/Time	
Relinquished By <b>FEDEX</b>			Date/Time	Received By <i>[Signature]</i>			Date/Time <b>4/14/10 10:00</b>	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By	Date/Time

Collector S.J. Southerland CHPRC	Contact/Requester Karen Waters-Husted H4207 (7647)	Telephone No. 376-4650
SAF No. X10-039	Sampling Origin Hanford Site	Purchase Order/Charge Code 300118ES20
Project Title IU2 IU6DURA APRIL 2010	Logbook No: HNF-N-506 28,79	Ice Chest No. SML-495
Shipped To (Lab) Eberline Services	Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No. 7934 4222 9384
Protocol CERCLA	Priority: 45 Days	Offsite Property No.

**POSSIBLE SAMPLE HAZARDS/REMARKS**  
 \*\* \*\* Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

**SPECIAL INSTRUCTIONS**    Hold Time    Total Activity Exemption: Yes  No   
 Do not combine samples from this SAF with other data sets. Need SDG to be stand alone.  
 100 Area Generator Knowledge Information Form applies.  
 The CACN for all analytical work at WSCF is 300118.  
 TICs are required 8260\_VOA method.  
 Do not combine samples

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B25025	N	W	4.12.10	1142	1x20-mL P	Activity Scan	6 Months	None
B25025	N	W	↓	↓	1x1000-mL G/P	Total Radium	6 Months	HNO3 to pH <2
bb 4/12/10								

Relinquished By S.J. Southerland CHPRC	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time APR 12 2010 14:00	Received By SSU #1	Print SSU #1	Sign <i>[Signature]</i>	Date/Time APR 12 2010 14:00	<b>Matrix *</b> S = Soil            DS = Drum Solid SE = Sediment    DI = Drum Liquid SO = Solid        T = Tissue SL = Sludge      WI = Wine W = Water        L = Limid O = Oil            V = Vegetation A = Air            X = Other
Relinquished By SSU #1	Print SSU #1	Sign <i>[Signature]</i>	Date/Time 4/13/10 1130	Received By L.D. Wall CHPRC	Print L.D. Wall	Sign <i>[Signature]</i>	Date/Time APR 13 2010 1130	
Relinquished By L.D. Wall CHPRC	Print L.D. Wall	Sign <i>[Signature]</i>	Date/Time APR 13 2010 1430	Received By FEDEX	Print FEDEX	Sign <i>[Signature]</i>	Date/Time APR 13 2010 1430	
Relinquished By FEDEX	Print FEDEX	Sign <i>[Signature]</i>	Date/Time APR 13 2010 1430	Received By Alex Kelso	Print ALEX Kelson	Sign <i>[Signature]</i>	Date/Time 4/14/10 10:00	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By	Date/Time



# RICHMOND, CA LABORATORY

## SAMPLE RECEIPT CHECKLIST

Client: CHPRC City RICHLAND State WA

Date/Time received 4/14/10 10:00 CoC No. X10-037-289, 296, 298, 300, 302

Container I.D. No. SMX-495 Requested TAT (Days) 45 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 [ ] N/A
- 6. Number of samples in shipping container: 5 Sample Matrix WATER
- 7. Number of containers per sample: 2 (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 2 Preservative \_\_\_\_\_
- 13. Describe any anomalies: \_\_\_\_\_

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date \_\_\_\_\_

15. Inspected by JK Date: 4/14/10 Time: 13:20

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>All Samples</u>	<u>&lt;60</u>						

Ion Chamber Ser. No. \_\_\_\_\_  
Alpha Meter Ser. No. \_\_\_\_\_  
Beta/Gamma Meter Ser. No. 100482

Calibration date \_\_\_\_\_  
Calibration date \_\_\_\_\_  
Calibration date Feb 9 2009