0059529

SAF-B03-015
Remaining Sites Confirmation Sampling-Soil
FINAL DATA PACKAGE

E:MAIL RESULTS TO:

Ella Feist N/A
INITIAL/DATE

Mike Stankovich N/A
INITIAL/DATE

MAIL COMPLETE COPY OF DATA PACKAGE TO:

Ella Feist H9-01 BT 4/15/03
INITIAL/DATE

Mike Stankovich H9-02 BT 4/15/03
INITIAL/DATE

Jeanette Duncan BT 4/15/03
INITIAL/DATE

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

SDG H2113 SAF-B03-015

Rad only Chem only X Rad & Chem

X Complete Partial

RECEIVED
MAY 30 2003
EDMC

Sample Location/Waste Site: 126-B-3

LIONVILLE LABORATORY INC.

9 April 2003

Joan Kessner
Bechtel-Hanford, Inc.
3190 Washington Way
MSIN H9-03
Richland, WA 99352

Subject: Contract No. 630
Analytical Data Package

Dear Ms. Kessner:

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

LvLI Batch #	0303L031
SDG #	H2113
SAF #	B03-015
Date Received	3-26-03
# Samples	8
Matrix	Soil
Volatiles	
Semivolatiles	X
Pest/PCB	X
DRO/KRO/GRO	
GC Alcohols	
Metals	X
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

RECEIVED APR 2003

r:\group\pm\orlette\tnu-hanford\data\b_ltrs.doc

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RECEIVED
APR 2003

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2113

DATE RECEIVED: 03/26/03 LVL LOT # :0303L031

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00JT6	001	S	03LE0361	03/21/03	03/27/03	03/29/03
J00JT6	001 MS	S	03LE0361	03/21/03	03/27/03	03/29/03
J00JT6	001 MSD	S	03LE0361	03/21/03	03/27/03	03/29/03
J00JK0	002	S	03LE0361	03/21/03	03/27/03	03/30/03
J00JR7	003	S	03LE0361	03/21/03	03/27/03	03/30/03
J00JR8	004	S	03LE0361	03/21/03	03/27/03	03/30/03
J00JR9	005	S	03LE0361	03/24/03	03/27/03	03/30/03
J00JT3	006	S	03LE0361	03/24/03	03/27/03	03/30/03
J00JT4	007	S	03LE0361	03/24/03	03/27/03	03/30/03
J00JT5	008	S	03LE0361	03/24/03	03/27/03	03/30/03

LAB QC:

SBLKQF	MB1	S	03LE0361	N/A	03/27/03	03/29/03
SBLKQF	MB1 BS	S	03LE0361	N/A	03/27/03	03/29/03

LIONVILLE LABORATORY INC.

Client: TNU-HANFORD B03-015
LVL #: 0303L031
SDG/SAF # H2113/B03-015

W.O. #: 11343-606-001-9999-00
Date Received: 03-26-2003

SEMIVOLATILE

Eight (8) soil samples were collected on 03-21,24-2003.

The samples and their associated QC samples were extracted according to Lionville Laboratory OPs based on method 3550 on 03-27-2003 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 03-29,30-2003.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. Non-target compounds were detected in the samples.
4. Several samples required 5 to 10-fold dilutions due to the sample matrix.
5. One (1) of seventy-two (72) surrogate recoveries was outside EPA QC limits. However, EPA CLP surrogate recovery criteria were met (i.e., no more than one outlier per fraction {acid and base neutral} and no recoveries less than 10%).
6. All blank spike recoveries were within EPA QC limits.
7. All matrix spike recoveries were within EPA QC limits.
8. Internal standard area criteria were not met for several samples; however, the GC/MS instrument was inspected for possible malfunction and was judged to be functioning properly.
9. Manual integrations are performed according to OP 21-06A-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").
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.

by

J. Michael Taylor
President
Lionville Laboratory Incorporated

04-04-03
Date

som\gorup\data\bna\tnu-hanford-0303-031.doc

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 2 5 pages.

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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, HSL List

Report Date: 04/03/03 14:35

RFW Batch Number: **0303L031** Client: **TNUHANFORD B03-015 H2113** Work Order: 11343606001 Page: 1a

	Cust ID:	J00JT6		J00JT6		J00JT6		J00JK0		J00JR7		J00JR8	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		5.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	75	%	79	%	90	%	28	%	78	%	87	%
	2-Fluorobiphenyl	74	%	78	%	87	%	34	%	85	%	91	%
	Terphenyl-d14	88	%	100	%	103	%	43	%	101	%	111	%
	Phenol-d5	81	%	86	%	97	%	32	%	84	%	89	%
	2-Fluorophenol	75	%	78	%	90	%	32	%	79	%	87	%
	2,4,6-Tribromophenol	78	%	94	%	98	%	18 *	%	100	%	114	%
			fl		fl		fl		fl		fl		fl
Phenol		330	U	79	%	90	%	1800	U	350	U	360	U
bis(2-Chloroethyl)ether		330	U	330	U	330	U	1800	U	350	U	360	U
2-Chlorophenol		330	U	75	%	86	%	1800	U	350	U	360	U
1,3-Dichlorobenzene		330	U	330	U	330	U	1800	U	350	U	360	U
1,4-Dichlorobenzene		330	U	66	%	76	%	1800	U	350	U	360	U
1,2-Dichlorobenzene		330	U	330	U	330	U	1800	U	350	U	360	U
2-Methylphenol		330	U	330	U	330	U	1800	U	350	U	360	U
2,2'-oxybis(1-Chloropropane)		330	U	330	U	330	U	1800	U	350	U	360	U
3- and/or 4-Methylphenol		330	U	330	U	330	U	1800	U	350	U	360	U
N-Nitroso-di-n-propylamine		330	U	95	%	105	%	1800	U	350	U	360	U
Hexachloroethane		330	U	330	U	330	U	1800	U	350	U	360	U
Nitrobenzene		330	U	330	U	330	U	1800	U	350	U	360	U
Isophorone		330	U	330	U	330	U	1800	U	350	U	360	U
2-Nitrophenol		330	U	330	U	330	U	1800	U	350	U	360	U
2,4-Dimethylphenol		330	U	330	U	330	U	1800	U	350	U	360	U
bis(2-Chloroethoxy)methane		330	U	330	U	330	U	1800	U	350	U	360	U
2,4-Dichlorophenol		330	U	330	U	330	U	1800	U	350	U	360	U
1,2,4-Trichlorobenzene		330	U	70	%	82	%	1800	U	350	U	360	U
Naphthalene		330	U	330	U	330	U	1800	U	350	U	360	U
4-Chloroaniline		330	U	330	U	330	U	1800	U	350	U	360	U
Hexachlorobutadiene		330	U	330	U	330	U	1800	U	350	U	360	U
4-Chloro-3-methylphenol		330	U	85	%	90	%	1800	U	350	U	360	U
2-Methylnaphthalene		330	U	330	U	330	U	1800	U	21	J	360	U
Hexachlorocyclopentadiene		330	U	330	U	330	U	1800	U	350	U	360	U
2,4,6-Trichlorophenol		330	U	330	U	330	U	1800	U	350	U	360	U
2,4,5-Trichlorophenol		840	U	840	U	840	U	4400	U	880	U	890	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0303L031 Client: TNUHANFORD B03-015 H2113 Work Order: 11343606001 Page: 1b

Cust ID:	J00JT6		J00JT6		J00JT6		J00JK0		J00JR7		J00JR8	
RFW#:	001		001 MS		001 MSD		002		003		004	
2-Chloronaphthalene	330	U	330	U	330	U	1800	U	350	U	360	U
2-Nitroaniline	840	U	840	U	840	U	4400	U	880	U	890	U
Dimethylphthalate	330	U	330	U	330	U	1800	U	350	U	360	U
Acenaphthylene	330	U	330	U	330	U	1800	U	350	U	360	U
2,6-Dinitrotoluene	330	U	330	U	330	U	1800	U	350	U	360	U
3-Nitroaniline	840	U	840	U	840	U	4400	U	880	U	890	U
Acenaphthene	330	U	71	%	78	%	1800	U	350	U	360	U
2,4-Dinitrophenol	840	U	840	U	840	U	4400	U	880	U	890	U
4-Nitrophenol	840	U	84	%	97	%	4400	U	880	U	890	U
Dibenzofuran	330	U	330	U	330	U	1800	U	350	U	360	U
2,4-Dinitrotoluene	330	U	79	%	84	%	1800	U	350	U	360	U
Diethylphthalate	18	J	20	J	21	J	1800	U	350	U	360	U
4-Chlorophenyl-phenylether	330	U	330	U	330	U	1800	U	350	U	360	U
Fluorene	330	U	330	U	330	U	1800	U	350	U	360	U
4-Nitroaniline	840	U	840	U	840	U	4400	U	880	U	890	U
4,6-Dinitro-2-methylphenol	840	U	840	U	840	U	4400	U	880	U	890	U
N-Nitrosodiphenylamine (1)	330	U	330	U	330	U	1800	U	350	U	360	U
4-Bromophenyl-phenylether	330	U	330	U	330	U	1800	U	350	U	360	U
Hexachlorobenzene	330	U	330	U	330	U	1800	U	350	U	360	U
Pentachlorophenol	840	U	86	%	93	%	4400	U	880	U	890	U
Phenanthrene	330	U	330	U	330	U	1800	U	350	U	360	U
Anthracene	330	U	330	U	330	U	1800	U	350	U	360	U
Carbazole	330	U	330	U	330	U	1800	U	350	U	360	U
Di-n-butylphthalate	330		480		380		1800	U	350	U	360	U
Fluoranthene	330	U	330	U	330	U	1800	U	350	U	360	U
Pyrene	330	U	84	%	86	%	1800	U	350	U	360	U
Butylbenzylphthalate	330	U	330	U	330	U	1800	U	350	U	360	U
3,3'-Dichlorobenzidine	330	U	330	U	330	U	1800	U	350	U	360	U
Benzo(a)anthracene	330	U	330	U	330	U	1800	U	350	U	360	U
Chrysene	330	U	330	U	330	U	1800	U	350	U	360	U
bis(2-Ethylhexyl)phthalate	32	J	24	J	17	J	1800	U	64	J	47	J
Di-n-octyl phthalate	330	U	330	U	330	U	1800	U	350	U	360	U
Benzo(b)fluoranthene	330	U	330	U	330	U	1800	U	350	U	360	U
Benzo(k)fluoranthene	330	U	330	U	330	U	1800	U	350	U	360	U
Benzo(a)pyrene	330	U	330	U	330	U	1800	U	350	U	360	U
Indeno(1,2,3-cd)pyrene	330	U	330	U	330	U	1800	U	350	U	360	U
Dibenz(a,h)anthracene	330	U	330	U	330	U	1800	U	350	U	360	U
Benzo(g,h,i)perylene	330	U	330	U	330	U	1800	U	350	U	360	U

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 04/03/03 14:35

RFW Batch Number: 0303L031 Client: **TNUHANFORD B03-015 H2113** Work Order: 11343606001 Page: 2a

	Cust ID:	J00JR9		J00JT3		J00JT4		J00JT5		SBLKQF		SBLKQF BS	
Sample Information	RFW#:	005		006		007		008		03LE0361-MB1		03LE0361-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	10.0		1.00		10.0		10.0		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	64	%	78	%	60	%	59	%	78	%	77	%
	2-Fluorobiphenyl	95	%	80	%	74	%	82	%	76	%	76	%
	Terphenyl-d14	98	%	113	%	81	%	85	%	99	%	93	%
	Phenol-d5	80	%	81	%	65	%	70	%	82	%	82	%
	2-Fluorophenol	79	%	80	%	71	%	74	%	77	%	77	%
	2,4,6-Tribromophenol	71	%	94	%	56	%	68	%	81	%	93	%
		fl		fl		fl		fl		fl		fl	
Phenol		3700	U	370	U	3700	U	3700	U	330	U	77	%
bis(2-Chloroethyl)ether		3700	U	370	U	3700	U	3700	U	330	U	330	U
2-Chlorophenol		3700	U	370	U	3700	U	3700	U	330	U	75	%
1,3-Dichlorobenzene		3700	U	370	U	3700	U	3700	U	330	U	330	U
1,4-Dichlorobenzene		3700	U	370	U	3700	U	3700	U	330	U	67	%
1,2-Dichlorobenzene		3700	U	370	U	3700	U	3700	U	330	U	330	U
2-Methylphenol		3700	U	370	U	3700	U	3700	U	330	U	330	U
2,2'-oxybis(1-Chloropropane)		3700	U	370	U	3700	U	3700	U	330	U	330	U
3- and/or 4-Methylphenol		3700	U	370	U	3700	U	3700	U	330	U	330	U
N-Nitroso-di-n-propylamine		3700	U	370	U	3700	U	3700	U	330	U	98	%
Hexachloroethane		3700	U	370	U	3700	U	3700	U	330	U	330	U
Nitrobenzene		3700	U	370	U	3700	U	3700	U	330	U	330	U
Isophorone		3700	U	370	U	3700	U	3700	U	330	U	330	U
2-Nitrophenol		3700	U	370	U	3700	U	3700	U	330	U	330	U
2,4-Dimethylphenol		3700	U	370	U	3700	U	3700	U	330	U	330	U
bis(2-Chloroethoxy)methane		3700	U	370	U	3700	U	3700	U	330	U	330	U
2,4-Dichlorophenol		3700	U	370	U	3700	U	3700	U	330	U	330	U
1,2,4-Trichlorobenzene		3700	U	370	U	3700	U	3700	U	330	U	72	%
Naphthalene		3700	U	370	U	3700	U	3700	U	330	U	330	U
4-Chloroaniline		3700	U	370	U	3700	U	3700	U	330	U	330	U
Hexachlorobutadiene		3700	U	370	U	3700	U	3700	U	330	U	330	U
4-Chloro-3-methylphenol		3700	U	370	U	3700	U	3700	U	330	U	80	%
2-Methylnaphthalene		3700	U	370	U	3700	U	3700	U	330	U	330	U
Hexachlorocyclopentadiene		3700	U	370	U	3700	U	3700	U	330	U	330	U
2,4,6-Trichlorophenol		3700	U	370	U	3700	U	3700	U	330	U	330	U
2,4,5-Trichlorophenol		9200	U	940	U	9200	U	9200	U	840	U	830	U

*= Outside of EPA CLP QC limits.

Cust ID:	J00JR9		J00JT3		J00JT4		J00JT5		SBLKQF		SBLKQF BS	
RFW#:	005		006		007		008		03LE0361-MB1		03LE0361-MB1	
2-Chloronaphthalene	3700	U	370	U	3700	U	3700	U	330	U	330	U
2-Nitroaniline	9200	U	940	U	9200	U	9200	U	840	U	830	U
Dimethylphthalate	3700	U	370	U	3700	U	3700	U	330	U	330	U
Acenaphthylene	3700	U	370	U	3700	U	3700	U	330	U	330	U
2,6-Dinitrotoluene	3700	U	370	U	3700	U	3700	U	330	U	330	U
3-Nitroaniline	9200	U	940	U	9200	U	9200	U	840	U	830	U
Acenaphthene	3700	U	370	U	3700	U	3700	U	330	U	69	%
2,4-Dinitrophenol	9200	U	940	U	9200	U	9200	U	840	U	830	U
4-Nitrophenol	9200	U	940	U	9200	U	9200	U	840	U	80	%
Dibenzofuran	3700	U	370	U	3700	U	3700	U	330	U	330	U
2,4-Dinitrotoluene	3700	U	370	U	3700	U	3700	U	330	U	74	%
Diethylphthalate	3700	U	370	U	3700	U	3700	U	330	U	330	U
4-Chlorophenyl-phenylether	3700	U	370	U	3700	U	3700	U	330	U	330	U
Fluorene	3700	U	370	U	3700	U	3700	U	330	U	330	U
4-Nitroaniline	9200	U	940	U	9200	U	9200	U	840	U	830	U
4,6-Dinitro-2-methylphenol	9200	U	940	U	9200	U	9200	U	840	U	830	U
N-Nitrosodiphenylamine (1)	3700	U	370	U	3700	U	3700	U	330	U	330	U
4-Bromophenyl-phenylether	3700	U	370	U	3700	U	3700	U	330	U	330	U
Hexachlorobenzene	3700	U	370	U	3700	U	3700	U	330	U	330	U
Pentachlorophenol	9200	U	940	U	9200	U	9200	U	840	U	86	%
Phenanthrene	910	J	370	U	3700	U	3700	U	330	U	330	U
Anthracene	3700	U	370	U	3700	U	3700	U	330	U	330	U
Carbazole	3700	U	370	U	3700	U	3700	U	330	U	330	U
Di-n-butylphthalate	600	J	370	U	3700	U	3700	U	330	U	330	U
Fluoranthene	880	J	370	U	3700	U	3700	U	330	U	330	U
Pyrene	1000	J	370	U	3700	U	3700	U	330	U	77	%
Butylbenzylphthalate	3700	U	370	U	3700	U	3700	U	330	U	330	U
3,3'-Dichlorobenzidine	3700	U	370	U	3700	U	3700	U	330	U	330	U
Benzo(a)anthracene	380	J	370	U	3700	U	3700	U	330	U	330	U
Chrysene	560	J	370	U	3700	U	3700	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	340	J	49	J	3700	U	3700	U	330	U	330	U
Di-n-octyl phthalate	3700	U	370	U	3700	U	3700	U	330	U	330	U
Benzo(b)fluoranthene	280	J	370	U	3700	U	3700	U	330	U	330	U
Benzo(k)fluoranthene	290	J	370	U	3700	U	3700	U	330	U	330	U
Benzo(a)pyrene	370	J	370	U	3700	U	3700	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	250	J	370	U	3700	U	3700	U	330	U	330	U
Dibenz(a,h)anthracene	3700	U	370	U	3700	U	3700	U	330	U	330	U
Benzo(g,h,i)perylene	220	J	370	U	3700	U	3700	U	330	U	330	U

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00JT6

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

Client: TNUHANFORD B03-015 H2113

Matrix: (soil/water) SOIL

Lab Sample ID: 0303L031-001

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

Lab File ID: A032830

Level: (low/med) LOW

Date Received: 03/26/03

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 03/27/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/29/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.877	70	J
2.	ALDOL CONDENSATE	5.962	200	JAB
3.	ALDOL CONDENSATE	6.425	5000	JAB
4.	ALDOL CONDENSATE	7.940	100	JAB
5.	PHTHALATE	20.761	400	J
6.	UNKNOWN	22.237	70	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00JK0

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

Client: TNUHANFORD B03-015 H2113

Matrix: (soil/water) SOIL

Lab Sample ID: 0303L031-002

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

Lab File ID: A033003

Level: (low/med) LOW

Date Received: 03/26/03

% Moisture: 5 decanted: (Y/N)__

Date Extracted: 03/27/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/30/03

Injection Volume: 2.0(uL)

Dilution Factor: 5.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.405	10000	JAB

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00JR7

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

Client: TNUHANFORD B03-015 H2113

Matrix: (soil/water) SOIL

Lab Sample ID: 0303L031-003

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

Lab File ID: A033004

Level: (low/med) LOW

Date Received: 03/26/03

% Moisture: 5 decanted: (Y/N)__

Date Extracted: 03/27/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/30/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 10

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.941	200	JAB
2.	ALDOL CONDENSATE	6.417	4000	JAB
3.	C5-ALKYLNAPHTHALENE	19.414	200	J
4.	ALKANE	23.698	200	J
5.	ALKANE	24.375	200	J
6.	ALKANE	25.153	200	J
7.	ALKANE	26.066	300	J
8.	ALKANE	27.140	200	J
9.	ALKANE	28.424	300	J
10.	UNKNOWN	40.772	300	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00JR8

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

Client: TNUHANFORD B03-015 H2113

Matrix: (soil/water) SOIL

Lab Sample ID: 0303L031-004

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

Lab File ID: A033005

Level: (low/med) LOW

Date Received: 03/26/03

% Moisture: 7 decanted: (Y/N)__

Date Extracted: 03/27/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/30/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 10

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.948	200	JAB
2.	ALDOL CONDENSATE	6.418	8000	JAB
3.	ALDOL CONDENSATE	7.940	100	JAB
4.	PHTHALATE	20.766	200	J
5.	ALKANE	23.698	100	J
6.	ALKANE	24.375	100	J
7.	ALKANE	25.153	100	J
8.	ALKANE	26.066	100	J
9.	ALKANE	27.145	90	J
10.	ALKANE	28.247	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00JR9

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

Client: TNUHANFORD B03-015 H2113

Matrix: (soil/water) SOIL

Lab Sample ID: 0303L031-005

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

Lab File ID: A033006

Level: (low/med) LOW

Date Received: 03/26/03

% Moisture: 9 decanted: (Y/N)__

Date Extracted: 03/27/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/30/03

Injection Volume: 2.0(uL)

Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.395	30000	JAB
2.	ALKANE	23.701	700	J
3.	ALKANE	24.379	900	J
4.	ALKANE	25.152	900	J
5.	ALKANE	26.069	900	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00JT3

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

Client: TNUHANFORD B03-015 H2113

Matrix: (soil/water) SOIL

Lab Sample ID: 0303L031-006

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

Lab File ID: A033007

Level: (low/med) LOW

Date Received: 03/26/03

% Moisture: 11 decanted: (Y/N)__

Date Extracted: 03/27/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/30/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.948	200	JAB
2.	ALDOL CONDENSATE	6.425	5000	JAB
3.	ALDOL CONDENSATE	7.941	100	JAB
4.	ALKANE	28.429	90	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00JT4

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

Client: TNUHANFORD B03-015 H2113

Matrix: (soil/water) SOIL

Lab Sample ID: 0303L031-007

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

Lab File ID: A033008

Level: (low/med) LOW

Date Received: 03/26/03

% Moisture: 9 decanted: (Y/N)__

Date Extracted: 03/27/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/30/03

Injection Volume: 2.0(uL)

Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.402	30000	JAB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00JT5

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

Client: TNUHANFORD B03-015 H2113

Matrix: (soil/water) SOIL

Lab Sample ID: 0303L031-008

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

Lab File ID: A033009

Level: (low/med) LOW

Date Received: 03/26/03

% Moisture: 9 decanted: (Y/N)__

Date Extracted: 03/27/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/30/03

Injection Volume: 2.0(uL)

Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.402	30000	JAB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKQF

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

Client: TNUHANFORD B03-015 H2113

Matrix: (soil/water) SOIL

Lab Sample ID: 03LE0361-MB1

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

Lab File ID: A032824

Level: (low/med) LOW

Date Received: 03/27/03

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

Date Extracted: 03/27/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/29/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.968	200	JA
2.	ALDOL CONDENSATE	6.424	5000	JA
3.	ALDOL CONDENSATE	7.939	100	JA

Lionville Laboratory Use Only
03036031

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B03-015

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPEC Del: STD TAT: 7 days

Date Rec'd: 3-26-03 Date Due: 4-2-03

Refrigerator #		A	B	C	D
#/Type Container	Liquid				
	Solid	1aq	1aq	1aq	1aq
Volume	Liquid				
	Solid	120	120	60	60
Preservatives		—	—	—	—

ANALYSES REQUESTED →

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	ORGANIC VOA	BNA (0625H)	Pest/PCB (8080H OPCB)	Herb	INORG Metal (2)	CN	TPH (IPHC)
001	J00JT6			S	3-21-03	0800		X			X		
002	J00JK0					0948		X	X		X		X
003	J00JR7					1320		X	X		X		X
004	J00JR8					1500		X	X		X		X
005	J00JR9				3-24-03	0850		X	X		X		X
006	J00JT3					0925		X	X		X		X
007	J00JT4					1010		X	X		X		X
008	J00JT5					1010		X	X		X		X

Lionville Laboratory Use Only

Special Instructions: SAF # B03-015

Run Matrix QC

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were: ✓
1) Shipped ___ or Hand Delivered ___
Airbill # 7907 3352 1456
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. 1.8 °C

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3-26-03	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-10	Page 1 of 1

Collector Doug Bowers	Company Contact Renee Neilson	Telephone No. 521-2090	Project Coordinator KESSNER, JH
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 126-B-3		SAF No. B03-015
Ice Chest No. ERC 96 039	Field Logbook No. EL 1577	COA C17HXB671C	Method of Shipment Fed Ex
Shipped To TMA/RECRA	Offsite Property No. A030170		Bill of Lading/Air Bill No. SEE OSPC

Price Code 8B | Data Turnaround 7 Days | Air Quality ☐

POSSIBLE SAMPLE HAZARDS/REMARKS
B03-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1000mL	60mL	60mL	120mL	120mL	60mL	60mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14; Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			

Sample No.	Matrix*	Sample Date	Sample Time											
J00JT3	SOIL													
J00JT4	SOIL													
J00JT5	SOIL													
J00JT6	SOIL	3-21-03	~~0800~~ 0800	X		X		X	X					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers	3-21-03/1730	ASF 3C 3725	3-21-03/1730
ASF 3C 3725	3-25-03/0900	Doug Bowers	3-25-03/0900
Doug Bowers	3-25-03/0900	Fed Ex	
Fed Ex	3-26-03 0945	[illegible]	3-26-03 0945

SPECIAL INSTRUCTIONS

(1) Americium-241; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

~~Area 3 soil~~ B03-20-03

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-015-12	Page 1 of 1
Collector: Doug Bowers	Company Contact: Renee Neilson	Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B; Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3		SAF No.: B03-015	Air Quality ☐
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577	COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: TMA/RECRA	Offsite Property No.: A030170		Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS: [illegible]

Special Handling and/or Storage: [illegible] 3-21-03

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	~~G/P~~ G	G/P	~~G/P~~ G	G	G/P	aG	G/P	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	~~1500g~~ 1000ml	20g	~~10g~~ 60ml	10g	125g	~~120g~~ 120ml	100g	~~125g~~ 120ml	20g	~~40g~~ 60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14; Tritium - H3	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	Pesticides - 8081; PCBs - 8082	See item (4) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1

Sample No.	Matrix *	Sample Date	Sample Time										
~~J00JV0~~ J00JK0	SOIL	3-21-03	0948	X		X			X		X		X
[illegible] 3-20-03													
				~~415~~ 3-24-03									

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Sign/Print Names	Date/Time
Relinquished By/Removed From	J049 Doug Bowers	3-21-03/1730	Received By/Stored In	Q3728 RoF 3C	3-21-03/1730
Relinquished By/Removed From	RoF 3C 3728	3-25-03/0900	Received By/Stored In	Doug Bowers	3-25-03/0900
Relinquished By/Removed From	J049 Doug Bowers	3-25-03/0900	Received By/Stored In	FedEx	
Relinquished By/Removed From	Fed Ex	3-26-03 0945	Received By/Stored In	[illegible]	3-26-03 0945
Relinquished By/Removed From			Received By/Stored In		
Relinquished By/Removed From			Received By/Stored In		

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90; Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}~~

(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

(3) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470

(4) IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}

Area 1 Soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-09	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson — Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B — Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3	SAF No.: B03-015	Air Quality ☐
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577 — COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: TMA/RECRA	Offsite Property No.: A030170	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS: N 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1000mL	60mL N 3-25-03	60mL	120mL	120mL	60mL	60mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Carbon-14,~~ Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			
Sample No. / Matrix * / Sample Date / Sample Time										
J00JR7 / SOIL / 3-21-03 / 1320	X	X	X	X	X		X			
J00JR8 / SOIL / 3-21-03 / 1500	X	X	X	X	X		X			
~~J00JR9 / SOIL~~ N 3-21-03										

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Doug Bowers Doug Bowers	3-21-03 / 1730	Ref 3C 3728	3-21-03 / 1730
Relinquished By/Removed From	Ref 3C 3728	3-25-03 / 0900	Doug Bowers Doug Bowers	3-25-03 / 0900
Relinquished By/Removed From	Doug Bowers Doug Bowers	3-25-03 / 0900	Fed EX	
Relinquished By/Removed From	Fed Ex	3-26-03 0945	[illegible]	3-26-03 0945
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63, Isotopic Plutonium {Plutonium-238, Plutonium-239/240}, Strontium-89,90 - Total Sr, Technetium-99;~~ Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 2 Soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-09	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson — Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B — Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3	SAF No.: B03-015	Air Quality ☐
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577 — COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: TMA/RECRA	Offsite Property No.: A030170 — DJB 3-25-03	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
DJB 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)			1	1	1	1	1			
Volume	1000mL	60mL DJB 3-25-03	60mL	120mL	120mL	60mL	60mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Gross-Pu~~, Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			

Sample No.	Matrix *	Sample Date	Sample Time										
~~J00JR7~~	~~SOIL~~ DJB 3-25-03												
~~J00JR8~~	~~SOIL~~ DJB												
J00JR9	SOIL	3-24-03	0850	X	X	X	X	X		X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Doug Doug Bowers (Bowers)	3/24/03 1330	Received By/Stored In: Ref 3C 3728	3-24-03 1330
Relinquished By/Removed From: Ref 3C 3728	3-25-03/0900	Received By/Stored In: Doug Bowers (Doug Bowers)	3-25-03/0900
Relinquished By/Removed From: Doug Doug Bowers (Bowers)	3-25-03/0900	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: Fed Ex	3-26-03 0945	Received By/Stored In: D J Muller	3 26 03 0945
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS DJB 3-25-03

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 - Total Sr; Technetium-99~~; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 2 Soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-10	Page 1 of 1

Collector Doug Bowers	Company Contact Renee Neilson	Telephone No. 521-2090	Project Coordinator KESSNER, JH
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 126-B-3		SAF No. B03-015
Ice Chest No. ERC 96 .039	Field Logbook No. EL 1577	COA C17HXB671C	Method of Shipment Fed Ex
Shipped To TMA/RECRA	Offsite Property No. A030170		Bill of Lading/Air Bill No. SEE OSPC

Price Code 8B

Data Turnaround 7 Days

Air Quality ☐

POSSIBLE SAMPLE HAZARDS/REMARKS
RADIO 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)		1	1	1	1	1	1			
Volume	1000mL	60mL RADIO 3-25-03	60mL	120mL	120mL	60mL	60mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Carbon-14;~~ Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			

Sample No.	Matrix *	Sample Date	Sample Time										
J00JT3	SOIL	3-24-03	0925	X	X	X	X	X		X			
J00JT4	SOIL	3-24-03	1010	X	X	X	X	X		X			
J00JT5	SOIL	3-24-03	1010	X	X	X	X	X		X			
~~J00JT6~~	~~SOIL~~												
RADIO 3-20-03													

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From Doug Bowers	Doug Bowers	3-24-03/1130	Rot 3C 3728	3-24-03/1130
Relinquished By/Removed From Rot 3C 3728		3-25-03 0900	Received By/Stored In Doug Bowers / Fed Ex / Doug Bowers	Date/Time 0900 3-25-03
Relinquished By/Removed From Doug Bowers	Doug Bowers	3-25-03/0900	Received By/Stored In Fed Ex	
Relinquished By/Removed From Fed Ex		3-26-03 0945	Received By/Stored In D. Smith	3-26-03 0945
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 - Total Sr; Technetium-99~~; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 3 Soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 3-26-03

SAF# / SOW# / Release #: B03-015

Laboratory SDG #: 03031031

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☑ N/A	☐ see Comment #
10. Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☐ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☑ N/A	☐ see Comment #
12. coc signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☑ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERE 96-039 / 1.8°C

Laboratory Sample Custodian: D. Smith

Laboratory Project Manager:

25

RECEIVED
APR 2003

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2113

DATE RECEIVED: 03/26/03 LVL LOT # :0303L031

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00JK0	002	S	03LE0362	03/21/03	03/27/03	03/30/03
J00JK0	002 MS	S	03LE0362	03/21/03	03/27/03	03/30/03
J00JK0	002 MSD	S	03LE0362	03/21/03	03/27/03	03/30/03
J00JR7	003	S	03LE0362	03/21/03	03/27/03	04/01/03
J00JR8	004	S	03LE0362	03/21/03	03/27/03	04/02/03
J00JR9	005	S	03LE0362	03/24/03	03/27/03	04/02/03
J00JT3	006	S	03LE0362	03/24/03	03/27/03	04/01/03
J00JT4	007	S	03LE0362	03/24/03	03/27/03	04/02/03
J00JT5	008	S	03LE0362	03/24/03	03/27/03	04/02/03

LAB QC:

PBLKPM	MB1	S	03LE0362	N/A	03/27/03	03/29/03
PBLKPM	MB1 BS	S	03LE0362	N/A	03/27/03	03/29/03

4/3/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B03-015
LVL #: 0303L031
SDG/SAF # H2113/B03-015

W.O. #: 11343-606-001-9999-00
Date Received: 03-26-2003

PESTICIDE

Seven (7) soil samples were collected on 03-21,24-2003.

The samples and their associated QC samples were extracted on 03-27-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 03-29,30-2003 and 04-01,02-2003. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8081A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.

2. The required holding time for extraction and analysis has been met.

3. The samples and their associated QC samples received a Florisil and Sulfur cleanup.

4. The method blank was below the reporting limits for all target compounds.

5. Nine (9) of twenty-two (22) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

6. Four (4) of six (6) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

7. All matrix spike recoveries were within acceptance criteria.

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

9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria with the exception of target compounds analyzed on 04-02-2003 on the RTX-CLP2 column. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

   The data reflected an increase in instrument response, so the ability to identify the target compounds was not impaired.

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

4/7/03
Date

som\r:\group\data\pest\tnu hanford\0303-031.pes

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 1 5 pages.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 03GC085

Initiator: Bryce Santoro
Date: 4/2/03
Client: TNV

Batch: 0303L030, 031
Samples: see below
Method: SW846/MCAWW/CLP/

Parameter: 0608H
Matrix: Soil
Prep Batch: 03E00362

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
__ 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)

BS 4/2/03

(1) High surrogate recoveries in sample 031-002, 002 MS, Blank and BS. -no hits in samples with high surrogates.

(2) High BS recoveries (see attached). Batch 031 matrix QC is good.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description: Narrate + Report

__ 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: [signature] 4/2/03

__ 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: [signature] 4/3/03 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
✓	X Project Mgr: Stone/Johnson/Haslett	__	__ GC/LC: Kiger
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rychlak/Layman
__	X QA (file)	__	__ Log-in: Melnic
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 03GC088

Initiator: Bryce Sutton
Date: 4/3/03
Client: TNV

Batch: 03031031
Samples: 4,5,7,8
Method: ~~SW846~~/MCAWW/CLP/

Parameter: 8260H
Matrix: Soil
Prep Batch: 03LE0362

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
__ 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)

(1) CCV prior to samples 004, 005, 007, 008 was increased on the RTX-CLP2 column, OK on RTX-35. All results taken from RTX-35 column

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description: Narrative

__ 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: 4/3/03

__ 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: 4/3/03 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
✓	X Project Mgr: Stone/Johnson/Haslett	__	__ GC/LC: Kiger
__	X Technical Mgr: ~~Wesson/Daniels~~	__	__ MS: Rychlak/Layman
__	X QA (file)	__	__ Log-in: Melnic
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

GLOSSARY OF PESTICIDE/PCB 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.

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.

SP = Indicates Spiked Compound.

GLOSSARY OF PESTICIDE/PCB DATA

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.

R:/SHARE/HPLC/PESTICIDE/PCBGLOS

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 04/03/03 10:39

RFW Batch Number: **0303L031** Client: **TNUHANFORD B03-015 H2113** Work Order: 11343606001 Page: 1

	Cust ID:	J00JK0	J00JK0	J00JK0	J00JR7	J00JR8	J00JR9
Sample Information	RFW#:	002	002 MS	002 MSD	003	004	005
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	135 * %	120 * %	75 %	80 %	95 %	70 %
	Decachlorobiphenyl	150 * %	140 * %	100 %	95 %	135 * %	145 * %
		fl	fl	fl	fl	fl	fl
Alpha-BHC		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Beta-BHC		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Delta-BHC		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
gamma-BHC (Lindane)		1.8 U	68 %	56 %	1.8 U	1.8 U	1.8 U
Heptachlor		1.8 U	116 %	74 %	1.8 U	1.8 U	1.8 U
Aldrin		1.8 U	92 %	58 %	1.8 U	1.8 U	1.8 U
Heptachlor epoxide		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Endosulfan I		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Dieldrin		3.5 U	114 %	73 %	3.5 U	3.6 U	3.7 U
4,4'-DDE		3.5 U	3.5 U	3.5 U	16	3.6 U	25
Endrin		3.5 U	124 %	79 %	3.5 U	3.6 U	3.7 U
Endosulfan II		3.5 U	3.5 U	3.5 U	3.5 U	3.6 U	8.8
4,4'-DDD		3.5 U	3.5 U	3.5 U	3.5 U	3.6 U	3.7 U
Endosulfan sulfate		3.5 U	3.5 U	3.5 U	3.5 U	3.6 U	15
4,4'-DDT		3.5 U	91 %	66 %	3.5 U	3.6 U	12
Methoxychlor		18 U	18 U	18 U	18 U	18 U	18 U
Endrin ketone		3.5 U	3.5 U	3.5 U	3.5 U	3.6 U	3.7 U
Endrin aldehyde		3.5 U	3.5 U	3.5 U	3.5 U	3.6 U	3.7 U
alpha-Chlordane		1.8 U	1.8 U	1.8 U	2.5	1.8 U	4.0
gamma-Chlordane		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Toxaphene		180 U	180 U	180 U	180 U	180 U	180 U

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, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 04/03/03 10:39

RFW Batch Number: **0303L031** Client: **TNUHANFORD B03-015 H2113** Work Order: 11343606001 Page: 2

	Cust ID:	J00JT3	J00JT4	J00JT5	PBLKPM	PBLKPM BS
Sample Information	RFW#:	006	007	008	03LE0362-MB1	03LE0362-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:	Tetrachloro-m-xylene	85 %	65 %	55 %	105 %	130 * %
	Decachlorobiphenyl	110 %	105 %	70 %	140 * %	170 * %
Alpha-BHC		1.9 U	1.8 U	1.8 U	1.7 U	1.7 U
Beta-BHC		1.9 U	1.8 U	1.8 U	1.7 U	1.7 U
Delta-BHC		1.9 U	1.8 U	1.8 U	1.7 U	1.7 U
gamma-BHC (Lindane)		1.9 U	1.8 U	1.8 U	1.7 U	104 %
Heptachlor		1.9 U	1.8 U	1.8 U	1.7 U	130 * %
Aldrin		1.9 U	1.8 U	1.8 U	1.7 U	106 %
Heptachlor epoxide		1.9 U	1.8 U	1.8 U	1.7 U	1.7 U
Endosulfan I		1.9 U	1.8 U	1.8 U	1.7 U	1.7 U
Dieldrin		3.7 U	3.7 U	3.7 U	3.3 U	126 * %
4,4'-DDE		3.7 U	7.7	7.7	3.3 U	3.3 U
Endrin		3.7 U	3.7 U	3.7 U	3.3 U	138 * %
Endosulfan II		3.7 U	3.7 U	3.7 U	3.3 U	3.3 U
4,4'-DDD		3.7 U	3.7 U	3.7 U	3.3 U	3.3 U
Endosulfan sulfate		3.7 U	3.7 U	3.7 U	3.3 U	3.3 U
4,4'-DDT		3.7 U	3.7 U	3.7 U	3.3 U	125 * %
Methoxychlor		19 U	18 U	18 U	17 U	17 U
Endrin ketone		3.7 U	3.7 U	3.7 U	3.3 U	3.3 U
Endrin aldehyde		3.7 U	3.7 U	3.7 U	3.3 U	3.3 U
alpha-Chlordane		1.9 U	1.8 U	1.8 U	1.7 U	1.7 U
gamma-Chlordane		1.9 U	1.8 U	1.8 U	1.7 U	1.7 U
Toxaphene		190 U	180 U	180 U	170 U	170 U

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

03036031

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI LIONVILLE LABORATORY INC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B03-015

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPCC Del: STD TAT: 7 days

Date Rec'd: 3-26-03 Date Due: 4-2-03

		A	B	C	D
Refrigerator #		6	6	6	6
#/Type Container	Liquid				
	Solid	1aq	1aq	1aq	1aq
Volume	Liquid				
	Solid	120	120	60	60
Preservatives		—	—	—	—

ANALYSES REQUESTED →

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA	BNA (625 H)	Pest/PCB (608 H OPCB)	Herb	INORG Metal (2) (MRCRTO)	CN	TPH (IPHC)
001	J00JT6			S	3-21-03	0800		X			X		
002	J00JK0					0948		X	X		X		X
003	J00JR7					1320		X	X		X		X
004	J00JR8					1500		X	X		X		X
005	J00JR9				3-24-03	0850		X	X		X		X
006	J00JT3					0925		X	X		X		X
007	J00JT4					1010		X	X		X		X
008	J00JT5					1010		X	X		X		X

Lionville Laboratory Use Only

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

Special Instructions: SAF # B03-015

Run Matrix QC

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were: ✓
1) Shipped ___ or Hand Delivered ___
Airbill # 7907 3352 1456
2) Ambient or Chilled
3) Received in Good Condition (Y) or N
4) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was:
1) Present on Outer Package (Y) or N
2) Unbroken on Outer Package (Y) or N
3) Present on Sample (Y) or N
4) Unbroken on Sample (Y) or N
COC Record Present Upon Sample Rec't (Y) or N
Cooler Temp. 1.8 °C

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3-26-03	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

Bechtel Hanford Inc. | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | B03-015-10

Collector Doug Bowers	**Company Contact** Renee Neilson	**Telephone No.** 521-2090	**Project Coordinator** KESSNER, JH
Price Code 8B	**Data Turnaround** 7 Days	**Air Quality** ☐	
Project Designation Remaining Sites Confirmation Sampling-Soil	**Sampling Location** 126-B-3		**SAF No.** B03-015
Ice Chest No. ERC 96 039	**Field Logbook No.** EL 1577	**COA** C17HXB671C	**Method of Shipment** Fed Ex
Shipped To ~~TMA~~/RECRA	**Offsite Property No.** A030170		**Bill of Lading/Air Bill No.** 988 03PC

POSSIBLE SAMPLE HAZARDS/REMARKS
B203-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1000mL	60mL	60mL	120mL	120mL	60mL	60mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14; Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			

Sample No.	Matrix*	Sample Date	Sample Time											
J00JT3	SOIL													
J00JT4	SOIL													
J00JT5	SOIL													
J00JT6	SOIL	3-21-03	0800	X		X		X	X					

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Bowers	3-21-03/1730	RCF 3C 3728	3-21-03/1730
RCF 3C 3728	3-25-03/0800	Doug Bowers	3-25-03/0800
Doug Bowers Bowers	3-25-03/0800	Fed Ex	
Fed Ex	3-26-03 0945	D. Smith	3-26-03 0945

SPECIAL INSTRUCTIONS

(1) Americium-241; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

~~Area 3 soil~~ B2B 3-20-03

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-015-12	Page 1 of 1
Collector: Doug Bowers	Company Contact: Renee Neilson	Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B; Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3		SAF No.: B03-015	Air Quality ☐
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577	COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: TMA/RECRA	Offsite Property No.: A030170		Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS: DJB 3-21-03

Special Handling and/or Storage: DJB 3-21-03

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	~~G/P~~ aG	G/P	~~G/P~~ aG	G	G/P	aG	G/P	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	~~150g~~ 100ml	20g	~~10g~~ 60ml	10g	125g	~~120g~~ 120ml	100g	~~125g~~ 120ml	20g	~~40g~~ 60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14; Tritium - H3	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	Pesticides - 8081; PCBs - 8082	See item (4) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1

Sample No.	Matrix *	Sample Date	Sample Time									
~~J00JV0~~ J00JK0	SOIL	3-21-03	0948	X		X			X		X	X
DJB 3-20-03												
				DJB 3-21-03								

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Sign/Print Names	Date/Time
Relinquished By/Removed From	Doug Bowers	3-21-03/1730	Received By/Stored In	Doug Bowers	3-21-03/1730
Relinquished By/Removed From	Doug Bowers	3-25-03/0900	Received By/Stored In	Doug Bowers	3-25-03/0900
Relinquished By/Removed From	Doug Bowers	3-25-03/0900	Received By/Stored In	Fed Ex	
Relinquished By/Removed From	Fed Ex	3-26-03 0945	Received By/Stored In	D Smith	3-26-03 0945
Relinquished By/Removed From			Received By/Stored In		
Relinquished By/Removed From			Received By/Stored In		

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 - Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}~~

(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

(3) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470

(4) IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}

Area 1 Soil

Matrix *: S=Soil; SE=Sediment; SO=Solid; SI=Sludge; W = Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; WI=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc. | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | B03-015-07

Collector: Doug Bowers	Company Contact: Renee Neilson — Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B — Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3	SAF No.: B03-015	Air Quality ☐
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577 — COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: TMA/RECRA	Offsite Property No.: A030170 — 3-25-03	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1	1				
Volume	1000mL	60mL	60mL	120mL	120mL	60mL	60mL				
		3-25-03									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Gamma-ray~~, Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1				
Sample No.	Matrix *	Sample Date	Sample Time								
J00JR7	SOIL	3-21-03	1320	X	X	X	X	X		X	
J00JR8	SOIL	3-21-03	1500	X	X	X	X	X		X	
~~J00JR9~~	~~SOIL~~	3-21-03									

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Doug Bowers	3-21-03/1730	Ref 3C 3728	3-21-03/1730
Relinquished By/Removed From	Ref 3C 3728	3-25-03/0900	Doug Bowers	3-25-03/0900
Relinquished By/Removed From	Doug Bowers	3-25-03/0900	Fed Ex	
Relinquished By/Removed From	Fed Ex	3-26-03 0945	[illegible]	3-26-03 0945
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63, Isotopic Plutonium {Plutonium-238, Plutonium-239/240}, Strontium-89,90 - Total Sr, Technetium-99,~~ Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 2 soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-09	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson — Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B — Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3	SAF No.: B03-015	Air Quality ☐
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577 — COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: TMA/RECRA	Offsite Property No.: A030170 — DJB 3-25-03	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
DJB 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)			1	1	1	1	1			
Volume	1000mL	60mL DJB 3-25-03	60mL	120mL	120mL	60mL	60mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Gamma-ray~~, Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			

Sample No.	Matrix *	Sample Date	Sample Time									
~~J00JR7~~	~~SOIL~~											
~~J00JR8~~	~~SOIL~~											
J00JR9	SOIL	3-24-03	0850	X	X	X	X	X		X		

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Doug Bowers (Bowers)	3/24/03 1330	Ref 3C 3728	3-24-03 1330
Relinquished By/Removed From	Ref 3C 3728	3-25-03/0900	Received By/Stored In (Doug Bowers) Doug Bowers	3-25-03/0900
Relinquished By/Removed From	Doug Bowers (Bowers)	3-25-03/0900	Received By/Stored In Fed Ex	
Relinquished By/Removed From	Fed Ex	3-26-03 0945	Received By/Stored In	3 26 03 0945
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS DJB 3-25-03

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-239, Plutonium-239/240}; Strontium-89,90 - Total Sr; Technetium-99~~; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 2 Soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-10	Page 1 of 1

Collector Doug Bowers	Company Contact Renee Neilson	Telephone No. 521-2090	Project Coordinator KESSNER, JH
Price Code 8B	Data Turnaround 7 Days	Air Quality ☐	
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 126-B-3	SAF No. B03-015	
Ice Chest No. ERC 96 .039	Field Logbook No. EL 1577	COA C17HXB671C	Method of Shipment Fed Ex
Shipped To TMA/RECRA	Offsite Property No. A030170	Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
AD 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)		1	1	1	1	1	1			
Volume	1000mL	60mL AD 3-25-03	60mL	120mL	120mL	60mL	60mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Gamma-14;~~ Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			
Sample No. / Matrix * / Sample Date / Sample Time										
J00JT3 / SOIL / 3-24-03 / 0925	X	X	X	X	X		X			
J00JT4 / SOIL / 3-24-03 / 1010	X	X	X	X	X		X			
J00JT5 / SOIL / 3-24-03 / 1010	X	X	X	X	X		X			
~~J00JT6~~ / SOIL / AD 3-25-03										

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From Doug Bowers	Doug Bowers	3-24-03/1130
Received By/Stored In Rcf 3C 3728		3-24-03/1130
Relinquished By/Removed From Rcf 3C 3728		3-25-03 0900
Received By/Stored In Doug Bowers	Doug Bowers	3-25-03 0800
Relinquished By/Removed From Doug Bowers	Doug Bowers	3-25-03/0900
Received By/Stored In Fed Ex	Fed Ex	
Relinquished By/Removed From Fed Ex		3-26-03 0945
Received By/Stored In		3-26-03 0945
Relinquished By/Removed From		
Received By/Stored In		
Relinquished By/Removed From		
Received By/Stored In		

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 - Total Sr; Technetium-99~~; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 3 Soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 3-26-03

SAF# / SOW# / Release #: B03-015

Laboratory SDG #: 03036031

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☑ N/A	☐ see Comment #
10. Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☐ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☑ N/A	☐ see Comment #
12. coc signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☑ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERE 96-039 / 1.8°C

Laboratory Sample Custodian: D. Smith

Laboratory Project Manager:

15

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2113

DATE RECEIVED: 03/26/03 LVL LOT # :0303L031

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00JK0	002	S	03LE0362	03/21/03	03/27/03	04/01/03
J00JR7	003	S	03LE0362	03/21/03	03/27/03	03/31/03
J00JR7	003 MS	S	03LE0362	03/21/03	03/27/03	03/31/03
J00JR7	003 MSD	S	03LE0362	03/21/03	03/27/03	03/31/03
J00JR8	004	S	03LE0362	03/21/03	03/27/03	04/01/03
J00JR9	005	S	03LE0362	03/24/03	03/27/03	04/01/03
J00JT3	006	S	03LE0362	03/24/03	03/27/03	04/01/03
J00JT4	007	S	03LE0362	03/24/03	03/27/03	04/01/03
J00JT5	008	S	03LE0362	03/24/03	03/27/03	04/01/03

LAB QC:

PBLKPM	MB1	S	03LE0362	N/A	03/27/03	03/31/03
PBLKPM	MB1 BS	S	03LE0362	N/A	03/27/03	03/31/03

4/15/03

01

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B03-015
LVL #: 0303L031
SDG/SAF # H2113/B03-015

W.O. #: 11343-606-001-9999-00
Date Received: 03-26-2003

PCB

Seven (7) soil samples were collected on 03-21,24-2003.

The samples and their associated QC samples were extracted on 03-27-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 03-31-2003 and 04-01-2003. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082 for Aroclors only.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. The required holding time for extraction and analysis has been met.
3. Samples and their associated QC samples received Sulfuric Acid and Sulfur cleanup.
4. The method blank was below the reporting limits for all target compounds.
5. Five (5) of twenty-two (22) surrogate recoveries were outside acceptance criteria. However, EPA CLP surrogate recovery criteria were met (i.e., no more than one outlier per sample).
6. The blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria with the exception of target compound Aroclor-1260 analyzed on 04-01-2003 at 1:09 on both columns. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

   The data reflected an increase in instrument response, so the ability to identify the target compounds was not impaired.
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

4/7/03
Date

som\r:\group\data\pest\tnu hanford\0303-031.pcb
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 1 3 pages.

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 036C087

Initiator: John Lach.
Date: 04/02/03
Client: TNU

Batch: 03031031
Samples: 4-8
Method: SW846/MCAWW/CLP/

Parameter: OPCB.
Matrix: Soil
Prep Batch: 03LE0362

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
__ 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)

The CCV run on 4/1/03 at 01:09 was elevated for 1016 @ 16.2% and 1260 at 21.2% on the RTX-35 column. Limit 15%.
The CCV run on 4/1/03 at 01:09 was elevated for ~~1260~~ 1016 @ ~~33.1~~ 19.6% on the RTX-35 column.
JL 4/2/03 JL 4/4/03

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

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

Other Description:
Narrate. No hits in samples.

4. Project Manager Instructions...signature/date: [signature] 4/4/03

__ 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: [signature] 4/4/03

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
__	X Project Mgr: Stone/Johnson/Haslett	__	__ GC/LC: Kiger
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rychlak/Layman
__	X QA (file)	__	__ Log-in: Melnic
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

GLOSSARY OF PESTICIDE/PCB 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.

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.

SP = Indicates Spiked Compound.

GLOSSARY OF PESTICIDE/PCB DATA

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.

R:/SHARE/HPLC/PESTICIDE/PCBGLOS

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 04/02/03 15:19

RFW Batch Number: **0303L031** Client: **TNUHANFORD B03-015 H2113** Work Order: 11343606001 Page: 1

	Cust ID:	J00JK0	J00JR7	J00JR7	J00JR7	J00JR8	J00JR9
Sample Information	RFW#:	002	003	003 MS	003 MSD	004	005
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	105 %	80 %	90 %	80 %	115 %	80 %
	Decachlorobiphenyl	125 * %	100 %	120 %	105 %	140 * %	115 %
Aroclor-1016		35 U	35 U	105 %	97 %	36 U	37 U
Aroclor-1221		70 U	70 U	70 U	70 U	71 U	73 U
Aroclor-1232		35 U	35 U	35 U	35 U	36 U	37 U
Aroclor-1242		35 U	35 U	35 U	35 U	36 U	37 U
Aroclor-1248		35 U	35 U	35 U	35 U	36 U	37 U
Aroclor-1254		35 U	35 U	35 U	35 U	36 U	37 U
Aroclor-1260		35 U	35 U	121 %	108 %	36 U	37 U

	Cust ID:	J00JT3	J00JT4	J00JT5	PBLKPM	PBLKPM BS
Sample Information	RFW#:	006	007	008	03LE0362-MB1	03LE0362-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:	Tetrachloro-m-xylene	85 %	80 %	70 %	90 %	85 %
	Decachlorobiphenyl	110 %	135 * %	95 %	135 * %	135 * %
Aroclor-1016		37 U	37 U	37 U	33 U	85 %
Aroclor-1221		75 U	73 U	73 U	67 U	67 U
Aroclor-1232		37 U	37 U	37 U	33 U	33 U
Aroclor-1242		37 U	37 U	37 U	33 U	33 U
Aroclor-1248		37 U	37 U	37 U	33 U	33 U
Aroclor-1254		37 U	37 U	37 U	33 U	33 U
Aroclor-1260		37 U	37 U	37 U	33 U	96 %

4/3/03

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

03031031

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory Inc

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B03-015

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Anderson

QC: SPEC Del: STD TAT: 7 days

Date Rec'd: 3-26-03 Date Due: 4-2-03

		A	B	C	D
Refrigerator #		6	6	6	6
#/Type Container	Liquid				
	Solid	1aq	1aq	1aq	1aq
Volume	Liquid				
	Solid	120	120	60	60
Preservatives		—	—	—	—

ANALYSES REQUESTED →

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal (2)	CN	TPH
							Lionville Laboratory Use Only						
								8625H	8608H 8PCB		MRCRATO		IPHC
001	J00JT6			S	3-21-03	0800		X			X		
002	J00JK0					0948		X	X		X		X
003	J00JR7					1320		X	X		X		X
004	J00JR8					1500		X	X		X		X
005	J00JR9				3-24-03	0850		X	X		X		X
006	J00JT3					0925		X	X		X		X
007	J00JT4					1010		X	X		X		X
008	J00JT5					1010		X	X		X		X

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

Special Instructions: SAF # B03-015

Run Matrix QC

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were: ✓
1) Shipped ___ or Hand Delivered ___
Airbill # 7907 3352 1456
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. 1.8 °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3-26-03	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Bechtel Hanford Inc. | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | B03-015-10

Collector: Doug Bowers	Company Contact: Renee Neilson — Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B — Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3	SAF No.: B03-015	Air Quality ☐
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577 — COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A030170	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
DB 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1000mL	60mL	60mL	120mL	120mL	60mL	60mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14; Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			

Sample No.	Matrix*	Sample Date	Sample Time										
J00JT3	SOIL												
J00JT4	SOIL												
~~J00JT5~~	SOIL												
J00JT6	SOIL	3-21-03	~~0800~~ 0900	X		X		X	X				

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From: Doug	Doug Bowers	3-21-03/1710	Rcf 3C 3728	3-21-03/1710
Relinquished By/Removed From: Rcf 3C 3728		3-25-03/0900	Received By/Stored In: Doug Bowers / Doug Bowers	3-25-03/0900
Relinquished By/Removed From: Doug	Doug Bowers / Bowers	3-25-03/0900	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: Fed Ex		3-26-03 0945	Received By/Stored In: [illegible]	3-26-03 0945
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Americium-241; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

~~Area 3 soil~~ DB 3-20-03

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-015-12	Page 1 of 1
Collector: Doug Bowers	Company Contact: Renee Neilson	Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B; Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3		SAF No.: B03-015	Air Quality ☐
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577	COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: TMA/RECRA	Offsite Property No.: A030170		Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS: DOJ 3-27-03

Special Handling and/or Storage: DOJ 3-21-03

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	~~G/P~~ aG	G/P	~~G/P~~ aG	G	G/P	aG	G/P	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	~~1500g~~ 100ml	20g	~~10g~~ 60ml	10g	125g	~~130g~~ 120ml	100g	~~125g~~ 120ml	20g	~~60g~~ 60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14; Tritium - H3	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	Pesticides - 8081; PCBs - 8082	See item (4) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1

Sample No.	Matrix *	Sample Date	Sample Time									
~~J00JV0~~ J00JK0	SOIL	3-21-03	0948	X		X			X		X	X
DOJ 3-20-03												
				~~415~~ 3-27-03								

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: DOJ Doug Bowers Bowers	3-21-03/1730	Received By/Stored In: 03728 Ref 3C	3-21-03 1730
Relinquished By/Removed From: Ref 3C 3728	3-25-03/0900	Received By/Stored In: Doug Bowers Doug Bowers	3-25-03/0900
Relinquished By/Removed From: DOJ Doug Bowers Bowers	3-25-03/0900	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: Fed Ex	3-26-03 0945	Received By/Stored In: D Smith	3-26-03 0945
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 - Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}~~
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)
(3) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470
(4) IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}

Area 1 soil

Matrix *: S=Soil; SE=Sediment; SO=Solid; Sl=Sludge; W = Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; Wi=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc. | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

Collector: Doug Bowers	Company Contact: Renee Neilson	Telephone No.: 521-2090	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 Days	Air Quality ☐	
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3		SAF No.: B03-015
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577	COA: C17HXB671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: A030170		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1	1				
Volume	1000mL	60mL	60mL	120mL	120mL	60mL	60mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Carbon-14~~, Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1				
Sample No.	Matrix *	Sample Date	Sample Time								
J00JR7	SOIL	3-21-03	1320	X	X	X	X	X		X	
J00JR8	SOIL	3-21-03	1500	X	X	X	X	X		X	
~~J00JR9~~	~~SOIL~~	3-21-03									

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From: Doug Bowers	Doug Bowers Bowers	3-21-03 / 1730	Ref 3C 3728	3-21-03 / 1730
Relinquished By/Removed From: Ref 3C 3728		3-25-03 / 0900	Received By/Stored In: Doug Bowers / Doug Bowers	3-25-03 / 0900
Relinquished By/Removed From: Doug Bowers / Doug Bowers Bowers		3-25-03 / 0900	Received By/Stored In: FedEx	
Relinquished By/Removed From: Fed Ex		3-26-03 0945	Received By/Stored In: [illegible]	3-26-03 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

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63, Isotopic Plutonium (Plutonium-238, Plutonium-239/240), Strontium-89,90 - Total Sr, Technetium-99,~~ Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 2 Soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-015-09	Page 1 of 1
Collector Doug Bowers	Company Contact Renee Neilson	Telephone No. 521-2090	Project Coordinator KESSNER, JH	Price Code 8B Data Turnaround 7 Days
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 126-B-3		SAF No. B03-015	Air Quality ☐
Ice Chest No. ERC 96 039	Field Logbook No. EL 1577	COA C17HXB671C	Method of Shipment Fed Ex	
Shipped To TMA/RECRA	Offsite Property No. A030170		Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
RJB 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)			1	1	1	1	1			
Volume	1000mL	60mL RJB 3-25-03	60mL	120mL	120mL	60mL	60mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Carbon-14~~ Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			

Sample No.	Matrix *	Sample Date	Sample Time									
~~J00JR7~~	~~SOIL~~											
~~J00JR8~~	~~SOIL~~											
J00JR9	SOIL	3-24-03	0850	X	X	X	X	X		X		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From Doug Bowers	Date/Time 3/24/03 1330	Received By/Stored In Ref 3C 3728	Date/Time 3-24-03 1330
Relinquished By/Removed From Ref 3C 3728	Date/Time 3-25-03 0900	Received By/Stored In Doug Bowers	Date/Time 3-25-03 0900
Relinquished By/Removed From Doug Bowers	Date/Time 3-25-03 0900	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 3-26-03 0945	Received By/Stored In	Date/Time 3 26 03 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

SPECIAL INSTRUCTIONS RJB 3-25-03

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-239; Plutonium-239/240}; Strontium-89/90 - Total Sr; Technetium-99~~; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 2 soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-10	Page 1 of 1

Collector Doug Bowers	Company Contact Renee Neilson Telephone No. 521-2090	Project Coordinator KESSNER, JH	Price Code 8B Data Turnaround 7 Days
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 126-B-3	SAF No. B03-015	Air Quality ☐
Ice Chest No. ERC 96 . 039	Field Logbook No. EL 1577 COA C17HXB671C	Method of Shipment Fed Ex	
Shipped To TMA/RECRA	Offsite Property No. A030170	Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
RD 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	aG	aG	aG	aG	aG	aG				
No. of Container(s)		1	1	1	1	1	1				
Volume	1000mL	60mL RD 3-25-03	60mL	120mL	120mL	60mL	60mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Carbon-14;~~ Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1				

Sample No.	Matrix *	Sample Date	Sample Time										
J00JT3	SOIL	3-24-03	0925	X	X	X	X	X		X			
J00JT4	SOIL	3-24-03	1010	X	X	X	X	X		X			
J00JT5	SOIL	3-24-03	1010	X	X	X	X	X		X			
~~J00JT6~~	~~SOIL~~												
RD 3-25-03													

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From Doug Bowers	Date/Time 3-24-03/1130	Received By/Stored In Rot JC 37d3	Date/Time 3.24.03/1130
Relinquished By/Removed From Rot JC 37d3	Date/Time 3-25-03 0900	Received By/Stored In Doug Bowers	Date/Time 0900 3-25-03
Relinquished By/Removed From Doug Bowers	Date/Time 3-25-03/0900	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 3-26-03 0945	Received By/Stored In D Mike	Date/Time 3-26-03 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

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 - Total Sr; Technetium-99~~; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 3 Soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 3-26-03

SAF# / SOW# / Release #: B03-015

Laboratory SDG #: 03031031

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☑ N/A	☐ see Comment #
10. Shipment meets LvLJ Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☐ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☑ N/A	☐ see Comment #
12. coc signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☑ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERC 96-039 / 1.8°C

Laboratory Sample Custodian: D. Smith

Laboratory Project Manager:

RECEIVED APR 2003

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2113

DATE RECEIVED: 03/26/03 LVL LOT # :0303L031

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00JT6						
SILVER, TOTAL	001	S	03L0167	03/21/03	03/28/03	04/01/03
SILVER, TOTAL	001 REP	S	03L0167	03/21/03	03/28/03	04/01/03
SILVER, TOTAL	001 MS	S	03L0167	03/21/03	03/28/03	04/01/03
ARSENIC, TOTAL	001	S	03L0167	03/21/03	03/28/03	04/01/03
ARSENIC, TOTAL	001 REP	S	03L0167	03/21/03	03/28/03	04/01/03
ARSENIC, TOTAL	001 MS	S	03L0167	03/21/03	03/28/03	04/01/03
BARIUM, TOTAL	001	S	03L0167	03/21/03	03/28/03	04/01/03
BARIUM, TOTAL	001 REP	S	03L0167	03/21/03	03/28/03	04/01/03
BARIUM, TOTAL	001 MS	S	03L0167	03/21/03	03/28/03	04/01/03
CADMIUM, TOTAL	001	S	03L0167	03/21/03	03/28/03	04/01/03
CADMIUM, TOTAL	001 REP	S	03L0167	03/21/03	03/28/03	04/01/03
CADMIUM, TOTAL	001 MS	S	03L0167	03/21/03	03/28/03	04/01/03
CHROMIUM, TOTAL	001	S	03L0167	03/21/03	03/28/03	04/01/03
CHROMIUM, TOTAL	001 REP	S	03L0167	03/21/03	03/28/03	04/01/03
CHROMIUM, TOTAL	001 MS	S	03L0167	03/21/03	03/28/03	04/01/03
MERCURY, TOTAL	001	S	03C0059	03/21/03	03/27/03	03/27/03
LEAD, TOTAL	001	S	03L0167	03/21/03	03/28/03	04/01/03
LEAD, TOTAL	001 REP	S	03L0167	03/21/03	03/28/03	04/01/03
LEAD, TOTAL	001 MS	S	03L0167	03/21/03	03/28/03	04/01/03
SELENIUM, TOTAL	001	S	03L0167	03/21/03	03/28/03	04/01/03
SELENIUM, TOTAL	001 REP	S	03L0167	03/21/03	03/28/03	04/01/03
SELENIUM, TOTAL	001 MS	S	03L0167	03/21/03	03/28/03	04/01/03
J00JK0						
SILVER, TOTAL	002	S	03L0167	03/21/03	03/28/03	04/01/03
ARSENIC, TOTAL	002	S	03L0167	03/21/03	03/28/03	04/01/03
BARIUM, TOTAL	002	S	03L0167	03/21/03	03/28/03	04/01/03
CADMIUM, TOTAL	002	S	03L0167	03/21/03	03/28/03	04/01/03
CHROMIUM, TOTAL	002	S	03L0167	03/21/03	03/28/03	04/01/03
MERCURY, TOTAL	002	S	03C0059	03/21/03	03/27/03	03/27/03
MERCURY, TOTAL	002 REP	S	03C0059	03/21/03	03/27/03	03/27/03
MERCURY, TOTAL	002 MS	S	03C0059	03/21/03	03/27/03	03/27/03
LEAD, TOTAL	002	S	03L0167	03/21/03	03/28/03	04/01/03
SELENIUM, TOTAL	002	S	03L0167	03/21/03	03/28/03	04/01/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2113

DATE RECEIVED: 03/26/03 LVL LOT # :0303L031

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00JR7						
SILVER, TOTAL	003	S	03L0167	03/21/03	03/28/03	04/01/03
ARSENIC, TOTAL	003	S	03L0167	03/21/03	03/28/03	04/01/03
BARIUM, TOTAL	003	S	03L0167	03/21/03	03/28/03	04/01/03
CADMIUM, TOTAL	003	S	03L0167	03/21/03	03/28/03	04/01/03
CHROMIUM, TOTAL	003	S	03L0167	03/21/03	03/28/03	04/01/03
MERCURY, TOTAL	003	S	03C0059	03/21/03	03/27/03	03/27/03
LEAD, TOTAL	003	S	03L0167	03/21/03	03/28/03	04/01/03
SELENIUM, TOTAL	003	S	03L0167	03/21/03	03/28/03	04/01/03
J00JR8						
SILVER, TOTAL	004	S	03L0167	03/21/03	03/28/03	04/01/03
ARSENIC, TOTAL	004	S	03L0167	03/21/03	03/28/03	04/01/03
BARIUM, TOTAL	004	S	03L0167	03/21/03	03/28/03	04/01/03
CADMIUM, TOTAL	004	S	03L0167	03/21/03	03/28/03	04/01/03
CHROMIUM, TOTAL	004	S	03L0167	03/21/03	03/28/03	04/01/03
MERCURY, TOTAL	004	S	03C0059	03/21/03	03/27/03	03/27/03
LEAD, TOTAL	004	S	03L0167	03/21/03	03/28/03	04/01/03
SELENIUM, TOTAL	004	S	03L0167	03/21/03	03/28/03	04/01/03
J00JR9						
SILVER, TOTAL	005	S	03L0167	03/24/03	03/28/03	04/01/03
ARSENIC, TOTAL	005	S	03L0167	03/24/03	03/28/03	04/01/03
BARIUM, TOTAL	005	S	03L0167	03/24/03	03/28/03	04/01/03
CADMIUM, TOTAL	005	S	03L0167	03/24/03	03/28/03	04/01/03
CHROMIUM, TOTAL	005	S	03L0167	03/24/03	03/28/03	04/01/03
MERCURY, TOTAL	005	S	03C0059	03/24/03	03/27/03	03/27/03
LEAD, TOTAL	005	S	03L0167	03/24/03	03/28/03	04/01/03
SELENIUM, TOTAL	005	S	03L0167	03/24/03	03/28/03	04/01/03
J00JT3						
SILVER, TOTAL	006	S	03L0167	03/24/03	03/28/03	04/01/03
ARSENIC, TOTAL	006	S	03L0167	03/24/03	03/28/03	04/01/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2113

DATE RECEIVED: 03/26/03 LVL LOT # :0303L031

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BARIUM, TOTAL	006	S	03L0167	03/24/03	03/28/03	04/01/03
CADMIUM, TOTAL	006	S	03L0167	03/24/03	03/28/03	04/01/03
CHROMIUM, TOTAL	006	S	03L0167	03/24/03	03/28/03	04/01/03
MERCURY, TOTAL	006	S	03C0059	03/24/03	03/27/03	03/27/03
LEAD, TOTAL	006	S	03L0167	03/24/03	03/28/03	04/01/03
SELENIUM, TOTAL	006	S	03L0167	03/24/03	03/28/03	04/01/03
J00JT4						
SILVER, TOTAL	007	S	03L0167	03/24/03	03/28/03	04/01/03
ARSENIC, TOTAL	007	S	03L0167	03/24/03	03/28/03	04/01/03
BARIUM, TOTAL	007	S	03L0167	03/24/03	03/28/03	04/01/03
CADMIUM, TOTAL	007	S	03L0167	03/24/03	03/28/03	04/01/03
CHROMIUM, TOTAL	007	S	03L0167	03/24/03	03/28/03	04/01/03
MERCURY, TOTAL	007	S	03C0059	03/24/03	03/27/03	03/27/03
LEAD, TOTAL	007	S	03L0167	03/24/03	03/28/03	04/01/03
SELENIUM, TOTAL	007	S	03L0167	03/24/03	03/28/03	04/01/03
J00JT5						
SILVER, TOTAL	008	S	03L0167	03/24/03	03/28/03	04/01/03
ARSENIC, TOTAL	008	S	03L0167	03/24/03	03/28/03	04/01/03
BARIUM, TOTAL	008	S	03L0167	03/24/03	03/28/03	04/01/03
CADMIUM, TOTAL	008	S	03L0167	03/24/03	03/28/03	04/01/03
CHROMIUM, TOTAL	008	S	03L0167	03/24/03	03/28/03	04/01/03
MERCURY, TOTAL	008	S	03C0059	03/24/03	03/27/03	03/27/03
LEAD, TOTAL	008	S	03L0167	03/24/03	03/28/03	04/01/03
SELENIUM, TOTAL	008	S	03L0167	03/24/03	03/28/03	04/01/03

LAB QC:

SILVER LABORATORY	LC1 BS	S	03L0167	N/A	03/28/03	04/01/03
SILVER, TOTAL	MB1	S	03L0167	N/A	03/28/03	04/01/03
ARSENIC LABORATORY	LC1 BS	S	03L0167	N/A	03/28/03	04/01/03
ARSENIC, TOTAL	MB1	S	03L0167	N/A	03/28/03	04/01/03
BARIUM LABORATORY	LC1 BS	S	03L0167	N/A	03/28/03	04/01/03
BARIUM, TOTAL	MB1	S	03L0167	N/A	03/28/03	04/01/03
CADMIUM LABORATORY	LC1 BS	S	03L0167	N/A	03/28/03	04/01/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2113

DATE RECEIVED: 03/26/03 LVL LOT # :0303L031

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CADMIUM, TOTAL	MB1	S	03L0167	N/A	03/28/03	04/01/03
CHROMIUM LABORATORY	LC1 BS	S	03L0167	N/A	03/28/03	04/01/03
CHROMIUM, TOTAL	MB1	S	03L0167	N/A	03/28/03	04/01/03
MERCURY LABORATORY	LC1 BS	S	03C0059	N/A	03/27/03	03/27/03
MERCURY, TOTAL	MB1	S	03C0059	N/A	03/27/03	03/27/03
LEAD LABORATORY	LC1 BS	S	03L0167	N/A	03/28/03	04/01/03
LEAD, TOTAL	MB1	S	03L0167	N/A	03/28/03	04/01/03
SELENIUM LABORATORY	LC1 BS	S	03L0167	N/A	03/28/03	04/01/03
SELENIUM, TOTAL	MB1	S	03L0167	N/A	03/28/03	04/01/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B03-015
LVL#: 0303L031
SDG/SAF#: H2113/B03-015

W.O.#: 11343-606-001-9999-00
Date Received: 03-26-03

METALS CASE NARRATIVE

1. This narrative covers the analyses of 8 soil samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.

3. All analyses were performed within the required holding times.

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

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.

6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).

7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

8. All ICP Interference Check Standards were within control limits.

9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.

10. All matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.

11. The duplicate analysis for 1 analyte was outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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 21 pages.

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

12. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

13. 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

04-03-03
Date

gmb/m03-031

LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 0803L031

Leaching Procedure: __1310 __1311 __1312 __Other:_____

CLP Metals __ Digestion and __ Analysis Methods: __ILM03.0 __ILM04.0

Metals Digestion Methods: __3005A __3010A __3015 __3020A __3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	__6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	__6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	__6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	__7470A [3]	✓7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	__6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	✓6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2__200.9			__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other: _____ **Method:** _____

L-WI-033/M-03/01

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
LCS = Laboratory Control Sample.
NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/02/03

CLIENT: TNUHANFORD B03-015 H2113

LVL LOT #: 0303L031

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J00JT6	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	0.35 u	MG/KG	0.35	1.0
		Barium, Total	1.2	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.19	MG/KG	0.06	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Lead, Total	0.29	MG/KG	0.26	1.0
		Selenium, Total	0.36 u	MG/KG	0.36	1.0
-002	J00JK0	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	2.4	MG/KG	0.36	1.0
		Barium, Total	99.3	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	5.4	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	3.6	MG/KG	0.27	1.0
		Selenium, Total	0.37 u	MG/KG	0.37	1.0
-003	J00JR7	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	2.5	MG/KG	0.33	1.0
		Barium, Total	50.6	MG/KG	0.01	1.0
		Cadmium, Total	1.3	MG/KG	0.04	1.0
		Chromium, Total	10.1	MG/KG	0.06	1.0
		Mercury, Total	0.34	MG/KG	0.02	1.0
		Lead, Total	3.6	MG/KG	0.25	1.0
		Selenium, Total	0.34 u	MG/KG	0.34	1.0
-004	J00JR8	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	2.4	MG/KG	0.35	1.0
		Barium, Total	65.5	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	4.5	MG/KG	0.06	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Lead, Total	3.3	MG/KG	0.26	1.0
		Selenium, Total	0.36 u	MG/KG	0.36	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/02/03

CLIENT: TNUHANFORD B03-015 H2113 LVL LOT #: 0303L031

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J00JR9	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Arsenic, Total	12.3	MG/KG	0.33	1.0
		Barium, Total	89.2	MG/KG	0.009	1.0
		Cadmium, Total	0.28	MG/KG	0.04	1.0
		Chromium, Total	14.0	MG/KG	0.06	1.0
		Mercury, Total	0.81	MG/KG	0.01	1.0
		Lead, Total	15.1	MG/KG	0.24	1.0
		Selenium, Total	0.34 u	MG/KG	0.34	1.0
-006	J00JT3	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	4.7	MG/KG	0.37	1.0
		Barium, Total	75.8	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	11.7	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	8.9	MG/KG	0.28	1.0
		Selenium, Total	0.38 u	MG/KG	0.38	1.0
-007	J00JT4	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	3.7	MG/KG	0.36	1.0
		Barium, Total	149	MG/KG	0.01	1.0
		Cadmium, Total	0.05	MG/KG	0.04	1.0
		Chromium, Total	12.0	MG/KG	0.06	1.0
		Mercury, Total	0.1	MG/KG	0.02	1.0
		Lead, Total	10.0	MG/KG	0.27	1.0
		Selenium, Total	0.37 u	MG/KG	0.37	1.0
-008	J00JT5	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	3.8	MG/KG	0.37	1.0
		Barium, Total	140	MG/KG	0.01	1.0
		Cadmium, Total	0.05	MG/KG	0.04	1.0
		Chromium, Total	12.4	MG/KG	0.06	1.0
		Mercury, Total	0.09	MG/KG	0.02	1.0
		Lead, Total	9.9	MG/KG	0.28	1.0
		Selenium, Total	0.38 u	MG/KG	0.38	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/02/03

CLIENT: TNUHANFORD B03-015 H2113

LVL LOT #: 0303L031

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	03L0167-MB1	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	0.35 u	MG/KG	0.35	1.0
		Barium, Total	0.05	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.06 u	MG/KG	0.06	1.0
		Lead, Total	0.26 u	MG/KG	0.26	1.0
		Selenium, Total	0.36 u	MG/KG	0.36	1.0
BLANK1	03C0059-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/02/03

CLIENT: TNUHANFORD B03-015 H2113

LVL LOT #: 0303L031

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J00JT6	Silver, Total	4.4	0.08u	4.7	93.6	1.0
		Arsenic, Total	186	0.35u	189	98.5	1.0
		Barium, Total	186	1.2	189	97.9	1.0
		Cadmium, Total	4.7	0.04u	4.7	100	1.0
		Chromium, Total	19.0	0.19	18.9	99.5	1.0
		Lead, Total	47.3	0.29	47.1	99.8	1.0
		Selenium, Total	180	0.36u	189	95.3	1.0
-002	J00JK0	Mercury, Total	0.14	0.02u	0.16	90.6	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/02/03

CLIENT: TNUHANFORD B03-015 H2113 LVL LOT #: 0303L031

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J00JT6	Silver, Total	0.08u	0.08u	NC	1.0
		Arsenic, Total	0.35u	0.35u	NC	1.0
		Barium, Total	1.2	1.3	8.0	1.0
		Cadmium, Total	0.04u	0.04u	NC	1.0
		Chromium, Total	0.19	0.19	3.2	1.0
		Lead, Total	0.29	0.44	41.1	1.0
		Selenium, Total	0.36u	0.36u	NC	1.0
-002REP	J00JK0	Mercury, Total	0.02u	0.02u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 04/02/03

CLIENT: TNUHANFORD B03-015 H2113 LVL LOT #: 0303L031

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	03L0167-LC1	Silver, LCS	50.8	50.0	MG/KG	101.6
		Arsenic, LCS	1000	1000	MG/KG	100.0
		Barium, LCS	513	500	MG/KG	102.7
		Cadmium, LCS	25.9	25.0	MG/KG	103.6
		Chromium, LCS	52.1	50.0	MG/KG	104.2
		Lead, LCS	257	250	MG/KG	102.8
		Selenium, LCS	976	1000	MG/KG	97.6
LCS1	03C0059-LC1	Mercury, LCS	5.9	6.2	MG/KG	94.6

Lionville Laboratory Use Only

03031031

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory Inc

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNU-Hanford B03-015

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager Arlette Gustavson

QC SPEC Del STD TAT 7 days

Date Rec'd 3-26-03 Date Due 4-2-03

		A	B	C	D
Refrigerator #		6	6	6	6
#/Type Container	Liquid				
	Solid	1aq	1aq	1aq	1aq
Volume	Liquid				
	Solid	120	120	60	60
Preservatives		—	—	—	—

ANALYSES REQUESTED →

ORGANIC				INORG		
VOA	BNA	Pest/PCB	Herb	Metal (2)	CN	TPH

Lionville Laboratory Use Only

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA 0625H	Pest/PCB 0608H OPCB	Herb				Metal (2) MRCRA70	CN	TPH IPHC					
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	001	J00JT6			S	3-21-03	0800		X						X							
	002	J00JK0					0948		X	X					X		X					
	003	J00JR7					1320		X	X					X		X					
	004	J00JR8					1500		X	X					X		X					
	005	J00JR9				3-24-03	0850		X	X					X		X					
	006	J00JT3					0925		X	X					X		X					
	007	J00JT4					1010		X	X					X		X					
	008	J00JT5					1010		X	X					X		X					

Special Instructions: SAF # B03-015

Run Matrix QC

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were: ✓
1) Shipped ___ or
Hand Delivered ___
Airbill # 7907 3352 1456
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. 1.8 °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
Lee Ex	W. Smith	3-26-03	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

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Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-10	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson — Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B — Data Turnaround: 7 Days — Air Quality ☐
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3	SAF No.: B03-015	
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577 — COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A030170	Bill of Lading/Air Bill No.: 388 03PC	

POSSIBLE SAMPLE HAZARDS/REMARKS: ABJ 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1	1				
Volume	1000mL	60mL	60mL	120mL	120mL	60mL	60mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14; Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA 8260A (TCL)	TPH (Total) - 418.1				
Sample No. / Matrix* / Sample Date / Sample Time											
J00JT3 / SOIL											
J00JT4 / SOIL											
J00JT5 / SOIL											
J00JT6 / SOIL / 3-21-03 / 0800	X		X		X	X					

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Doug Bowers	3-21-03/1730	ARF 3C 3725	3-21-03/1730
Relinquished By/Removed From	ARF 3C 3725	3-25-03/0900	Doug Bowers	3-25-03/0900
Relinquished By/Removed From	Doug Bowers	3-25-03/0900	Fed Ex	
Relinquished By/Removed From	CCE	3-26-03 0945		3-26-03 0945
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Americium-241; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

~~Area 3 soil~~ ABJ 3-20-03

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

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Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-12	Page 1 of 1

Collector Doug Bowers	Company Contact Renee Neilson	Telephone No. 521-2090	Project Coordinator KESSNER, JH
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 126-B-3		SAF No. B03-015
Ice Chest No. ERC 96 039	Field Logbook No. EL 1577	COA C17HXB671C	Method of Shipment Fed Ex
Shipped To TMA/RECRA	Offsite Property No. A030170		Bill of Lading/Air Bill No. SEE OSPC

Price Code 8B

Data Turnaround 7 Days

Air Quality ☐

POSSIBLE SAMPLE HAZARDS/REMARKS
DOJ 3-21-03

Special Handling and/or Storage
DOJ 3-21-03

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	~~G/P~~ aG	G/P	~~G/P~~ aG	G	G/P	aG	G/P	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	~~150g~~ 100ml	20g	~~10g~~ 60ml	10g	125g	~~120g~~ 120ml	100g	~~125g~~ 120ml	20g	~~60g~~ 60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14; Tritium - H3	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	Pesticides - 8081; PCBs - 8082	See item (4) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1

Sample No.	Matrix *	Sample Date	Sample Time										
~~J00JV0~~ J00JK0	SOIL	3-21-03	0948	X		X			X		X		X
DOJ 3-20-03													
				DOJ 3-21-03									

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From 1049 Doug Bowers Doug Bowers	3-21-03/1730	Received By/Stored In 03728 Rof 3C	3-21-03 1730
Relinquished By/Removed From Rof 3C 3728	3-25-03/0900	Received By/Stored In Doug Bowers Doug Bowers	3-25-03/0900
Relinquished By/Removed From 1049 Doug Bowers Doug Bowers	3-25-03/0900	Received By/Stored In FedEx	
Relinquished By/Removed From Fed Ex	3-26-03 0945	Received By/Stored In D Smith	3-26-03 0945
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 - Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}~~
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)
(3) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470
(4) IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}

Area 1 soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

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Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-09	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson — Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B — Data Turnaround: 7 Days — Air Quality ☐
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3	SAF No.: B03-015	
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577 — COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: TMA/RECRA	Offsite Property No.: A030170 — 3-25-03	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1	1				
Volume	1000mL	60mL	60mL	120mL	120mL	60mL	60mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Carbonate~~, Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1				

Sample No.	Matrix *	Sample Date	Sample Time										
J00JR7	SOIL	3-21-03	1320	X	X	X	X	X		X			
J00JR8	SOIL	3-21-03	1500	X	X	X	X	X		X			
~~J00JR9~~	~~SOIL~~	3-21-03											

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Doug Bowers	3-21-03 / 1730	Ref 3C 3728	3-21-03 / 1730
Relinquished By/Removed From	Ref 3C 3728	3-25-03 / 0900	Doug Bowers	3-25-03 / 0900
Relinquished By/Removed From	Doug Bowers	3-25-03 / 0900	Fed EX	
Relinquished By/Removed From	Fed Ex	3-26-03 0945	[illegible]	3-26-03 0945
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63, Isotopic Plutonium {Plutonium-238, Plutonium-239/240}, Strontium-89,90 - Total Sr, Technetium-99;~~ Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 2 Soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

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Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-09	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson — Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B — Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3	SAF No.: B03-015	Air Quality ☐
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577 — COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: TMA/RECRA	Offsite Property No.: A030170 — RDB 3-25-03	Bill of Lading/Air Bill No.: 5850SPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
RDB 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)			1	1	1	1	1			
Volume	100mL	60mL RDB 3-25-03	60mL	120mL	120mL	60mL	60mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Gamma-ray~~; Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			

Sample No.	Matrix *	Sample Date	Sample Time										
~~J00JR7~~	~~SOIL~~ RDB 3-25-03												
~~J00JR8~~	~~SOIL~~ RDB												
J00JR9	SOIL	3-24-03	0850	X	X	X	X	X		X			

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From: Doug Bowers	Doug Bowers (Bowers)	3/24/03 1330	Received By/Stored In: RCF 3C 3728	3-24-03 1330
Relinquished By/Removed From: RCF 3C 3728	(Doug Bowers)	3-25-03/0900	Received By/Stored In: Doug Bowers	3-25-03/0900
Relinquished By/Removed From: Doug Bowers	Doug Bowers (Bowers)	3-25-03/0900	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: Fed Ex		3-26-03 0945	Received By/Stored In: D. Muse	3 26 03 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

SPECIAL INSTRUCTIONS RDB 3-25-03

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-239, Plutonium-239/240}; Strontium-89,90 - Total Sr; Technetium-99~~; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 2 Soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-10	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson	Telephone No.: 521-2090	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 Days	Air Quality ☐	
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3	SAF No.: B03-015	
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577	COA: C17HXB671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: A030170	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
~~B03~~ 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	aG	aG	aG	aG	aG	aG				
No. of Container(s)		1	1	1	1	1	1				
Volume	1000mL	60mL ~~B03~~ 3-25-03	60mL	120mL	120mL	60mL	60mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Carbon-14;~~ Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1				
Sample No. / Matrix * / Sample Date / Sample Time											
J00JT3 / SOIL / 3-24-03 / 0925	X	X	X	X	X		X				
J00JT4 / SOIL / 3-24-03 / 1010	X	X	X	X	X		X				
J00JT5 / SOIL / 3-24-03 / 1010	X	X	X	X	X		X				
~~J00JT6~~ / SOIL / ~~B03~~ 3-25-03											

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Bowers	3-24-03/1130	Rot JC 3728	3-24-03/1130
Rot JC 3728	3-25-03 0900	Doug Bowers Bowers / Fed Ex Doug Bowers	3-25-03 0900
Doug Bowers Bowers	3-25-03/0900	Fed Ex	
Fed Ex	3-26-03 0945	D Smith	3-26-03 0945

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 - Total Sr; Technetium-99~~; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 3 Soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

20

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

:LIENT: TNU Hanford

'urchase Order/Project:

DATE: 3-26-03

;AF# / SOW# / Release #: B03-015

.aboratory SDG #: 03031031

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☑ N/A	☐ see Comment #
10. Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☐ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☑ N/A	☐ see Comment #
12. coc signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☑ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERE 96-039 / 1.8°C

Laboratory Sample Custodian: D. Smith

Laboratory Project Manager:

RECEIVED APR 2003

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2113

DATE RECEIVED: 03/26/03 LVL LOT # :0303L031

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00JT6						
% SOLIDS	001	S	03L%S042	03/21/03	03/26/03	03/27/03
J00JK0						
% SOLIDS	002	S	03L%S042	03/21/03	03/26/03	03/27/03
PETROLEUM HYDROCARBO	002	S	03LHC009	03/21/03	03/27/03	03/31/03
PETROLEUM HYDROCARBO	002 MS	S	03LHC009	03/21/03	03/27/03	03/31/03
PETROLEUM HYDROCARBO	002 MSD	S	03LHC009	03/21/03	03/27/03	03/31/03
J00JR7						
% SOLIDS	003	S	03L%S042	03/21/03	03/26/03	03/27/03
PETROLEUM HYDROCARBO	003	S	03LHC009	03/21/03	03/27/03	03/31/03
J00JR8						
% SOLIDS	004	S	03L%S042	03/21/03	03/26/03	03/27/03
PETROLEUM HYDROCARBO	004	S	03LHC009	03/21/03	03/27/03	03/31/03
J00JR9						
% SOLIDS	005	S	03L%S042	03/24/03	03/26/03	03/27/03
PETROLEUM HYDROCARBO	005	S	03LHC009	03/24/03	03/27/03	03/31/03
J00JT3						
% SOLIDS	006	S	03L%S042	03/24/03	03/26/03	03/27/03
% SOLIDS	006 REP	S	03L%S042	03/24/03	03/26/03	03/27/03
PETROLEUM HYDROCARBO	006	S	03LHC009	03/24/03	03/27/03	03/31/03
J00JT4						
% SOLIDS	007	S	03L%S042	03/24/03	03/26/03	03/27/03
PETROLEUM HYDROCARBO	007	S	03LHC009	03/24/03	03/27/03	03/31/03
J00JT5						
% SOLIDS	008	S	03L%S042	03/24/03	03/26/03	03/27/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2113

DATE RECEIVED: 03/26/03 LVL LOT # :0303L031

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
PETROLEUM HYDROCARBO	008	S	03LHC009	03/24/03	03/27/03	03/31/03

LAB QC:

PETROLEUM HYDROCARBO	LC1 BS	S	03LHC009	N/A	03/27/03	03/31/03
PETROLEUM HYDROCARBO	MB1	S	03LHC009	N/A	03/27/03	03/31/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B03-015 H2113
LVL#: 0303L031

W.O.#: 11343-606-001-9999-00
Date Received: 03-26-03

INORGANIC NARRATIVE

1. This narrative covers the analyses of 8 soil samples.

2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary.

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

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

5. The method blank for Petroleum Hydrocarbon (PHC) were within the method criteria.

6. The Laboratory Control Sample (LCS) for PHC was within the laboratory control limits.

7. The matrix spike recoveries for PHC were within the 75-125% control limits. The matrix spike duplicate was within the 20% Relative Percent Difference (RPD) control limit.

8. The replicate analysis for Percent Solids was within the 20% 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

04-01-03
Date

njp\i03-031

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 17 pages.

208 Welsh Pool Road • Lionville, PA 19341-1333 • (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**		

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 04/01/03

CLIENT: TNUHANFORD B03-015 H2113

LVL LOT #: 0303L031

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J00JT6	% Solids	100	%	0.01	1.0
-002	J00JK0	% Solids	95.0	%	0.01	1.0
		Petroleum Hydrocarbons	25.6	MG/KG	3.5	1.0
-003	J00JR7	% Solids	95.0	%	0.01	1.0
		Petroleum Hydrocarbons	32.1	MG/KG	3.5	1.0
-004	J00JR8	% Solids	93.5	%	0.01	1.0
		Petroleum Hydrocarbons	44.4	MG/KG	3.5	1.0
-005	J00JR9	% Solids	91.2	%	0.01	1.0
		Petroleum Hydrocarbons	645	MG/KG	18.2	5.0
-006	J00JT3	% Solids	89.2	%	0.01	1.0
		Petroleum Hydrocarbons	33.2	MG/KG	3.7	1.0
-007	J00JT4	% Solids	90.9	%	0.01	1.0
		Petroleum Hydrocarbons	227	MG/KG	3.6	1.0
-008	J00JT5	% Solids	90.8	%	0.01	1.0
		Petroleum Hydrocarbons	664	MG/KG	36.6	10.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/01/03

CLIENT: TNUHANFORD B03-015 H2113

LVL LOT #: 0303L031

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	03LHC009-MB1	Petroleum Hydrocarbons	3.3 u	MG/KG	3.3	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/01/03

CLIENT: TNUHANFORD B03-015 H2113

LVL LOT #: 0303L031

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	J00JK0	Petroleum Hydrocarbons	163	25.6	147	93.5	1.0
		Petroleum Hydrocarbons	167	25.6	147	95.7	1.0
LCS10	03LHC009-LC1	Petroleum Hydrocarbons	152	3.3 u	140	108.3	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 04/01/03

CLIENT: TNUHANFORD B03-015 H2113 LVL LOT #: 0303L031

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
-002	J00JK0	Petroleum Hydrocarbons	93.5	95.7	2.3

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/01/03

CLIENT: TNUHANFORD B03-015 H2113 LVL LOT #: 0303L031

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-006REP	J00JT3	% Solids	89.2	91.0	2.0	1.0

Lionville Laboratory Use Only

03036031

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNU-Hanford B03-015

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager Arlette Johnson

QC SPEC Del STD TAT 7 days

Date Rec'd 3-26-03 Date Due 4-2-03

		A	B	C	D
Refrigerator #		6	6	6	6
#/Type Container	Liquid				
	Solid	1 qg	1 qg	1 qg	1 qg
Volume	Liquid				
	Solid	120	120	60	60
Preservatives		—	—	—	—

ANALYSES REQUESTED →

	ORGANIC				INORG		
	VOA	BNA	Pest/PCB	Herb	Metal (2)	CN	TPH
Lionville Laboratory Use Only		0625H	0608H OPCB		MRCRTO		IPHC

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	0625H	0608H OPCB	MRCRTO	IPHC
001	J00JT6			S	3-21-03	0800	X		X	
002	J00JK0					0948	X	X	X	X
003	J00JR7					1320	X	X	X	X
004	J00JR8					1500	X	X	X	X
005	J00JR9				3-24-03	0850	X	X	X	X
006	J00JT3					0925	X	X	X	X
007	J00JT4					1010	X	X	X	X
008	J00JT5					1010	X	X	X	X

Special Instructions: SAF # B03-015

Run Matrix QC

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were: ✓
1) Shipped ___ or Hand Delivered ___
Airbill # 7907 3352 1456
2) Ambient or Chilled
3) Received in Good Condition (Y) or N
4) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was:
1) Present on Outer Package (Y) or N
2) Unbroken on Outer Package (Y) or N
3) Present on Sample (Y) or N
4) Unbroken on Sample (Y) or N
COC Record Present Upon Sample Rec't (Y) or N
Cooler Temp. 1.8 °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3-26-03	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-10	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson — Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B — Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3	SAF No.: B03-015	Air Quality ☐
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577 — COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: TMA/RECRA	Offsite Property No.: A030170	Bill of Lading/Air Bill No.: SBB 03PC	

POSSIBLE SAMPLE HAZARDS/REMARKS
ABB 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1	1				
Volume	1000mL	60mL	60mL	120mL	120mL	60mL	60mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14; Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1				
Sample No. / Matrix* / Sample Date / Sample Time											
J00JT3 / SOIL											
J00JT4 / SOIL											
J00JT5 / SOIL											
J00JT6 / SOIL / 3-21-03 / 0800	X		X		X	X					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Doug Bowers	3-21-03/1730	Ref 3C 3725	3-21-03/1730
Ref 3C 3725	3-25-03/0800	Doug Bowers Doug Bowers	3-25-03/0800
Doug Bowers Doug Bowers	3-25-03/0800	Fed Ex	
Fed Ex	3-26-03 0945	D. Smith	3-26-03 0945

SPECIAL INSTRUCTIONS

(1) Americium-241; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

~~Anne 3 soil~~ ABB 3-20-03

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-12	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson	Telephone No.: 521-2090	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 Days	Air Quality ☐	
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3	SAF No.: B03-015	
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577	COA: C17HXB671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: A030170	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
DB 3-21-03

Special Handling and/or Storage
DB 3-21-03

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	~~G/P~~ aG	G/P	~~G/P~~ aG	G	G/P	aG	G/P	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	~~150g~~ 100ml	20g	~~10g~~ 60ml	10g	125g	~~120g~~ 120ml	100g	~~125g~~ 120ml	20g	~~60g~~ 60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14; Tritium - H3	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	Pesticides - 8081; PCBs - 8082	See item (4) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1

Sample No.	Matrix *	Sample Date	Sample Time										
~~J00JV0~~ J00JK0	SOIL	3-21-03	0948	X		X			X		X		X
DB 3-20-03													
				DB 3-24-03									

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers (Bowers)	3-21-03/1730	RofFC 3728	3-21-03/1730
RofFC 3728	3-25-03/0900	Doug Bowers	3-25-03/0900
Doug Bowers (Bowers)	3-25-03/0900	FedEx	
Fed Ex	3-26-03 0945	D. Smith	3-26-03 0945

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium (Plutonium-238, Plutonium-239/240); Strontium-89,90 - Total Sr; Technetium-99; Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)~~
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)
(3) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470
(4) IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}

Area 1 soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-09	Page 1 of 1

Collector Doug Bowers	Company Contact Renee Neilson	Telephone No. 521-2090	Project Coordinator KESSNER, JH
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 126-B-3		SAF No. B03-015
Ice Chest No. ERC 96 039	Field Logbook No. EL 1577	COA C17HXB671C	Method of Shipment Fed Ex
Shipped To TMA/RECRA	Offsite Property No. A030170		Bill of Lading/Air Bill No. SEE OSPC

Price Code 8B

Data Turnaround 7 Days

Air Quality ☐

POSSIBLE SAMPLE HAZARDS/REMARKS
RD 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1000mL	60mL RDB 3-25-03	60mL	120mL	120mL	60mL	60mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Carbon-14;~~ Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			

Sample No.	Matrix *	Sample Date	Sample Time										
J00JR7	SOIL	3-21-03	1320	X	X	X	X	X		X			
J00JR8	SOIL	3-21-03	1500	X	X	X	X	X		X			
~~J00JR9~~	~~SOIL~~ DD	3-21-03											

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Doug Doug Bowers Bowers	3-21-03 / 1730	Received By/Stored In Ref 3C 3728	3-21-03 / 1730
Relinquished By/Removed From Ref 3C 3728	3-25-03 / 0900	Received By/Stored In Doug Bowers Doug Bowers	3-25-03 / 0900
Relinquished By/Removed From Doug Doug Bowers Bowers	3-25-03 / 0900	Received By/Stored In FedEX	
Relinquished By/Removed From Fed Ex	3-26-03 0945	Received By/Stored In	3-26-03 0945
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63, Isotopic Plutonium {Plutonium-238, Plutonium-239/240}, Strontium-89,90 - Total Sr, Technetium-99;~~ Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 2 Soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-09	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson	Telephone No.: 521-2090	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 Days	Air Quality ☐	
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3	SAF No.: B03-015	
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577	COA: C17HXB671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: A030170 BJB 3-25-03	Bill of Lading/Air Bill No.: 5355 05PC	

POSSIBLE SAMPLE HAZARDS/REMARKS
BJB 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)			1	1	1	1	1			
Volume	1000mL	60mL BJB 3-25-03	60mL	120mL	120mL	60mL	60mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Carbon-14~~; Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			

Sample No.	Matrix *	Sample Date	Sample Time										
~~J00JR7~~	~~SOIL~~												
~~J00JR8~~	~~SOIL~~												
J00JR9	SOIL	3-24-03	0850	X	X	X	X	X		X			

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Doug Bowers (Bowers)	3/24/03 1330	Ref 3C 3728	3-24-03 1330
Relinquished By/Removed From	Ref 3C 3728	3-25-03/0900	Received By/Stored In (Doug Bowers) Doug Bowers	3-25-03/0900
Relinquished By/Removed From	Doug Bowers (Bowers)	3-25-03/0900	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: Fed Ex		3-26-03 0945	Received By/Stored In: D. Muller	3-26-03 0945
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS BJB 3-25-03

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-239, Plutonium-239/240}; Strontium-89,90 - Total Sr; Technetium-99~~; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 2 Soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-10	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson	Telephone No.: 521-2090	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 Days	Air Quality ☐	
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3	SAF No.: B03-015	
Ice Chest No.: ERC 96 . 039	Field Logbook No.: EL 1577	COA: C17HXB671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: A030170	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
RTD 3-25-03

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)		1	1	1	1	1	1			
Volume	1000mL	60mL RTD 3-25-03	60mL	120mL	120mL	60mL	60mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Carbon-14,~~ Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			
Sample No. / Matrix * / Sample Date / Sample Time										
J00JT3 / SOIL / 3-24-03 / 0925	X	X	X	X	X		X			
J00JT4 / SOIL / 3-24-03 / 1010	X	X	X	X	X		X			
J00JT5 / SOIL / 3-24-03 / 1010	X	X	X	X	X		X			
~~J00JT6~~ / SOIL										
RTD 3-20-03										

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: Doug Bowers	Received By/Stored In: Rot JC 3728	3-24-03 / 1130
Relinquished By/Removed From: Rot JC 3728	Received By/Stored In: Doug Bowers	3-25-03 / 0900
Relinquished By/Removed From: Doug Bowers	Received By/Stored In: Fed Ex	3-25-03 / 0900
Relinquished By/Removed From: Fed Ex	Received By/Stored In: D Smith	3-26-03 / 0945
Relinquished By/Removed From:	Received By/Stored In:	
Relinquished By/Removed From:	Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63, Isotopic Plutonium {Plutonium-238, Plutonium-239/240}, Strontium-89,90 - Total Sr, Technetium-99~~; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 3 Soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 3-26-03

SAF# / SOW# / Release #: B03-015

Laboratory SDG #: 03031031

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☑ N/A	☐ see Comment #
10. Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☐ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☑ N/A	☐ see Comment #
12. coc signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☑ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERE 96-039 / 1.8°C

Laboratory Sample Custodian: D. Ignatin

Laboratory Project Manager:

EBERLINE
SERVICES

RECEIVED
APR 2003

April 11, 2003

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

Reference: **P.O. #630**
Eberline Services R3-03-114-7463, SDG H2113

Dear Ms. Kessner:

Enclosed is the data report for eight solid samples designated under SAF No. B03-015 received at Eberline Services on March 26, 2003. 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
Program Manager

MCM

Enclosure: Data Package

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

1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H2113 was composed of eight solid (soil) samples designated under SAF No. B03-015 with a Project Designation of: Remaining Sites Confirmation Sampling – Soil, 126-B-3.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to BHI via e-Fax on April 2 and 7, 2003. The electronic data deliverable (EDD) was transmitted to BHI via e-Mail on April 8, 2003.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Beta Analyses

No problems were encountered during the course of the analyses.

2.2 Tritium Analyses

No problems were encountered during the course of the analyses.

2.3 Nickel-63 Analyses

There was contamination in the method blank (8.5 pCi/g). The activity was less than the RDL (30 pCi/g) for Ni-63. The RPD between sample J00JT6 and its sample duplicate was 74%, greater than the 3σ limit of 40%. The difference between sample J00JT6 and its sample duplicate was less than the RDL for Ni-63 (30 pCi/g). No other problems were encountered during the course of the analyses.

2.4 Total Strontium Analyses

No problems were encountered during the course of the analyses.

2.5 Technetium-99 Analyses

No problems were encountered during the course of the analyses.

2.6 Isotopic Uranium Analyses

No problems were encountered during the course of the analyses.

2.7 Isotopic Plutonium Analyses

No problems were encountered during the course of the analyses.

2.8 Americium-241 Analyses

No problems were encountered during the course of the analyses.

2.9 Gamma Spectroscopy Analyses

No problems were encountered during the course of the analyses.

Case Narrative Certification Statement

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

Melissa Mannion

Melissa C. Mannion
Program Manager

4/11/3

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 H2113

SDG	7463
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG H2113

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

About this section	1
Sample Summaries	3
Prep Batch Summary	5
Work Summary	6
Method Blanks	9
Lab Control Samples	10
Duplicates	11
Matrix Spikes	13
Data Sheets	15
Method Summaries	23
Report Guides	38
End of Section	52

Melissa Mannion
Prepared by

Melissa Mannion
Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	04/07/03

SDG 7463
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2113

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 04/07/03

SDG 7463
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG_H2113

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 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

SDG 7463
Contact Melissa C. Mannion

SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG H2113

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
J00JK0	126-B-3	SOLID		R303114-01	B03-015	B03-015-12	03/21/03 09:48
J00JR7	126-B-3	SOLID		R303114-02	B03-015	B03-015-09	03/21/03 13:20
J00JR8	126-B-3	SOLID		R303114-03	B03-015	B03-015-09	03/21/03 15:00
J00JR9	126-B-3	SOLID		R303114-04	B03-015	B03-015-09	03/24/03 08:50
J00JT3	126-B-3	SOLID		R303114-05	B03-015	B03-015-10	03/24/03 09:25
J00JT4	126-B-3	SOLID		R303114-06	B03-015	B03-015-10	03/24/03 10:10
J00JT5	126-B-3	SOLID		R303114-07	B03-015	B03-015-10	03/24/03 10:10
J00JT6	126-B-3	SOLID		R303114-08	B03-015	B03-015-10	03/21/03 08:00
Method Blank		SOLID		R303114-10	B03-015		
Lab Control Sample		SOLID		R303114-09	B03-015		
Duplicate (R303114-02)	126-B-3	SOLID		R303114-12	B03-015		03/21/03 13:20
Duplicate (R303114-08)	126-B-3	SOLID		R303114-11	B03-015		03/21/03 08:00
Spike (R303114-02)	126-B-3	SOLID		R303114-13	B03-015		03/21/03 13:20
Spike (R303114-08)	126-B-3	SOLID		R303114-14	B03-015		03/21/03 08:00

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

SDG 7463
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG H2113

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
7463	B03-015-09	J00JR7	SOLID	95.4	1304 g		03/26/03	5	R303114-02	7463-002
		J00JR8	SOLID	94.4	1501 g		03/26/03	5	R303114-03	7463-003
		J00JR9	SOLID	92.5	1215 g		03/26/03	2	R303114-04	7463-004
	B03-015-10	J00JT3	SOLID	91.6	1228 g		03/26/03	2	R303114-05	7463-005
		J00JT4	SOLID	93.2	1229 g		03/26/03	2	R303114-06	7463-006
		J00JT5	SOLID	93.6	1407 g		03/26/03	2	R303114-07	7463-007
		J00JT6	SOLID	100.0	1374 g		03/26/03	5	R303114-08	7463-008
	B03-015-12	J00JK0	SOLID	95.2	1347 g		03/26/03	5	R303114-01	7463-001
		Method Blank	SOLID						R303114-10	7463-010
		Lab Control Sample	SOLID						R303114-09	7463-009
		Duplicate (R303114-02)	SOLID	95.4	1304 g		03/26/03	5	R303114-12	7463-012
		Duplicate (R303114-08)	SOLID	100.0	1374 g		03/26/03	5	R303114-11	7463-011
		Spike (R303114-02)	SOLID	95.4	1304 g		03/26/03	5	R303114-13	7463-013
		Spike (R303114-08)	SOLID	100.0	1374 g		03/26/03	5	R303114-14	7463-014

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

SDG 7463
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG H2113

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 Soil	7043-180	5.0	1			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	7043-180	5.0	1			1	1	1/1		
U	SOLID	Uranium, Isotopic in Soil	7043-180	5.0	7			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Soil	7043-180	10.0	1			1	1	1/1		
TC	SOLID	Technetium 99 in Soil	7043-180	10.0	1			1	1	1/1		
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Soil	7043-180	20.0	8			1	1	1/1		
93B	SOLID	Gross Beta in Soil	7043-180	15.0	8			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	7043-180	15.0	8			1	1	1/1		
Liquid Scintillation Counting												
H	SOLID	Tritium in Soil	7043-180	10.0	6			1	1	1/1	1/1	X
NI_L	SOLID	Nickel 63 in Soil	7043-180	10.0	1			1	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 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

SDG 7463
Contact Melissa C. Mannion

WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG H2113

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
J00JK0			R303114-01	7463-001	93A/93		03/31/03	04/02/03	MCM	Gross Alpha in Soil
126-B-3		SOLID	03/21/03	7463-001	93B/93		03/31/03	04/02/03	MCM	Gross Beta in Soil
B03-015-12	B03-015		03/26/03	7463-001	GAM		03/31/03	04/02/03	MCM	Gamma Scan
J00JR7			R303114-02	7463-002	93A/93		03/31/03	04/02/03	MCM	Gross Alpha in Soil
126-B-3		SOLID	03/21/03	7463-002	93B/93		03/31/03	04/02/03	MCM	Gross Beta in Soil
B03-015-09	B03-015		03/26/03	7463-002	GAM		03/31/03	04/02/03	MCM	Gamma Scan
				7463-002	H		04/01/03	04/02/03	MCM	Tritium in Soil
				7463-002	U		03/31/03	04/02/03	MCM	Uranium, Isotopic in Soil
J00JR8			R303114-03	7463-003	93A/93		03/31/03	04/02/03	MCM	Gross Alpha in Soil
126-B-3		SOLID	03/21/03	7463-003	93B/93		03/31/03	04/02/03	MCM	Gross Beta in Soil
B03-015-09	B03-015		03/26/03	7463-003	GAM		03/31/03	04/02/03	MCM	Gamma Scan
				7463-003	H		04/01/03	04/02/03	MCM	Tritium in Soil
				7463-003	U		03/31/03	04/02/03	MCM	Uranium, Isotopic in Soil
J00JR9			R303114-04	7463-004	93A/93		03/31/03	04/02/03	MCM	Gross Alpha in Soil
126-B-3		SOLID	03/24/03	7463-004	93B/93		03/31/03	04/02/03	MCM	Gross Beta in Soil
B03-015-09	B03-015		03/26/03	7463-004	GAM		03/31/03	04/02/03	MCM	Gamma Scan
				7463-004	H		04/01/03	04/02/03	MCM	Tritium in Soil
				7463-004	U		03/31/03	04/02/03	MCM	Uranium, Isotopic in Soil
J00JT3			R303114-05	7463-005	93A/93		03/31/03	04/02/03	MCM	Gross Alpha in Soil
126-B-3		SOLID	03/24/03	7463-005	93B/93		03/31/03	04/02/03	MCM	Gross Beta in Soil
B03-015-10	B03-015		03/26/03	7463-005	GAM		03/31/03	04/02/03	MCM	Gamma Scan
				7463-005	H		04/01/03	04/02/03	MCM	Tritium in Soil
				7463-005	U		03/31/03	04/02/03	MCM	Uranium, Isotopic in Soil
J00JT4			R303114-06	7463-006	93A/93		03/31/03	04/02/03	MCM	Gross Alpha in Soil
126-B-3		SOLID	03/24/03	7463-006	93B/93		03/31/03	04/02/03	MCM	Gross Beta in Soil
B03-015-10	B03-015		03/26/03	7463-006	GAM		03/31/03	04/02/03	MCM	Gamma Scan
				7463-006	H		04/01/03	04/02/03	MCM	Tritium in Soil
				7463-006	U		03/31/03	04/02/03	MCM	Uranium, Isotopic in Soil
J00JT5			R303114-07	7463-007	93A/93		04/01/03	04/02/03	MCM	Gross Alpha in Soil
126-B-3		SOLID	03/24/03	7463-007	93B/93		04/01/03	04/02/03	MCM	Gross Beta in Soil
B03-015-10	B03-015		03/26/03	7463-007	GAM		03/31/03	04/02/03	MCM	Gamma Scan
				7463-007	H		04/01/03	04/02/03	MCM	Tritium in Soil
				7463-007	U		03/31/03	04/02/03	MCM	Uranium, Isotopic in Soil

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

SDG 7463
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG H2113

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
J00JT6			R303114-08	7463-008	93A/93		03/31/03	04/02/03	MCM	Gross Alpha in Soil
126-B-3		SOLID	03/21/03	7463-008	93B/93		03/31/03	04/02/03	MCM	Gross Beta in Soil
B03-015-10	B03-015		03/26/03	7463-008	AM		03/31/03	04/02/03	MCM	Americium 241 in Soil
				7463-008	GAM		03/31/03	04/02/03	MCM	Gamma Scan
				7463-008	NI_L		04/01/03	04/02/03	MCM	Nickel 63 in Soil
				7463-008	PU		03/31/03	04/02/03	MCM	Plutonium, Isotopic in Solids
				7463-008	SR		03/31/03	04/02/03	MCM	Total Strontium in Soil
				7463-008	TC		04/04/03	04/07/03	MCM	Technetium 99 in Soil
				7463-008	U		03/31/03	04/02/03	MCM	Uranium, Isotopic in Soil
Method Blank			R303114-10	7463-010	93A/93		03/31/03	04/02/03	MCM	Gross Alpha in Soil
		SOLID		7463-010	93B/93		03/31/03	04/02/03	MCM	Gross Beta in Soil
	B03-015			7463-010	AM		03/31/03	04/02/03	MCM	Americium 241 in Soil
				7463-010	GAM		03/31/03	04/02/03	MCM	Gamma Scan
				7463-010	H		04/02/03	04/02/03	MCM	Tritium in Soil
				7463-010	NI_L		04/02/03	04/02/03	MCM	Nickel 63 in Soil
				7463-010	PU		03/31/03	04/02/03	MCM	Plutonium, Isotopic in Solids
				7463-010	SR		03/31/03	04/02/03	MCM	Total Strontium in Soil
				7463-010	TC		04/04/03	04/07/03	MCM	Technetium 99 in Soil
				7463-010	U		03/31/03	04/02/03	MCM	Uranium, Isotopic in Soil
Lab Control Sample			R303114-09	7463-009	93A/93		03/31/03	04/02/03	MCM	Gross Alpha in Soil
		SOLID		7463-009	93B/93		03/31/03	04/02/03	MCM	Gross Beta in Soil
	B03-015			7463-009	AM		03/31/03	04/02/03	MCM	Americium 241 in Soil
				7463-009	GAM		03/31/03	04/02/03	MCM	Gamma Scan
				7463-009	H		04/01/03	04/02/03	MCM	Tritium in Soil
				7463-009	NI_L		04/01/03	04/02/03	MCM	Nickel 63 in Soil
				7463-009	PU		03/31/03	04/02/03	MCM	Plutonium, Isotopic in Solids
				7463-009	SR		03/31/03	04/02/03	MCM	Total Strontium in Soil
				7463-009	TC		04/03/03	04/07/03	MCM	Technetium 99 in Soil
				7463-009	U		04/01/03	04/02/03	MCM	Uranium, Isotopic in Soil
Duplicate (R303114-02)			R303114-12	7463-012	H		04/02/03	04/02/03	MCM	Tritium in Soil
126-B-3		SOLID	03/21/03							
	B03-015		03/26/03							

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

SDG 7463
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG H2113

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
Duplicate (R303114-08)			R303114-11	7463-011	93A/93		03/31/03	04/02/03	MCM	Gross Alpha in Soil
126-B-3		SOLID	03/21/03	7463-011	93B/93		03/31/03	04/02/03	MCM	Gross Beta in Soil
	B03-015		03/26/03	7463-011	AM		03/31/03	04/02/03	MCM	Americium 241 in Soil
				7463-011	GAM		03/31/03	04/02/03	MCM	Gamma Scan
				7463-011	NI_L		04/01/03	04/02/03	MCM	Nickel 63 in Soil
				7463-011	PU		03/31/03	04/02/03	MCM	Plutonium, Isotopic in Solids
				7463-011	SR		03/31/03	04/02/03	MCM	Total Strontium in Soil
				7463-011	TC		04/04/03	04/07/03	MCM	Technetium 99 in Soil
				7463-011	U		03/31/03	04/02/03	MCM	Uranium, Isotopic in Soil
Spike (R303114-02)			R303114-13	7463-013	H		04/02/03	04/02/03	MCM	Tritium in Soil
126-B-3		SOLID	03/21/03							
	B03-015		03/26/03							
Spike (R303114-08)			R303114-14	7463-014	NI_L		04/01/03	04/02/03	MCM	Nickel 63 in Soil
126-B-3		SOLID	03/21/03							
	B03-015		03/26/03							

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
93A/93	B03-015	Gross Alpha in Soil	900.0_ALPHABETA_GPC	8			1	1	1		11
93B/93	B03-015	Gross Beta in Soil	900.0_ALPHABETA_GPC	8			1	1	1		11
AM	B03-015	Americium 241 in Soil	AMCMISO_IE_PLATE_AEA	1			1	1	1		4
GAM	B03-015	Gamma Scan	GAMMA_GS	8			1	1	1		11
H	B03-015	Tritium in Soil	906.0_H3_LSC	6			1	1	1	1	10
NI_L	B03-015	Nickel 63 in Soil	NI63_LSC	1			1	1	1	1	5
PU	B03-015	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	1			1	1	1		4
SR	B03-015	Total Strontium in Soil	SRTOT_SEP_PRECIP_GPC	1			1	1	1		4
TC	B03-015	Technetium 99 in Soil	TC99_TR_SEP_LSC	1			1	1	1		4
U	B03-015	Uranium, Isotopic in Soil	UISO_PLATE_AEA	7			1	1	1		10
TOTALS				42			10	10	10	2	74

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

R303114-10 **Method Blank**

METHOD BLANK

SDG	7463	Client/Case no	Hanford SDG H2113
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R303114-10	Client sample id	Method Blank
Dept sample id	7463-010	Material/Matrix	SOLID
		SAF No	B03-015

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	0.153	1.3	2.5	10	U	93A
Gross Beta	12587-47-2	-0.656	3.0	5.2	15	U	93B
Tritium	10028-17-8	-0.128	0.16	0.28	400	U	H
Nickel 63	13981-37-8	8.50	2.5	3.6	30		NI_L
Total Strontium	SR-RAD	-0.320	0.25	0.61	1.0	U	SR
Technetium 99	14133-76-7	0.137	0.28	0.51	15	U	TC
Uranium 233/234	U-233/234	-0.025	0.050	0.19	1.0	U	U
Uranium 235	15117-96-1	0	0.061	0.23	1.0	U	U
Uranium 238	U-238	0	0.050	0.19	1.0	U	U
Plutonium 238	13981-16-3	-0.019	0.039	0.15	1.0	U	PU
Plutonium 239/240	PU-239/240	0.019	0.039	0.15	1.0	U	PU
Americium 241	14596-10-2	-0.024	0.048	0.18	1.0	U	AM
Potassium 40	13966-00-2	U		1.9		U	GAM
Cobalt 60	10198-40-0	U		0.068	0.050	U	GAM
Cesium 137	10045-97-3	U		0.074	0.10	U	GAM
Radium 226	13982-63-3	U		0.14		U	GAM
Radium 228	15262-20-1	U		0.36		U	GAM
Europium 152	14683-23-9	U		0.18	0.10	U	GAM
Europium 154	15585-10-1	U		0.18	0.10	U	GAM
Europium 155	14391-16-3	U		0.14	0.10	U	GAM
Thorium 228	14274-82-9	U		0.086		U	GAM
Thorium 232	TH-232	U		0.36		U	GAM
Uranium 235	15117-96-1	U		0.23		U	GAM
Uranium 238	U-238	U		8.3		U	GAM
Americium 241	14596-10-2	U		0.076		U	GAM

Remaining Sites Confirmation Smpl.

QC-BLANK 44181

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

R303114-09

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7463
Contact Melissa C. Mannion

Client/Case no Hanford SDG H2113
Contract No. 630

Lab sample id R303114-09
Dept sample id 7463-009

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No B03-015

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
Gross Alpha	206	15	3.6	10		93A	200	8.0	103	67-133	70-130
Gross Beta	208	10	5.8	15		93B	211	8.4	99	76-124	70-130
Tritium	13.3	0.41	0.27	400		H	13.1	0.52	102	83-117	80-120
Nickel 63	232	4.9	2.4	30	B	NI_L	228	9.1	102	83-117	80-120
Total Strontium	43.4	2.3	0.74	1.0		SR	42.2	1.7	103	82-118	80-120
Technetium 99	115	8.4	0.53	15		TC	109	4.4	106	79-121	80-120
Uranium 233/234	17.5	2.1	1.0	1.0		U	18.6	0.74	94	81-119	80-120
Uranium 235	13.9	1.8	0.30	1.0		U	15.1	0.60	92	80-120	80-120
Uranium 238	20.4	2.3	0.99	1.0		U	20.2	0.81	101	80-120	80-120
Plutonium 238	26.1	2.3	0.16	1.0		PU	24.4	0.98	107	83-117	80-120
Plutonium 239/240	26.9	2.3	0.16	1.0		PU	26.4	1.1	102	84-116	80-120
Americium 241	19.8	2.1	0.22	1.0		AM	19.0	0.76	104	81-119	80-120
Cobalt 60	4.46	0.27	0.15	0.050		GAM	5.31	0.21	84	79-121	80-120
Cesium 137	4.32	0.22	0.16	0.10		GAM	5.09	0.20	85	79-121	80-120

Remaining Sites Confirmation Smpl.

QC-LCS 44180

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

R303114-12 J00JR7

DUPLICATE

SDG	7463			Client/Case no	Hanford SDG H2113
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R303114-12	Lab sample id	R303114-02	Client sample id	J00JR7
Dept sample id	7463-012	Dept sample id	7463-002	Location/Matrix	126-B-3 SOLID
		Received	03/26/03	Collected/Weight	03/21/03 13:20 1304 g
% solids	95.4	% solids	95.4	Custody/SAF No	B03-015-09 B03-015

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	PROT LIMIT
Tritium	0.079	0.084	0.14	400	U	H	0.082	0.080	0.13	U	-		

Remaining Sites Confirmation Smpl.

QC-DUP#2 44184

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

R303114-11 J00JT6

DUPLICATE

SDG	7463			Client/Case no	Hanford SDG H2113
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R303114-11	Lab sample id	R303114-08	Client sample id	J00JT6
Dept sample id	7463-011	Dept sample id	7463-008	Location/Matrix	126-B-3 SOLID
		Received	03/26/03	Collected/Weight	03/21/03 08:00 1374 g
% solids	100.0	% solids	100.0	Custody/SAF No	B03-015-10 B03-015

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 PROT TOT LIMIT
Gross Alpha	1.31	1.6	2.3	10	U	93A	3.49	2.4	2.6		91	186
Gross Beta	3.84	4.0	6.4	15	U	93B	4.84	4.2	6.6	U	-	
Nickel 63	5.56	1.3	2.0	30	B	NI_L	12.1	1.4	1.9	B	74	40
Total Strontium	-0.106	0.30	0.64	1.0	U	SR	0.027	0.26	0.54	U	-	
Technetium 99	-0.002	0.33	0.52	15	U	TC	0.070	0.19	0.50	U	-	
Uranium 233/234	0.192	0.14	0.18	1.0		U	0.235	0.16	0.20		20	150
Uranium 235	0.058	0.058	0.22	1.0	U	U	0	0.063	0.24	U	-	
Uranium 238	0.144	0.097	0.18	1.0	U	U	0.209	0.16	0.20		37	159
Plutonium 238	0	0.051	0.20	1.0	U	PU	0.043	0.085	0.33	U	-	
Plutonium 239/240	0	0.051	0.20	1.0	U	PU	0.085	0.085	0.33	U	-	
Americium 241	0.057	0.11	0.22	1.0	U	AM	0	0.057	0.22	U	-	
Potassium 40	4.37	0.48	0.16			GAM	4.48	0.47	0.13		2	39
Cobalt 60	U		0.017	0.050	U	GAM	U		0.019	U	-	
Cesium 137	U		0.013	0.10	U	GAM	U		0.014	U	-	
Radium 226	0.148	0.038	0.026			GAM	0.134	0.036	0.026		10	64
Radium 228	0.181	0.070	0.075			GAM	0.226	0.062	0.060		22	76
Europium 152	U		0.037	0.10	U	GAM	U		0.036	U	-	
Europium 154	U		0.046	0.10	U	GAM	U		0.047	U	-	
Europium 155	U		0.049	0.10	U	GAM	U		0.049	U	-	
Thorium 228	0.151	0.018	0.017			GAM	0.152	0.020	0.018		1	42
Thorium 232	0.181	0.070	0.075			GAM	0.226	0.062	0.060		22	76
Uranium 235	U		0.065		U	GAM	U		0.064	U	-	
Uranium 238	U		1.8		U	GAM	U		1.8	U	-	
Americium 241	U		0.083		U	GAM	U		0.085	U	-	

Remaining Sites Confirmation Smpl.

QC-DUP#8 44182

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

R303114-13 J00JR7

MATRIX SPIKE

SDG	7463			Client/Case no	Hanford SDG H2113
Contact	Melissa C. Mannion			Contract	No. 630
	MATRIX SPIKE		ORIGINAL		
Lab sample id	R303114-13	Lab sample id	R303114-02	Client sample id	J00JR7
Dept sample id	7463-013	Dept sample id	7463-002	Location/Matrix	126-B-3 SOLID
		Received	03/26/03	Collected/Weight	03/21/03 13:20 1304 g
% solids	95.4	% solids	95.4	Custody/SAF No	B03-015-09 B03-015

ANALYTE	SPIKE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	ORIGINAL pCi/g	2σ ERR (COUNT)	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	33.6	0.42	0.13	400	X	H	36.6	1.5	0.082	0.080	92	85-115	60-140

Remaining Sites Confirmation Smpl.

QC-MS#2 44183

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-MS
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

R303114-14 J00JT6

MATRIX SPIKE

SDG	7463			Client/Case no	Hanford SDG H2113
Contact	Melissa C. Mannion			Contract	No. 630
	MATRIX SPIKE		ORIGINAL		
Lab sample id	R303114-14	Lab sample id	R303114-08	Client sample id	J00JT6
Dept sample id	7463-014	Dept sample id	7463-008	Location/Matrix	126-B-3 SOLID
		Received	03/26/03	Collected/Weight	03/21/03 08:00 1374 g
% solids	100.0	% solids	100.0	Custody/SAF No	B03-015-10 B03-015

ANALYTE	SPIKE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	ORIGINAL pCi/g	2σ ERR (COUNT)	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Nickel 63	851	17	4.5	30	B	NI_L	916	37	12.1	1.4	92	85-115	60-140

Remaining Sites Confirmation Smpl.

QC-MS#8 44185

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-MS
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

R303114-01 J00JK0

DATA SHEET

SDG	7463	Client/Case no	Hanford SDG H2113
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R303114-01	Client sample id	J00JK0
Dept sample id	7463-001	Location/Matrix	126-B-3 SOLID
Received	03/26/03	Collected/Weight	03/21/03 09:48 1347 g
% solids	95.2	Custody/SAF No	B03-015-12 B03-015

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	7.42	3.8	4.3	10		93A
Gross Beta	12587-47-2	10.2	3.9	5.6	15		93B
Potassium 40	13966-00-2	8.19	0.74	0.26			GAM
Cobalt 60	10198-40-0	U		0.025	0.050	U	GAM
Cesium 137	10045-97-3	U		0.023	0.10	U	GAM
Radium 226	13982-63-3	0.319	0.050	0.045			GAM
Radium 228	15262-20-1	0.498	0.11	0.11			GAM
Europium 152	14683-23-9	U		0.053	0.10	U	GAM
Europium 154	15585-10-1	U		0.082	0.10	U	GAM
Europium 155	14391-16-3	U		0.052	0.10	U	GAM
Thorium 228	14274-82-9	0.552	0.041	0.044			GAM
Thorium 232	TH-232	0.498	0.11	0.11			GAM
Uranium 235	15117-96-1	U		0.083		U	GAM
Uranium 238	U-238	U		2.8		U	GAM
Americium 241	14596-10-2	U		0.032		U	GAM

Remaining Sites Confirmation Smpl.

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

R303114-02 J00JR7

DATA SHEET

SDG	7463	Client/Case no	Hanford SDG H2113
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R303114-02	Client sample id	J00JR7
Dept sample id	7463-002	Location/Matrix	126-B-3 SOLID
Received	03/26/03	Collected/Weight	03/21/03 13:20 1304 g
% solids	95.4	Custody/SAF No	B03-015-09 B03-015

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	4.82	3.4	3.7	10		93A
Gross Beta	12587-47-2	14.8	4.8	6.8	15		93B
Tritium	10028-17-8	0.082	0.080	0.13	400	U	H
Uranium 233/234	U-233/234	0.564	0.26	0.20	1.0		U
Uranium 235	15117-96-1	0.031	0.062	0.24	1.0	U	U
Uranium 238	U-238	0.410	0.21	0.20	1.0		U
Potassium 40	13966-00-2	8.81	1.5	0.94			GAM
Cobalt 60	10198-40-0	U		0.083	0.050	U	GAM
Cesium 137	10045-97-3	U		0.072	0.10	U	GAM
Radium 226	13982-63-3	0.268	0.14	0.16			GAM
Radium 228	15262-20-1	0.275	0.23	0.28		U	GAM
Europium 152	14683-23-9	U		0.20	0.10	U	GAM
Europium 154	15585-10-1	U		0.31	0.10	U	GAM
Europium 155	14391-16-3	U		0.19	0.10	U	GAM
Thorium 228	14274-82-9	0.328	0.074	0.091			GAM
Thorium 232	TH-232	0.275	0.23	0.28		U	GAM
Uranium 235	15117-96-1	U		0.30		U	GAM
Uranium 238	U-238	U		9.4		U	GAM
Americium 241	14596-10-2	U		0.20		U	GAM

Remaining Sites Confirmation Smpl.

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

R303114-03 **J00JR8**

DATA SHEET

SDG	7463	Client/Case no	Hanford	SDG H2113
Contact	Melissa C. Mannion	Contract	No. 630	
Lab sample id	R303114-03	Client sample id	J00JR8	
Dept sample id	7463-003	Location/Matrix	126-B-3	SOLID
Received	03/26/03	Collected/Weight	03/21/03 15:00	1501 g
% solids	94.4	Custody/SAF No	B03-015-09	B03-015

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	1.61	2.6	3.9	10	U	93A
Gross Beta	12587-47-2	13.0	4.2	6.0	15		93B
Tritium	10028-17-8	0.044	0.081	0.14	400	U	H
Uranium 233/234	U-233/234	0.383	0.21	0.27	1.0		U
Uranium 235	15117-96-1	0.042	0.084	0.32	1.0	U	U
Uranium 238	U-238	0.452	0.28	0.27	1.0		U
Potassium 40	13966-00-2	8.24	1.3	0.63			GAM
Cobalt 60	10198-40-0	U		0.068	0.050	U	GAM
Cesium 137	10045-97-3	U		0.071	0.10	U	GAM
Radium 226	13982-63-3	0.339	0.15	0.14			GAM
Radium 228	15262-20-1	0.684	0.25	0.24			GAM
Europium 152	14683-23-9	U		0.18	0.10	U	GAM
Europium 154	15585-10-1	U		0.23	0.10	U	GAM
Europium 155	14391-16-3	U		0.17	0.10	U	GAM
Thorium 228	14274-82-9	0.400	0.067	0.072			GAM
Thorium 232	TH-232	0.684	0.25	0.24			GAM
Uranium 235	15117-96-1	U		0.28		U	GAM
Uranium 238	U-238	U		8.2		U	GAM
Americium 241	14596-10-2	U		0.18		U	GAM

Remaining Sites Confirmation Smpl.

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

R303114-04 **J00JR9**

DATA SHEET

SDG	7463	Client/Case no	Hanford	SDG H2113	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R303114-04	Client sample id	J00JR9		
Dept sample id	7463-004	Location/Matrix	126-B-3	SOLID	
Received	03/26/03	Collected/Weight	03/24/03 08:50	1215 g	
% solids	92.5	Custody/SAF No	B03-015-09	B03-015	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	8.32	3.8	4.3	10		93A
Gross Beta	12587-47-2	15.8	4.7	6.5	15		93B
Tritium	10028-17-8	-0.012	0.090	0.15	400	U	H
Uranium 233/234	U-233/234	0.331	0.20	0.25	1.0		U
Uranium 235	15117-96-1	0	0.080	0.31	1.0	U	U
Uranium 238	U-238	0.562	0.27	0.25	1.0		U
Potassium 40	13966-00-2	8.72	0.89	0.31			GAM
Cobalt 60	10198-40-0	U		0.065	0.050	U	GAM
Cesium 137	10045-97-3	0.057	0.051	0.051	0.10		GAM
Radium 226	13982-63-3	0.358	0.083	0.084			GAM
Radium 228	15262-20-1	0.432	0.18	0.19			GAM
Europium 152	14683-23-9	U		0.11	0.10	U	GAM
Europium 154	15585-10-1	U		0.15	0.10	U	GAM
Europium 155	14391-16-3	U		0.10	0.10	U	GAM
Thorium 228	14274-82-9	0.440	0.055	0.055			GAM
Thorium 232	TH-232	0.432	0.18	0.19			GAM
Uranium 235	15117-96-1	U		0.16		U	GAM
Uranium 238	U-238	U		6.3		U	GAM
Americium 241	14596-10-2	U		0.11		U	GAM

Remaining Sites Confirmation Smpl.

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

R303114-05 **J00JT3**

DATA SHEET

SDG	7463	Client/Case no	Hanford	SDG H2113	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R303114-05	Client sample id	J00JT3		
Dept sample id	7463-005	Location/Matrix	126-B-3	SOLID	
Received	03/26/03	Collected/Weight	03/24/03 09:25	1228 g	
% solids	91.6	Custody/SAF No	B03-015-10	B03-015	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	8.75	3.8	4.0	10		93A
Gross Beta	12587-47-2	20.3	4.4	5.3	15		93B
Tritium	10028-17-8	-0.031	0.078	0.13	400	U	H
Uranium 233/234	U-233/234	0.593	0.24	0.18	1.0		U
Uranium 235	15117-96-1	0.057	0.058	0.22	1.0	U	U
Uranium 238	U-238	0.474	0.19	0.18	1.0		U
Potassium 40	13966-00-2	9.64	1.1	0.64			GAM
Cobalt 60	10198-40-0	U		0.071	0.050	U	GAM
Cesium 137	10045-97-3	U		0.055	0.10	U	GAM
Radium 226	13982-63-3	0.357	0.088	0.090			GAM
Radium 228	15262-20-1	0.573	0.24	0.25			GAM
Europium 152	14683-23-9	U		0.14	0.10	U	GAM
Europium 154	15585-10-1	U		0.17	0.10	U	GAM
Europium 155	14391-16-3	U		0.13	0.10	U	GAM
Thorium 228	14274-82-9	0.656	0.088	0.088			GAM
Thorium 232	TH-232	0.573	0.24	0.25			GAM
Uranium 235	15117-96-1	U		0.18		U	GAM
Uranium 238	U-238	U		7.4		U	GAM
Americium 241	14596-10-2	U		0.12		U	GAM

Remaining Sites Confirmation Smpl.

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

R303114-06 **J00JT4**

DATA SHEET

SDG	7463	Client/Case no	Hanford		SDG H2113
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R303114-06	Client sample id	J00JT4		
Dept sample id	7463-006	Location/Matrix	126-B-3		SOLID
Received	03/26/03	Collected/Weight	03/24/03 10:10	1229 g	
% solids	93.2	Custody/SAF No	B03-015-10	B03-015	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	3.58	2.8	3.2	10		93A
Gross Beta	12587-47-2	16.4	4.7	6.5	15		93B
Tritium	10028-17-8	-0.069	0.083	0.14	400	U	H
Uranium 233/234	U-233/234	0.428	0.22	0.20	1.0		U
Uranium 235	15117-96-1	0.162	0.13	0.25	1.0	U	U
Uranium 238	U-238	0.375	0.22	0.20	1.0		U
Potassium 40	13966-00-2	13.7	0.90	0.24			GAM
Cobalt 60	10198-40-0	U		0.034	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.10	U	GAM
Radium 226	13982-63-3	0.482	0.072	0.056			GAM
Radium 228	15262-20-1	0.785	0.14	0.13			GAM
Europium 152	14683-23-9	U		0.079	0.10	U	GAM
Europium 154	15585-10-1	U		0.095	0.10	U	GAM
Europium 155	14391-16-3	0.109	0.083	0.11	0.10	U	GAM
Thorium 228	14274-82-9	0.668	0.041	0.033			GAM
Thorium 232	TH-232	0.785	0.14	0.13			GAM
Uranium 235	15117-96-1	U		0.13		U	GAM
Uranium 238	U-238	U		3.8		U	GAM
Americium 241	14596-10-2	U		0.18		U	GAM

Remaining Sites Confirmation Smpl.

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

R303114-07 **J00JT5**

DATA SHEET

SDG	7463	Client/Case no	Hanford	SDG H2113	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R303114-07	Client sample id	J00JT5		
Dept sample id	7463-007	Location/Matrix	126-B-3	SOLID	
Received	03/26/03	Collected/Weight	03/24/03 10:10	1407 g	
% solids	93.6	Custody/SAF No	B03-015-10	B03-015	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	7.58	3.5	3.7	10		93A
Gross Beta	12587-47-2	13.8	5.4	8.0	15		93B
Tritium	10028-17-8	-0.076	0.087	0.15	400	U	H
Uranium 233/234	U-233/234	0.592	0.29	0.22	1.0		U
Uranium 235	15117-96-1	0.068	0.068	0.26	1.0	U	U
Uranium 238	U-238	0.592	0.29	0.22	1.0		U
Potassium 40	13966-00-2	12.4	0.77	0.20			GAM
Cobalt 60	10198-40-0	U		0.030	0.050	U	GAM
Cesium 137	10045-97-3	0.039	0.024	0.028	0.10		GAM
Radium 226	13982-63-3	0.463	0.063	0.047			GAM
Radium 228	15262-20-1	0.793	0.11	0.096			GAM
Europium 152	14683-23-9	U		0.062	0.10	U	GAM
Europium 154	15585-10-1	U		0.083	0.10	U	GAM
Europium 155	14391-16-3	U		0.087	0.10	U	GAM
Thorium 228	14274-82-9	U		0.068		U	GAM
Thorium 232	TH-232	0.793	0.11	0.096			GAM
Uranium 235	15117-96-1	U		0.11		U	GAM
Uranium 238	U-238	U		3.1		U	GAM
Americium 241	14596-10-2	U		0.15		U	GAM

Remaining Sites Confirmation Smpl.

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

R303114-08 J00JT6

DATA SHEET

SDG	7463	Client/Case no	Hanford SDG H2113
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R303114-08	Client sample id	J00JT6
Dept sample id	7463-008	Location/Matrix	126-B-3 SOLID
Received	03/26/03	Collected/Weight	03/21/03 08:00 1374 g
% solids	100.0	Custody/SAF No	B03-015-10 B03-015

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	3.49	2.4	2.6	10		93A
Gross Beta	12587-47-2	4.84	4.2	6.6	15	U	93B
Nickel 63	13981-37-8	12.1	1.4	1.9	30	B	NI_L
Total Strontium	SR-RAD	0.027	0.26	0.54	1.0	U	SR
Technetium 99	14133-76-7	0.070	0.19	0.50	15	U	TC
Uranium 233/234	U-233/234	0.235	0.16	0.20	1.0		U
Uranium 235	15117-96-1	0	0.063	0.24	1.0	U	U
Uranium 238	U-238	0.209	0.16	0.20	1.0		U
Plutonium 238	13981-16-3	0.043	0.085	0.33	1.0	U	PU
Plutonium 239/240	PU-239/240	0.085	0.085	0.33	1.0	U	PU
Americium 241	14596-10-2	0	0.057	0.22	1.0	U	AM
Potassium 40	13966-00-2	4.48	0.47	0.13			GAM
Cobalt 60	10198-40-0	U		0.019	0.050	U	GAM
Cesium 137	10045-97-3	U		0.014	0.10	U	GAM
Radium 226	13982-63-3	0.134	0.036	0.026			GAM
Radium 228	15262-20-1	0.226	0.062	0.060			GAM
Europium 152	14683-23-9	U		0.036	0.10	U	GAM
Europium 154	15585-10-1	U		0.047	0.10	U	GAM
Europium 155	14391-16-3	U		0.049	0.10	U	GAM
Thorium 228	14274-82-9	0.152	0.020	0.018			GAM
Thorium 232	TH-232	0.226	0.062	0.060			GAM
Uranium 235	15117-96-1	U		0.064		U	GAM
Uranium 238	U-238	U		1.8		U	GAM
Americium 241	14596-10-2	U		0.085		U	GAM

Remaining Sites Confirmation Smpl.

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

SAMPLE DELIVERY GROUP H2113

Test AM Matrix SOLID
SDG 7463
Contact Melissa C. Mannion

METHOD SUMMARY

AMERICIUM 241 IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2113

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Americium 241	
Preparation batch 7043-180						
J00JT6	R303114-08			7463-008	U	
BLK (QC ID=44181)	R303114-10			7463-010	U	
LCS (QC ID=44180)	R303114-09			7463-009	ok	
Duplicate (R303114-08)	R303114-11			7463-011	-	U
Nominal values and limits from method				RDLs (pCi/g)	1.0	
Remaining Sites Confirmation Smpl.						

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	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 7043-180	2σ prep error 5.0 %				Reference Lab Notebook 7043 pg. 180											
J00JT6	R303114-08			0.22	0.500			71		133			10	03/31/03	03/31	SS-051
BLK (QC ID=44181)	R303114-10			0.18	0.500			84		133				03/31/03	03/31	SS-055
LCS (QC ID=44180)	R303114-09			0.22	0.500			65		133				03/31/03	03/31	SS-052
Duplicate (R303114-08) (QC ID=44182)	R303114-11			0.22	0.500			74		134			10	03/31/03	03/31	SS-058
Nominal values and limits from method				1.0	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 7

AVERAGES ± 2 SD FOR 4 SAMPLES				
MDA	0.21	±	0.040
YIELD	74	±	16

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

Test PU Matrix SOLID
SDG 7463
Contact Melissa C. Mannion

METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2113

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Plutonium 238		Plutonium 239/240	
Preparation batch 7043-180								
J00JT6	R303114-08			7463-008	U		U	
BLK (QC ID=44181)	R303114-10			7463-010	U		U	
LCS (QC ID=44180)	R303114-09			7463-009	ok		ok	
Duplicate (R303114-08)	R303114-11			7463-011	-	U	-	U
Nominal values and limits from method				RDLs (pCi/g)	1.0		1.0	
Remaining Sites Confirmation Smpl.								

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	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 7043-180	2σ prep error 5.0 %			Reference Lab Notebook 7043 pg. 180												
J00JT6	R303114-08			0.33	0.500			38		168			10	03/31/03	03/31	SS-042
BLK (QC ID=44181)	R303114-10			0.15	0.500			79		169				03/31/03	03/31	SS-044
LCS (QC ID=44180)	R303114-09			0.16	0.500			74		168				03/31/03	03/31	SS-043
Duplicate (R303114-08) (QC ID=44182)	R303114-11			0.20	0.500			53		168			10	03/31/03	03/31	SS-045
Nominal values and limits from method				1.0	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 7

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.21 ± 0.17
YIELD 61 ± 38

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

Test U Matrix SOLID
SDG 7463
Contact Melissa C. Mannion

METHOD SUMMARY

URANIUM, ISOTOPIC IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2113

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1÷3	2σ	2÷3	2σ
Preparation batch 7043-180											
J00JR7	R303114-02			7463-002	0.564	U	0.410	138	95	8	16
J00JR8	R303114-03			7463-003	0.383	U	0.452	85	70	9	19
J00JR9	R303114-04			7463-004	0.331	U	0.562	59	45	0	14
J00JT3	R303114-05			7463-005	0.593	U	0.474	125	71	12	13
J00JT4	R303114-06			7463-006	0.428	U	0.375	114	89	43	43
J00JT5	R303114-07			7463-007	0.592	U	0.592	100	69	11	13
J00JT6	R303114-08			7463-008	0.235	U	0.209	112	115	0	30
BLK (QC ID=44181)	R303114-10			7463-010	U	U	U				
LCS (QC ID=44180)	R303114-09			7463-009	ok	ok	ok				
Duplicate (R303114-08)	R303114-11			7463-011	ok	- U	ok U				
Nominal values and limits from method				RDLs (pCi/g)	1.0	1.0	1.0	100		4	
Remaining Sites Confirmation Smpl.								Averages 105		12	

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	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 7043-180	2σ prep error 5.0 %				Reference Lab Notebook 7043 pg. 180											
J00JR7	R303114-02			0.24	0.500			82		133			10	03/31/03	03/31	SS-053
J00JR8	R303114-03			0.32	0.500			60		133			10	03/31/03	03/31	SS-057
J00JR9	R303114-04			0.31	0.500			66		135			7	03/31/03	03/31	SS-060
J00JT3	R303114-05			0.22	0.500			83		135			7	03/31/03	03/31	SS-061
J00JT4	R303114-06			0.25	0.500			78		136			7	03/31/03	03/31	SS-064
J00JT5	R303114-07			0.26	0.500			72		136			7	03/31/03	03/31	SS-065
J00JT6	R303114-08			0.24	0.500			80		136			10	03/31/03	03/31	SS-066
BLK (QC ID=44181)	R303114-10			0.23	0.500			65		166				03/31/03	03/31	SS-011
LCS (QC ID=44180)	R303114-09			1.0	0.500			83		101				03/31/03	04/01	SS-011
Duplicate (R303114-08) (QC ID=44182)	R303114-11			0.22	0.500			66		166			10	03/31/03	03/31	SS-014
Nominal values and limits from method				1.0	0.500			20-105		100	100		180			

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

Test	U
Matrix	SOLID
SDG	7463
Contact	Melissa C. Mannion

METHOD SUMMARY, cont.

URANIUM, ISOTOPIC IN SOIL

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG H2113

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 0
	CP-008	Heavy Element Electroplating, rev 7

AVERAGES ± 2 SD FOR 10 SAMPLES				
MDA	0.33	±	0.48
YIELD	74	±	17

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

Test SR Matrix SOLID
SDG 7463
Contact Melissa C. Mannion

METHOD SUMMARY

TOTAL STRONTIUM IN SOIL
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2113

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Total Strontium	
Preparation batch 7043-180						
J00JT6	R303114-08			7463-008	U	
BLK (QC ID=44181)	R303114-10			7463-010	U	
LCS (QC ID=44180)	R303114-09			7463-009	ok	
Duplicate (R303114-08)	R303114-11			7463-011	-	U
Nominal values and limits from method				RDLs (pCi/g)	1.0	
Remaining Sites Confirmation Smpl.						

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	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 7043-180 2σ prep error 10.0 % Reference Lab Notebook 7043 pg. 180																
J00JT6	R303114-08			0.54	0.500			89		100			10	03/31/03	03/31	GRB-230
BLK (QC ID=44181)	R303114-10			0.61	0.500			82		100				03/31/03	03/31	GRB-232
LCS (QC ID=44180)	R303114-09			0.74	0.500			81		61				03/31/03	03/31	GRB-220
Duplicate (R303114-08) (QC ID=44182)	R303114-11			0.64	0.500			82		100			10	03/31/03	03/31	GRB-231
Nominal values and limits from method				1.0	0.500			30-105		100			180			

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-381	Strontium in Solids, rev 1

AVERAGES ± 2 SD	MDA	0.63	±	0.17
FOR 4 SAMPLES	YIELD	84	±	7

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

Test TC Matrix SOLID
SDG 7463
Contact Melissa C. Mannion

METHOD SUMMARY

TECHNETIUM 99 IN SOIL
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2113

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Technetium 99	
Preparation batch 7043-180						
J00JT6	R303114-08			7463-008	U	
BLK (QC ID=44181)	R303114-10			7463-010	U	
LCS (QC ID=44180)	R303114-09			7463-009	ok	
Duplicate (R303114-08)	R303114-11			7463-011	-	U
Nominal values and limits from method				RDLs (pCi/g)	15	
Remaining Sites Confirmation Smpl.						

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	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 7043-180 2σ prep error 10.0 % Reference Lab Notebook 7043 pg. 180																
J00JT6	R303114-08			0.50	1.03			99		50			14	04/01/03	04/04	GRB-217
BLK (QC ID=44181)	R303114-10			0.51	1.00			98		50				04/01/03	04/04	GRB-218
LCS (QC ID=44180)	R303114-09			0.53	1.00			99		50				04/01/03	04/03	GRB-223
Duplicate (R303114-08) (QC ID=44182)	R303114-11			0.52	1.03			96		50			14	04/01/03	04/04	GRB-219
Nominal values and limits from method				15	1.00			20-105		50			180			

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

AVERAGES ± 2 SD	MDA	0.52	±	0.026
FOR 4 SAMPLES	YIELD	98	±	3

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

Test 93A Matrix SOLID
SDG 7463
Contact Melissa C. Mannion

METHOD SUMMARY

GROSS ALPHA IN SOIL
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG H2113

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Gross Alpha	
Preparation batch 7043-180						
J00JK0	R303114-01	93		7463-001	7.42	
J00JR7	R303114-02	93		7463-002	4.82	
J00JR8	R303114-03	93		7463-003	U	
J00JR9	R303114-04	93		7463-004	8.32	
J00JT3	R303114-05	93		7463-005	8.75	
J00JT4	R303114-06	93		7463-006	3.58	
J00JT5	R303114-07	93		7463-007	7.58	
J00JT6	R303114-08	93		7463-008	3.49	
BLK (QC ID=44181)	R303114-10	93		7463-010	U	
LCS (QC ID=44180)	R303114-09	93		7463-009	ok	
Duplicate (R303114-08)	R303114-11	93		7463-011	ok	U
Nominal values and limits from method				RDLs (pCi/g)	10	
Remaining Sites Confirmation Smpl.						

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7043-180	2σ prep error 20.0 % Reference Lab Notebook 7043 pg. 180															
J00JK0	R303114-01	93		4.3	0.100			55		100			10	03/31/03	03/31	GRB-114
J00JR7	R303114-02	93		3.7	0.100			43		100			10	03/31/03	03/31	GRB-110
J00JR8	R303114-03	93		3.9	0.100			55		100			10	03/31/03	03/31	GRB-111
J00JR9	R303114-04	93		4.3	0.100			43		100			7	03/31/03	03/31	GRB-115
J00JT3	R303114-05	93		4.0	0.100			45		100			7	03/31/03	03/31	GRB-114
J00JT4	R303114-06	93		3.2	0.100			40		100			7	03/31/03	03/31	GRB-105
J00JT5	R303114-07	93		3.7	0.100			40		100			8	03/31/03	04/01	GRB-114
J00JT6	R303114-08	93		2.6	0.100			2		100			10	03/31/03	03/31	GRB-110
BLK (QC ID=44181)	R303114-10	93		2.5	0.100			22		100				03/31/03	03/31	GRB-101
LCS (QC ID=44180)	R303114-09	93		3.6	0.100			21		100				03/31/03	03/31	GRB-115
Duplicate (R303114-08) (QC ID=44182)	R303114-11	93		2.3	0.100			3		100			10	03/31/03	03/31	GRB-105
Nominal values and limits from method				10	0.100			5-250		100			180			

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

Test 93A	Matrix SOLID
SDG 7463	
Contact Melissa C. Mannion	

METHOD SUMMARY, cont.

GROSS ALPHA IN SOIL

GAS PROPORTIONAL COUNTING

Client Hanford	
Contract No. 630	
Contract SDG H2113	

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-125	Gross Alpha and Beta in Dissolved Solids, rev 3

AVERAGES ± 2 SD	MDA	3.5	±	1.4
FOR 11 SAMPLES	RESIDUE	34	±	38

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

Test 93B Matrix SOLID
SDG 7463
Contact Melissa C. Mannion

METHOD SUMMARY

GROSS BETA IN SOIL
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG H2113

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Gross Beta	
Preparation batch 7043-180						
J00JK0	R303114-01	93		7463-001	10.2	
J00JR7	R303114-02	93		7463-002	14.8	
J00JR8	R303114-03	93		7463-003	13.0	
J00JR9	R303114-04	93		7463-004	15.8	
J00JT3	R303114-05	93		7463-005	20.3	
J00JT4	R303114-06	93		7463-006	16.4	
J00JT5	R303114-07	93		7463-007	13.8	
J00JT6	R303114-08	93		7463-008	U	
BLK (QC ID=44181)	R303114-10	93		7463-010	U	
LCS (QC ID=44180)	R303114-09	93		7463-009	ok	
Duplicate (R303114-08)	R303114-11	93		7463-011	-	U
Nominal values and limits from method				RDLs (pCi/g)	15	
Remaining Sites Confirmation Smpl.						

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7043-180	2σ prep error 15.0 % Reference Lab Notebook 7043 pg. 180															
J00JK0	R303114-01	93		5.6	0.100			55		100			10	03/31/03	03/31	GRB-109
J00JR7	R303114-02	93		6.8	0.100			43		100			10	03/31/03	03/31	GRB-110
J00JR8	R303114-03	93		6.0	0.100			55		100			10	03/31/03	03/31	GRB-111
J00JR9	R303114-04	93		6.5	0.100			43		100			7	03/31/03	03/31	GRB-105
J00JT3	R303114-05	93		5.3	0.100			45		100			7	03/31/03	03/31	GRB-101
J00JT4	R303114-06	93		6.5	0.100			40		100			7	03/31/03	03/31	GRB-105
J00JT5	R303114-07	93		8.0	0.100			40		100			8	03/31/03	04/01	GRB-114
J00JT6	R303114-08	93		6.6	0.100			2		100			10	03/31/03	03/31	GRB-110
BLK (QC ID=44181)	R303114-10	93		5.2	0.100			22		100				03/31/03	03/31	GRB-101
LCS (QC ID=44180)	R303114-09	93		5.8	0.100			21		100				03/31/03	03/31	GRB-111
Duplicate (R303114-08) (QC ID=44182)	R303114-11	93		6.4	0.100			3		100			10	03/31/03	03/31	GRB-105
Nominal values and limits from method				15	0.100			5-250		100			180			

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

Test 93B Matrix SOLID
SDG 7463
Contact Melissa C. Mannion

METHOD SUMMARY, cont.

GROSS BETA IN SOIL

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG H2113

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-125	Gross Alpha and Beta in Dissolved Solids, rev 3

AVERAGES ± 2 SD	MDA	6.2	±	1.6
FOR 11 SAMPLES	RESIDUE	34	±	38

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

Test GAM Matrix SOLID
SDG 7463
Contact Melissa C. Mannion

METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2113

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Cobalt 60	Cesium 137
Preparation batch 7043-180						
J00JK0	R303114-01			7463-001	U	U
J00JR7	R303114-02			7463-002	U	U
J00JR8	R303114-03			7463-003	U	U
J00JR9	R303114-04			7463-004	U	0.057
J00JT3	R303114-05			7463-005	U	U
J00JT4	R303114-06			7463-006	U	U
J00JT5	R303114-07			7463-007	U	0.039
J00JT6	R303114-08			7463-008	U	U
BLK (QC ID=44181)	R303114-10			7463-010	U	U
LCS (QC ID=44180)	R303114-09			7463-009	ok	ok
Duplicate (R303114-08)	R303114-11			7463-011	- U	- U
Nominal values and limits from method				RDLs (pCi/g)	0.050	0.10
Remaining Sites Confirmation Smpl.						

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	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 7043-180	2σ prep error 15.0 % Reference Lab Notebook 7043 pg. 180															
J00JK0	R303114-01			0.19	910					101			10	03/28/03	03/31	MB,07,00
J00JR7	R303114-02			0.63	227					119			10	03/28/03	03/31	JR,03,00
J00JR8	R303114-03			0.56	219					144			10	03/28/03	03/31	JR,03,00
J00JR9	R303114-04			0.38	190					144			7	03/28/03	03/31	JR,04,00
J00JT3	R303114-05			0.41	183					119			7	03/28/03	03/31	JR,04,00
J00JT4	R303114-06			0.25	566					101			7	03/28/03	03/31	MB,08,00
J00JT5	R303114-07			0.20	619					127			7	03/28/03	03/31	MB,08,00
J00JT6	R303114-08			0.11	927					119			10	03/28/03	03/31	MB,08,00
BLK (QC ID=44181)	R303114-10			0.63	183					111				03/28/03	03/31	MB,07,00
LCS (QC ID=44180)	R303114-09			0.15	183					212				03/28/03	03/31	01,03,00
Duplicate (R303114-08) (QC ID=44182)	R303114-11			0.12	927					112			10	03/28/03	03/31	MB,08,00
Nominal values and limits from method				0.050	183					100			180			

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

Test GAM Matrix SOLID
SDG 7463
Contact Melissa C. Mannion

METHOD SUMMARY, cont.

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2113

PROCEDURES	REFERENCE	GAMMA_GS
	CP-060	Soil Preparation, rev 4
	CP-100	Ge(Li) Preparation for Commercial Samples, rev 5

AVERAGES ± 2 SD	MDA	0.33	±	0.40
FOR 11 SAMPLES	YIELD		±	

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

Test H Matrix SOLID
SDG 7463
Contact Melissa C. Mannion

METHOD SUMMARY

TRITIUM IN SOIL
LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2113

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Tritium	
Preparation batch 7043-180						
J00JR7	R303114-02			7463-002	U	
J00JR8	R303114-03			7463-003	U	
J00JR9	R303114-04			7463-004	U	
J00JT3	R303114-05			7463-005	U	
J00JT4	R303114-06			7463-006	U	
J00JT5	R303114-07			7463-007	U	
BLK (QC ID=44181)	R303114-10			7463-010	U	
LCS (QC ID=44180)	R303114-09			7463-009	ok	
Duplicate (R303114-02)	R303114-12			7463-012	-	U
Spike (R303114-02)	R303114-13			7463-013	ok	X

Nominal values and limits from method RDLs (pCi/g) 400
Remaining Sites Confirmation Smpl.

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	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 7043-180	2σ prep error 10.0 % Reference Lab Notebook 7043 pg. 180															
J00JR7	R303114-02			0.13	28.7			49		120			11	03/31/03	04/01	LSC-007
J00JR8	R303114-03			0.14	27.5			49		120			11	03/31/03	04/01	LSC-007
J00JR9	R303114-04			0.15	25.7			47		120			8	03/31/03	04/01	LSC-007
J00JT3	R303114-05			0.13	26.8			49		120			8	03/31/03	04/01	LSC-007
J00JT4	R303114-06			0.14	26.1			48		120			8	03/31/03	04/01	LSC-007
J00JT5	R303114-07			0.15	26.3			46		120			8	03/31/03	04/01	LSC-007
BLK (QC ID=44181)	R303114-10			0.28	20.0			33		120				03/31/03	04/02	LSC-007
LCS (QC ID=44180)	R303114-09			0.27	20.0			33		120				03/31/03	04/01	LSC-007
Duplicate (R303114-02) (QC ID=44184)	R303114-12			0.14	27.0			49		120			12	03/31/03	04/02	LSC-007
Spike (R303114-02) (QC ID=44183)	R303114-13			0.13	28.7			49		120			12	03/31/03	04/02	LSC-007
Nominal values and limits from method				400	20.0					25			180			

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

Test	H
Matrix	SOLID
SDG	7463
Contact	Melissa C. Mannion

METHOD SUMMARY, cont.

TRITIUM IN SOIL

LIQUID SCINTILLATION COUNTING

Client	Hanford
Contract	No. 630
Contract	SDG H2113

PROCEDURES	REFERENCE	906.0_H3_LSC
	CP-218	Tritium in Soil Samples by Azeotropic Distillation, rev 1

AVERAGES ± 2 SD	MDA	0.17	±	0.12
FOR 10 SAMPLES	YIELD	45	±	13

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

Test NI_L Matrix SOLID
SDG 7463
Contact Melissa C. Mannion

METHOD SUMMARY

NICKEL 63 IN SOIL
LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2113

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Nickel 63
Preparation batch 7043-180					
J00JT6	R303114-08			7463-008	12.1
BLK (QC ID=44181)	R303114-10			7463-010	8.50
LCS (QC ID=44180)	R303114-09			7463-009	ok
Duplicate (R303114-08)	R303114-11			7463-011	OUT
Spike (R303114-08)	R303114-14			7463-014	ok
Nominal values and limits from method				RDLs (pCi/g)	30

Remaining Sites Confirmation Smpl.

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	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 7043-180	2σ prep error 10.0 % Reference Lab Notebook 7043 pg. 180															
J00JT6	R303114-08			1.9	0.500			100		100			11	04/01/03	04/01	LSC-004
BLK (QC ID=44181)	R303114-10			3.6	0.500			100		30				04/01/03	04/02	LSC-004
LCS (QC ID=44180)	R303114-09			2.4	0.500			100		68				04/01/03	04/01	LSC-004
Duplicate (R303114-08) (QC ID=44182)	R303114-11			2.0	0.500			100		100			11	04/01/03	04/01	LSC-004
Spike (R303114-08) (QC ID=44185)	R303114-14			4.5	0.500			100		18			11	04/01/03	04/01	LSC-004
Nominal values and limits from method				30	0.500			30-105		50			180			

PROCEDURES	REFERENCE	NI63_LSC
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-281	Nickel-63 Purification By Extraction Chromatography, rev 0

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 2.9 ± 2.3
YIELD 100 ± 0

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 04/07/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2113

SDG 7463
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2113

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/07/03

SDG	7463
Contact	Melissa C. Mannion

REPORT GUIDE

Client	Hanford
Contract	No. 630
Case no	SDG H2113

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.

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-RG
Version	3.06
Report date	04/07/03

SDG 7463
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2113

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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REPORT GUIDE

Client Hanford
Contract No. 630
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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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Case no SDG H2113

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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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.

SDG 7463
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
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Case no SDG H2113

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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MATRIX SPIKE

for the recovery.

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

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

SDG 7463
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2113

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
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METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

* 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.

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-12	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson — Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B — Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3 H2113 (7463)	SAF No.: B03-015	Air Quality [ ]
Ice Chest No.: ERC 96 036	Field Logbook No.: EL 1577 — COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: TMA/REORA BD 3-25-03	Offsite Property No.: A030185	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

BD 3-21-03

Preservation	None	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	~~G/P~~ aG	G/P	~~G/P~~ aG	G	G/P	aG	G/P	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	~~1500g~~ 1000ml	20g	~~10g~~ 60ml	10g	125g	~~130g~~ 120ml	100g	~~125g~~ 120ml	20g	~~60g~~ 60ml
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14; Tritium - H3	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	Pesticides - 8081; PCBs - 8082	See item (4) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1

Sample No.	Matrix *	Sample Date	Sample Time									
~~J00JV0~~ J00JK0	SOIL	3-21-03	0948	X		X			X		X	X
BD 3-20-03												

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: 1049 Doug Bowers Bowers	3-21-03/1730	Received By/Stored In: 03728 Ref 3C	3-21-03/1730
Relinquished By/Removed From: Ref 3C 3728	3-25-03/0900	Received By/Stored In: Doug Bowers Doug Bowers	3-25-03/0900
Relinquished By/Removed From: 1049 Doug Bowers Bowers	3-25-03/0900	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: Fed Ex		Received By/Stored In: [signature]	3-26-03 10:00
Relinquished By/Removed From		Received By/Stored In	MM 3/27/03
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90; Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}~~

(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

(3) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470

(4) IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}

Area 1 soil

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-09	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson; Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B; Data Turnaround: 7 Days; Air Quality ☐
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3 H2113 (7463)	SAF No.: B03-015	
Ice Chest No.: ERC 96 036	Field Logbook No.: EL 1577; COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: TMA/~~RECRA~~ 3-25-03	Offsite Property No.: A030185	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1000mL	60mL	60mL	120mL	120mL	60mL	60mL			

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	~~Carbon-14,~~ Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270 (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			
J00JR7	SOIL	3-21-03	1320	X	X	X	X	X		X			
J00JR8	SOIL	3-21-03	1500	X	X	X	X	X		X			
~~J00JR9~~	~~SOIL~~	3-21-03											

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Doug Bowers	3-21-03 / 1730	RFJC 3728	3-21-03 / 1730
RFJC 3728	3-25-03 / 0900	Doug Bowers Doug Bowers	3-25-03 / 0900
Doug Bowers Doug Bowers	3-25-03 / 0900	FedEx	
FedEx		[illegible]	3-26-03 10:00

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63, Isotopic Plutonium (Plutonium-238, Plutonium-239/240), Strontium-89,90 - Total Sr, Technetium-99~~; Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 2 soil

MM 3/27/03

Matrix *: S=Soil; SE=Sediment; SO=Solid; SL=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; WI=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-09	Page 1 of 1

Collector Doug Bowers	Company Contact Renee Neilson	Telephone No. 521-2090	Project Coordinator KESSNER, JH
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 126-B-3 H2113 (7463)		SAF No. B03-015
Ice Chest No. ERC 96 036	Field Logbook No. EL 1577	COA C17HXB671C	Method of Shipment Fed Ex
Shipped To TMA/~~RECRA~~ RAD 3-25-03	Offsite Property No. A030185		Bill of Lading/Air Bill No. 3-25-03 SUE OSPC

Price Code 8B

Air Quality ☐

Data Turnaround 7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1					1				
Volume	1000mL	60mL 3-25-03	60mL	120mL	120mL	60mL	60mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Carbon-14~~; Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1				
Sample No.	Matrix *	Sample Date	Sample Time								
~~J00JR7~~	~~SOIL~~ RAD 3-25-03										
~~J00JR8~~	~~SOIL~~ RAD 3-25-03										
J00JR9	SOIL	3-24-03	0850	X	X	X	X	X		X	

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Doug Doug Bowers (Bowers)	3/24/03 1330	Received By/Stored In Ref 3C 3728	3-24-03 1330
Relinquished By/Removed From Ref 3C 3728	3-25-03/0900	Received By/Stored In Doug (Bowers) Doug Bowers	3-25-03 0900
Relinquished By/Removed From Doug Doug Bowers (Bowers)	3-25-03/0900	Received By/Stored In Fed Ex	
Relinquished By/Removed From FED EX		Received By/Stored In	3-26-03 10:00
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS RAD 3-25-03

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-239, Plutonium-239/240}; Strontium-89,90 - Total Sr; Technetium-99~~; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 2 soil

MR 3/27/03

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-10	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson — Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B — Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3 H2113 (7463)	SAF No.: B03-015	Air Quality ☐
Ice Chest No.: ERC 96 036	Field Logbook No.: EL 1577 — COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: TMA/RCRA AHD 3-25-03	Offsite Property No.: A030185	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	1000mL	60mL AHD 3-25-03	60mL	120mL	120mL	60mL	60mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Carbon-14;~~ Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082 AHD 3-25-03	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			

Sample No.	Matrix *	Sample Date	Sample Time									
J00JT3	SOIL	3-24-03	0925	X	X	X	X	X		X		
J00JT4	SOIL	3-24-03	1010	X	X	X	X	X		X		
J00JT5	SOIL	3-24-03	1010	X	X	X	X	X		X		
~~J00JT6~~ AHD 3-20-03	SOIL											

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Doug Bowers	3-24-03/1130	Rof JC 7728	3-24-03/1130
Relinquished By/Removed From	Rof JC 7728	3-25-03 0900	Received By/Stored In: Doug Bowers	Date/Time 0800
Relinquished By/Removed From	Doug Bowers	3-25-03/0800	Received By/Stored In: Fed Ex Doug Bowers	3-25-03
Relinquished By/Removed From	FED EX		Received By/Stored In	Fed Ex
Relinquished By/Removed From			Received By/Stored In	3-26-03 10:00
Relinquished By/Removed From			Received By/Stored In	MM 3/27/3
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ~~Americium-241~~; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; ~~Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 - Total Sr; Technetium-99~~; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Area 3 soil

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-10	Page 1 of 1

Collector: Doug Bowers	Company Contact: Renee Neilson; Telephone No.: 521-2090	Project Coordinator: KESSNER, JH	Price Code: 8B; Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 126-B-3 H213 (7463)	SAF No.: B03-015	Air Quality ☐
Ice Chest No.: ERC 96 036	Field Logbook No.: EL 1577; COA: C17HXB671C	Method of Shipment: Fed Ex	
Shipped To: TMA/RCRA 3-25-03	Offsite Property No.: A030185	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1	1				
Volume	1000mL	60mL	60mL	120mL	120mL	60mL	60mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14; Tritium - H3	See item (2) in Special Instructions.	Pesticides - 8081; PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1				

Sample No.	Matrix*	Sample Date	Sample Time										
~~J00JT3~~	~~SOIL~~												
~~J00JT4~~	SOIL												
~~J00JT5~~	SOIL												
J00JT6	SOIL	3-21-03	~~0800~~ 0900	X		X		X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Bowers	3-21-03/1730	RCF 3C 3728	3-21-03/1730
RCF 3C 3728	3-25-03/0900	Doug Bowers	3-25-03/0900
Doug Bowers Bowers	3-25-03/0900	Fed Ex	
Fed Ex		Ner CA	3-26-03 10:00

SPECIAL INSTRUCTIONS

(1) Americium-241; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(2) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

mm 3/27/03 ~~Area 3 soil~~ 3-20-03

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

3HI-EE-011 (03/01/2002)

EBERLINE SERVICES

ANALYTICAL SERVICES GROUP
Richmond, CA Laboratory

SAMPLE RECEIPT CHECKLIST

Client: BHI Date/Time received 1000 3-26-03

CoC No. B 03-015-009, 10

Container I.D. No. G-R C-96-030 Requested TAT (Days) 7 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [✓] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [✓] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [✓] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [✓] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [✓]
6. Number of samples in shipping container: 8
7. Number of containers per sample: _____ (Or see CoC _____) ✓
8. Paperwork agrees with samples? Yes [✓] No [ ]
9. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [✓]
10. Samples are: In good condition [✓] Leaking [ ] Broken Container [ ] Missing [ ]
11. *Samples are: Preserved [ ] Not preserved [✓] Preservative* _____
12. Describe any anomalies: _____
13. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
14. Received by [signature] Date: 3-26-03 Time: 1000

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. _____ Calibration date _____