

SAF-B03-010

105-H Smear and Filter Sampling

FINAL DATA PACKAGE

FAX RESULTS TO:

Rikki Thoren 372-2183

N/A
INITIAL/DATE

VERIFICATION OF CLIENT RECEIPT:

Phone or CC:Mail to Rikki Thoren

N/A
INITIAL/DATE

COMPLETE COPY OF DATA PACKAGE TO:

Rikki Thoren

X9-05

RT 3/5/03
INITIAL/DATE

COMMENTS: (PLEASE INCLUDE THE FOLLOWING ON THE FAX COVER SHEET)

SDG

H2073

SAF-B03-010

X Rad only

Chem only

Rad & Chem

X Complete

Partial

RECEIVED
MAY 13 2003

EDMC



EBERLINE
SERVICES

February 26, 2003

Ms. Joan Kessner
Bechtel Hanford Inc.
3350 George Washington Way
Richland, WA 99352
MSIN: H0-25

Reference: **P.O. #630**
Eberline Services R3-02-071-7760, SDG H2073

Dear Ms. Kessner:

Enclosed is the data report for one other solid sample designated under SAF No. B03-010 received at Eberline Services on February 14, 2003. The sample was analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion
Program Manager

MCM

Enclosure: Data Package

Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H2073 was composed of one other solid (composited filters) sample designated under SAF No. B03-010 with a Project Designation of: 105-H Smear and Filter Sampling. The data is in units of picoCurie per sample (pCi/smpl).

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to BHI via e-Fax on February 25, 2003.

2.0 ANALYSIS NOTES

2.1 Nickel-63 Analyses

There was activity in the method blank (4.44 pCi/smpl). The activity was below the RDL (30 pCi/smpl) for Ni-63. The Ni-63 activity in sample J00CH4 was greater than 5-times the method blank activity. Sample J00CH4 was analyzed per Eberline Services new Ni-63 procedure (CP-281). The LCS and method blank were not scaled to a nominal aliquot. No other problems were encountered during the course of the analyses.

2.2 Total Strontium Analyses

There was activity in the method blank (1.31 pCi/smpl). The activity was greater than the RDL (1 pCi/smpl) for total strontium. The total strontium activity in sample J00CH4 was significantly greater than 5-times the method blank activity. The LCS and method blank were not scaled to a nominal aliquot. No other problems were encountered during the course of the analyses.

2.3 Technetium-99 Analyses

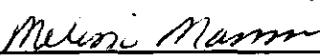
The LCS and method blank were not scaled to a nominal aliquot. No problems were encountered during the course of the analyses.

2.4 Gamma Spectroscopy Analyses

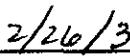
The LCS and method blank were not scaled to a nominal aliquot. No problems were encountered during the course of the analyses.

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."



Melissa C. Mannion
Program Manager



Date

EBRLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2073

SDG 7760
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG_H2073

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

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Melissa Mannion
Prepared by

Melissa Mannion
Reviewed by

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 02/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2073

SDG 7760
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2073

ABOUT THE DATA SUMMARY SECTION

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

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

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

PREPARATION BATCH SUMMARY

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

WORK SUMMARY

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

METHOD BLANKS

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

LAB CONTROL SAMPLES

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

REPORT GUIDES

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SUMMARY DATA SECTION

Page 1

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2073

SDG 7760
Contact Melissa C. Mannion

GUIDE , c o n t .

Client Hanford
Contract No. 630
Case no SDG H2073

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

REPORT GUIDES

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SUMMARY DATA SECTION

Page 2

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2073

SAMPLE SUMMARY

SDG 7760
 Contact Melissa C. Mannion

Client Hanford
 Contract No. 630
 Case no SDG H2073

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
J00HC4	105-H FSB	FILTERS		R302071-01	B03-010	B03-010-3	01/30/03 11:00
Method Blank		FILTERS		R302071-03	B03-010		
Lab Control Sample		FILTERS		R302071-02	B03-010		
Duplicate (R302071-01)	105-H FSB	FILTERS		R302071-04	B03-010		01/30/03 11:00
Spike (R302071-01)	105-H FSB	FILTERS		R302071-05	B03-010		01/30/03 11:00

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CS
 Version 3.06
 Report date 02/25/03

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP H2073

SDG 7760
 Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
 Contract No. 630
 Case no SDG_H2073

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
7760	B03-010-3	J00HC4	FILTERS	100.0	5.85 g		02/14/03 15	R302071-01		7760-001
		Method Blank	FILTERS					R302071-03		7760-003
		Lab Control Sample	FILTERS					R302071-02		7760-002
		Duplicate (R302071-01)	FILTERS	100.0	5.85 g		02/14/03 15	R302071-04		7760-004
		Spike (R302071-01)	FILTERS	100.0	5.85 g		02/14/03 15	R302071-05		7760-005

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-QS
 Version 3.06
 Report date 02/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2073

SDG 7760
 Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
 Contract No. 630
 Case no SDG H2073

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALI-	
			BATCH	2σ %	CLIENT	MORE	RE	BLANK		LCS
Beta Counting										
SR	FILTERS	Total Strontium in Filters	7032-176	10.0	1			1	1	1/1
TC	FILTERS	Technetium 99 in Filters	7032-176	10.0	1			1	1	1/1
Gamma Spectroscopy										
GAM	FILTERS	Gamma Scan on Filters	7032-176	15.0	1			1	1	1/1
Liquid Scintillation Counting										
NI_L	FILTERS	Nickel 63 in Filters	7032-176	10.0	1			1	1	1/1 1/1 X

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

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-PBS
 Version 3.06
 Report date 02/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2073

WORK SUMMARY

SDG 7760
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG_H2073

CLIENT SAMPLE ID	LAB SAMPLE ID									
LOCATION	MATRIX	COLLECTED	PLANCHET	TEST	SUF-	ANALYZED	REVIEWED	BY	METHOD	
CUSTODY	SAF No	RECEIVED			FIX					
J00HC4		R302071-01	7760-001	GAM		02/21/03	02/25/03	MCM	Gamma Scan on Filters	
105-H FSB	FILTERS	01/30/03	7760-001	NI_L		02/21/03	02/25/03	MCM	Nickel 63 in Filters	
B03-010-3	B03-010	02/14/03	7760-001	SR		02/21/03	02/25/03	MCM	Total Strontium in Filters	
			7760-001	TC		02/25/03	02/25/03	MCM	Technetium 99 in Filters	
Method Blank		R302071-03	7760-003	GAM		02/21/03	02/25/03	MCM	Gamma Scan on Filters	
	FILTERS		7760-003	NI_L		02/22/03	02/25/03	MCM	Nickel 63 in Filters	
	B03-010		7760-003	SR		02/21/03	02/25/03	MCM	Total Strontium in Filters	
			7760-003	TC		02/25/03	02/25/03	MCM	Technetium 99 in Filters	
Lab Control Sample		R302071-02	7760-002	GAM		02/21/03	02/25/03	MCM	Gamma Scan on Filters	
	FILTERS		7760-002	NI_L		02/22/03	02/25/03	MCM	Nickel 63 in Filters	
	B03-010		7760-002	SR		02/21/03	02/25/03	MCM	Total Strontium in Filters	
			7760-002	TC		02/25/03	02/25/03	MCM	Technetium 99 in Filters	
Duplicate (R302071-01)		R302071-04	7760-004	GAM		02/21/03	02/25/03	MCM	Gamma Scan on Filters	
105-H FSB	FILTERS	01/30/03	7760-004	NI_L		02/22/03	02/25/03	MCM	Nickel 63 in Filters	
	B03-010	02/14/03	7760-004	SR		02/21/03	02/25/03	MCM	Total Strontium in Filters	
			7760-004	TC		02/25/03	02/25/03	MCM	Technetium 99 in Filters	
Spike (R302071-01)		R302071-05	7760-005	NI_L		02/22/03	02/25/03	MCM	Nickel 63 in Filters	
105-H FSB	FILTERS	01/30/03								
	B03-010	02/14/03								

COUNTS OF TESTS BY SAMPLE TYPE											
TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
GAM	B03-010	Gamma Scan on Filters	GAMMA_GS	1			1	1	1		4
NI_L	B03-010	Nickel 63 in Filters	NI63_LSC	1			1	1	1	1	5
SR	B03-010	Total Strontium in Filters	SRTOT_SEP_PRECIP_GPC	1			1	1	1		4
TC	B03-010	Technetium 99 in Filters	TC99_TR_SEP_LSC	1			1	1	1		4
TOTALS				4			4	4	4	1	17

WORK SUMMARY

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CWS
Version 3.06
Report date 02/25/03

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2073

R302071-03

Method Blank

METHOD BLANK

SDG <u>7760</u>	Client/Case no <u>Hanford</u>	SDG <u>H2073</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R302071-03</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7760-003</u>	Material/Matrix <u>FILTERS</u>	
	SAF No <u>B03-010</u>	

ANALYTE	CAS NO	RESULT pCi/smpl	2σ ERR (COUNT)	MDA pCi/smpl	RDL pCi/smpl	QUALI- FIERS	TEST
Nickel 63	13981-37-8	4.44	0.66	0.91	30		NI_L
Total Strontium	SR-RAD	1.31	0.14	0.12	1.0		SR
Technetium 99	14133-76-7	-0.105	0.17	0.60	15	U	TC
Cobalt 60	10198-40-0	U		8.4	0.050	U	GAM
Cesium 137	10045-97-3	U		7.0	0.10	U	GAM
Radium 226	13982-63-3	U		16	0.10	U	GAM
Radium 228	15262-20-1	U		41	0.20	U	GAM
Europium 152	14683-23-9	U		17	0.10	U	GAM
Europium 154	15585-10-1	U		20	0.10	U	GAM
Europium 155	14391-16-3	U		19	0.10	U	GAM
Thorium 232	TH-232	U		41		U	GAM
Uranium 235	15117-96-1	U		29		U	GAM
Uranium 238	U-238	U		870		U	GAM
Americium 241	14596-10-2	U		33		U	GAM

105-H Smear and Filter Sampling

QC-BLANK 43901

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/25/03</u>

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP H2073

R302071-02

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7760</u> Contact <u>Melissa C. Mannion</u>	Client/Case no <u>Hanford</u> <u>SDG H2073</u> Contract No. <u>630</u>
Lab sample id <u>R302071-02</u> Dept sample id <u>7760-002</u>	Client sample id <u>Lab Control Sample</u> Material/Matrix _____ <u>FILTERS</u> SAF No <u>B03-010</u>

ANALYTE	RESULT	2σ ERR	MDA	RDL	QUALI-	ADDED	2σ ERR	REC	3σ	LMTS	PROTOCOL
	pCi/smpl	(COUNT)	pCi/smpl	pCi/smpl	FIERS	TEST	pCi/smpl	pCi/smpl	%	(TOTAL)	LIMITS
Nickel 63	141	2.9	1.3	30	B	NI_L	137	5.5	103	83-117	80-120
Total Strontium	23.0	0.90	0.28	1.0	B	SR	22.2	0.89	104	82-118	80-120
Technetium 99	129	4.4	0.53	15		TC	120	4.8	108	82-118	80-120
Cobalt 60	284	72	<u>53</u>	0.050		GAM	264	11	108	52-148	80-120
Cesium 137	293	57	<u>38</u>	0.10		GAM	257	10	114	58-142	80-120

105-H Smear and Filter Sampling

QC-LCS 43900

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>02/25/03</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2073

R302071-04

J00HC4

DUPLICATE

SDG <u>7760</u>	Client/Case no <u>Hanford</u>	SDG <u>H2073</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
DUPLICATE	ORIGINAL	
Lab sample id <u>R302071-04</u>	Lab sample id <u>R302071-01</u>	Client sample id <u>J00HC4</u>
Dept sample id <u>7760-004</u>	Dept sample id <u>7760-001</u>	Location/Matrix <u>105-H FSB</u> FILTERS
	Received <u>02/14/03</u>	Collected/Weight <u>01/30/03 11:00</u> <u>5.85 g</u>
% solids <u>100.0</u>	% solids <u>100.0</u>	Custody/SAF No <u>B03-010-3</u> <u>B03-010</u>

ANALYTE	DUPLICATE pCi/smpl	2σ ERR (COUNT)	MDA pCi/smpl	RDL pCi/smpl	QUALI- FIERS	TEST	ORIGINAL pCi/smpl	2σ ERR (COUNT)	MDA pCi/smpl	QUALI- FIERS	RPD %	3σ TOT	PROT LIMIT
Nickel 63	4870	100	<u>43</u>	30	B	NI_L	4740	99	<u>42</u>	B	3	22	
Total Strontium	48800	170	<u>4.8</u>	1.0	B	SR	47200	180	<u>5.0</u>	B	3	21	
Technetium 99	8.68	4.6	14	15	U	TC	12.3	6.4	<u>16</u>	U	-	-	
Cobalt 60	287	67	<u>52</u>	0.050		GAM	240	69	<u>57</u>		18	63	
Cesium 137	44200	480	<u>190</u>	0.10		GAM	44400	510	<u>210</u>		0	32	
Radium 226	U		<u>240</u>	0.10	U	GAM	U		<u>270</u>	U	-	-	
Europium 152	10600	540	<u>570</u>	0.10		GAM	10100	490	<u>540</u>		5	34	
Europium 154	1070	250	<u>230</u>	0.10		GAM	924	290	<u>310</u>		15	66	
Europium 155	U		<u>340</u>	0.10	U	GAM	U		<u>370</u>	U	-	-	
Uranium 235	U		530		U	GAM	U		560	U	-	-	
Uranium 238	U		13000		U	GAM	U		12000	U	-	-	
Americium 241	U		1400		U	GAM	U		1600	U	-	-	

105-H Smear and Filter Sampling

QC-DUP#1 43902

Composited Filters

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP H2073

R302071-05

J00HC4

MATRIX SPIKE

SDG <u>7760</u>		Client/Case no <u>Hanford</u> SDG <u>H2073</u>
Contact <u>Melissa C. Mannion</u>		Contract No. <u>630</u>
MATRIX SPIKE	ORIGINAL	
Lab sample id <u>R302071-05</u>	Lab sample id <u>R302071-01</u>	Client sample id <u>J00HC4</u>
Dept sample id <u>7760-005</u>	Dept sample id <u>7760-001</u>	Location/Matrix <u>105-H FSB</u> <u>FILTERS</u>
	Received <u>02/14/03</u>	Collected/Weight <u>01/30/03 11:00</u> <u>5.85 g</u>
% solids <u>100.0</u>	% solids <u>100.0</u>	Custody/SAF No <u>B03-010-3</u> <u>B03-010</u>

ANALYTE	SPIKE pCi/smpl	2σ ERR (COUNT)	MDA pCi/smpl	RDL pCi/smpl	QUALI- FIERS	TEST	ADDED pCi/smpl	2σ ERR pCi/smpl	ORIGINAL pCi/smpl	2σ ERR (COUNT)	REC 3σ % (TOTAL)	LMTS LIMITS	PROTOCOL
Nickel 63	20200	410	<u>88</u>	30	BX	NI_L	16000	640	4740	99	97	79-121	60-140

105-H Smear and Filter Sampling

QC-MS#1 43903

Composited Filters

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-MS</u>
Version <u>3.06</u>
Report date <u>02/25/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2073

R302071-01

J00HC4

DATA SHEET

SDG <u>7760</u>	Client/Case no <u>Hanford</u>	<u>SDG H2073</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R302071-01</u>	Client sample id <u>J00HC4</u>	
Dept sample id <u>7760-001</u>	Location/Matrix <u>105-H FSB</u>	<u>FILTERS</u>
Received <u>02/14/03</u>	Collected/Weight <u>01/30/03 11:00</u>	<u>5.85 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B03-010-3</u>	<u>B03-010</u>

ANALYTE	CAS NO	RESULT pCi/smpl	2σ ERR (COUNT)	MDA pCi/smpl	RDL pCi/smpl	QUALI- FIERS	TEST
Nickel 63	13981-37-8	4740	99	<u>42</u>	30	B	NI_L
Total Strontium	SR-RAD	47200	180	<u>5.0</u>	1.0	B	SR
Technetium 99	14133-76-7	12.3	6.4	<u>16</u>	15	U	TC
Cobalt 60	10198-40-0	240	69	<u>57</u>	0.050		GAM
Cesium 137	10045-97-3	44400	510	<u>210</u>	0.10		GAM
Radium 226	13982-63-3	U		<u>270</u>	0.10	U	GAM
Europium 152	14683-23-9	10100	490	<u>540</u>	0.10		GAM
Europium 154	15585-10-1	924	290	<u>310</u>	0.10		GAM
Europium 155	14391-16-3	U		<u>370</u>	0.10	U	GAM
Uranium 235	15117-96-1	U		560		U	GAM
Uranium 238	U-238	U		12000		U	GAM
Americium 241	14596-10-2	U		1600		U	GAM

105-H Smear and Filter Sampling

Composited Filters

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/25/03</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2073

METHOD SUMMARY

TOTAL STRONTIUM IN FILTERS
BETA COUNTING

Test SR Matrix FILTERS
SDG 7760
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Contract SDG H2073

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	Total Strontium
Preparation batch 7032-176					
J00HC4	R302071-01			7760-001	47200
BLK (QC ID=43901)	R302071-03			7760-003	<u>1.31</u>
LCS (QC ID=43900)	R302071-02			7760-002	ok
Duplicate (R302071-01)	R302071-04			7760-004	ok

Nominal values and limits from method RDLs (pCi/smpl) 1.0
105-H Smear and Filter Sampling

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/smpl	ALIQ smpl	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- PREPARED	YZED	DETECTOR
Preparation batch 7032-176 2σ prep error 10.0 % Reference Lab Notebook 7024 pg. 176																
J00HC4	R302071-01			<u>5.0</u>	<u>0.0500</u>			84		100			22	02/21/03	02/21	GRB-230
BLK (QC ID=43901)	R302071-03			0.12	1.00			80		400				02/21/03	02/21	GRB-230
LCS (QC ID=43900)	R302071-02			0.28	1.00			81		100				02/21/03	02/21	GRB-231
Duplicate (R302071-01)	R302071-04			<u>4.8</u>	<u>0.0500</u>			88		100			22	02/21/03	02/21	GRB-217
	(QC ID=43902)															

Nominal values and limits from method 1.0 1.00 100 180

PROCEDURES REFERENCE SRTOT_SEP_PRECIP_GPC
CP-071 Soil Dissolution, > 1.0g Aliquot, rev 2
CP-381 Strontium in Solids, rev 1

AVERAGES ± 2 SD MDA 2.6 ± 5.4
FOR 4 SAMPLES YIELD 83 ± 7

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Version 3.06
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SAMPLE DELIVERY GROUP H2073

METHOD SUMMARY

TECHNETIUM 99 IN FILTERS
BETA COUNTING

Test TC Matrix FILTERS
SDG 7760
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Contract SDG H2073

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	Technetium 99
Preparation batch 7032-176					
J00HC4	R302071-01			7760-001	U
BLK (QC ID=43901)	R302071-03			7760-003	U
LCS (QC ID=43900)	R302071-02			7760-002	ok
Duplicate (R302071-01)	R302071-04			7760-004	- U

Nominal values and limits from method RDLs (pCi/smpl) 15
105-H Smeared and Filter Sampling

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/smpl	ALIQ smpl	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- PREPARED	YZED	DETECTOR
Preparation batch 7032-176 2σ prep error 10.0 % Reference Lab Notebook 7024 pg. 176																
J00HC4	R302071-01			<u>16</u>	<u>0.0376</u>			83		50			26	02/19/03	02/25	GRB-222
BLK (QC ID=43901)	R302071-03			0.60	1.00			90		50				02/19/03	02/25	GRB-223
LCS (QC ID=43900)	R302071-02			0.53	1.00			94		50				02/19/03	02/25	GRB-218
Duplicate (R302071-01)	R302071-04			14	<u>0.0376</u>			92		50			26	02/19/03	02/25	GRB-220
																(QC ID=43902)

Nominal values and limits from method 15 1.00 20-105 50 180

PROCEDURES	REFERENCE	TC99_TR_SEP_LSC
CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2	
CP-021	Preparation of Tc-99m Tracer, rev 2	
CP-002	Q.C. Preparation, rev 4	
CP-003	Addition of Carriers and Tracers, rev 5	
CP-542	Technetium-99 Purification (Soil) by Extraction Chromatography, rev 2	
CP-008	Heavy Element Electroplating, rev 7	

AVERAGES ± 2 SD	MDA <u>7.8</u> ± <u>17</u>
FOR 4 SAMPLES	YIELD <u>90</u> ± <u>10</u>

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SAMPLE DELIVERY GROUP H2073

METHOD SUMMARY

GAMMA SCAN ON FILTERS
GAMMA SPECTROSCOPY

Test GAM Matrix FILTERS
SDG 7760
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Contract SDG H2073

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	Cobalt 60	Cesium 137
Preparation batch 7032-176					
J00HC4	R302071-01		7760-001	240	44400
BLK (QC ID=43901)	R302071-03		7760-003	U	U
LCS (QC ID=43900)	R302071-02		7760-002	ok	ok
Duplicate (R302071-01)	R302071-04		7760-004	ok	ok

Nominal values and limits from method RDLs (pCi/smpl) 0.050 0.10
105-H Smear and Filter Sampling

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- pCi/smpl	MDA pCi/smpl	ALIQ smpl	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- PREPARED	YZED	DETECTOR
Preparation batch 7032-176 2σ prep error 15.0 % Reference Lab Notebook 7024 pg. 176																
J00HC4	R302071-01		<u>120</u>	<u>0.500</u>						103			22	02/19/03	02/21	JR,03,00
BLK (QC ID=43901)	R302071-03		<u>8.4</u>	<u>1.00</u>						226				02/19/03	02/21	JR,05,00
LCS (QC ID=43900)	R302071-02		<u>53</u>	<u>1.00</u>						<u>47</u>				02/19/03	02/21	JR,03,00
Duplicate (R302071-01)	R302071-04		<u>120</u>	<u>0.500</u>						121			22	02/19/03	02/21	JR,03,00
	(QC ID=43902)															

Nominal values and limits from method 0.050 1.00 100 180

PROCEDURES	REFERENCE	GAMMA_GS
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-100	Ge(Li) Preparation for Commercial Samples, rev 5

AVERAGES ± 2 SD	MDA <u>75</u> ± <u>110</u>
FOR 4 SAMPLES	YIELD _____ ± _____

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Version <u>Ver 1.0</u>
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Version <u>3.06</u>
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SAMPLE DELIVERY GROUP H2073

METHOD SUMMARY
NICKEL 63 IN FILTERS
LIQUID SCINTILLATION COUNTING

Test NI L Matrix FILTERS
 SDG 7760
 Contact Melissa C. Mannion

Client Hanford
 Contract No. 630
 Contract SDG H2073

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	Nickel 63
Preparation batch 7032-176					
J00HC4	R302071-01	7760-001			4740
BLK (QC ID=43901)	R302071-03	7760-003			<u>4.44</u>
LCS (QC ID=43900)	R302071-02	7760-002			ok
Duplicate (R302071-01)	R302071-04	7760-004			ok
Spike (R302071-01)	R302071-05	7760-005			ok X
Nominal values and limits from method RDLs (pCi/smpl) 30					
105-H Smear and Filter Sampling					

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/smpl	ALIQ smpl	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- YZED	DETECTOR
Preparation batch 7032-176 2σ prep error 10.0 % Reference Lab Notebook 7024 pg. 176															
J00HC4	R302071-01			<u>42</u>	<u>0.0300</u>			100		55			22	02/21/03	02/21 LSC-004
BLK (QC ID=43901)	R302071-03			0.91	1.00			100		100				02/21/03	02/22 LSC-004
LCS (QC ID=43900)	R302071-02			1.3	1.00			100		57				02/21/03	02/22 LSC-004
Duplicate (R302071-01)	R302071-04			<u>43</u>	<u>0.0300</u>			100		55			23	02/21/03	02/22 LSC-004
(QC ID=43902)															
Spike (R302071-01)	R302071-05			<u>88</u>	<u>0.0300</u>			100		13			23	02/21/03	02/22 LSC-004
(QC ID=43903)															
Nominal values and limits from method				30	1.00					10			180		

PROCEDURES REFERENCE NI63_LSC
 CP-071 Soil Dissolution, > 1.0g Aliquot, rev 2
 CP-431 Nickel-63 Purification, rev 5

AVERAGES ± 2 SD MDA 35 ± 72
 FOR 5 SAMPLES YIELD 100 ± 0

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SDG 7760
Contact Melissa C. Mannion

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SAMPLE SUMMARY

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

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

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

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

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

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PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of plachets 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 plachet 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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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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MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

- * The first, computed limits for the recovery reflect:

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

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

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

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

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MATRIX SPIKE

for the recovery.

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

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

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SDG 7760

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Case no SDG H2073

METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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METHOD SUMMARY

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

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

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

MDAs are underlined if greater than the printed RDL.

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

* 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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SUMMARY DATA SECTION

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 Protocol Hanford
 Version Ver 1.0
 Form DVD-RG
 Version 3.06
 Report date 02/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2073

SDG 7760
 Contact Melissa C. Mannion

GUIDE , c o n t .

Client Hanford
 Contract No. 630
 Case no SDG H2073

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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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2073

SDG 7760
 Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
 Contract No. 630
 Case no SDG H2073

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 Hanford
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Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B03-010-3		Page 1 of 1	
Collector UNKNOWN		Company Contact RIKKI THOREN		Telephone No. 372-2178		Project Coordinator KESSNER, JH		Price Code	
Project Designation 105-H Smear and Filter Sampling		Sampling Location 105-H FSB		H2073 (7760)		SAF No. B03-010		Data Turnaround 3 Business Days	
Ice Chest No. ERC-01-025		Field Logbook No. N/A		COA R105HX2200		Method of Shipment FED EX			
Shipped To TMA/RECRA		Offsite Property No. RSR 107172				Bill of Lading/Air Bill No. N/A			
POSSIBLE SAMPLE HAZARDS/REMARKS RADIOACTIVE			Preservation	None					
Special Handling and/or Storage			Type of Container	Petri Dish					
			No. of Container(s)	1					
			Volume	4 Filter					
SAMPLE ANALYSIS				See item (1) in Special Instructions.					
Sample No.	Matrix *	Sample Date	Sample Time						
J00HC4	OTHER SOLID	1-30-03	1100	X					
CHAIN OF POSSESSION					SPECIAL INSTRUCTIONS				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix *	
S JGALE		9:00		FED EX				(1) Gamma Spectroscopy (TCL List); Nickel-63; Strontium-89,90 -- Total Sr; Technetium-99 NOTE: SAMPLES WERE COLLECTED AS TECH SMEARS WITHOUT CDC. COC GENERATED FOR FURTHER OFF-SITE LAB ANALYSIS. S JGALE 2-13-03	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
				Kear Ch		2-13-03 1000			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
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			

SAMPLE RECEIPT CHECKLIST

SAMPLE RECEIPT

Client: BHI Date/Time received 1000 2-14-03

CoC No. B03-010-3

Container I.D. No. ERC-01-025 Requested TAT (Days) 3 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. Cooler Temperature: _____ Packing material is: Wet [] Dry []

6. Number of samples in shipping container: 1

7. Number of containers per sample: 1 (Or see CoC _____)

8. Paperwork agrees with samples? Yes [] No []

9. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels []

10. Samples are: In good condition [] Leaking [] Broken Container [] Missing []

11. Describe any anomalies: _____

13. Was P.M. notified of any anomalies? Yes [] No [] Date _____

14. Received by [Signature] Date: 2-14-03 Time: 1000

Customer Sample No.	Cpm	mr/hr
<u>300 HCL</u>	<u>400</u>	<u>.051</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Customer Sample No.	Cpm	mr/hr
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Ion Chamber Ser. No. 1198

Survey Meter Ser No. 99574

Calibration date 10-25-02

Calibration date 12-12-03