0076714

EBERLINE SERVICES

October 26, 2007

Mr. Steve Trent
Fluor Hanford Inc.
1200 Jadwin Avenue
Richland, WA 99352

Reference: **P.O. #630**
Eberline Services R7-08-060-7673, SDG H3550

Dear Mr. Trent:

Enclosed is the data report for two solid (soil) samples designated under SAF No. F07-043 received at Eberline Services on August 9, 2007. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

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(510) 235-2633 Fax (510) 235-0438
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1.0 GENERAL

Fluor Hanford Inc. (FH) Sample Delivery Group H3550 was composed of two solid (soil) samples designated under SAF No. F07-043 with a Project Designation of: 216-A-2 and 216-A-21 Characterization Sampling and Analysis-Soil.

Due to the high activity of the samples very small aliquots were taken for chemistry; as a consequence most MDA's were greater than their respective RDL's.

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

2.0 ANALYSIS NOTES

2.1 Tritium Analysis

No problems were encountered during the course of the analyses.

2.2 Carbon-14 Analysis

The initial QC LCS recovery was unacceptably low. The sample was reanalyzed with new QC samples. No problems were encountered during the course of the reanalyses.

2.3 Nickel-63 Analysis

The relative percent difference in the original and duplicate analysis results was 112%, greater than the 3σ limit of 58%; the DER was 5.7. No other problems were encountered during the course of the analyses.

2.4 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.5 Technetium-99 Analysis

The relative percent difference in the original and duplicate analysis results was 41%, greater than the 3σ limit of 41%; the DER was 3.9. No other problems were encountered during the course of the analyses.

2.6 Iodine-129 Analysis

No problems were encountered during the course of the analyses.

2.7 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.8 Isotopic Plutonium Analysis

Plutonium-238 activity at 50.0 ± 22 pCi/g, MDA=16.6 pCi/g, was observed in the QC blank sample. No other problems were encountered during the course of the analyses.

2.9 Americium-241 Analysis

The sample B1NRH3 was reanalyzed twice due to difficulties decontaminating the Pu from the sample. No other problems were encountered during the course of the analyses. Americium-241 activity at 60.6 ± 6.9 pCi/g, MDA=2.58 pCi/g, was observed in the QC blank sample.

2.10 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

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

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

10/26/7

Date

E B E R L I N E S E R V I C E S / R I C H M O N D
SAMPLE DELIVERY GROUP H3550

SDG	7673
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG H3550

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

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

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Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

SDG	7673
Contact	Melissa C. Mannion

REPORT GUIDE

Client	Hanford
Contract	No. 630
Case no	SDG_H3550

ABOUT THE DATA SUMMARY SECTION

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

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

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

PREPARATION BATCH SUMMARY

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

WORK SUMMARY

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

METHOD BLANKS

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

LAB CONTROL SAMPLES

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

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-RG
Version	3.06
Report date	10/22/07

SDG 7673
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H3550

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

LAB SAMPLE SUMMARY

SDG 7673
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG H3550

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R708060-01	B1NRH2	C5515, I-010 32.0'-34.5'	SOLID		F07-043	F07-043-021	07/03/07 09:35
R708060-02	B1NRH3		SOLID		F07-043	F07-043-024	07/03/07 09:35
R708060-03	Lab Control Sample		SOLID		F07-043		
R708060-04	Method Blank		SOLID		F07-043		
R708060-05	Duplicate (R708060-01)	C5515, I-010 32.0'-34.5'	SOLID		F07-043		07/03/07 09:35
R708060-06	Duplicate (R708060-02)		SOLID		F07-043		07/03/07 09:35
R708060-07	Lab Control Sample		SOLID		F07-043		
R708060-08	Method Blank		SOLID		F07-043		
R708060-09	Duplicate (R708060-02)		SOLID		F07-043		07/03/07 09:35
R708060-10	Duplicate (R708060-01)	C5515, I-010 32.0'-34.5'	SOLID		F07-043		07/03/07 09:35
R708060-11	Lab Control Sample		SOLID		F07-043		
R708060-12	Method Blank		SOLID		F07-043		
R708060-13	Duplicate (R708060-02)		SOLID		F07-043		07/03/07 09:35

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

SDG 7673
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG H3550

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7673	F07-043-021	B1NRH2	SOLID	96.0	70 g		08/09/07	37	R708060-01	7673-001
	F07-043-024	B1NRH3	SOLID	96.3	660 g		08/09/07	37	R708060-02	7673-002
		Method Blank	SOLID						R708060-04	7673-004
		Method Blank	SOLID						R708060-08	7673-008
		Method Blank	SOLID						R708060-12	7673-012
		Lab Control Sample	SOLID						R708060-03	7673-003
		Lab Control Sample	SOLID						R708060-07	7673-007
		Lab Control Sample	SOLID						R708060-11	7673-011
		Duplicate (R708060-01)	SOLID	96.0	70 g		08/09/07	37	R708060-05	7673-005
		Duplicate (R708060-01)	SOLID	96.0	70 g		08/09/07	37	R708060-10	7673-010
		Duplicate (R708060-02)	SOLID	96.3	660 g		08/09/07	37	R708060-06	7673-006
		Duplicate (R708060-02)	SOLID	96.3	660 g		08/09/07	37	R708060-09	7673-009
		Duplicate (R708060-02)	SOLID	96.3	660 g		08/09/07	37	R708060-13	7673-013

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

SDG 7673
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG H3550

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	SOLID	Americium 241 in Solids	6121-066	5.0	1			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	6121-066	5.0	1			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	6121-066	5.0	1			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	6121-066	10.0	1			1	1	1/1		
TC	SOLID	Technetium 99 in Solids	6121-066	10.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6121-066	15.0	1			1	1	1/1		
I	SOLID	Iodine 129 in Solids	6121-066	10.0	1			1	1	1/1		
Liquid Scintillation Counting												
C	SOLID	Carbon 14 in Solids	6121-066	10.0	1			1	1	1/1		
H	SOLID	Tritium in Solids	6121-066	10.0	1			1	1	1/1		
NI_L	SOLID	Nickel 63 in Solids	6121-066	10.0	1			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

SDG 7673
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG H3550

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R708060-01	B1NRH2			7673-001	C	A1	10/05/07	10/09/07	BW	Carbon 14 in Solids
07/03/07	C5515, I-010 32.0'-34.5'		SOLID	7673-001	H		09/30/07	10/02/07	BW	Tritium in Solids
08/09/07	F07-043-021	F07-043		7673-001	I		09/12/07	09/14/07	BW	Iodine 129 in Solids
				7673-001	NI_L		09/24/07	09/27/07	BW	Nickel 63 in Solids
				7673-001	TC		09/08/07	09/14/07	BW	Technetium 99 in Solids
R708060-02	B1NRH3			7673-002	AM	A2	10/17/07	10/19/07	BW	Americium 241 in Solids
07/03/07			SOLID	7673-002	GAM		09/06/07	09/13/07	CSS	Gamma Scan
08/09/07	F07-043-024	F07-043		7673-002	PU	A1	10/16/07	10/19/07	BW	Plutonium, Isotopic in Solids
				7673-002	SR		09/12/07	09/17/07	BW	Total Strontium in Solids
				7673-002	U		09/18/07	09/20/07	BW	Uranium, Isotopic in Solids
R708060-03	Lab Control Sample			7673-003	GAM		09/08/07	09/13/07	CSS	Gamma Scan
			SOLID	7673-003	H		09/30/07	10/02/07	BW	Tritium in Solids
		F07-043		7673-003	I		09/12/07	09/14/07	BW	Iodine 129 in Solids
				7673-003	NI_L		09/24/07	09/27/07	BW	Nickel 63 in Solids
				7673-003	SR		09/12/07	09/17/07	BW	Total Strontium in Solids
				7673-003	TC		09/08/07	09/14/07	BW	Technetium 99 in Solids
				7673-003	U		09/18/07	09/20/07	BW	Uranium, Isotopic in Solids
R708060-04	Method Blank			7673-004	GAM		09/11/07	09/13/07	CSS	Gamma Scan
			SOLID	7673-004	H		09/30/07	10/02/07	BW	Tritium in Solids
		F07-043		7673-004	I		09/13/07	09/14/07	BW	Iodine 129 in Solids
				7673-004	NI_L		09/24/07	09/27/07	BW	Nickel 63 in Solids
				7673-004	SR		09/12/07	09/17/07	BW	Total Strontium in Solids
				7673-004	TC		09/08/07	09/14/07	BW	Technetium 99 in Solids
				7673-004	U		09/18/07	09/20/07	BW	Uranium, Isotopic in Solids
R708060-05	Duplicate (R708060-01)			7673-005	H		09/30/07	10/02/07	BW	Tritium in Solids
07/03/07	C5515, I-010 32.0'-34.5'		SOLID	7673-005	I		09/13/07	09/14/07	BW	Iodine 129 in Solids
08/09/07		F07-043		7673-005	NI_L		09/24/07	09/27/07	BW	Nickel 63 in Solids
				7673-005	TC		09/08/07	09/14/07	BW	Technetium 99 in Solids
R708060-06	Duplicate (R708060-02)			7673-006	GAM		09/12/07	09/13/07	CSS	Gamma Scan
07/03/07			SOLID	7673-006	SR		09/12/07	09/17/07	BW	Total Strontium in Solids
08/09/07		F07-043		7673-006	U		09/18/07	09/20/07	BW	Uranium, Isotopic in Solids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

SDG 7673
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG H3550

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R708060-07	Lab Control Sample	F07-043	SOLID	7673-007	C		10/05/07	10/09/07	BW	Carbon 14 in Solids
R708060-08	Method Blank	F07-043	SOLID	7673-008	C		10/05/07	10/09/07	BW	Carbon 14 in Solids
R708060-09 07/03/07 08/09/07	Duplicate (R708060-02)	F07-043	SOLID	7673-009	PU		10/16/07	10/19/07	BW	Plutonium, Isotopic in Solids
R708060-10 07/03/07 08/09/07	Duplicate (R708060-01) C5515, I-010 32.0'-34.5'	F07-043	SOLID	7673-010	C		10/05/07	10/09/07	BW	Carbon 14 in Solids
R708060-11	Lab Control Sample	F07-043	SOLID	7673-011 7673-011	AM PU		10/17/07 10/16/07	10/19/07 10/19/07	BW BW	Americium 241 in Solids Plutonium, Isotopic in Solids
R708060-12	Method Blank	F07-043	SOLID	7673-012 7673-012	AM PU		10/17/07 10/18/07	10/19/07 10/19/07	BW BW	Americium 241 in Solids Plutonium, Isotopic in Solids
R708060-13 07/03/07 08/09/07	Duplicate (R708060-02)	F07-043	SOLID	7673-013	AM		10/17/07	10/19/07	BW	Americium 241 in Solids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

SDG 7673
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG H3550

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
AM	F07-043	Americium 241 in Solids	AMCMISO_IE_PLATE_AEA	1			1	1	1	4
C	F07-043	Carbon 14 in Solids	C14_COX_LSC	1			1	1	1	4
GAM	F07-043	Gamma Scan	GAMMA_GS	1			1	1	1	4
H	F07-043	Tritium in Solids	TRITIUM_COX_LSC	1			1	1	1	4
I	F07-043	Iodine 129 in Solids	I129_SEP_LEPS_GS	1			1	1	1	4
NI_L	F07-043	Nickel 63 in Solids	NI63_LSC	1			1	1	1	4
PU	F07-043	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	1			1	1	1	4
SR	F07-043	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	1			1	1	1	4
TC	F07-043	Technetium 99 in Solids	TC99_TR_SEP_GPC	1			1	1	1	4
U	F07-043	Uranium, Isotopic in Solids	UISO_PLATE_AEA	1			1	1	1	4
TOTALS				10			10	10	10	40

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

7673-004 Method Blank

METHOD BLANK

SDG	7673	Client/Case no	Hanford	SDG H3550	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R708060-04	Client sample id	Method Blank		
Dept sample id	7673-004	Material/Matrix		SOLID	
		SAF No	F07-043		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-2.10	3.2	5.74	400	U	H
Nickel 63	13981-37-8	0.052	1.3	2.11	30.0	U	NI_L
Total Strontium	SR-RAD	-8.03	13	28.1	1.00	U	SR
Technetium 99	14133-76-7	0.044	0.24	0.492	15.0	U	TC
Uranium 233/234	U-233/234	2.31	3.1	5.90	1.00	U	U
Uranium 235	15117-96-1	0.933	1.9	7.14	1.00	U	U
Uranium 238	U-238	5.40	4.6	5.90	1.00	U	U
Iodine 129	15046-84-1	-0.010	0.38	0.869	2.00	U	I
Potassium 40	13966-00-2	U		1.46		U	GAM
Cobalt 60	10198-40-0	U		0.052	0.050	U	GAM
Cesium 137	10045-97-3	U		0.056	0.100	U	GAM
Radium 226	13982-63-3	U		0.120	0.100	U	GAM
Radium 228	15262-20-1	U		0.282	0.200	U	GAM
Europium 152	14683-23-9	U		0.148	0.100	U	GAM
Europium 154	15585-10-1	U		0.158	0.100	U	GAM
Europium 155	14391-16-3	U		0.114	0.100	U	GAM
Thorium 228	14274-82-9	U		0.086		U	GAM
Thorium 232	TH-232	U		0.282		U	GAM
Uranium 235	15117-96-1	U		0.208		U	GAM
Uranium 238	U-238	U		6.61		U	GAM
Americium 241	14596-10-2	U		0.048		U	GAM

216A2/216A21CharactrztnSamp&Ana-Soil

QC-BLANK #62456

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

7673-008 **Method Blank**

METHOD BLANK

SDG	7673	Client/Case no	Hanford SDG H3550
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R708060-08	Client sample id	Method Blank
Dept sample id	7673-008	Material/Matrix	SOLID
		SAF No	F07-043

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.734	2.8	4.78	50.0	U	C

216A2/216A21CharactrztnSamp&Ana-Soil

QC-BLANK #62911

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

7673-012 Method Blank

METHOD BLANK

SDG	7673	Client/Case no	Hanford SDG H3550
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R708060-12	Client sample id	Method Blank
Dept sample id	7673-012	Material/Matrix	SOLID
		SAF No	F07-043

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Americium 241	14596-10-2	60.6	6.9	2.58	1.00		AM
Plutonium 238	13981-16-3	50.0	22	16.6	1.00		PU
Plutonium 239/240	PU-239/240	-2.18	4.4	16.6	1.00	U	PU

216A2/216A21CharactrztnSamp&Ana-Soil

QC-BLANK #63115

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

7673-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7673

Contact Melissa C. Mannion

Client/Case no Hanford SDG H3550

Contract No. 630

Lab sample id R708060-03

Dept sample id 7673-003

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No F07-043

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	772	16	5.74	400		H	850	34	91	85-115	80-120
Nickel 63	213	4.0	2.12	30.0		NI_L	222	8.9	96	84-116	80-120
Total Strontium	966	53	24.5	1.00		SR	949	38	102	82-118	80-120
Technetium 99	103	2.5	0.501	15.0		TC	109	4.4	94	84-116	80-120
Uranium 233/234	914	82	36.4	1.00		U	929	37	98	84-116	80-120
Uranium 235	755	71	7.26	1.00		U	755	30	100	83-117	80-120
Uranium 238	981	86	35.0	1.00		U	1010	40	97	84-116	80-120
Iodine 129	129	1.5	1.88	2.00		I	116	4.6	111	82-118	80-120
Cobalt 60	2.17	0.16	0.035	0.050		GAM	1.93	0.077	112	71-129	80-120
Cesium 137	2.03	0.13	0.086	0.100		GAM	1.93	0.077	105	74-126	80-120

216A2/216A21CharactrztnSamp&Ana-Soil

QC-LCS #62455

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

7673-007

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7673
Contact Melissa C. Mannion

Client/Case no Hanford SDG H3550
Contract No. 630

Lab sample id R708060-07
Dept sample id 7673-007

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No F07-043

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Carbon 14	2020	41	9.35	50.0		C	2130	85	95	84-116	80-120

216A2/216A21CharactrztnSamp&Ana-Soil

QC-LCS #62910

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

7673-011 Lab Control Sample

LAB CONTROL SAMPLE

SDG 7673
Contact Melissa C. Mannion

Client/Case no Hanford SDG H3550
Contract No. 630

Lab sample id R708060-11
Dept sample id 7673-011

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No F07-043

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Americium 241	1050	100	10.3	1.00	B	AM	1010	40	104	82-118	80-120
Plutonium 238	1280	150	15.1	1.00	B	PU	1180	47	108	78-122	80-120
Plutonium 239/240	1340	160	15.1	1.00		PU	1320	53	102	79-121	80-120

216A2/216A21CharactrztnSamp&Ana-Soil

QC-LCS #63114

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

7673-005 B1NRH2

DUPLICATE

SDG	7673			Client/Case no	Hanford SDG H3550
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R708060-05	Lab sample id	R708060-01	Client sample id	B1NRH2
Dept sample id	7673-005	Dept sample id	7673-001	Location/Matrix	C5515, I-010 32.0'-34.5' SOLID
		Received	08/09/07	Collected/Weight	07/03/07 09:35 70 g
% solids	96.0	% solids	96.0	Custody/SAF No	F07-043-021 F07-043

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Tritium	-0.723	2.5	4.28	400	U	H	2.09	2.6	4.37	U	-		1.6
Nickel 63	2.99	1.8	2.82	30.0		NI_L	10.6	1.6	2.28		112	58	5.7
Technetium 99	6.88	0.65	0.924	15.0		TC	4.56	0.58	0.526		41	31	3.9
Iodine 129	0.814	0.74	1.65	2.00	U	I	0.122	0.60	1.35	U	-		1.4

216A2/216A21CharactrztnSamp&Ana-Soil

QC-DUP#1 62457

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	10/22/07

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

7673-010

B1NRH2

DUPLICATE

SDG	7673			Client/Case no	Hanford SDG H3550
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R708060-10	Lab sample id	R708060-01	Client sample id	B1NRH2
Dept sample id	7673-010	Dept sample id	7673-001	Location/Matrix	C5515, I-010 32.0'-34.5' SOLID
		Received	08/09/07	Collected/Weight	07/03/07 09:35 70 g
% solids	96.0	% solids	96.0	Custody/SAF No	F07-043-021 F07-043

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Carbon 14	0.093	1.8	3.02	50.0	U	C	-0.457	1.9	3.19	U	-		0.4

216A2/216A21CharactrztnSamp&Ana-Soil

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

7673-006 B1NRH3

DUPLICATE

SDG	7673			Client/Case no	Hanford SDG H3550
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R708060-06	Lab sample id	R708060-02	Client sample id	B1NRH3
Dept sample id	7673-006	Dept sample id	7673-002	Location/Matrix	SOLID
		Received	08/09/07	Collected/Weight	07/03/07 09:35 660 g
% solids	96.3	% solids	96.3	Custody/SAF No	F07-043-024 F07-043

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Total Strontium	1700	78	28.0	1.00		SR	1700	78	26.9		0	23	0
Uranium 233/234	50.3	13	5.20	1.00		U	43.2	12	5.70		15	58	0.8
Uranium 235	3.29	3.3	6.29	1.00	U	U	3.61	3.6	6.90	U	-		0.1
Uranium 238	51.0	13	5.20	1.00		U	56.6	14	5.70		10	54	0.6
Potassium 40	15.2	1.1	0.469			GAM	11.7	1.3	0.838		26	37	2.1
Cobalt 60	0.245	0.072	0.065	0.050		GAM	0.199	0.10	0.092		21	89	0.7
Cesium 137	91.6	0.63	0.181	0.100		GAM	90.0	0.80	0.241		2	32	0.2
Radium 226	0.491	0.22	0.287	0.100		GAM	0.402	0.25	0.338		20	116	0.5
Radium 228	0.457	0.25	0.291	0.200		GAM	0.830	0.33	0.340		58	102	1.7
Europium 152	U		0.611	0.100	U	GAM	U		0.770	U	-		0.3
Europium 154	U		0.724	0.100	U	GAM	U		0.898	U	-		0.3
Europium 155	U		0.636	0.100	U	GAM	U		1.12	U	-		0.7
Thorium 228	0.778	0.27	0.379			GAM	0.709	0.39	0.520		9	101	0.3
Thorium 232	0.457	0.25	0.291			GAM	0.830	0.33	0.340		58	102	1.7
Uranium 235	U		1.43		U	GAM	U		2.00	U	-		0.5
Uranium 238	U		11.7		U	GAM	U		15.0	U	-		0.3
Americium 241	421	0.90	0.450			GAM	414	1.2	0.618		2	32	0.2

216A2/216A21CharactrztnSamp&Ana-Soil

QC-DUP#2 62458

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

7673-009 B1NRH3

DUPLICATE

SDG	7673			Client/Case no	Hanford SDG H3550
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R708060-09	Lab sample id	R708060-02	Client sample id	B1NRH3
Dept sample id	7673-009	Dept sample id	7673-002	Location/Matrix	SOLID
		Received	08/09/07	Collected/Weight	07/03/07 09:35 660 g
% solids	96.3	% solids	96.3	Custody/SAF No	F07-043-024 F07-043

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Plutonium 238	128	25	11.0	1.00	B	PU	120	24	8.66	B	6	43	0.4
Plutonium 239/240	6290	420	7.58	1.00	.	PU	6360	450	8.64		1	18	0.2

216A2/216A21CharactrztnSamp&Ana-Soil

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

7673-013 B1NRH3

DUPLICATE

SDG	7673			Client/Case no	Hanford SDG H3550
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R708060-13	Lab sample id	R708060-02	Client sample id	B1NRH3
Dept sample id	7673-013	Dept sample id	7673-002	Location/Matrix	SOLID
		Received	08/09/07	Collected/Weight	07/03/07 09:35 660 g
% solids	96.3	% solids	96.3	Custody/SAF No	F07-043-024 F07-043

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TRST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Americium 241	1390	95	7.00	1.00	B	AM	1420	130	9.46	B	2	20	0.3

216A2/216A21CharactrztnSamp&Ana-Soil

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

7673-001 B1NRH2

DATA SHEET

SDG	7673	Client/Case no	Hanford	SDG H3550
Contact	Melissa C. Mannion	Contract	No. 630	
Lab sample id	R708060-01	Client sample id	B1NRH2	
Dept sample id	7673-001	Location/Matrix	C5515, I-010 32.0'-34.5'	SOLID
Received	08/09/07	Collected/Weight	07/03/07 09:35	70 g
% solids	96.0	Custody/SAF No	F07-043-021	F07-043

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.09	2.6	4.37	400	U	H
Carbon 14	14762-75-5	-0.457	1.9	3.19	50.0	U	C
Nickel 63	13981-37-8	10.6	1.6	2.28	30.0		NI_L
Technetium 99	14133-76-7	4.56	0.58	0.526	15.0		TC
Iodine 129	15046-84-1	0.122	0.60	1.35	2.00	U	I

216A2/216A21CharactrztnSamp&Ana-Soil

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

7673-002 B1NRH3

DATA SHEET

SDG	7673	Client/Case no	Hanford	SDG H3550	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R708060-02	Client sample id	B1NRH3		
Dept sample id	7673-002	Location/Matrix		SOLID	
Received	08/09/07	Collected/Weight	07/03/07 09:35	660 g	
% solids	96.3	Custody/SAF No	F07-043-024	F07-043	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	1700	78	26.9	1.00		SR
Americium 241	14596-10-2	1420	130	9.46	1.00	B	AM
Uranium 233/234	U-233/234	43.2	12	5.70	1.00		U
Uranium 235	15117-96-1	3.61	3.6	6.90	1.00	U	U
Uranium 238	U-238	56.6	14	5.70	1.00		U
Plutonium 238	13981-16-3	120	24	8.66	1.00	B	PU
Plutonium 239/240	PU-239/240	6360	450	8.64	1.00		PU
Potassium 40	13966-00-2	11.7	1.3	0.838			GAM
Cobalt 60	10198-40-0	0.199	0.10	0.092	0.050		GAM
Cesium 137	10045-97-3	90.0	0.80	0.241	0.100		GAM
Radium 226	13982-63-3	0.402	0.25	0.338	0.100		GAM
Radium 228	15262-20-1	0.830	0.33	0.340	0.200		GAM
Europium 152	14683-23-9	U		0.770	0.100	U	GAM
Europium 154	15585-10-1	U		0.898	0.100	U	GAM
Europium 155	14391-16-3	U		1.12	0.100	U	GAM
Thorium 228	14274-82-9	0.709	0.39	0.520			GAM
Thorium 232	TH-232	0.830	0.33	0.340			GAM
Uranium 235	15117-96-1	U		2.00		U	GAM
Uranium 238	U-238	U		15.0		U	GAM
Americium 241	14596-10-2	414	1.2	0.618			GAM

216A2/216A21CharactrztnSamp&Ana-Soil

Lab id	EBRLNE
Prctocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

Test AM Matrix SOLID
SDG 7673
Contact Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H3550

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241
Preparation batch 6121-066					
R708060-02		A2	7673-002	B1NRH3	1420
R708060-11			7673-011	Lab Control Sample	ok
R708060-12			7673-012	Method Blank	60.6
R708060-13			7673-013	Duplicate (R708060-02)	ok
Nominal values and limits from method 216A2/216A21CharactrztnSamp&Ana-Soil				RDLs (pCi/g)	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6121-066			2σ prep error 5.0 % Reference Lab Notebook #6121, pg. 66													
R708060-02		A2	B1NRH3	9.46	0.0100			92		103			106	10/16/07	10/17	SS-056
R708060-11			Lab Control Sample	10.3	0.0100			84		103				10/16/07	10/17	SS-061
R708060-12			Method Blank	2.58	0.0100			83		1111				10/16/07	10/17	SS-040
R708060-13			Duplicate (R708060-02)	7.00	0.0100			90		225			106	10/16/07	10/17	SS-063
Nominal values and limits from method				1.00	0.0100			20-105		100	100		180			

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_ABA
	SPP-060	Soil Preparation, rev 0
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 6
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 4 SAMPLES				
	MDA	7.34	±	6.93
	YIELD	87	±	9

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-Lms
Version 3.06
Report date 10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

Test PU	Matrix SOLID
SDG 7673	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford	
Contract No. 630	
Contract SDG H3550	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238	Plutonium 239/240
Preparation batch 6121-066						
R708060-02		A1	7673-002	B1NRH3	120	6360
R708060-09			7673-009	Duplicate (R708060-02)	ok	ok
R708060-11			7673-011	Lab Control Sample	ok	ok
R708060-12			7673-012	Method Blank	50.0	U
Nominal values and limits from method 216A2/216A21CharactrztnSamp&Ana-Soil				RDLs (pCi/g)	1.00	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6121-066 2σ prep error 5.0 % Reference Lab Notebook #6121, pg. 66																
R708060-02		A1	B1NRH3	8.66	0.0100			84		115			105	10/16/07	10/16	SS-055
R708060-09			Duplicate (R708060-02)	11.0	0.0100			77		163			105	10/16/07	10/16	SS-038
R708060-11			Lab Control Sample	15.1	0.0100			71		110				10/16/07	10/16	SS-040
R708060-12			Method Blank	16.6	0.0100			67		101				10/16/07	10/18	SS-063
Nominal values and limits from method				1.00	0.0100			20-105		100	100		180			

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD	MDA	12.8	± 7.31
FOR 4 SAMPLES	YIELD	75	± 15

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

Test U	Matrix SOLID
SDG 7673	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford	
Contract No. 630	
Contract SDG H3550	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1+3	2σ	2+3	2σ
Preparation batch 6121-066											
R708060-02			7673-002	B1NRH3	43.2	3.61 U	56.6	76	28	6	7
R708060-03			7673-003	Lab Control Sample	ok	ok	ok				
R708060-04			7673-004	Method Blank	2.31 U	U	5.40 U				
R708060-06			7673-006	Duplicate (R708060-02)	ok	- U	ok	99	36	6	7
Nominal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
216A2/216A21CharactrztnSamp&Ana-Soil								Averages 87		6	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6121-066			2σ prep error 5.0 %	Reference Lab Notebook #6121, pg. 66												
R708060-02			B1NRH3	6.90	0.0100			85		171			77	09/18/07	09/18	SS-055
R708060-03			Lab Control Sample	36.4	0.0100			87		171				09/18/07	09/18	SS-056
R708060-04			Method Blank	7.14	0.0100			86		172				09/18/07	09/18	SS-057
R708060-06			Duplicate (R708060-02)	6.29	0.0100			94		172			77	09/18/07	09/18	SS-058
Nominal values and limits from method				1.00	0.0100			20-105		100	100		180			

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 4 SAMPLES			
MDA	14.2	±	29.6
YIELD	88	±	8

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

Test SR Matrix SOLID
SDG 7673
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H3550

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium
Preparation batch 6121-066					
R708060-02			7673-002	B1NRH3	1700
R708060-03			7673-003	Lab Control Sample	ok
R708060-04			7673-004	Method Blank	U
R708060-06			7673-006	Duplicate (R708060-02)	ok

Nominal values and limits from method RDLs (pCi/g) 1.00
216A2/216A21CharactrztnSamp&Ana-Soil

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6121-066			2σ prep error 10.0 % Reference Lab Notebook #6121, pg. 66													
R708060-02			B1NRH3	26.9	0.0100			90		100			71	09/12/07	09/12	GRB-202
R708060-03			Lab Control Sample	24.5	0.0100			95		100				09/12/07	09/12	GRB-219
R708060-04			Method Blank	28.1	0.0100			90		100				09/12/07	09/12	GRB-204
R708060-06			Duplicate (R708060-02)	28.0	0.0100			92		100			71	09/12/07	09/12	GRB-201
Nominal values and limits from method				1.00	0.0100			30-105		100			180			

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-383	Strontium in Dissolved Solid of < 5.0g Aliquot, rev 1

AVERAGES ± 2 SD FOR 4 SAMPLES				
	MDA	26.9	±	3.35
	YIELD	92	±	5

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

Test	TC
Matrix	SOLID
SDG	7673
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

TECHNETIUM 99 IN SOLIDS

BETA COUNTING

Client	Hanford
Contract	No. 630
Contract	SDG H3550

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Technetium 99
Preparation batch 6121-066					
R708060-01			7673-001	B1NRH2	4.56
R708060-03			7673-003	Lab Control Sample	ok
R708060-04			7673-004	Method Blank	U
R708060-05			7673-005	Duplicate (R708060-01)	OUT
Nominal valnes and limits from method 216A2/216A21CharactrztnSamp&Ana-Soil				RDLs (pCi/g)	15.0

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6121-066			2σ prep error 10.0 % Reference Lab Notebook #6121, pg. 66													
R708060-01			B1NRH2	0.526	1.00			101		50			67	09/05/07	09/08	GRB-221
R708060-03			Lab Control Sample	0.501	1.00			104		50				09/05/07	09/08	GRB-222
R708060-04			Method Blank	0.492	1.00			105		50				09/05/07	09/08	GRB-223
R708060-05			Duplicate (R708060-01)	0.924	1.00			56		50			67	09/05/07	09/08	GRB-224
Nominal values and limits from method				15.0	1.00			20-105		50			180			

PROCEDURES	REFERENCE	TC99_TR_SEP_GPC
	SPP-062	Sample Aliquoting, rev 0
	CP-431	Technetium-99 Purification of Soil or Resin by Extraction Chromatography, rev 2
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD	MDA	0.611	± 0.419
FOR 4 SAMPLES	YIELD	92	± 47

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

Test GAM Matrix SOLID
SDG 7673
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H3550

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60	Cesium 137
Preparation batch 6121-066						
R708060-02			7673-002	B1NRH3	0.199	90.0
R708060-03			7673-003	Lab Control Sample	ok	ok
R708060-04			7673-004	Method Blank	U	U
R708060-06			7673-006	Duplicate (R708060-02)	ok	ok
Nominal values and limits from method 216A2/216A21CharactrztnSamp&Ana-Soil				RDLs (pCi/g)	0.050	0.100

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6121-066			2σ prep error 15.0 % Reference Lab Notebook #6121, pg. 66													
R708060-02			B1NRH3	50.4	248					103			65	08/28/07	09/06	JR,01,00
R708060-03			Lab Control Sample	0.035	247					101				08/28/07	09/08	JR,07,00
R708060-04			Method Blank	12.7	247					253				08/28/07	09/11	JR,06,00
R708060-06			Duplicate (R708060-02)	39.8	248					169			71	08/28/07	09/12	JR,01,00
Nominal values and limits from method				0.050	247					100			180			

PROCEDURES REFERENCE GAMMA_GS
SPP-100 Ge(Li) Preparation for Commercial Samples, rev 7

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 25.7 ± 46.7
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

Test I	Matrix SOLID
SDG 7673	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

IODINE 129 IN SOLIDS

GAMMA SPECTROSCOPY

Client Hanford	
Contract No. 630	
Contract SDG H3550	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Iodine 129	
Preparation batch 6121-066						
R708060-01			7673-001	B1NRH2	U	
R708060-03			7673-003	Lab Control Sample	ok	
R708060-04			7673-004	Method Blank	U	
R708060-05			7673-005	Duplicate (R708060-01)	-	U
Nominal values and limits from method 216A2/216A21CharactrztnSamp&Ana-Soil				RDLs (pCi/g)	2.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6121-066			2σ prep error 10.0 % Reference Lab Notebook #6121, pg. 66													
R708060-01			B1NRH2	1.35	1.00			64		728			71	09/12/07	09/12	XSPEC-004
R708060-03			Lab Control Sample	1.88	1.00			91		728				09/12/07	09/12	XSPEC-002
R708060-04			Method Blank	0.869	1.00			92		614				09/12/07	09/13	XSPEC-004
R708060-05			Duplicate (R708060-01)	1.65	1.00			64		614			72	09/12/07	09/13	XSPEC-002
Nominal values and limits from method				2.00	1.00			20-105		300			180			

PROCEDURES	REFERENCE	I129_SEP_LEPS_GS
	SPP-062	Sample Aliquoting, rev 0
	CP-024	Iodine-129, Sample Dissolution, rev 5
	CP-530	Iodine-129 Purification, rev 1

AVERAGES ± 2 SD FOR 4 SAMPLES				
MDA	1.44	±	0.873
YIELD	78	±	32

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

Test C	Matrix SOLID
SDG 7673	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

CARBON 14 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford	
Contract No. 630	
Contract SDG H3550	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Carbon 14	
Preparation batch 6121-066						
R708060-01		A1	7673-001	B1NRH2	U	
R708060-07			7673-007	Lab Control Sample	ok	
R708060-08			7673-008	Method Blank	U	
R708060-10			7673-010	Duplicate (R708060-01)	-	U
Nominal values and limits from method				RDLs (pCi/g)	50.0	
216A2/216A21CharactrztnSamp&Ana-Soil						

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6121-066			2σ prep error 10.0 % Reference Lab Notebook #6121, pg. 66													
R708060-01		A1	B1NRH2	3.19	0.462			100		50			94	10/03/07	10/05	LSC-007
R708060-07			Lab Control Sample	9.35	0.300			100		11				10/03/07	10/05	LSC-007
R708060-08			Method Blank	4.78	0.300			100		50				10/03/07	10/05	LSC-007
R708060-10			Duplicate (R708060-01)	3.02	0.462			100		50			94	10/03/07	10/05	LSC-007
Nominal values and limits from method				50.0	0.300					10			180			

PROCEDURES	REFERENCE	C14_COX_LSC
	CP-251	Tritium/Carbon-14 Oxidation, rev 8

AVERAGES ± 2 SD	MDA	5.08	± 5.90
FOR 4 SAMPLES	YIELD	100	± 0

Lab id	EBRLNE
Protocol	Hanford
Version	ver 1.0
Form	DVD-I MS
Version	3.06
Report date	10/22/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

Test H	Matrix SOLID
SDG 7673	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

TRITIUM IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford	
Contract No. 630	
Contract SDG H3550	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
Preparation batch 6121-066						
R708060-01			7673-001	B1NRH2	U	
R708060-03			7673-003	Lab Control Sample	ok	
R708060-04			7673-004	Method Blank	U	
R708060-05			7673-005	Duplicate (R708060-01)	-	U

Nominal values and limits from method EDLs (pCi/g) 400
216A2/216A21CharactrztnSamp&Ana-Soil

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6121-066			2σ prep error 10.0 % Reference Lab Notebook #6121, pg. 66													
R708060-01			B1NRH2	4.37	0.398			100		50			89	09/14/07	09/30	LSC-004
R708060-03			Lab Control Sample	5.74	0.300			100		50				09/14/07	09/30	LSC-004
R708060-04			Method Blank	5.74	0.300			100		50				09/14/07	09/30	LSC-004
R708060-05			Duplicate (R708060-01)	4.28	0.402			100		50			89	09/14/07	09/30	LSC-004
Nominal values and limits from method				400	0.300					25			180			

PROCEDURES	REFERENCE	TRITIUM_COX_LSC
	CP-251	Tritium/Carbon-14 Oxidation, rev 8

AVERAGES ± 2 SD	MDA	5.03	± 1.64
FOR 4 SAMPLES	YIELD	100	± 0

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3550

Test NI L Matrix SOLID
SDG 7673
Contact Melissa C. Mannion

LAB METHOD SUMMARY

NICKEL 63 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H3550

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Nickel 63
Preparation batch 6121-066					
R708060-01			7673-001	B1NRH2	10.6
R708060-03			7673-003	Lab Control Sample	ok
R708060-04			7673-004	Method Blank	U
R708060-05			7673-005	Duplicate (R708060-01)	OUT
Nominal values and limits from method 216A2/216A21CharactrztnSamp&Ana-Soil				RDLs (pCi/g)	30.0

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	RFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6121-066			2σ prep error 10.0 % Reference Lab Notebook #6121, pg. 66													
R708060-01			B1NRH2	2.28	0.500			92		100			83	09/19/07	09/24	LSC-004
R708060-03			Lab Control Sample	2.12	0.500			97		100				09/19/07	09/24	LSC-004
R708060-04			Method Blank	2.11	0.500			98		100				09/19/07	09/24	LSC-004
R708060-05			Duplicate (R708060-01)	2.82	0.500			74		100			83	09/19/07	09/24	LSC-004
Nominal values and limits from method				30.0	0.500			30-105		25			180			

PROCEDURES	REFERENCE	NI63_LSC
	CP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-280	Nickel-63 Purification, rev 3

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 2.33 ± 0.668
YIELD 90 ± 22

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
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SAMPLE DELIVERY GROUP H3550

SDG 7673
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H3550

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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Protocol Hanford
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Form DVD-RG
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SDG	7673
Contact	Melissa C. Mannion

REPORT GUIDE

Client	Hanford
Contract	No. 630
Case no	SDG H3550

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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REPORT GUIDE

Client Hanford
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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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GUIDE, cont.

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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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REPORT GUIDE

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LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

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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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GUIDE, cont.

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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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/22/07

SDG 7673
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H3550

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/22/07

SDG	7673
Contact	Melissa C. Mannion

REPORT GUIDE

Client	Hanford
Contract	No. 630
Case no	SDG H3550

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'

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-RG
Version	3.06
Report date	10/22/07

METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F07-043-021	PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Mokler	COMPANY CONTACT: Trent, SJ	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 8N	DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: C5515, I-010 32.0' - 34.5'	PROJECT DESIGNATION: H3550 (7673) 216-A-2 and 216-A-21 Characterization Sampling and Analysis - Soil	SAF NO.: F07-043	AIR QUALITY: ☐
ICE CHEST NO.: GWO-07-010	FIELD LOGBOOK NO.:	COA: 122868 ES3	METHOD OF SHIPMENT: FEDERAL EXPRESS
SHIPPED TO: Eberline Services	OFFSITE PROPERTY NO.: See ~~PTR~~ ① RSR G0013000	BILL OF LADING/AIR BILL NO.: See ~~PTR~~ ① RSR G0013000 ① MAB 8/8/07	

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

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 HANDLING AND/OR STORAGE

PRESERVATION	None
TYPE OF CONTAINER	G/P
NO. OF CONTAINER(S)	1
VOLUME	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1NRH2	SOIL	7-3-07	0935	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J. Mokler	7-3-07 530	A2 Site Ref.	7-5-07 1330
A2 Site Ref.	7-13-07 1900	MO 745 Ref #3 ①	7-13-07 1900
MO-745 Ref 3	AUG 08 2007 0915	M.A. Baechler	AUG 08 2007 0915
M.A. Baechler	08 2007 0915	FED EX	
FED EX			08/09/07 9:15

SPECIAL INSTRUCTIONS
(1)Tritium - H3; Carbon-14; Iodine-129; Nickel-63; Technetium-99 {Technetium-99}

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

00000050

A-6003-618(01/06)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F07-043-024	PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Mokler	COMPANY CONTACT: Trent, SJ	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 8N	DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: C5515, I-010 32.0' - 34.5'	PROJECT DESIGNATION: 216-A-2 and 216-A-21 Characterization Sampling and Analysis - Soil H3550 (7673)		SAF NO.: F07-043	AIR QUALITY ☐	
ICE CHEST NO.: GW0-07-010	FIELD LOGBOOK NO.:	ACTUAL SAMPLE DEPTH:	COA: 122868 ES3	METHOD OF SHIPMENT: FEDERAL EXPRESS	
SHIPPED TO: Eberline Services	OFFSITE PROPERTY NO.: See ~~PIR~~ ① RSR G00130000		BILL OF LADING/AIR BILL NO.: See ~~PIR~~ ① RSR G00130000 ① MDB 8/8/07		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

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 HANDLING AND/OR STORAGE

PRESERVATION	None
TYPE OF CONTAINER	Square Bottle - Poly
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B1NRH3	SOIL	7-3-07	0935

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J. Mokler	7-3-07 1530	A2 Ref.	7-3-07 1530
A2 Ref.	7-17-07 1400	MO 245 Ref #43 ①	7-13-07 1400
MO 245 Ref 43	AUG 08 2007 0915	M. A. Baechler	AUG 08 2007 0915
M. A. Baechler	AUG 08 2007 0915	FED EX	
FED EX			08/09/07 9:15

SPECIAL INSTRUCTIONS
(1)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Americium-241; Isotopic Plutonium; Isotopic Uranium; Strontium-89,90 -- Total Sr;

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

A-6003-618(01/06)

00000051

EBERLINE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

8/9/07

Client: F. HANFORD City RICHLAND State WA

Date/Time received 08/09/07 9:15 CoC No. F07-093-021, 024

Container I.D. No. GW0-07-010 Requested TAT (Days) Std P.O. Received Yes [ ] No [ ]

INSPECTION

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

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by [signature] Date: 08/09/07 Time: 10:15

Customer Sample No.	cpm	mR/hr	Wipe	Customer Sample No.	cpm	mR/hr	wipe
BLNRH3	2100						

Ion Chamber Ser. No. _____ Calibration date _____
Alpha Meter Ser. No _____ Calibration date _____
Beta/Gamma Meter Ser. No. 100482 Calibration date 9 MAY 07

Form SCP-01.2 01-23-04

"over 55 years of quality nuclear services"

00000052

LvLI

LIONVILLE LABORATORY INC.

Mr. Steve Trent
Fluor Hanford Inc.
825 Jadwin Ave.
Richland, WA 99352

Subject: Contract No. 630
Analytical Data Package

Dear Mr. Trent:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0708L679
SDG #	H3550
SAF #	F07-043
Date Received	8/1/07
# Samples	1
Matrix	SOIL
Volatiles	
Semivolatiles	
Pest/PCB	
DRO/GRO/KRO	X
Herbicides	
GC Alcohol	
Metals	
Inorganics	X

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

SEP 2007
RECEIVED

r:\group\pm\orlette\tmu-hanford\data\fc_ltrs.doc

000001

208 Welsh Pool Road • Exton, PA 19341- 1313 • (610) 280-3000 • Fax (610) 280-3041

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F07-043 H3550

DATE RECEIVED: 08/01/07 LVL LOT # :0708L679

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1NRH2	001	S	07LE0427	07/03/07	08/06/07	08/16/07
B1NRH2	001 MS	S	07LE0427	07/03/07	08/06/07	08/16/07
B1NRH2	001 MSD	S	07LE0427	07/03/07	08/06/07	08/16/07
LAB QC:						
SBLKNC	MB1	S	07LE0427	N/A	08/06/07	08/08/07
SBLKNC	MB1 BS	S	07LE0427	N/A	08/06/07	08/08/07

SEP 2007
RECEIVED

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD F07-043
LVL #: 0708L679
SDG/SAF # K0883/F07-043

W.O. #: 11343-606-001-9999-00
Date Received: 08-01-2007

SEMIVOLATILE

One (1) soil samples was collected on 07-03-2007.

The sample and it's associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 08-06-2007 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 08-08,16-2007.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. Samples were extracted and analyzed within required holding time.

2. Non-target compounds were detected in the samples.

3. All surrogate recoveries were within acceptance criteria.

4. Ten (10) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

5. Two (2) of sixty-four (64) blank spike recoveries was outside acceptance criteria.

6. The method blank contained the common laboratory contaminants Bis (2-Ethylhexyl) phthalate, Di-n-butylphthalate, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(ghi)perylene at levels less than the CRQL.

7. Internal standard area criteria were met not met for sample B1NRH2 MS. The out of criteria samples were reanalyzed on 08-18-2007 with similar results and not reported. The GC/MS instrument was inspected for possible malfunction and was judge to be functioning properly and all surrogate recoveries were within QC limits; consequently, the sample was not reanalyzed.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 15 pages.

208 Welsh Pool Road • Exton, PA 19341- 1313 • (610) 280-3000 • Fax (610) 280-3041

LIONVILLE LABORATORY INC.

8. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

9. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

8/21/07
Date

kim\gcmp\data\bna\tmu-hanford\0708-679.doc

0000004

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 07MS174

Initiator: Shawn Sylo
Date: 8-20-07
Client: TMU F07-043

Batch: 0708674
Samples: 001ms, msd
Method: SW846/MCAWW/CLP/

Parameter: P270
Matrix: solid
Prep Batch: 071ED427

1. Reason for SDR

a. COC Discrepancy __ Tech Profile Error __ Client Request __ Sampler Error on C-O-C __ Transcription Error __ Wrong Test Code __ Other _____

b. General Discrepancy

__ Missing Sample/Extract* __ Container Broken __ Wrong Sample Pulled __ Label ID's Illegible
X Hold Time Exceeded __ Insufficient Sample* __ Preservation Wrong __ Received Past Hold
__ Improper Bottle Type __ Not Amenable to Analysis

Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

low recovery of several spike analytes in the ms + msd but as is ok (nitrobenzene, isophorone, 2,4-dimethylphenol, 1,2,4-Trichlorobenzene, 4-chloro-3-methylphenol, 2-methylnaphthalene, hexachlorocyclopentadiene) sample received past hold time

2. Known or Probable Causes(s) acidic phenols are subject to erratic chromatographic behavior. Hexachlorocyclopentadiene subject to thermal decomposition in the inlet of the gas chromatograph, chemical reactions in acetone and photochemical decompositions. others sporadic

3. Discussion and Proposed Action Other Description:

narrate

__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

4. Project Manager Instructions...signature/date: 8/20/07

__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
✓ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: _____ Other Explanation:

__ Verified re-[log][leach][extract][digest][analysis] (circle)
__ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
(1)	X Project Mgr: Stone/Johnson		__ GC/LC: Kiger
	__ Data Management: Stilwell	(2)	__ MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

GLOSSARY

DATA QUALIFIERS

U	=	Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
J	=	Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
B	=	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
E	=	Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
D	=	Identifies all compounds identified in an analysis at a secondary dilution factor.
I	=	Interference.
NQ	=	Result qualitatively confirmed but not able to quantify.
A	=	Indicates that a TIC is a suspected aldol-condensation product.
N	=	Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
X	=	This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
Y	=	Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

MP - Missed Peak: manually added peak not found by automatic quan program.

PA - Peak Assignment: quan report was changed to reflect correct peak assignment.

RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.

SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.

CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.

PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, Special List

Report Date: 08/20/07 14:34

RFW Batch Number: 0708L679 Client: TNUHANFORD F07-043 H3550 Work Order: 11343606001 Page: 1a

	Cust ID:	B1NRH2		B1NRH2		B1NRH2		SBLKNC		SBLKNC BS	
Sample Information	RFW#:	001		001 MS		001 MSD		07LE0427-MB1		07LE0427-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	68	%	49	%	50	%	70	%	78	%
	2-Fluorobiphenyl	66	%	70	%	66	%	71	%	81	%
	Terphenyl-d14	82	%	85	%	76	%	92	%	101	%
	Phenol-d5	58	%	74	%	66	%	71	%	84	%
	2-Fluorophenol	63	%	76	%	69	%	72	%	79	%
	2,4,6-Tribromophenol	57	%	80	%	62	%	41	%	74	%
			fl		fl		fl		fl		fl
Phenol		350	U	76	%	70	%	330	U	84	%
bis(2-Chloroethyl)ether		350	U	73	%	67	%	330	U	85	%
2-Chlorophenol		350	U	81	%	74	%	330	U	82	%
1,3-Dichlorobenzene		350	U	68	%	65	%	330	U	72	%
1,4-Dichlorobenzene		350	U	98	%	93	%	330	U	109	%
1,2-Dichlorobenzene		350	U	71	%	66	%	330	U	76	%
2-Methylphenol		350	U	76	%	69	%	330	U	86	%
2,2'-oxybis(1-Chloropropane)		350	U	71	%	68	%	330	U	82	%
4-Methylphenol		350	U	75	%	69	%	330	U	93	%
N-Nitroso-di-n-propylamine		350	U	73	%	64	%	330	U	89	%
Hexachloroethane		350	U	64	%	62	%	330	U	72	%
Nitrobenzene		350	U	51	%	49 *	%	330	U	78	%
Isophorone		350	U	60	%	58 *	%	330	U	89	%
2-Nitrophenol		350	U	56	%	54	%	330	U	79	%
2,4-Dimethylphenol		350	U	46 *	%	46 *	%	330	U	78	%
bis(2-Chloroethoxy)methane		350	U	57	%	55	%	330	U	86	%
2,4-Dichlorophenol		350	U	57	%	57	%	330	U	88	%
1,2,4-Trichlorobenzene		350	U	54 *	%	51 *	%	330	U	77	%
Naphthalene		350	U	55	%	53	%	330	U	77	%
4-Chloroaniline		350	U	30	%	39	%	330	U	50	%
Hexachlorobutadiene		350	U	57	%	54	%	330	U	79	%
4-Chloro-3-methylphenol		350	U	60	%	59 *	%	330	U	90	%
2-Methylnaphthalene		350	U	57 *	%	53 *	%	330	U	119 *	%
Hexachlorocyclopentadiene		350	U	57	%	9 *	%	330	U	80	%
2,4,6-Trichlorophenol		350	U	82	%	65	%	330	U	58	%
2,4,5-Trichlorophenol		870	U	84	%	75	%	830	U	84	%

*= Outside of EPA CLP QC limits.

000009

RFW Batch Number: 0708L679 Client: TNUHANFORD F07-043 H3550 Work Order: 11343606001 Page: 1b

Cust ID:	B1NRH2		B1NRH2		B1NRH2		SBLKNC		SBLKNC BS	
RFW#:	001		001 MS		001 MSD		07LE0427-MB1		07LE0427-MB1	
2-Chloronaphthalene	350	U	76	%	70	%	330	U	84	%
2-Nitroaniline	870	U	81	%	77	%	830	U	85	%
Dimethylphthalate	350	U	87	%	82	%	330	U	84	%
Acenaphthylene	350	U	79	%	72	%	330	U	86	%
2,6-Dinitrotoluene	350	U	83	%	78	%	330	U	82	%
3-Nitroaniline	870	U	72	%	68	%	830	U	90	%
Acenaphthene	350	U	79	%	71	%	330	U	83	%
2,4-Dinitrophenol	870	U	107	%	45	%	830	U	99	%
4-Nitrophenol	870	U	90	%	74	%	830	U	139	%
Dibenzofuran	350	U	83	%	78	%	330	U	88	%
2,4-Dinitrotoluene	350	U	92	%	87	%	330	U	88	%
Diethylphthalate	350	U	90	%	87	%	330	U	89	%
4-Chlorophenyl-phenylether	350	U	85	%	78	%	330	U	86	%
Fluorene	350	U	82	%	75	%	330	U	79	%
4-Nitroaniline	870	U	72	%	61	%	830	U	89	%
4,6-Dinitro-2-methylphenol	870	U	94	%	67	%	830	U	119	%
N-Nitrosodiphenylamine (1)	350	U	60	%	55	%	330	U	78	%
4-Bromophenyl-phenylether	350	U	74	%	69	%	330	U	83	%
Hexachlorobenzene	350	U	86	%	79	%	330	U	94	%
Pentachlorophenol	870	U	106	%	86	%	830	U	108	%
Phenanthrene	350	U	85	%	79	%	330	U	97	%
Anthracene	350	U	90	%	84	%	330	U	96	%
Carbazole	350	U	78	%	72	%	330	U	122 *	%
Di-n-butylphthalate	38	JB	93	%	93	%	34	J	104	%
Fluoranthene	350	U	98	%	93	%	330	U	98	%
Pyrene	350	U	82	%	73	%	330	U	92	%
Butylbenzylphthalate	350	U	92	%	85	%	330	U	102	%
3,3-Dichlorobenzidine	350	U	48	%	40	%	330	U	64	%
Benzo(a)anthracene	350	U	86	%	83	%	330	U	93	%
Chrysene	350	U	87	%	84	%	330	U	89	%
bis(2-Ethylhexyl)phthalate	47	JB	95	%	91	%	68	J	97	%
Di-n-octyl phthalate	350	U	92	%	73	%	330	U	96	%
Benzo(b)fluoranthene	350	U	87	%	77	%	330	U	91	%
Benzo(k)fluoranthene	350	U	85	%	79	%	330	U	92	%
Benzo(a)pyrene	350	U	90	%	86	%	330	U	94	%
Indeno(1,2,3-cd)pyrene	350	U	87	%	97	%	24	J	93	%
Dibenz(a,h)anthracene	350	U	86	%	97	%	24	J	94	%
Benzo(g,h,i)perylene	350	U	86	%	102	%	30	J	95	%
Tributylphosphate	20	J	41	J	42	J	330	U	330	U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

Lionville Laboratory Use Only

07081679

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU HANFORD SAF# F02-043

Est. Final Proj. Sampling Date:

Project#: 11343-606-001-9999-00

Project Contact/Phone#:

Lionville Laboratory Project Manager: O Johnson

QC: SW846 Del: STD TAT: 30 days

Date Rec'd: 8-1-07 Date Due: 8-31-07

Refrigerator #			A												B				
#/Type Container	Liquid																		
	Solid		16												16				
Volume			160												160				
Preservatives																			
ANALYSES REQUESTED →			ORGANIC								INORG								
			VOA	BNA	Pest/PCB	Herb	TPH DRO				Metal	CN	TPH		CRL				
			Lionville Laboratory Use Only																
				06254			ODRO								ICRL				

MATRIX CODES:
S- Soil
SE- Sediment
SO- Solid
SL- Sludge
W- Water
O- Oil
A- Air
DS- Drum Solids
DL- Drum Liquids
L- EP/TCLP Leachate
WI- Wipe
X- Other
F- Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb	TPH DRO			Metal	CN	TPH	CRL				
001	BINRH2	✓	✓	SOIL	7-3-07	0935		X			X					X	X				

Special Instructions:

Special Instructions: 8/1/07 1. Lab report kerosene w/ODRO.

2.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	8/1/07	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-043-095

COLLECTOR Pope/Pfister/Mokler	**COMPANY CONTACT** Trent, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ
SAMPLING LOCATION C5515, I-010	**PROJECT DESIGNATION** 216-A-2 and 216-A-21 Characterization Sampling and Analysis - Soil		**SAF NO.** F07-043
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 122860E510	**METHOD OF SHIPMENT** FEDERAL EXPRESS
SHIPPED TO Lionville Laboratory Incorporated	**OFFSITE PROPERTY NO.** See PTR		**BILL OF LADING/AIR BILL NO.** See PTR

PRICE CODE 8N

AIR QUALITY ☐

DATA TURNAROUND 45 Days / 45 Days

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

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 HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	
TYPE OF CONTAINER	G/P	aG	
NO. OF CONTAINER(S)	1	1	
VOLUME	60mL	120mL	
SAMPLE ANALYSIS	Chromium Hex - 7196;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
31NRH2	SOIL	7/3/07	0935	✓	—	

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
D. Parcher	7-3-07 1100	MO 7-3-07 ~~MO 745 #3~~ A2 Ref	7-3-07 1100
A2 Ref	7-26-07 1830	D. Parcher	7-26-07 1830
D. Parcher	7-26-07 1610	MO745 Ref #3	7-26-07 1610
Fed Ex	8/1/07 0945	[illegible]	8-1-07 0945

SPECIAL INSTRUCTIONS

NOTE: ORIGINAL COC ATTACHED TO DOCUMENT CHAIN OF POSSESSION
(1)Semi-VOA - 8270B (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

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

A-6003-618(01/06)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F07-043-095	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	8N	DATA TURNAROUND
Pope/Pfister/Mokler	Trent, SJ	373-5869	TRENT, SJ			
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	☐	**45 Days / 45 Days**
C5515, I-010	216-A-2 and 216-A-21 Characterization Sampling and Analysis - Soil		F07-043			
ICE CHEST NO. GRP-05-009	**FIELD LOGBOOK NO.**	**COA** 122868ES10	**METHOD OF SHIPMENT** FEDERAL EXPRESS			
SHIPPED TO Lionville Laboratory Incorporated	**OFFSITE PROPERTY NO.** See PTR 19951		**BILL OF LADING/AIR BILL NO.** See PTR 19951			

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegitation, W=Water, WI=Wipe, X=Other

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 HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C
TYPE OF CONTAINER	G/P	aG
NO. OF CONTAINER(S)	1	1
VOLUME	60mL	120mL
SAMPLE ANALYSIS	Chromium Hex - 7196;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
31NRH2	SOIL	7/3/07	0935	X	X								

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
MO-745 Kit 3	JUL 3 1 2007 1020	M.A. Baechler	JUL 3 1 2007 1020
M.A. Baechler	JUL 3 1 2007 1020		
	8/1/07 0945		8-1-07 0945

SPECIAL INSTRUCTIONS

NOTE: ORIGINAL COC ATTACHED TO DOCUMENT CHAIN OF POSSESSION
(1)Semi-VOA - 8270B (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

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

A-6003-618(01/06)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNR - HANFORD

Project/SAF/SOW/Release #:

Date: 8/1/07

LvLI Batch #: 0708L679

Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill #
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	Comments:
4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4-2°	°C	Cooler # ERP-05-009
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B1NRH2

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F07-043 H3550

Matrix: (soil/water) SOIL

Lab Sample ID: 0708L679-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: N081523

Level: (low/med) LOW

Date Received: 08/01/07

% Moisture: 4 decanted: (Y/N)__

Date Extracted: 08/06/07

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 08/16/07

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	2.526	100	JA
2.	ALKANE	4.566	100	J
3.	ALKANE	4.679	300	J
4.	ALKANE	4.810	200	J
5.	UNKNOWN	5.010	30000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKNC

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F07-043 H3550

Matrix: (soil/water) SOIL

Lab Sample ID: 07LE0427-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D080809

Level: (low/med) LOW

Date Received: 08/06/07

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 08/06/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/08/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	1.751	400	JA
2.	UNKNOWN	2.268	800	J
3.	ALDOL CONDENSATE	2.966	30000	JA
4.	ALDOL CONDENSATE	3.001	10000	JA
5.	UNKNOWN	16.794	500	J

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F07-043 H3550

DATE RECEIVED: 08/01/07 LVL LOT # :0708L679

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1NRH2						
% SOLIDS	001	S	07L%S088	07/03/07	08/02/07	08/06/07
% SOLIDS	001 REP	S	07L%S088	07/03/07	08/02/07	08/06/07
CHROMIUM VI	001	S	07LVI061	07/03/07	08/06/07	08/06/07
CHROMIUM VI	001 REP	S	07LVI061	07/03/07	08/06/07	08/06/07
CHROMIUM VI	001 MS	S	07LVI061	07/03/07	08/06/07	08/06/07
LAB QC:						
CHROMIUM VI	MB1	S	07LVI061	N/A	08/06/07	08/06/07
CHROMIUM VI	MB1 BS	S	07LVI061	N/A	08/06/07	08/06/07
CHROMIUM VI	MB1 BSD	S	07LVI061	N/A	08/06/07	08/06/07

SEP 2007
RECEIVED

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD F07-043 H3550
LVL#: 0708L679

W.O.#: 11343-606-001-9999-00
Date Received: 08-01-07

INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 soil sample.

2. The sample was prepared and analyzed in accordance with the methods checked on the attached glossary.

   LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvLI certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met.

4. The results presented in this report are derived from a sample that met LvLI's sample acceptance policy.

5. The method blank for ChromiumVI was within the method criteria.

6. The Laboratory Control Samples (LCS) for Chromium VI were within the laboratory control limits.

7. The matrix spike recovery for Soluble Chromium VI was within the 75-125% control limits however insufficient sample volume was provided so as to perform Insoluble Chromium VI matrix spike analysis.

8. The replicate analyses for Percent Solids and Chromium VI were within the 20% Relative Percent Difference (RPD) control limit.

9. Results for solid samples are reported on a dry weight basis.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

8/17/07
Date

njp\\08-679

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

208 Welsh Pool Road • Exton, PA 19341- 1313 • (610) 280-3000 • Fax (610) 280-3041

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	__ D2216-80		
% Moisture	__ D2216-80		__ ILMO4.0 (e)
% Solids	✓ D2216-80		__ ILMO4.0 (e)
% Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Chromium VI		✓ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		__ 1110(mod) __ 9045C	
Cyanide, Total		__ 9010B	__ ILMO4.0 (e)
Cyanide, Reactive		__ Section 7.3/9014	
Halides, Extractable Organic		__ 9020B	__ EPA 600/4/84-008
Halides, Total		__ 9020B	__ EPA 600/4/84-008
EP Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		__ 1010	
Oil & Grease		__ 9071A	
Carbon, Total Organic		__ 9060	__ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	__ D240-87(mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		__ 9071	__ EPA 418.1
pH, Soil		__ 9045C	
Sulfide, Reactive		__ Section 7.3/9030B	
Sulfide		__ 9030B(mod)	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Preparation Leach		__ 1312	
Paint Filter		__ 9095A	
Other:	**Method:**		
Other:	**Method**		

L-WI-034/B-01/01

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).

b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 08/15/07

CLIENT: TNUHANFORD F07-043 H3550 LVL LOT #: 0708L679
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B1NRH2	% Solids	95.9		0.0	1.0
		Chromium VI	0.21 u	MG/KG	0.21	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 08/15/07

CLIENT: TNDHANFORD F07-043 H3550 LVL LOT #: 0708L679
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	07LVI061-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 08/15/07

CLIENT: TNUHANFORD F07-043 H3550 LVL LOT #: 0708L679
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B1NRH2	Soluble Chromium VI	3.9	0.21u	4.2	94.1	1.0
BLANK10	07LVI061-MB1	Soluble Chromium VI	4.0	0.20u	4.0	101.2	1.0
		Insoluble Chromium VI	1120	0.20u	1110	100.9	100

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 08/15/07

CLIENT: TNUHANFORD F07-043 H3550 LVL LOT #: 0708L679
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
-001REP	B1NRH2	% Solids	95.9	96.2	0.30	1.0
		Chromium VI	0.21u	0.21u	NC	1.0

0000024

NS

Lionville Laboratory Use Only

07081679

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

Client: INW HANFORD SAF F07-043

Est. Final Proj. Sampling Date:

Project#: 11343-606-001-9999-00

Project Contact/Phone#:

Lionville Laboratory Project Manager: O Johnson

QC: SW846 Del: STD TAT: 30 days

Date Rec'd: 8-1-07 Date Due: 8-31-07

		A									B				
Refrigerator #															
#/Type Container	Liquid / Solid		16								16				
Volume			120								60				
Preservatives															
ANALYSES REQUESTED →		ORGANIC							INORG						
		VOA	BNA	Pest/PCB	Herb	TPH-DRO			Metal	CN	TPH	Cr6			
		Lionville Laboratory Use Only													
			062514			ODRO						ICR6			

MATRIX CODES: S- Soil; SE- Sediment; SO- Solid; SL- Sludge; W- Water; O- Oil; A- Air; DS- Drum Solids; DL- Drum Liquids; L- EP/TCLP Leachate; WI- Wipe; X- Other; F- Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb	TPH-DRO			Metal	CN	TPH	Cr6				
001	B1NRH2	✓	✓	SOIL	7-31-07	0935		X			X					X	X				

Special Instructions:

Special Instructions: 8/1/07 1. Lab report kerosene w/ODRO.

2.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	8/1/07	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-043-093

COLLECTOR Pope/Pfister/Mokler	**COMPANY CONTACT** Trent, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ
SAMPLING LOCATION C5515, I-010	**PROJECT DESIGNATION** 216-A-2 and 216-A-21 Characterization Sampling and Analysis - Soil		**SAF NO.** F07-043
ICE CHEST NO. GRP-05-009	**FIELD LOGBOOK NO.**	**COA** 122868ES10	**METHOD OF SHIPMENT** FEDERAL EXPRESS
SHIPPED TO Lionville Laboratory Incorporated	**OFFSITE PROPERTY NO.** See PTR 19951		**BILL OF LADING/AIR BILL NO.** See PTR 19951

PRICE CODE 8N **DATA TURNAROUND** 45 Days / 45 Days

AIR QUALITY ☐

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

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 HANDLING AND/ OR STORAGE

PRESERVATION			Cool~4C	Cool~4C								
TYPE OF CONTAINER			G/P	aG								
NO. OF CONTAINER(S)			1	1								
VOLUME			60mL	120mL								
SAMPLE ANALYSIS			Chromium Hex - 7196;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS								
SAMPLE NO.	**MATRIX***	**SAMPLE DATE**	**SAMPLE TIME**									
B1NRH2	SOIL	7/31/07	0935	X	X							

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
MO-745 RLJ 3	JUL 3 1 2007 1220	M. A. Baechler	JUL 3 1 2007 1220
M. A. Baechler	JUL 3 1 2007 1220		
Ed Ep 8/1/07	0945	8-1-07	0945
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

SPECIAL INSTRUCTIONS

NOTE: ORIGINAL COC ATTACHED TO DOCUMENT CHAIN OF POSSESSION
(1)Semi-VOA - 8270B (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

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

A-6003-618(01/06)

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Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNX - HANFORD

Project/SAF/SOW/Release #:

Date: 8/1/07

LvLI Batch #: 07081679

Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill #
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	Comments:
4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4.2°	°C	Cooler # GRP-05-009
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI

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Lionville Laboratory, Inc.
DRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F07-043 H3550

DATE RECEIVED: 08/01/07 LVL LOT # :0708L679

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1NRH2	001	S	07LE0431	07/03/07	08/07/07	08/09/07
LAB QC:						
BLK	MB1	S	07LE0431	N/A	08/07/07	08/08/07
BLK	MB1 BS	S	07LE0431	N/A	08/07/07	08/08/07
BLK	MB1 BSD	S	07LE0431	N/A	08/07/07	08/08/07

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD F07-043
LVL #: 0708L679
SDG/SAF # H3550/F07-043

W.O. #: 11343-606-001-9999-00
Date Received: 08-01-2007

DIESEL RANGE ORGANICS

One (1) water sample was collected on 08-01-2007.

The sample and its associated QC samples were extracted on 08-07-2007 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 08-08,09,15-2007. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8015B. The analysis met the intent of method WTPH-D.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. The samples were extracted 21 days outside of recommended hold time. Samples were received 15 days out of hold.

2. The method blank was below the reporting limits.

3. All surrogate recoveries were within acceptance criteria.

4. The blank spike recoveries were within acceptance criteria.

5. Due to insufficient sample volume, matrix spike QC could not be performed on the sample in this data set. However, blank spike QC was performed with the sample to demonstrate that the system was in control.

6. All initial calibrations associated with this data set were within acceptance criteria.

7. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 9 pages.
r:\group\data\dro\tnu\0708-679ks1.doc

208 Welsh Pool Road • Exton, PA 19341- 1313 • (610) 280-3000 • Fax (610) 280-3041

LvLI
LIONVILLE LABORATORY INC.

8. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

8/31/07
Date

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GLOSSARY OF DATA

DATA QUALIFIERS

U	=	Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
J	=	Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
B	=	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
E	=	Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
I	=	Interference.
.I	=	Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
NS	=	Not Spiked.
SP	=	Indicates Spiked Compound.
P	=	This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
D	=	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
C	=	This flag applies to a compound that has been confirmed by GC/MS.
NPM	=	No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

DIESEL RANGE ORGANICS BY GC

Report Date: 08/31/07 10:37

RFW Batch Number: **0708L679** Client: **TNUHANFORD F07-043 H3550** Work Order: 11343606001 Page: 1

	Cust ID:	B1NRH2	BLK	BLK BS	BLK BSD
Sample Information	RFW#:	001	07LE0431-MB1	07LE0431-MB1	07LE0431-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg
	p-Terphenyl	36 %	63 %	85 %	75 %
Diesel Range Organics		3500 U	3300 U	80 %	75 %
Kerosene		3500 U	3300 U	NS	NS

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Laboratory Use Only

07081679

Custody Transfer Record/Lab Work Request

Revision

Page 1 of 1

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU HANFORD SAF# F07-043

Est. Final Proj. Sampling Data:

Project#: 11343-606-001-9999-00

Project Contact/Phone#:

Lionville Laboratory Project Manager: O Johnson

QC: SW846 Del: STD TAT: 30 days

Date Rec'd: 8-1-07 Date Due: 8-31-07

Refrigerator #			A										B			
#/Type Container	Liquid															
	Solid		16										16			
Volume			120										60			
Preservatives			—													
ANALYSES REQUESTED →		VOA	BNA	Pest/PCB	Herb	TPH DRO			Metal	CN	TPH	Cr6				
		ORGANIC							INORG							
			0625H													
						ODRO						ICR6				

Lionville Laboratory Use Only

MATRIX CODES: S- Soil; Sd- Sediment; SO- Solid; SL- Sludge; W- Water; O- Oil; A- Air; DS- Drum Solids; DL- Drum Liquids; L- EP/TCLP Leachate; Wi- Wipe; X- Other; F- Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb	TPH DRO	Metal	CN	TPH	Cr6
001	B1NRH2	✓	✓	Soil	7-3-07	0935		X			X			X	X

Special Instructions:

Special Instructions:

8/1/07 1. Lab report Kerosene W/ODRO.

8-21-07 2. Change 0625H to 0625X mm

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	8/1/07	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-043-095

COLLECTOR Pope/Pfister/Mokler	**COMPANY CONTACT** Trent, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ
SAMPLING LOCATION C5515, I-010	**PROJECT DESIGNATION** 216-A-2 and 216-A-21 Characterization Sampling and Analysis - Soil		**SAF NO.** F07-043
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 122868ES10	**METHOD OF SHIPMENT** FEDERAL EXPRESS
SHIPPED TO Lionville Laboratory Incorporated	**OFFSITE PROPERTY NO.** See PTR		**BILL OF LADING/AIR BILL NO.** See PTR

PRICE CODE BN **DATA TURNAROUND** 45 Days / 45 Days

AIR QUALITY ☐

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

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 HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C										
TYPE OF CONTAINER	G/P	aG										
NO. OF CONTAINER(S)	1	1										
VOLUME	60mL	120mL										
SAMPLE ANALYSIS	Chromium Hex - 7196;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS										

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1NRH2	SOIL	7/3/07	0935	✓	—								

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
D. Parchen Daily	7-3-07 1100	MO 745 #3 A2 Ref	7-3-07 1100
A2 Ref	7-26-07 1830	D. Parchen Daily	7-26-07 1830
D. Parchen Daily	7-26-07 1610	MO 745 Ref #3	7-26-07 1610
Ed Ep	8/1/07 0945	[illegible]	8-1-07 0945

SPECIAL INSTRUCTIONS

NOTE: ORIGINAL COC ATTACHED TO DOCUMENT CHAIN OF POSSESSION
(1)Semi-VQA - 8270B (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

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

A-6003-618(01/06)

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Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F07-043-095	PAGE 1 OF 1

COLLECTOR Pope/Pfister/Mokler	COMPANY CONTACT Trent, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 8N	DATA TURNAROUND
SAMPLING LOCATION C5515, 1-010	PROJECT DESIGNATION 216-A-2 and 216-A-21 Characterization Sampling and Analysis - Soil		SAF NO. F07-043	AIR QUALITY ☐	45 Days / 45 Days
ICE CHEST NO. GRP-05-009	FIELD LOGBOOK NO.	COA 122868ES10	METHOD OF SHIPMENT FEDERAL EXPRESS		
SHIPPED TO Lionville Laboratory Incorporated	OFFSITE PROPERTY NO. See PTR 19951		BILL OF LADING/AIR BILL NO. See PTR 19951		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

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 HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C										
TYPE OF CONTAINER	G/P	aG										
NO. OF CONTAINER(S)	1	1										
VOLUME	60mL	120mL										
SAMPLE ANALYSIS	Chromium Hex - 7196;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS										

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1NRH2	SOIL	7/3/07	0935	X	X								

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
MD-745 Kit 3	JUL 3 1 2007 1020	M. A. Baechler	JUL 3 1 2007 1020
M. A. Baechler	JUL 3 1 2007 1020		
Fed Ex	8/1/07 0745		8-1-07 0745

SPECIAL INSTRUCTIONS
NOTE: ORIGINAL COC ATTACHED TO DOCUMENT CHAIN OF POSSESSION
(1)Semi-VOA - 8270B (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

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

A-6003-618(01/06)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNR - HANFORD

Project/SAF/SOW/Release #:

Date: 8/1/07

LvLI Batch #: 07081679

Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill #
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	Comments:
4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4-2°	°C	Cooler # GRP-05-009
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date: _____

LvLI

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