*0067542

EBERLINE
SERVICES

June 9, 2005

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

Reference: **P.O. #630**
Eberline Services R5-04-140-7264, SDG H3130

Dear Mr. Trent:

Enclosed is the data report for three solid samples designated under SAF No. F04-015 received at Eberline Services on April 22, 2005. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/

Enclosure: Data Package

JUN 2005
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EDMC

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
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1.0 GENERAL

Fluor Hanford Inc. (FH) Sample Delivery Group H3130 was composed of three solid (soil) samples designated under SAF No. F04-015 with a Project Designation of: 200-MW-1 Characterization Sampling and Analysis – Soil.

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

2.0 ANALYSIS NOTES

2.1 Tritium Analyses

No problems were encountered during the course of the analyses.

2.2 Total Strontium Analyses

No problems were encountered during the course of the analyses.

2.3 Technetium-99 Analyses

No problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analyses

No problems were encountered during the course of the analyses.

2.5 Total Uranium Analyses

No problems were encountered during the course of the analyses.

2.6 Isotopic Plutonium Analyses

No problems were encountered during the course of the analyses.

2.7 Americium-241 Analyses

No problems were encountered during the course of the analyses.

2.8 Gamma Spectroscopy

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."

Mel Mann
Melissa C. Mannion
Senior Program Manager

4/8/5
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 H3130

SDG	7264
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG H3130

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

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

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Melissa Mann
Prepared by

Melissa Mann
Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

SDG	7264
Contact	Melissa C. Mannion

REPORT GUIDE

Client	Hanford
Contract	No. 630
Case no	SDG H3130

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	06/09/05

SDG 7264
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H3130

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 06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

SDG 7264
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG H3130

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R504140-01	B1C7D2	200-E-4; 9-10 ft	SOLID		F04-015	F04-015-159	04/13/05 10:05
R504140-02	B1C7D4	200-E-4; 14-15 ft	SOLID		F04-015	F04-015-164	04/13/05 10:55
R504140-03	B1C7D5	200-E-4; 15-15 ft	SOLID		F04-015	F04-015-165	04/13/05 10:55
R504140-04	Lab Control Sample		SOLID		F04-015		
R504140-05	Method Blank		SOLID		F04-015		
R504140-06	Duplicate (R504140-01)	200-E-4; 9-10 ft	SOLID		F04-015		04/13/05 10:05
R504140-07	Duplicate (R504140-03)	200-E-4; 15-15 ft	SOLID		F04-015		04/13/05 10:55
R504140-08	Spike (R504140-02)	200-E-4; 14-15 ft	SOLID		F04-015		04/13/05 10:55

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

SDG 7264
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG H3130

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
7264	F04-015-159	B1C7D2	SOLID	96.4	51.81 g		04/22/05	9	R504140-01	7264-001
	F04-015-164	B1C7D4	SOLID	96.6	55.49		04/22/05	9	R504140-02	7264-002
	F04-015-165	B1C7D5	SOLID	96.3	281.8 g		04/22/05	9	R504140-03	7264-003
		Method Blank	SOLID						R504140-05	7264-005
		Lab Control Sample	SOLID						R504140-04	7264-004
		Duplicate (R504140-01)	SOLID	96.4	51.81 g		04/22/05	9	R504140-06	7264-006
		Duplicate (R504140-03)	SOLID	96.3	281.8 g		04/22/05	9	R504140-07	7264-007
		Spike (R504140-02)	SOLID	96.6	55.49		04/22/05	9	R504140-08	7264-008

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

SDG 7264
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG H3130

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	SOLID	Americium 241 in Solids	7132-113	5.0	1			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	7132-113	5.0	1			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	7132-113	5.0	1			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	7132-113	10.0	1			1	1	1/1		
TC	SOLID	Technetium 99 in Solids	7132-113	10.0	2			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	7132-113	15.0	1			1	1	1/1		
Kinetic Phosphorimetry (KPA)												
U_T	SOLID	Uranium, Total in Solids	7132-113	9.0	1			1	1	1/1		
Liquid Scintillation Counting												
H	SOLID	Tritium in Solids	7132-113	10.0	2			1	1	1/1	1/1	X

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

SDG 7264
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG H3130

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R504140-01	B1C7D2			7264-001	H		05/27/05	06/08/05	MWT	Tritium in Solids
04/13/05	200-E-4; 9-10 ft		SOLID	7264-001	TC		06/04/05	06/08/05	MWT	Technetium 99 in Solids
04/22/05	F04-015-159	F04-015								
R504140-02	B1C7D4			7264-002	H		05/27/05	06/08/05	MWT	Tritium in Solids
04/13/05	200-E-4; 14-15 ft		SOLID	7264-002	TC		06/04/05	06/08/05	MWT	Technetium 99 in Solids
04/22/05	F04-015-164	F04-015								
R504140-03	B1C7D5			7264-003	AM		06/03/05	06/08/05	MWT	Americium 241 in Solids
04/13/05	200-E-4; 15-15 ft		SOLID	7264-003	GAM		05/17/05	06/08/05	MWT	Gamma Scan
04/22/05	F04-015-165	F04-015		7264-003	PU		06/07/05	06/08/05	MWT	Plutonium, Isotopic in Solids
				7264-003	SR		05/19/05	06/08/05	MWT	Total Strontium in Solids
				7264-003	U		05/25/05	06/08/05	MWT	Uranium, Isotopic in Solids
				7264-003	U_T		05/20/05	06/08/05	MWT	Uranium, Total in Solids
R504140-04	Lab Control Sample			7264-004	AM		06/01/05	06/08/05	MWT	Americium 241 in Solids
			SOLID	7264-004	GAM		05/20/05	06/08/05	MWT	Gamma Scan
		F04-015		7264-004	H		05/27/05	06/08/05	MWT	Tritium in Solids
				7264-004	PU		06/07/05	06/08/05	MWT	Plutonium, Isotopic in Solids
				7264-004	SR		05/19/05	06/08/05	MWT	Total Strontium in Solids
				7264-004	TC		06/04/05	06/08/05	MWT	Technetium 99 in Solids
				7264-004	U		05/25/05	06/08/05	MWT	Uranium, Isotopic in Solids
				7264-004	U_T		05/20/05	06/08/05	MWT	Uranium, Total in Solids
R504140-05	Method Blank			7264-005	AM		06/01/05	06/08/05	MWT	Americium 241 in Solids
			SOLID	7264-005	GAM		05/19/05	06/08/05	MWT	Gamma Scan
		F04-015		7264-005	H		05/28/05	06/08/05	MWT	Tritium in Solids
				7264-005	PU		06/07/05	06/08/05	MWT	Plutonium, Isotopic in Solids
				7264-005	SR		05/19/05	06/08/05	MWT	Total Strontium in Solids
				7264-005	TC		06/07/05	06/08/05	MWT	Technetium 99 in Solids
				7264-005	U		05/26/05	06/08/05	MWT	Uranium, Isotopic in Solids
				7264-005	U_T		05/20/05	06/08/05	MWT	Uranium, Total in Solids
R504140-06	Duplicate (R504140-01)			7264-006	H		05/28/05	06/08/05	MWT	Tritium in Solids
04/13/05	200-E-4; 9-10 ft		SOLID	7264-006	TC		06/08/05	06/08/05	MWT	Technetium 99 in Solids
04/22/05		F04-015								

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

SDG 7264
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG H3130

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R504140-07	Duplicate (R504140-03)			7264-007	AM		06/01/05	06/08/05	MWT	Americium 241 in Solids
04/13/05	200-E-4; 15-15 ft		SOLID	7264-007	GAM		05/18/05	06/08/05	MWT	Gamma Scan
04/22/05		F04-015		7264-007	PU		06/07/05	06/08/05	MWT	Plutonium, Isotopic in Solids
				7264-007	SR		05/19/05	06/08/05	MWT	Total Strontium in Solids
				7264-007	U		05/25/05	06/08/05	MWT	Uranium, Isotopic in Solids
				7264-007	U_T		05/20/05	06/08/05	MWT	Uranium, Total in Solids
R504140-08	Spike (R504140-02)			7264-008	H		05/28/05	06/08/05	MWT	Tritium in Solids
04/13/05	200-E-4; 14-15 ft		SOLID							
04/22/05		F04-015								

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
AM	F04-015	Americium 241 in Solids	AMCMISO_IE_PLATE_AEA	1			1	1	1		4
GAM	F04-015	Gamma Scan	GAMMA_GS	1			1	1	1		4
H	F04-015	Tritium in Solids	906.0_H3_LSC	2			1	1	1	1	6
PU	F04-015	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	1			1	1	1		4
SR	F04-015	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	1			1	1	1		4
TC	F04-015	Technetium 99 in Solids	TC99_TR_SEP_LSC	2			1	1	1		5
U	F04-015	Uranium, Isotopic in Solids	UISO_PLATE_AEA	1			1	1	1		4
U_T	F04-015	Uranium, Total in Solids	UTOT_KPA	1			1	1	1		4
TOTALS				10			8	8	8	1	35

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

7264-005 **Method Blank**

METHOD BLANK

SDG	7264	Client/Case no	Hanford SDG H3130
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R504140-05	Client sample id	Method Blank
Dept sample id	7264-005	Material/Matrix	SOLID
		SAF No	F04-015

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.143	0.14	0.25	400	U	H
Total Strontium	SR-RAD	-0.042	0.17	0.36	1.0	U	SR
Technetium 99	14133-76-7	0.112	0.21	0.52	15	U	TC
Total Uranium (ug/g)	7440-61-1	0	0.004	0.010	1.0	U	U_T
Uranium 233/234	U-233/234	0	0.066	0.25	1.0	U	U
Uranium 235	15117-96-1	0	0.080	0.31	1.0	U	U
Uranium 238	U-238	0	0.066	0.25	1.0	U	U
Plutonium 238	13981-16-3	0.030	0.061	0.23	1.0	U	PU
Plutonium 239/240	PU-239/240	0	0.061	0.23	1.0	U	PU
Americium 241	14596-10-2	0	0.10	0.39	1.0	U	AM
Potassium 40	13966-00-2	U		0.78		U	GAM
Cobalt 60	10198-40-0	U		0.083	0.050	U	GAM
Cesium 137	10045-97-3	U		0.069	0.10	U	GAM
Radium 226	13982-63-3	U		0.13	0.10	U	GAM
Radium 228	15262-20-1	U		0.27	0.20	U	GAM
Europium 152	14683-23-9	U		0.17	0.10	U	GAM
Europium 154	15585-10-1	U		0.23	0.10	U	GAM
Europium 155	14391-16-3	U		0.097	0.10	U	GAM
Thorium 228	14274-82-9	U		0.079		U	GAM
Thorium 232	TH-232	U		0.27		U	GAM
Uranium 235	15117-96-1	U		0.18		U	GAM
Uranium 238	U-238	U		8.4		U	GAM
Americium 241	14596-10-2	U		0.058		U	GAM

200-MW-1 Characterization - Soil

QC-BLANK 52821

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

7264-004

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7264
Contact Melissa C. Mannion

Client/Case no Hanford SDG H3130
Contract No. 630

Lab sample id R504140-04
Dept sample id 7264-004

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No F04-015

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
Tritium	12.7	0.37	0.25	400	X	H	12.8	0.51	99	83-117	80-120
Total Strontium	11.9	0.62	0.27	1.0		SR	11.0	0.44	108	81-119	80-120
Technetium 99	64.7	1.5	0.36	15		TC	65.4	2.6	99	84-116	80-120
Total Uranium (ug/g)	35.4	4.5	0.095	1.0		U_T	36.2	1.4	98	76-124	80-120
Uranium 233/234	9.72	1.3	0.75	1.0		U	9.66	0.39	101	78-122	80-120
Uranium 235	8.07	1.2	0.26	1.0		U	7.84	0.31	103	75-125	80-120
Uranium 238	9.37	1.3	0.71	1.0		U	10.5	0.42	89	79-121	80-120
Plutonium 238	11.5	1.4	0.19	1.0		PU	12.0	0.48	96	80-120	80-120
Plutonium 239/240	11.6	1.4	0.19	1.0		PU	13.2	0.53	88	82-118	80-120
Americium 241	12.0	1.6	0.27	1.0		AM	12.3	0.49	98	78-122	80-120
Cobalt 60	3.61	0.13	0.077	0.050		GAM	3.59	0.14	101	76-124	80-120
Cesium 137	3.96	0.12	0.097	0.10		GAM	3.72	0.15	106	75-125	80-120

200-MW-1 Characterization - Soil

QC-LCS 52820

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

7264-006 B1C7D2

DUPLICATE

SDG	7264			Client/Case no	Hanford SDG H3130
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R504140-06	Lab sample id	R504140-01	Client sample id	B1C7D2
Dept sample id	7264-006	Dept sample id	7264-001	Location/Matrix	200-E-4; 9-10 ft SOLID
		Received	04/22/05	Collected/Weight	04/13/05 10:05 51.81 g
% solids	96.4	% solids	96.4	Custody/SAF No	F04-015-159 F04-015

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	0.025	0.18	0.30	400	U	H	0.087	0.20	0.33	U	-		
Technetium 99	0.104	0.30	0.57	15	U	TC	0.111	0.25	0.48	U	-		

200-MW-1 Characterization - Soil

QC-DUP#1 52822

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

7264-007 B1C7D5

DUPLICATE

SDG 7264			Client/Case no Hanford	SDG H3130	
Contact Melissa C. Mannion			Contract No. 630		
DUPLICATE		ORIGINAL			
Lab sample id R504140-07		Lab sample id R504140-03	Client sample id B1C7D5		
Dept sample id 7264-007		Dept sample id 7264-003	Location/Matrix 200-E-4; 15-15 ft	SOLID	
		Received 04/22/05	Collected/Weight 04/13/05 10:55	281.8 g	
% solids 96.3		% solids 96.3	Custody/SAF No F04-015-165	F04-015	

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
Total Strontium	0.011	0.15	0.32	1.0	U	SR	0.040	0.17	0.33	U	-	
Total Uranium (ug/g)	1.18	0.14	0.010	1.0		U_T	1.21	0.15	0.010		3	32
Uranium 233/234	0.630	0.27	0.25	1.0		U	0.697	0.31	0.23		10	94
Uranium 235	0.040	0.080	0.31	1.0	U	U	0.037	0.073	0.28	U	-	
Uranium 238	0.332	0.20	0.25	1.0		U	0.455	0.25	0.23		31	122
Plutonium 238	0	0.051	0.20	1.0	U	PU	0.025	0.050	0.19	U	-	
Plutonium 239/240	0	0.051	0.19	1.0	U	PU	0	0.050	0.19	U	-	
Americium 241	0.038	0.075	0.29	1.0	U	AM	0.119	0.12	0.23	U	-	
Potassium 40	17.4	1.3	0.69			GAM	14.9	1.6	0.73		15	37
Cobalt 60	U		0.070	0.050	U	GAM	U		0.088	U	-	
Cesium 137	U		0.061	0.10	U	GAM	U		0.082	U	-	
Radium 226	0.455	0.13	0.12	0.10		GAM	0.407	0.14	0.15		11	74
Radium 228	0.777	0.27	0.26	0.20		GAM	0.742	0.31	0.33		5	87
Europium 152	U		0.14	0.10	U	GAM	U		0.20	U	-	
Europium 154	U		0.21	0.10	U	GAM	U		0.27	U	-	
Europium 155	U		0.14	0.10	U	GAM	U		0.18	U	-	
Thorium 228	0.725	0.071	0.074			GAM	0.644	0.088	0.093		12	40
Thorium 232	0.777	0.27	0.26			GAM	0.742	0.31	0.33		5	87
Uranium 235	U		0.21		U	GAM	U		0.27	U	-	
Uranium 238	U		7.7		U	GAM	U		10	U	-	
Americium 241	U		0.16		U	GAM	U		0.21	U	-	

200-MW-1 Characterization - Soil

QC-DUP#3 52823

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

7264-008 B1C7D4

MATRIX SPIKE

SDG	7264			Client/Case no	Hanford SDG H3130
Contact	Melissa C. Mannion			Contract	No. 630
	MATRIX SPIKE		ORIGINAL		
Lab sample id	R504140-08	Lab sample id	R504140-02	Client sample id	B1C7D4
Dept sample id	7264-008	Dept sample id	7264-002	Location/Matrix	200-E-4; 14-15 ft SOLID
		Received	04/22/05	Collected/Amount	04/13/05 10:55 55.49
% solids	96.6	% solids	96.6	Custody/SAF No	F04-015-164 F04-015

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	58.2	1.2	0.41	400	X	H	65.8	2.6	0.110	0.15	88	85-115	60-140

200-MW-1 Characterization - Soil

QC-MS#2 52824

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-MS
Version 3.06
Report date 06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

7264-001 B1C7D2

DATA SHEET

SDG	7264	Client/Case no	Hanford	SDG H3130	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R504140-01	Client sample id	B1C7D2		
Dept sample id	7264-001	Location/Matrix	200-E-4; 9-10 ft	SOLID	
Received	04/22/05	Collected/Weight	04/13/05 10:05	51.81 g	
% solids	96.4	Custody/SAF No	F04-015-159	F04-015	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.087	0.20	0.33	400	U	H
Technetium 99	14133-76-7	0.111	0.25	0.48	15	U	TC

200-MW-1 Characterization - Soil

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

7264-002 B1C7D4

DATA SHEET

SDG	7264	Client/Case no	Hanford	SDG H3130	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R504140-02	Client sample id	B1C7D4		
Dept sample id	7264-002	Location/Matrix	200-E-4; 14-15 ft	SOLID	
Received	04/22/05	Collected/Amount	04/13/05 10:55	55.49	
% solids	96.6	Custody/SAF No	F04-015-164	F04-015	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.110	0.15	0.25	400	U	H
Technetium 99	14133-76-7	0.082	0.27	0.41	15	U	TC

200-MW-1 Characterization - Soil

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

7264-003 B1C7D5

DATA SHEET

SDG	7264	Client/Case no	Hanford SDG H3130
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R504140-03	Client sample id	B1C7D5
Dept sample id	7264-003	Location/Matrix	200-E-4; 15-15 ft SOLID
Received	04/22/05	Collected/Weight	04/13/05 10:55 281.8 g
% solids	96.3	Custody/SAF No	F04-015-165 F04-015

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.040	0.17	0.33	1.0	U	SR
Total Uranium (ug/g)	7440-61-1	1.21	0.15	0.010	1.0		U_T
Uranium 233/234	U-233/234	0.697	0.31	0.23	1.0		U
Uranium 235	15117-96-1	0.037	0.073	0.28	1.0	U	U
Uranium 238	U-238	0.455	0.25	0.23	1.0		U
Plutonium 238	13981-16-3	0.025	0.050	0.19	1.0	U	PU
Plutonium 239/240	PU-239/240	0	0.050	0.19	1.0	U	PU
Americium 241	14596-10-2	0.119	0.12	0.23	1.0	U	AM
Potassium 40	13966-00-2	14.9	1.6	0.73			GAM
Cobalt 60	10198-40-0	U		0.088	0.050	U	GAM
Cesium 137	10045-97-3	U		0.082	0.10	U	GAM
Radium 226	13982-63-3	0.407	0.14	0.15	0.10		GAM
Radium 228	15262-20-1	0.742	0.31	0.33	0.20		GAM
Europium 152	14683-23-9	U		0.20	0.10	U	GAM
Europium 154	15585-10-1	U		0.27	0.10	U	GAM
Europium 155	14391-16-3	U		0.18	0.10	U	GAM
Thorium 228	14274-82-9	0.644	0.088	0.093			GAM
Thorium 232	TH-232	0.742	0.31	0.33			GAM
Uranium 235	15117-96-1	U		0.27		U	GAM
Uranium 238	U-238	U		10		U	GAM
Americium 241	14596-10-2	U		0.21		U	GAM

200-MW-1 Characterization - Soil

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

Test	AM
Matrix	SOLID
SDG	7264
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN SOLIDS

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG H3130

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241	
Preparation batch 7132-113						
R504140-03			7264-003	B1C7D5	U	
R504140-04			7264-004	LCS (QC ID=52820)	ok	
R504140-05			7264-005	BLK (QC ID=52821)	U	
R504140-07			7264-007	Duplicate (R504140-03)	-	U
Nominal values and limits from method				RDLs (pCi/g)	1.0	
200-MW-1 Characterization - Soil						

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7132-113			2σ prep error 5.0 %	Reference Lab Notebook 7132 pg. 113												
R504140-03			B1C7D5	0.23	0.500			74		110			51	06/01/05	06/03	SS-028
R504140-04			LCS (QC ID=52820)	0.27	0.500			62		118				06/01/05	06/01	SS-056
R504140-05			BLK (QC ID=52821)	0.39	0.500			45		118				06/01/05	06/01	SS-057
R504140-07			Duplicate (R504140-03) (QC ID=52823)	0.29	0.500			62		118			49	06/01/05	06/01	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 7
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 6
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 4 SAMPLES				
MDA	0.30	±	0.14
YIELD	61	±	24

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

Test	PU
Matrix	SOLID
SDG	7264
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG H3130

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238		Plutonium 239/240	
Preparation batch 7132-113								
R504140-03			7264-003	B1C7D5	U		U	
R504140-04			7264-004	LCS (QC ID=52820)	ok		ok	
R504140-05			7264-005	BLK (QC ID=52821)	U		U	
R504140-07			7264-007	Duplicate (R504140-03)	-	U	-	U
Nominal values and limits from method 200-MW-1 Characterization - Soil				RDLs (pCi/g)	1.0		1.0	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7132-113			2σ prep error 5.0 %	Reference Lab Notebook 7132 pg. 113												
R504140-03			B1C7D5	0.19	0.500			76		139			55	06/07/05	06/07	SS-059
R504140-04			LCS (QC ID=52820)	0.19	0.500			73		139				06/07/05	06/07	SS-060
R504140-05			BLK (QC ID=52821)	0.23	0.500			63		140				06/07/05	06/07	SS-061
R504140-07			Duplicate (R504140-03) (QC ID=52822)	0.20	0.500			74		140			55	06/07/05	06/07	SS-062
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 7
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 4 SAMPLES				
MDA	0.20	±	0.038
YIELD	72	±	12

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

Test U Matrix SOLID
SDG 7264
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H3130

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1÷3	2σ	2÷3	2σ
Preparation batch 7132-113											
R504140-03			7264-003	B1C7D5	0.697	U	0.455	153	108	8	17
R504140-04			7264-004	LCS (QC ID=52820)	ok	ok	ok				
R504140-05			7264-005	BLK (QC ID=52821)	U	U	U				
R504140-07			7264-007	Duplicate (R504140-03)	ok	- U	ok	190	140	12	25
Nominal values and limits from method				RDLs (pCi/g)	1.0	1.0	1.0	100		4	
200-MW-1 Characterization - Soil								Averages 171		10	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7132-113			2σ prep error 5.0 %	Reference Lab Notebook 7132 pg. 113												
R504140-03			B1C7D5	0.28	0.500			80		108			42	05/25/05	05/25	SS-031
R504140-04			LCS (QC ID=52820)	0.75	0.500			87		108				05/25/05	05/25	SS-032
R504140-05			BLK (QC ID=52821)	0.31	0.500			75		122				05/25/05	05/26	SS-063
R504140-07			Duplicate (R504140-03) (QC ID=52823)	0.31	0.500			76		108			42	05/25/05	05/25	SS-034
Nominal values and limits from method				1.0	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	CP-060	Soil Preparation, rev 7
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 4 SAMPLES				
	MDA	0.41	±	0.45
	YIELD	80	±	11

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

Test SR	Matrix SOLID
SDG 7264	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford	
Contract No. 630	
Contract SDG H3130	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium
Preparation batch 7132-113					
R504140-03			7264-003	B1C7D5	U
R504140-04			7264-004	LCS (QC ID=52820)	ok
R504140-05			7264-005	BLK (QC ID=52821)	U
R504140-07			7264-007	Duplicate (R504140-03)	- U
Nominal values and limits from method 200-MW-1 Characterization - Soil				RDLs (pCi/g)	1.0

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7132-113 2σ prep error 10.0 % Reference Lab Notebook 7132 pg. 113																
R504140-03			B1C7D5	0.33	1.00			86		100			36	05/19/05	05/19	GRB-221
R504140-04			LCS (QC ID=52820)	0.27	1.00			79		120				05/19/05	05/19	GRB-217
R504140-05			BLK (QC ID=52821)	0.36	1.00			78		100				05/19/05	05/19	GRB-223
R504140-07			Duplicate (R504140-03) (QC ID=52823)	0.32	1.00			85		100			36	05/19/05	05/19	GRB-224
Nominal values and limits from method				1.0	1.00			30-105		100			180			

PROCEDURES	REFERENCE	
	SRTOT_SEP_PRECIP_GPC	
	CP-060	Soil Preparation, rev 7
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-383	Strontium in Dissolved Solid of < 5.0g Aliquot, rev 1

AVERAGES ± 2 SD FOR 4 SAMPLES				
MDA	0.32	±	0.075
YIELD	82	±	8

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

Test TC	Matrix SOLID
SDG 7264	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

TECHNETIUM 99 IN SOLIDS

BETA COUNTING

Client Hanford	
Contract No. 630	
Contract SDG H3130	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Technetium 99	
Preparation batch 7132-113						
R504140-01			7264-001	B1C7D2	U	
R504140-02			7264-002	B1C7D4	U	
R504140-04			7264-004	LCS (QC ID=52820)	ok	
R504140-05			7264-005	BLK (QC ID=52821)	U	
R504140-06			7264-006	Duplicate (R504140-01)	-	U

Nominal values and limits from method RDLs (pCi/g) 15

200-MW-1 Characterization - Soil

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7132-113			2σ prep error 10.0 % Reference Lab Notebook 7132 pg. 113													
R504140-01			B1C7D2	0.48	1.00			91		100			52	06/01/05	06/04	GRB-226
R504140-02			B1C7D4	0.41	1.00			86		100			52	06/01/05	06/04	GRB-227
R504140-04			LCS (QC ID=52820)	0.36	1.00			96		100				06/01/05	06/04	GRB-228
R504140-05			BLK (QC ID=52821)	0.52	1.00			98		50				06/01/05	06/07	GRB-224
R504140-06			Duplicate (R504140-01) (QC ID=52822)	0.57	1.00			89		50			56	06/01/05	06/08	GRB-220
Nominal values and limits from method				15	1.00			20-105		50			180			

PROCEDURES	REFERENCE	TC99_TR_SEP_LSC
	CP-431	Technetium-99 Purification of Soil or Resin by Extraction Chromatography, rev 2
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD	MDA	0.47	± 0.17
FOR 5 SAMPLES	YIELD	92	± 10

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

Test GAM Matrix SOLID	Client Hanford
SDG 7264	Contract No. 630
Contact Melissa C. Mannion	Contract SDG H3130

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
Preparation batch 7132-113								
R504140-03			7264-003	B1C7D5	U		U	
R504140-04			7264-004	LCS (QC ID=52820)	ok		ok	
R504140-05			7264-005	BLK (QC ID=52821)	U		U	
R504140-07			7264-007	Duplicate (R504140-03)	-	U	-	U
Nominal values and limits from method				RDLs (pCi/g)	0.050		0.10	

200-MW-1 Characterization - Soil

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7132-113			2σ prep error 15.0 % Reference Lab Notebook 7132 pg. 113													
R504140-03			B1C7D5	0.71	71.6					415			34	05/10/05	05/17	PD,03,00
R504140-04			LCS (QC ID=52820)	0.077	71.6					950				05/10/05	05/20	PD,07,00
R504140-05			BLK (QC ID=52821)	0.60	71.6					430				05/10/05	05/19	PD,07,00
R504140-07			Duplicate (R504140-03) (QC ID=52823)	0.56	71.6					725			35	05/10/05	05/18	PD,03,00
Nominal values and limits from method				0.050	71.6					100			180			

PROCEDURES	REFERENCE	GAMMA_GS
	CP-060	Soil Preparation, rev 7
	CP-100	Ge(Li) Preparation for Commercial Samples, rev 7

AVERAGES ± 2 SD FOR 4 SAMPLES				
	MDA	0.49	±	0.56
	YIELD		±	

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

Test	U_T Matrix SOLID
SDG	7264
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, TOTAL IN SOLIDS

KINETIC PHOSPHORIMETRY (KPA)

Client	Hanford
Contract	No. 630
Contract	SDG H3130

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Uranium
Preparation batch 7132-113					
R504140-03			7264-003	B1C7D5	1.21
R504140-04			7264-004	LCS (QC ID=52820)	ok
R504140-05			7264-005	BLK (QC ID=52821)	U
R504140-07			7264-007	Duplicate (R504140-03)	ok
Nominal values and limits from method 200-MW-1 Characterization - Soil				RDLs (ug/g)	1.0

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA ug/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7132-113			2σ prep error 9.0 %	Reference Lab Notebook 7132 pg. 113												
R504140-03			B1C7D5	0.010	0.0500								37	05/20/05	05/20	KPA-001
R504140-04			LCS (QC ID=52820)	0.095	0.0500									05/20/05	05/20	KPA-001
R504140-05			BLK (QC ID=52821)	0.010	0.0500									05/20/05	05/20	KPA-001
R504140-07			Duplicate (R504140-03) (QC ID=52823)	0.010	0.0500								37	05/20/05	05/20	KPA-001
Nominal values and limits from method				1.0	0.0500								180			

PROCEDURES	REFERENCE	UTOT_KPA
	CP-062	Sample Aliquoting, rev 2
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-928	Total Uranium by Kinetic Phosphorimetry, rev 8
	CP-929	Calibration of the Kinetic Phosphorimeter, rev 9

AVERAGES ± 2 SD FOR 4 SAMPLES				
	MDA	0.031	±	0.085
	YIELD		±	

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

Test H	Matrix SOLID
SDG 7264	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

TRITIUM IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford	
Contract No. 630	
Contract SDG H3130	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
Preparation batch 7132-113						
R504140-01			7264-001	B1C7D2	U	
R504140-02			7264-002	B1C7D4	U	
R504140-04			7264-004	LCS (QC ID=52820)	ok	X
R504140-05			7264-005	BLK (QC ID=52821)	U	
R504140-06			7264-006	Duplicate (R504140-01)	-	U
R504140-08			7264-008	Spike (R504140-02)	ok	X

Nominal values and limits from method RDLs (pCi/g) 400

200-MW-1 Characterization - Soil

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7132-113			2σ prep error 10.0 % Reference Lab Notebook 7132 pg. 113													
R504140-01			B1C7D2	0.33	15.0			34		120			44	05/26/05	05/27	LSC-004
R504140-02			B1C7D4	0.25	20.1			34		120			44	05/26/05	05/27	LSC-004
R504140-04			LCS (QC ID=52820)	0.25	20.0			33		120				05/26/05	05/27	LSC-004
R504140-05			BLK (QC ID=52821)	0.25	20.0			33		120				05/26/05	05/28	LSC-004
R504140-06			Duplicate (R504140-01) (QC ID=52822)	0.30	15.4			35		120			45	05/26/05	05/28	LSC-004
R504140-08			Spike (R504140-02) (QC ID=52824)	0.41	20.2			35		40			45	05/26/05	05/28	LSC-004
Nominal values and limits from method				400	20.0					25			180			

PROCEDURES	REFERENCE	906.0_H3_LSC
	CP-218	Tritium in Soil Samples by Azeotropic Distillation, rev 3

AVERAGES ± 2 SD FOR 6 SAMPLES	MDA	0.30 ±	0.13
	YIELD	34 ±	2

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	06/09/05

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

SDG	7264
Contact	Melissa C. Mannion

REPORT GUIDE

Client	Hanford
Contract	No. 630
Case no	SDG H3130

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
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3130

SDG	7264
Contact	Melissa C. Mannion

REPORT GUIDE

Client	Hanford
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PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

* The preparation batches are shown in the same order as the Method Summary Reports are printed.

* Only analyses of planchets relevant to the SDG are included.

* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.

* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

  These qualifiers should be reviewed as follows:

  X Some data has been manually entered or modified. Transcription errors are possible.

  P One or more results are 'preliminary'. The data is not ready for final reporting.

  2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

  Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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Protocol	Hanford
Version	Ver 1.0
Form	DVD-RG
Version	3.06
Report date	06/09/05

SDG 7264
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H3130

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.

* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.

* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.

* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.

* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

  The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

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DATA SHEET

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

J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

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

The following values are underlined to indicate possible problems:

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

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SAMPLE DELIVERY GROUP H3130

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DATA SHEET

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.

* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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REPORT GUIDE

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LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

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DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

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

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

* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

  If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

  For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

  If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

  This value reported for this limit is at most 999.

* The second limit for the RPD is the larger of:

  1. A fixed percentage specified in the protocol.

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DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

* The RPD is underlined if it is greater than either limit.

* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

  Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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Contact	Melissa C. Mannion

REPORT GUIDE

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MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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MATRIX SPIKE

for the recovery.

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/09/05

SDG	7264
Contact	Melissa C. Mannion

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Contract	No. 630
Case no	SDG_H3130

METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

* 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.

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Version 3.06
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METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-159	PAGE 1 OF 1

COLLECTOR Pope/Pfister/Tyra/Wiberg	**COMPANY CONTACT** CS Cearlock	**TELEPHONE NO.** 372-9638	**PROJECT COORDINATOR** TRENT, SJ
PRICE CODE 8N	**DATA TURNAROUND** 45 Days / 45 Days	**AIR QUALITY** ☐	
SAMPLING LOCATION 200-E-4; 9-10 ft	**PROJECT DESIGNATION** 200-MW-1 Characterization Sampling and Analysis - Soil	**SAF NO.** F04-015	
ICE CHEST NO. SHWS-1JD	**FIELD LOGBOOK NO.**	**COA** 119144ES10	**METHOD OF SHIPMENT** Federal Express
SHIPPED TO Eberline Services	**OFFSITE PROPERTY NO.** See PTR 15368		**BILL OF LADING/AIR BILL NO.** See PTR 15368

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
N/A

SPECIAL HANDLING AND/OR STORAGE
Radioactive Tie To: B1C7C8

PRESERVATION	None												
TYPE OF CONTAINER	aG												
NO. OF CONTAINER(S)	1												
VOLUME	60mL												
SAMPLE ANALYSIS	~~Iodine-129;~~ Technetium-99; Tritium - H3;	PMG 2/11/05											

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1C7D2	SOIL	4-13-05	1005	X										

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Pope / [illegible]	4-13-05 1400	MW-626 / REF. # 10	4-13-05 1400
MW-626 / REF. # 10	4/21/05 0655	M.H. Bauchler / M.G. Bauchler	4/21/05 0655
M.H. Bauchler / M.G. Bauchler	4/21/05 0655	Fed Ex	
FED EX	4/22/05	AK	4/22/05 10:00

SPECIAL INSTRUCTIONS

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F04-015-164	PAGE 1 OF 1
COLLECTOR Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT CS Cearlock	TELEPHONE NO. 372-9638	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 8N AIR QUALITY ☐
SAMPLING LOCATION 200-E-4; 14-15 ft	PROJECT DESIGNATION 200-MW-1 Characterization Sampling and Analysis - Soil		SAF NO. F04-015	DATA TURNAROUND 45 Days / 45 Days
ICE CHEST NO. SAWS-100	FIELD LOGBOOK NO.	COA 119144ES10	METHOD OF SHIPMENT Federal Express	
SHIPPED TO Eberline Services	OFFSITE PROPERTY NO. See PTR 15368		BILL OF LADING/AIR BILL NO. See PTR 15368	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
N/A

SPECIAL HANDLING AND/OR STORAGE
Radioactive Tie To: ~~B1C7C9~~ B1C7C8 MAB 4/21/05

PRESERVATION	None												
TYPE OF CONTAINER	aG												
NO. OF CONTAINER(S)	1												
VOLUME	60mL												
SAMPLE ANALYSIS	~~Iodine-129;~~ Technetium-99; Tritium - H3;	PMG 2/11/05											

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1C7D4	SOIL	4-13-05	1055	X										

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Pfister / J Gibson	4-13-05 1400	MG-026 / CEC #1	4-13-05 1400
MO-026 RST	4/21/05 0655	M.H. Bauchler / M.G. Bauchler	4/21/05 0655
M.H. Bauchler / M.G. Bauchler	4/21/05 0655	Fed Ex	
FED EX	4-22-05	AK	4/22/05 10:00

SPECIAL INSTRUCTIONS

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

A-6003-61B(03/03)

00000043

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-165	PAGE 1 OF 1

COLLECTOR Pope/Pfister/Tyra/Wiberg	**COMPANY CONTACT** CS Cearlock	**TELEPHONE NO.** 372-9638	**PROJECT COORDINATOR** TRENT, SJ
PRICE CODE 8N	**DATA TURNAROUND**		
AIR QUALITY ☐	**45 Days / 45 Days**		
SAMPLING LOCATION 200-E-4; 14-15 ft	**PROJECT DESIGNATION** 200-MW-1 Characterization Sampling and Analysis - Soil	**SAF NO.** F04-015	
ICE CHEST NO. 5HWS-100	**FIELD LOGBOOK NO.**	**COA** 119144ES10	**METHOD OF SHIPMENT** Federal Express
SHIPPED TO Eberline Services	**OFFSITE PROPERTY NO.** See PTR 15368		**BILL OF LADING/AIR BILL NO.** See PTR 15368

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
N/A

SPECIAL HANDLING AND/OR STORAGE
Radioactive Tie To: ~~B1C7C9~~ MAB B1C7C8 4/21/05

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

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1C7D5	SOIL	4-13-05	1655	+

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[illegible]	4-13-05 1400	MO-026 / REF. #1	4-13-05 1400
MO-026 [illegible]	4/21/05 0655	M.H. Bauchler / M.G. Bauchler	4/21/05 0655
M.H. Bauchler / M.G. Bauchler	4/21/05 0655	FED EX	
FED EX	4-22-05	[illegible]	4/22/05 10:00

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

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

A-6003-618(03/03)

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: FLUOR HANFORD City RICHLAND State WA

Date/Time received 4/22/05 10:00 CoC No. F04-015-159, 164, 165

Container I.D. No. SAWS-100 Requested TAT (Days) 45 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [✓] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [✓] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [✓] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [✓] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [✓]
6. Number of samples in shipping container: 3 Sample Matrix SOIL
7. Number of containers per sample: 1 (Or see CoC _____)
8. Samples are in correct container Yes [✓] No [ ]
9. Paperwork agrees with samples? Yes [✓] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [✓]
11. Samples are: In good condition [✓] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH _____ Preservative _____
13. Describe any anomalies:
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by AK Date: 4/22/05 Time: 10:00

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 _____

LvLI
LIONVILLE LABORATORY INC.

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

JUN 2005
RECEIVED

Subject: Contract No. 630
Analytical Data Package

Dear Mr. Trent:

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

LvLI Batch #	0504L297
SDG #	H3130
SAF #	F04-015
Date Received	4-25-05
# Samples	3
Matrix	Soil
Volatiles	X
Semivolatiles	X
Pest/PCB	X
DRO/GRO/KRO	X
Herbicides	
GC Alcohol	
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

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

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

JUN 2005
RECEIVED

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F04-015 H3130

DATE RECEIVED: 04/25/05 LVL LOT # :0504L297

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1C7D2						
% SOLIDS	001	S	05L%S057	04/13/05	04/26/05	04/26/05
% SOLIDS	001 REP	S	05L%S057	04/13/05	04/26/05	04/26/05
OIL & GREASE BY GRAV	001	S	05LOG019	04/13/05	04/26/05	04/26/05
OIL AND GREASE BY GR	001 REP	S	05LOG019	04/13/05	04/26/05	04/26/05
OIL AND GREASE BY GR	001 MS	S	05LOG019	04/13/05	04/26/05	04/26/05
B1C7D4						
% SOLIDS	002	S	05L%S057	04/13/05	04/26/05	04/26/05
OIL & GREASE BY GRAV	002	S	05LOG019	04/13/05	04/26/05	04/26/05
B1C7D5						
% SOLIDS	003	S	05L%S057	04/13/05	04/26/05	04/26/05
NITRITE BY IC	003	S	05LICA29	04/13/05	05/02/05	05/02/05
NITRITE BY IC	003 REP	S	05LICA29	04/13/05	05/02/05	05/02/05
NITRITE BY IC	003 MS	S	05LICA29	04/13/05	05/02/05	05/02/05
NITRATE BY IC	003	S	05LICA29	04/13/05	05/02/05	05/02/05
NITRATE BY IC	003 REP	S	05LICA29	04/13/05	05/02/05	05/02/05
NITRATE BY IC	003 MS	S	05LICA29	04/13/05	05/02/05	05/02/05
TOTAL CYANIDE	003	S	05LC026	04/13/05	04/26/05	04/26/05
TOTAL CYANIDE	003 REP	S	05LC026	04/13/05	04/26/05	04/26/05
TOTAL CYANIDE	003 MS	S	05LC026	04/13/05	04/26/05	04/26/05
PHOSPHATE BY IC	003	S	05LICA29	04/13/05	05/02/05	05/02/05
PHOSPHATE BY IC	003 REP	S	05LICA29	04/13/05	05/02/05	05/02/05
PHOSPHATE BY IC	003 MS	S	05LICA29	04/13/05	05/02/05	05/02/05
SULFATE BY IC	003	S	05LICC31	04/13/05	05/06/05	05/06/05
SULFATE BY IC	003 REP	S	05LICC31	04/13/05	05/06/05	05/06/05
SULFATE BY IC	003 MS	S	05LICC31	04/13/05	05/06/05	05/06/05
PH	003	S	05LPH027	04/13/05	04/26/05	04/26/05
PH	003 REP	S	05LPH027	04/13/05	04/26/05	04/26/05

LAB QC:

OIL & GREASE BY GRAV	MB1	S	05LOG019	N/A	04/26/05	04/26/05

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F04-015 H3130

DATE RECEIVED: 04/25/05 LVL LOT # :0504L297

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
OIL AND GREASE BY GR	MB1 BS	S	05LOG019	N/A	04/26/05	04/26/05
OIL AND GREASE BY GR	MB1 BSD	S	05LOG019	N/A	04/26/05	04/26/05
NITRITE BY IC	MB1	S	05LICA29	N/A	05/02/05	05/02/05
NITRITE BY IC	MB1 BS	S	05LICA29	N/A	05/02/05	05/02/05
NITRATE BY IC	MB1	S	05LICA29	N/A	05/02/05	05/02/05
NITRATE BY IC	MB1 BS	S	05LICA29	N/A	05/02/05	05/02/05
TOTAL CYANIDE	LCS L	S	05LC026	N/A	04/26/05	04/26/05
TOTAL CYANIDE	LCS L	S	05LC026	N/A	04/26/05	04/26/05
TOTAL CYANIDE	MB1	S	05LC026	N/A	04/26/05	04/26/05
PHOSPHATE BY IC	MB1	S	05LICA29	N/A	05/02/05	05/02/05
PHOSPHATE BY IC	MB1 BS	S	05LICA29	N/A	05/02/05	05/02/05
SULFATE BY IC	MB1	S	05LICC31	N/A	05/06/05	05/06/05
SULFATE BY IC	MB1 BS	S	05LICC31	N/A	05/06/05	05/06/05

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD F04-015 H3130
LVL#: 0504L297

W.O.#: 11343-606-001-9999-00
Date Received: 04-25-05

INORGANIC NARRATIVE

1. This narrative covers the analyses of 3 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 did not meet LvLI's sample acceptance policy as noted on the Sample Receipt Checklist.

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS for Oil and Grease was within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike (MS) recoveries for Oil and Grease, Nitrite, Nitrate, Total Cyanide and Phosphate were within the 75-125% control limits however MS recovery for Sulfate was above the control limits at 135.6% that may be attributed to sample inhomogeneity.

8. The replicate analyses for Percent Solids, Oil and Grease, Nitrite, Total Cyanide, Phosphate, Sulfate and pH were within the 20% RPD control limit however replicate analysis for Nitrate was outside the control limit that may be attributed to sample inhomogeneity.

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

5/25/05
Date

njp\i04-297

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 16 pages.

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

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	__ D2216-80		
% Moisture	__ D2216-80		__ ILMO4.0 (e)
% Solids	✓ D2216-80		__ ILMO4.0 (e)
% Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Chromium VI		__ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		__ 1110(mod) __ 9045C	
Cyanide, Total		✓ 9010B/9014	__ 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 (mod.)	✓ EPA 413.1 (mod.)
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: Nitrite, Nitrate, Phosphate, **Method:** EPA 300.0 (mod.)

Other: Sulfate **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 05/24/05

CLIENT: TNUHANFORD F04-015 H3130 LVL LOT #: 0504L297
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B1C7D2	% Solids	95.0		%	0.01	1.0
		Oil & Grease Gravimetri	702	u	MG/KG	702	1.0
-002	B1C7D4	% Solids	96.5		%	0.01	1.0
		Oil & Grease Gravimetri	691	u	MG/KG	691	1.0
-003	B1C7D5	% Solids	96.8		%	0.01	1.0
		Nitrite by IC	1.03	u	MG/KG	1.03	1.0
		Nitrate by IC	2.95		MG/KG	1.03	1.0
		Cyanide, Total	0.49	u	MG/KG	0.49	1.0
		Phosphate by IC	1.0	u	MG/KG	1.0	1.0
		Sulfate by IC	18.1		MG/KG	1.0	1.0
		pH	8.6		PH UNIT	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/24/05

CLIENT: TNUHANFORD F04-015 H3130 LVL LOT #: 0504L297
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	05LOG019-MB1	Oil & Grease Gravimetri	667	u	MG/KG	667	1.0
BLANK10	05LICA29-MB1	Nitrite by IC	12.5	u	MG/KG	12.5	1.0
		Nitrate by IC	12.5	u	MG/KG	12.5	1.0
		Phosphate by IC	12.5	u	MG/KG	12.5	1.0
BLANK1	05LC026-MB1	Cyanide, Total	0.50	u	MG/KG	0.50	1.0
BLANK10	05LICC31-MB1	Sulfate by IC	12.5	u	MG/KG	12.5	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/24/05

CLIENT: TNUHANFORD F04-015 H3130 LVL LOT #: 0504L297

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B1C7D2	Oil & Grease Gravimetr	12600	702 u	12800	98.7	1.0
-003	B1C7D5	Nitrite by IC	40.6	1.03u	41.3	98.3	2.0
		Nitrate by IC	45.5	2.95	41.3	103.0	2.0
		Cyanide, Total	5.16	0.49u	5.29	97.5	1.0
		Phosphate by IC	43.9	1.0 u	41.3	106.3	2.0
		Sulfate by IC	72.3	18.1	40.0	135.6	2.0
BLANK10	05LOG019-MB1	Oil & Grease Gravimetr	12200	667 u	12200	100.2	1.0
		Oil & Grease - Grav M	12400	667 u	12200	102.3	1.0
BLANK10	05LICA29-MB1	Nitrite by IC	246	12.5 u	250	98.2	1.0
		Nitrate by IC	240	12.5 u	250	96.2	1.0
		Phosphate by IC	245	12.5 u	250	98.2	1.0
BLANK10	05LICC31-MB1	Sulfate by IC	244	12.5 u	250	97.5	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 05/24/05

CLIENT: TNUHANFORD F04-015 H3130 LVL LOT #: 0504L297
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	05LOG019-MB1	Oil & Grease - Grav	100.2	102.3	2.1

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/24/05

CLIENT: TNUHANFORD F04-015 H3130 LVL LOT #: 0504L297
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B1C7D2	% Solids	95.0	95.2	0.23	1.0
		Oil & Grease Gravimetri	702 u	702 u	NC	1.0
-003REP	B1C7D5	Nitrite by IC	1.03u	1.03u	NC	1.0
		Nitrate by IC	2.95	1.74	51.4	1.0
		Cyanide, Total	0.49u	0.51u	NC	1.0
		Phosphate by IC	1.0 u	1.0 u	NC	1.0
		Sulfate by IC	18.1	17.9	0.71	1.0
		pH	8.6	8.6	0.3	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/24/05

CLIENT: TNUHANFORD F04-015 H3130 LVL LOT #: 0504L297
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCSS1	05LC026-LCS1	Cyanide, Total LCS	1.97	2.0	MG/KG	98.4
LCSS2	05LC026-LCS2	Cyanide, Total LCS	10.3	10.0	MG/KG	103.4

Lionville Laboratory Use Only

0504L-297

Custody Transfer Record/Lab Work Request

Page 1 of 1

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNU Hanford, F04-075

Est. Final Proj. Sampling Date:

Project #: 11343-006-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: OJ

QC: Spec Del: Std TAT: 30 Days

Date Rec'd: 4/25/05 Date Due: 5/25/05

		AB	C	D		E			F	G						
Refrigerator #		1	6	6		6			6	6						
#/Type Container	Liquid															
	Solid	AGL	AGL	AGL		1AGL			AGL	AGL	→					
Volume	Liquid															
	Solid	40	120	120		120			250	250	→					
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	~~Pest~~ PCB	Herb	Gal/Gross			Metal	CN	Iodine	pH				
		Lionville Laboratory Use Only														
		OC624H	OC25X OCP10DRO	OPCB		IDGSR			METALS①	ICNTO	IC NO2/IC NO3 IC SO4 IC PO4	IPH				

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	OC624H	OC25X OCP10DRO	OPCB		IDGSR			METALS①	ICNTO	IC NO2/IC NO3 IC SO4 IC PO4	IPH				
001	B1C7D2			S	4/13/05	1005					1										
002	B1C7D4			↓	↓	1055					1										
003	B1C7D5					1055	2	1	1					1	1	✓	✓				

Special Instructions:

METALS① = Cd, Cr, Pb, Ag, Cu, Hg

Run matrix QC

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time
FedEx	IRuny	4/25/05	0925

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	ORIGINAL REWRITTEN		

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-161	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Tyra/Wiberg	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-E-4; 9-10 ft	200-MW-1 Characterization Sampling and Analysis - Soil		F04-015		
ICE CHEST NO. GRP-04-015	**FIELD LOGBOOK NO.**	**COA** 119144ES10	**METHOD OF SHIPMENT** Federal Express		
SHIPPED TO Lionville Laboratory Incorporated	**OFFSITE PROPERTY NO.** See PTR 15370		**BILL OF LADING/AIR BILL NO.** See PTR 15370		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
N/A

SPECIAL HANDLING AND/OR STORAGE
Radioactive Tie To: B1C7C8

PRESERVATION	Cool 4C												
TYPE OF CONTAINER	aG												
NO. OF CONTAINER(S)	1												
VOLUME	120mL												
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS												

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1C7D2	SOIL	4-13-05	1005	X										

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSPope / [illegible]	4-13-05 1400	MO-626 / REF. #1	4-13-05 1400
MO-626 / [illegible]	4/21/05 0710	M.H. Bauchkus / M.H. Bauchkus	4/21/05 0710
M.H. Bauchkus / M.H. Bauchkus	4/21/05 0710	[illegible]	
FedEx	4/25/05 0905	JRuny	

SPECIAL INSTRUCTIONS
(1) ~~NO2/NO3 - 353.2; Chromium Hex - 7196;~~ Oil & Grease - 413.1;
PMG 2/14/05

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

A-6003-618(03/03)

Pacific Northwest Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-166 | PAGE 1 OF 1

COLLECTOR Pope/Pfister/Tyra/Wiberg	**COMPANY CONTACT** CS Cearlock	**TELEPHONE NO.** 372-9638	**PROJECT COORDINATOR** TRENT, SJ
SAMPLING LOCATION 200-E-4; 14-15 ft	**PROJECT DESIGNATION** 200-MW-1 Characterization Sampling and Analysis - Soil		**SAF NO.** F04-015
ICE CHEST NO. GRP-04-015	**FIELD LOGBOOK NO.**	**COA** 119144ES10	**METHOD OF SHIPMENT** Federal Express
SHIPPED TO Lionville Laboratory Incorporated	**OFFSITE PROPERTY NO.** See PTC 15370		**BILL OF LADING/AIR BILL NO.** See PTC 15370

PRICE CODE 8N | **AIR QUALITY** ☐ | **DATA TURNAROUND** 45 Days / 45 Days

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

POSSIBLE SAMPLE HAZARDS/ REMARKS N/A

SPECIAL HANDLING AND/OR STORAGE Radioactive Tie To: ~~B1C7G9~~ B1C7C8 MAD 4/21/05

PRESERVATION	Cool 4C												
TYPE OF CONTAINER	aG												
NO. OF CONTAINER(S)	1												
VOLUME	120mL												
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS												

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1C7D4	SOIL	4-13-05	1055	X										

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Pope / [illegible]	4-13-05 1400	MU-026 / Rec. #1	4-13-05 1400
MU-026 / Rec. #1	4/21/05 0720	M.H. Buchler / M.H. Buchler	4/21/05 0720
M.H. Buchler / M.H. Buchler	4/21/05 0720	Fed Ex	
Fed Ex	4/25/05 0925	J Perry	

SPECIAL INSTRUCTIONS

(1) ~~NO2/NO3 - 353.2; Chromium Hex - 7196;~~ Oil & Grease - 413.1;
PMG 2/14/05

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-167	PAGE 1 OF 1

COLLECTOR Pope/Pfister/Tyra/Wiberg	**COMPANY CONTACT** CS Cearlock	**TELEPHONE NO.** 372-9638	**PROJECT COORDINATOR** TRENT, SJ
PRICE CODE 8N	**DATA TURNAROUND** 45 Days / 45 Days	**AIR QUALITY** ☐	
SAMPLING LOCATION 200-E-4; 14-15 ft	**PROJECT DESIGNATION** 200-MW-1 Characterization Sampling and Analysis - Soil	**SAF NO.** F04-015	
ICE CHEST NO. GRP-04-015	**FIELD LOGBOOK NO.**	**COA** 119144ES10	**METHOD OF SHIPMENT** Federal Express
SHIPPED TO Lionville Laboratory Incorporated	**OFFSITE PROPERTY NO.** 5a PTR 15370		**BILL OF LADING/AIR BILL NO.** 5a PTR 15370

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

POSSIBLE SAMPLE HAZARDS/ REMARKS N/A

SPECIAL HANDLING AND/OR STORAGE Radioactive Tie To: ~~B1C7G0~~ B1C7C5 MJAB 4/21/05

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
TYPE OF CONTAINER	aGs*	aG	aG	aG	aG
NO. OF CONTAINER(S)	~~3~~ 2 MJ 4-13-05	1	1	1	1
VOLUME	40mL	120mL	120mL	250mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B1C7D5	SOIL	4-13-05	1055	X	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
TSPOPE/ [illegible]	4-13-05 1400	MW-026 / REF. # /	4-13-05 1400
MW-026 / REF. # /	4/21/05 0720	M.H. Bauchler / M.G. Bauchler	4/21/05 0720
M.H. Bauchler / M.G. Bauchler	4/21/05 0720	FedEx	
FedEx	4/25/05 0925	J Perry	

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, ~~n-Butylbenzene,~~ trans-1,2-Dichloroethylene} PMG 2/11/05
(2)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range} TPH-Gasoline Range - WTPH-G;
(3)ICP Metals - 6010A (Supertrace) {Cadmium, Chromium, Lead, Silver} ICP Metals - 6010A (Supertrace Add-On) {Copper} Mercury - 7471 - (CV);
(4)IC Anions - 300.0 {~~Fluoride,~~ Nitrate, Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045; PMG 2/11/05

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

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford **Date:** 4/25/05

Purchase Order / Project# /
SAF# / SOW# / Release #:

LvLI Batch #: 0504L297 **Sample Custodian:** JHenry

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier FedEx		Airbill# 7909 8897 4268
2.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals Comments
3.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No	
5.	Samples received cooled or ambient?	Temp 13.0°C all ice melted		Cooler # GRP-04-015
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7.	coc signed and dated?	☑ Yes	☐ No	
8.	Sample containers are intact?	☑ Yes	☐ No	
9.	All samples on coc received? All samples received on coc?	☑ Yes	☐ No	
10.	All sample label information matches coc?	☑ Yes	☐ No	
11.	Samples properly preserved?	☐ Yes	☑ No All #5	
12.	Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No	
13.	VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14.	QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15.	Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☑ Yes JP 4/25/05	☑ No All #5, 11	
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) OJ 4/25/05	☑ Yes	☐ No	☐ No Discrepancies

SR-002-B

JUN 2005
RECEIVED

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F04-015 H3130

DATE RECEIVED: 04/25/05 LVL LOT # :0504L297

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1C7D5						
SILVER, TOTAL	003	S	05L0278	04/13/05	05/25/05	05/26/05
SILVER, TOTAL	003 REP	S	05L0278	04/13/05	05/25/05	05/26/05
SILVER, TOTAL	003 MS	S	05L0278	04/13/05	05/25/05	05/26/05
CADMIUM, TOTAL	003	S	05L0278	04/13/05	05/25/05	05/26/05
CADMIUM, TOTAL	003 REP	S	05L0278	04/13/05	05/25/05	05/26/05
CADMIUM, TOTAL	003 MS	S	05L0278	04/13/05	05/25/05	05/26/05
CHROMIUM, TOTAL	003	S	05L0278	04/13/05	05/25/05	05/26/05
CHROMIUM, TOTAL	003 REP	S	05L0278	04/13/05	05/25/05	05/26/05
CHROMIUM, TOTAL	003 MS	S	05L0278	04/13/05	05/25/05	05/26/05
COPPER, TOTAL	003	S	05L0278	04/13/05	05/25/05	05/26/05
COPPER, TOTAL	003 REP	S	05L0278	04/13/05	05/25/05	05/26/05
COPPER, TOTAL	003 MS	S	05L0278	04/13/05	05/25/05	05/26/05
MERCURY, TOTAL	003	S	05C0108	04/13/05	05/13/05	05/16/05
MERCURY, TOTAL	003 REP	S	05C0108	04/13/05	05/13/05	05/16/05
MERCURY, TOTAL	003 MS	S	05C0108	04/13/05	05/13/05	05/16/05
LEAD, TOTAL	003	S	05L0278	04/13/05	05/25/05	05/26/05
LEAD, TOTAL	003 REP	S	05L0278	04/13/05	05/25/05	05/26/05
LEAD, TOTAL	003 MS	S	05L0278	04/13/05	05/25/05	05/26/05

LAB QC:

SILVER LABORATORY	LC1 BS	S	05L0278	N/A	05/25/05	05/26/05
SILVER, TOTAL	MB1	S	05L0278	N/A	05/25/05	05/26/05
CADMIUM LABORATORY	LC1 BS	S	05L0278	N/A	05/25/05	05/26/05
CADMIUM, TOTAL	MB1	S	05L0278	N/A	05/25/05	05/26/05
CHROMIUM LABORATORY	LC1 BS	S	05L0278	N/A	05/25/05	05/26/05
CHROMIUM, TOTAL	MB1	S	05L0278	N/A	05/25/05	05/26/05
COPPER LABORATORY	LC1 BS	S	05L0278	N/A	05/25/05	05/26/05
COPPER, TOTAL	MB1	S	05L0278	N/A	05/25/05	05/26/05
MERCURY LABORATORY	LC1 BS	S	05C0108	N/A	05/13/05	05/16/05
MERCURY, TOTAL	MB1	S	05C0108	N/A	05/13/05	05/16/05
LEAD LABORATORY	LC1 BS	S	05L0278	N/A	05/25/05	05/26/05
LEAD, TOTAL	MB1	S	05L0278	N/A	05/25/05	05/26/05

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD F04-015
LVL#: 0504L297
SDG/SAF#: H3130/F04-015

W.O.#: 11343-606-001-9999-00
Date Received: 04-25-05

METALS CASE NARRATIVE

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

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

3. The sample was analyzed 5 days past the required holding time for Mercury.

4. Please refer to the Sample Receipt Check List for sample discrepancies in LvLI's sample acceptance policy.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

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), 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. The matrix spike (MS) recovery for 1 analyte was outside the 75-125% control limits. Refer to the Inorganics Accuracy Report. A serial dilution is performed for Mercury.

11. The duplicate analyses for 4 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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

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

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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

6/2/05
Date

jjw/m04-297

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 05041297

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:_____ 00000020

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 06/01/05

CLIENT: TNUHANFORD F04-015 H3130 LVL LOT #: 0504L297

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	B1C7D5	Silver, Total	0.19	MG/KG	0.09	1.0
		Cadmium, Total	0.16	MG/KG	0.03	1.0
		Chromium, Total	7.4	MG/KG	0.07	1.0
		Copper, Total	36.5	MG/KG	0.08	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	3.2	MG/KG	0.25	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/01/05

CLIENT: TNUHANFORD F04-015 H3130 LVL LOT #: 0504L297

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	05L0278-MB1	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	0.07 u	MG/KG	0.07	1.0
		Copper, Total	0.08 u	MG/KG	0.08	1.0
		Lead, Total	0.25 u	MG/KG	0.25	1.0
BLANK1	05C0108-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 06/01/05

CLIENT: TNUHANFORD F04-015 H3130 LVL LOT #: 0504L297

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-003	B1C7D5	Silver, Total	4.7	0.19	4.7	96.0	1.0
		Cadmium, Total	4.4	0.16	4.7	90.2	1.0
		Chromium, Total	26.3	7.4	18.6	101.6	1.0
		Copper, Total	57.3	36.5	23.3	89.3	1.0
		Mercury, Total	0.21	0.02u	0.16	130.4	1.0
		Lead, Total	46.5	3.2	46.6	92.9	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/01/05

CLIENT: TNUHANFORD F04-015 H3130 LVL LOT #: 0504L297

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-003REP	B1C7D5	Silver, Total	0.19	0.48	87.7	1.0
		Cadmium, Total	0.16	0.28	54.9	1.0
		Chromium, Total	7.4	10.1	30.9	1.0
		Copper, Total	36.5	51.3	33.7	1.0
		Mercury, Total	0.02u	0.01u	NC	1.0
		Lead, Total	3.2	3.6	11.8	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 06/01/05

CLIENT: TNUHANFORD F04-015 H3130 LVL LOT #: 0504L297

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	05L0278-LC1	Silver, LCS	49.4	50.0	MG/KG	98.8
		Cadmium, LCS	24.9	25.0	MG/KG	99.6
		Chromium, LCS	50.4	50.0	MG/KG	100.8
		Copper, LCS	124	125	MG/KG	99.3
		Lead, LCS	253	250	MG/KG	101.0
LCS1	05C0108-LC1	Mercury, LCS	6.8	6.2	MG/KG	109.3

Lionville Laboratory Use Only

0504L297

Custody Transfer Record/Lab Work Request

Page 1 of 1

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNU Hanford, F04-015

Est. Final Proj. Sampling Date:

Project #: 11343-006-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: OJ

QC: Spec Del: Std TAT: 30 Days

Date Rec'd: 4/25/05 Date Due: 5/25/05

		AB	C	D		E			F	G						
Refrigerator #		1	6	6		6			6	6						
#/Type Container	Liquid															
	Solid	AGL	AGL	AGL		1AGL			AGL	AGL	→					
Volume	Liquid															
	Solid	40	120	120		120			250	250	→					
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	~~Pest~~ PCB	Herb	Gx/Bx			Metal	CN	Ignition	pH				
		Lionville Laboratory Use Only														
		OC24H	OC25X OGPB/ODRO	OPCB		IDGCR			METALS(1)	ICNTO	ICNO2/ICNO3 ICSO4 ICPO4	IPH				

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	OC24H	OC25X OGPB/ODRO	OPCB		IDGCR			METALS(1)	ICNTO	ICNO2/ICNO3 ICSO4 ICPO4	IPH				
001	BIC7D2			S	4/12/05	1005					1										
002	BIC7D4			↓	↓	1055					1										
003	BIC7D5			↓	↓	1055	2	1	1					1	1	✓	✓				

Special Instructions:

METALS(1) = Cd, Cr, Pb, Ag, Cu, Hg

Run Matrix QC

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time
FedEx	JRuny	4/25/05	0925

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	ORIGINAL REWRITTEN		

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-161	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Tyra/Wiberg	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-E-4; 9-10 ft	200-MW-1 Characterization Sampling and Analysis - Soil		F04-015		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
GRP-04-015		119144ES10	Federal Express		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	See PTR 15370		See PTR 15370		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
N/A

SPECIAL HANDLING AND/OR STORAGE
Radioactive Tie To: B1C7C8

PRESERVATION	Cool 4C												
TYPE OF CONTAINER	aG												
NO. OF CONTAINER(S)	1												
VOLUME	120mL												
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS												

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1C7D2	SOIL	4-13-05	1005	X										

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSPope/JSPope	4-13-05 1400	MO-026 / REF #1	4-13-05 1400
MO-026 / RAJ	4/21/05 0710	M.H. Bauchlin / M.H. Bauchlin	4/21/05 0710
M.H. Bauchlin / M.H. Bauchlin	4/21/05 0710	HQ	
FedEx	4/25/05 0935	JRuny	

SPECIAL INSTRUCTIONS
(1)~~NO2/NO3 - 353.2; Chromium Hex - 7196;~~ Oil & Grease - 413.1;
PMG 2/14/05

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

A-6003-618(03/03)

0000028

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-166 | PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT: CS Cearlock	TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ
PRICE CODE: 8N	DATA TURNAROUND: 45 Days / 45 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: 200-E-4; 14-15 ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil	SAF NO.: F04-015	
ICE CHEST NO.: GRP-04-015	FIELD LOGBOOK NO.:	COA: 119144ES10	METHOD OF SHIPMENT: Federal Express
SHIPPED TO: Lionville Laboratory Incorporated	OFFSITE PROPERTY NO.: See PTC 15370		BILL OF LADING/AIR BILL NO.: See PTC 15370

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: ~~B1C7C0~~ B1C7C8 MAD 4/21/05

PRESERVATION	Cool 4C												
TYPE OF CONTAINER	BG												
NO. OF CONTAINER(S)	1												
VOLUME	120mL												
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS												

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
31C7D4	SOIL	4-13-05	1055	X									

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSPope/JSPfister 4-13-05	1400	MU-026 Freezer #1 4-13-05	1400
MU-026 Kill 4/21/05	0720	M.H. Bauchler/M.G. Bauchler 4/21/05	0720
M.H. Bauchler/M.G. Bauchler 4/21/05	0720	FedEx	
FedEx 4/25/05	0925	JPerry	

SPECIAL INSTRUCTIONS

(1) ~~NO2/NO3 - 353.2; Chromium Hex - 7196;~~ Oil & Grease - 413.1;
PMG 2/14/05

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

A-6003-618(03/03)

92000029

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-167 | PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT: CS Cearlock	TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ
PRICE CODE: 8N	DATA TURNAROUND: 45 Days / 45 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: 200-E-4; 14-15 ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil	SAF NO.: F04-015	
ICE CHEST NO.: GRP-04-015	FIELD LOGBOOK NO.:	COA: 119144ES10	METHOD OF SHIPMENT: Federal Express
SHIPPED TO: Lionville Laboratory Incorporated	OFFSITE PROPERTY NO.: 5a PTR 15370		BILL OF LADING/AIR BILL NO.: 5a PTR 15370

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: ~~B1C7C9~~ B1C7C5 MAB 4/21/05

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
TYPE OF CONTAINER	aGs*	aG	aG	aG	aG					
NO. OF CONTAINER(S)	~~2~~ 2 4-11-05	1	1	1	1					
VOLUME	40mL	120mL	120mL	250mL	250mL					
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS					

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1C7D5	SOIL	4-13-05	1055	+	+	+	+	+					

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
TSPG/RE/ [illegible] 4-13-05	1400	MO-026 / REF. # 1 4-13-05	1400
MO-026 Refr. 4/21/05	0720	M.H. Bauchler M.G. Bauchler 4/21/05	0720
M.H. Bauchler M.G. Bauchler 4/21/05	0720	FedEx	
FedEx 4/25/05	0925	J Perry	

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, ~~n-Butylbenzene,~~ trans-1,2-Dichloroethylene} PMG 2/11/05
(2)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range} TPH-Gasoline Range - WTPH-G;
(3)ICP Metals - 6010A (Supertrace) {Cadmium, Chromium, Lead, Silver} ICP Metals - 6010A (Supertrace Add-On) {Copper} Mercury - 7471 - (CV);
(4)IC Anions - 300.0 {~~Fluoride,~~ Nitrate, Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045; PMG 2/11/05

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

A-6003-618(03/03)

00000030

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford **Date:** 4/25/05

Purchase Order / Project# /
SAF# / SOW# / Release #:

LvLI Batch #: 0504L297 **Sample Custodian:** JPerry

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier FedEX		Airbill# 7909 8897 4268
2.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals Comments
3.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No	
5.	Samples received cooled or ambient?	Temp 13.0°C all ice melted		Cooler # GRP-04-015
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7.	coc signed and dated?	☑ Yes	☐ No	
8.	Sample containers are intact?	☑ Yes	☐ No	
9.	All samples on coc received? All samples received on coc?	☑ Yes	☐ No	
10.	All sample label information matches coc?	☑ Yes	☐ No	
11.	Samples properly preserved?	☐ Yes	☑ No All #5	
12.	Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No	
13.	VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14.	QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15.	Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☑ Yes JP 4/25/05	☑ No All #5, 11	
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) OJ 4/25/05	☑ Yes	☐ No	☐ No Discrepancies

SR-002-B

Lionville Laboratory, Inc.
DRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F04-015 H3130

DATE RECEIVED: 04/25/05 LVL LOT # :0504L297

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1C7D5	003	S	05LE0319	04/13/05	04/26/05	04/29/05
B1C7D5	003 MS	S	05LE0319	04/13/05	04/26/05	04/29/05
B1C7D5	003 MSD	S	05LE0319	04/13/05	04/26/05	04/29/05
LAB QC:						
BLK	MB1	S	05LE0319	N/A	04/26/05	04/29/05
BLK	MB1 BS	S	05LE0319	N/A	04/26/05	04/29/05

JUN 2005
RECEIVED

00000032

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD F04-015
LVL #: 0504L297
SDG/SAF # H3130/F04-015

W.O. #: 11343-606-001-9999-00
Date Received: 04-25-2005

DIESEL RANGE ORGANICS

One (1) soil sample was collected on 04-13-2005.

The sample and its associated QC samples were extracted on 04-26-2005 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 04-29-2005. The analysis was based on method 8015B. The analysis met the intent of method WTPH-D.

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 a sample that met LvLI's sample acceptance policy.

2. The sample was extracted and analyzed within required holding time.

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

4. All surrogate recoveries were within acceptance criteria.

5. The blank spike recovery was within acceptance criteria.

6. The matrix spike recoveries were within acceptance criteria.

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

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

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

Jain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/31/05
Date

00000033

som\r:\group\data\dro\tnu hanford\0504297doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 9 pages.

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

DIESEL RANGE ORGANICS BY GC

RFW Batch Number: **0504L297** Client: **TNUHANFORD F04-015 H3130** Work Order: 11343606001 Page: 1

Report Date: 05/23/05 13:15

	Cust ID:	B1C7D5	B1C7D5	B1C7D5	BLK	BLK BS
Sample Information	RFW#:	003	003 MS	003 MSD	05LE0319-MB1	05LE0319-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
	p-Terphenyl	76 %	83 %	78 %	89 %	68 %
Diesel Range Organics		12400 U	66 %	70 %	12000 U	63 %
Kerosene		12400 U	NS	NS	12000 U	NS

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

Lionville Laboratory Use Only

05041-297

Custody Transfer Record/Lab Work Request

Page 1 of 1

VLI

See SRC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford F04-015

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: OJ

QC: Spec Del: Std TAT: 30 Days

Date Rec'd: 4/25/05 Date Due: 5/25/05

		AB	C	D		E			F	G						
Refrigerator #		1	6	6		6			6	6						
#/Type Container	Liquid															
	Solid	AGL	AGL	AGL		1AGL			AGL	AGL	→					
Volume	Liquid															
	Solid	40	120	120		120			250	250	→					
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	~~Pest/~~ PCB	Herb	Grease			Metal	CN	Cations	pH				
		Lionville Laboratory Use Only														
		OG24H	OG25 x OGRO/DRO	OPCB		IDGGR			METALS(1)	ICNTD	ICNO3/ICNO3 ICSO4 ICPO4	IPH				

MATRIX CODES:
S - Soil
SE - Sediment
SQ - 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	OG24H	OG25 x OGRO/DRO	OPCB		IDGGR			METALS(1)	ICNTD	ICNO3/ICNO3 ICSO4 ICPO4	IPH				
001	B1C7D2			S	4/12/05	1005					1										
002	B1C7D4			↓	↓	1055					1										
003	B1C7D5			↓	↓	1055	2	1	1					1	1	✓	✓				

Special Instructions:

METALS(1) = Cd, Cr, Pb, Ag, Cu, Hg

Run matrix QC

DATE/REVISIONS:

1. OPCB R
2. OGRO B
3. ODRO Q (+Kero)
4.
5.
6.

Relinquished by	Received by	Date	Time
FedEx	JRum	4/25/05	0925

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	ORIGINAL DEWATERED		

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-161 | PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT: CS Cearlock	TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ
PRICE CODE: 8N	DATA TURNAROUND: 45 Days / 45 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: 200-E-4; 9-10 ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil	SAF NO.: F04-015	
CE CHEST NO.: GRP-04-015	FIELD LOGBOOK NO.:	COA: 119144ES10	METHOD OF SHIPMENT: Federal Express
SHIPPED TO: Lionville Laboratory Incorporated	OFFSITE PROPERTY NO.: See PTR 15370		BILL OF LADING/AIR BILL NO.: See PTR 15370

MATRIX*: =Air; L=Drum; liquids; S=Drum; olids; =Liquid; =Oil; =Soil; E=Sediment; =Tissue; =Vegitation; V=Water; VI=Wipe; =Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B1C7C8

PRESERVATION	Cool 4C													
TYPE OF CONTAINER	aG													
NO. OF CONTAINER(S)	1													
VOLUME	120mL													
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS													

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
1C7D2	SOIL	4-13-05	1005	X										

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
TSPope/TSPfister	4-13-05 1400	MW-026 / REF #1	4-13-05 1400
MW-026 / REF #1	4/21/05 0710	M.A. Bauchert / M.A. Bauchert	4/21/05 0710
M.A. Bauchert / M.A. Bauchert	4/21/05 0710	FedEx	
FedEx	4/25/05 0905	JKlung	

SPECIAL INSTRUCTIONS

(1) ~~NO2/NO3 - 353.2; Chromium Hex - 7196;~~ Oil & Grease - 413.1;

PMG 2/14/05

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

00000037

FLUOR HANFORD INC.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-166 | PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT: CS Cearlock	TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ
SAMPLING LOCATION: 200-E-4; 14-15 ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil		SAF NO.: F04-015
CE CHEST NO.: GRP-04-015	FIELD LOGBOOK NO.:	COA: 119144ES10	METHOD OF SHIPMENT: Federal Express
SHIPPED TO: Jonville Laboratory Incorporated	OFFSITE PROPERTY NO.: See PTR 15370		BILL OF LADING/AIR BILL NO.: See PTR 15370

PRICE CODE: 8N

AIR QUALITY: ☐

DATA TURNAROUND: 45 Days / 45 Days

MATRIX*: =Air; L=Drum; quids; S=Drum; olids; =Liquid; =Oil; =Soil; E=Sediment; =Tissue; =Vegitation; =Water; I=Wipe; =Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: ~~B1C7C9~~ B1C7C8 MAO 4/21/05

PRESERVATION	Cool 4C
TYPE OF CONTAINER	aG
NO. OF CONTAINER(S)	1
VOLUME	120mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
C7D4	SOIL	4-13-05	1055	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Shop 2 / [illegible]	4-13-05 1400	MO-026 / Rec #1	4-13-05 1400
MO-026 / [illegible]	4/21/05 0720	M.H. Bauchler / M.H. Bauchler	4/21/05 0720
M.H. Bauchler / M.H. Bauchler	4/21/05 0720	FedEx	
FedEx	4/25/05 0925	J Penny	

SPECIAL INSTRUCTIONS: (1) ~~NO2/NO3 - 353.2; Chromium Hex - 7196;~~ Oil & Grease - 413.1; PMG 2/14/05

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

0000038

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-167 | PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT: CS Cearlock	TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ
SAMPLING LOCATION: 200-E-4; 14-15 ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil		SAF NO.: F04-015
ICE CHEST NO.: GRP-04-015	FIELD LOGBOOK NO.:	COA: 119144ES10	METHOD OF SHIPMENT: Federal Express
SHIPPED TO: Lionville Laboratory Incorporated	OFFSITE PROPERTY NO.: SU PTR 15370		BILL OF LADING/AIR BILL NO.: SU PTR 15370

PRICE CODE: 8N | AIR QUALITY: ☐ | DATA TURNAROUND: 45 Days / 45 Days

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: ~~B1C7G0~~ B1C7CF NMB 4/21/05

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
TYPE OF CONTAINER	aGs*	aG	aG	aG	aG
NO. OF CONTAINER(S)	~~2~~ 2 AR 4-11-05	1	1	1	1
VOLUME	40mL	120mL	120mL	250mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
31C7D5	SOIL	4-13-05	1055	X	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
TSPG PE / [illegible]	4-13-05 1400	MO-026 / REF. #1	4-13-05 1400
MO-026 / [illegible]	4/21/05 0720	M.H. Bachler / M.G. Bachler	4/21/05 0720
M.H. Bachler / M.G. Bachler	4/21/05 0720	[illegible]	
FedEx	4/25/05 0925	J Perry	

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, ~~n-Butylbenzene,~~ trans-1,2-Dichloroethylene} PMG 2/11/05
(2)Seml-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range} TPH-Gasoline Range - WTPH-G;
(3)ICP Metals - 6010A (Supertrace) {Cadmium, Chromium, Lead, Silver} ICP Metals - 6010A (Supertrace Add-On) {Copper} Mercury - 7471 - (CV);
(4)IC Anions - 300.0 {~~Fluoride~~, Nitrate, Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045; PMG 2/11/05

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

000000

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford **Date:** 4/25/05

Purchase Order / Project# /
SAF# / SOW# / Release #:

LvLI Batch #: 0504L297 **Sample Custodian:** JPerry

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped	Carrier FedEx		Airbill# 7909 8897 4268	
2. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5. Samples received cooled or ambient?	Temp 13.0°C all ice melted		Cooler # GRP-04-015	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7. coc signed and dated?	☑ Yes	☐ No		
8. Sample containers are intact?	☑ Yes	☐ No		
9. All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10. All sample label information matches coc?	☑ Yes	☐ No		
11. Samples properly preserved?	☐ Yes	☑ No All #5		
12. Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A	
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A	
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☑ Yes JP 4/25/05	☑ No All #5, 11		
16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☑ Yes OJ 4/25/05	☐ No	☐ No Discrepancies	

SR-002-B

00000040

Lionville Laboratory, Inc.
GRO ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD F04-015, #3130

DATE RECEIVED: 04/25/05 LVL LOT # :0504L297

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1C7D5	003	S	05LVJ429	04/13/05	N/A	04/29/05
B1C7D5	003 MS	S	05LVJ429	04/13/05	N/A	04/29/05
B1C7D5	003 MSD	S	05LVJ429	04/13/05	N/A	04/29/05
LAB QC:						
TBLKUN	MB1	S	05LVJ429	N/A	N/A	04/29/05
TBLKUN	MB1 BS	S	05LVJ429	N/A	N/A	04/29/05

JUN 2005
RECEIVED

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD F04-015
LVL #: 0504L297
SDG/SAF # H3130/F04-015

W.O. #: 11343-606-001-9999-00
Date Received: 04-25-2005

GRO

One (1) soil sample was collected on 04-13-2005.

The sample and its associated QC samples were analyzed according to Lionville Laboratory SOPs based on SW-846 method 8015B for Gasoline Range Organics (GRO) on 04-29-2005. The analysis met the intent of method WTPH-G.

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

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

2. The sample was analyzed outside the required holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

3. The method blank was below the reporting limits for the target compound.

4. All surrogate recoveries were within acceptance criteria.

5. The blank spike recovery was within acceptance criteria.

6. The matrix spike recoveries were within acceptance criteria.

7. The initial calibrations associated with this data set were within acceptance criteria.

8. The continuing calibration standards analyzed prior to sample extracts were outside the acceptance criteria.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/31/05
Date

som\r\group\data\gro\tnu-hanford\0504-297.doc

00000042

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 0 pages.

Initiator: John Lauh
Date: 4/27/05
Client: TNU

Batch: 0504L297
Samples: All
Method: SW846/MCAWW/CLP/

Parameter: GRO
Matrix: Soil
Prep Batch: None

1. Reason for SDR

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

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

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

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

No sample left for analysis

2. Known or Probable Causes(s)

Only volume left is 1 Large rock which is not amenable to analysis

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:

use VOA vial A or B for analysis volume

4/28/05

4. Project Manager Instructions...signature/date: _____
√ 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: JL 4/29/05
__ Verified re-[log][leach][extract][digest][analysis] (circle)
__ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

Other Explanation:

VOA vial used, sample run 2 Days past hold.

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): Alberts		__ Log-in: Melnic
	__ Data Management: Feldman		__ Admin: Soos
	__ Sample Prep: Beegle/Kiger		__ Other: _____

QA-105-A-0801

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

GAS RANGE ORGANICS

Report Date: 05/06/05 13:18

RFW Batch Number: **0504L297** Client: **TNU-HANFORD F04-015**, H3130 Work Order: 11343606001 Page: 1

	Cust ID:	B1C7D5	B1C7D5	B1C7D5	TBLKUN	TBLKUN BS
Sample Information	RFW#:	003	003 MS	003 MSD	05LVJ429-MB1	05LVJ429-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
Fluorobenzene		90 %	89 %	122 %	101 %	105 %
Gasoline Range Organics (GRO)		29 U	99 %	106 %	30 U	98 %

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

0000045

Lionville Laboratory Use Only

05044L297

Custody Transfer Record/Lab Work Request

Page 1 of 1

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: INU Hanford FOU-015

Est. Final Proj. Sampling Date:

Project #: 11343-006-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: OJ

QC: Spec Del: Std TAT: 30 Days

Date Rec'd: 4/25/05 Date Due: 5/25/05

		AB	C	D		E			F	G						
Refrigerator #		1	6	6		6			6	6						
#/Type Container	Liquid															
	Solid	AGL	AGL	AGL		1AGL			AGL	AGL	→					
Volume	Liquid															
	Solid	40	120	120		120			250	250	→					
Preservatives																

ANALYSES REQUESTED →

	ORGANIC							INORG							
	VOA	BNA	~~Pest~~ PCB	Herb	Oil/Grease			Metal	CN	Sulfide	pH				
Lionville Laboratory Use Only	OGA24H	OG35x DGRO/ODRO	OPCB		IDGGR			METALS①	ICNTO	ICNO2/ICNO3 ICSO4 ICPO4	HPH				

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DB - 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	OGA24H	OG35x DGRO/ODRO	OPCB		IDGGR			METALS①	ICNTO	ICNO2/ICNO3 ICSO4 ICPO4	HPH				
001	B1C7D2			S	4/13/05	1005					1										
002	B1C7D4			↓	↓	1055					1										
003	B1C7D5			↓	↓	1055	2	1	1					1	1	✓	✓				

Special Instructions:

METALS① = Cd, Cr, Pb, Ag, Cu, Hg

Run matrix QC

DATE/REVISIONS:

1. OPCB R
2. OGRO B
3. ODRO Q (+Kero)
4.
5.
6.

Relinquished by	Received by	Date	Time
FedEx	JRum	4/25/05	0925

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	ORIGINAL REWRITTEN		

0000046

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-161 | PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT: CS Cearlock	TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ
PRICE CODE: 8N	DATA TURNAROUND: 45 Days / 45 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: 200-E-4; 9-10 ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil	SAF NO.: F04-015	
ICE CHEST NO.: GRP-04-015	FIELD LOGBOOK NO.:	COA: 119144ES10	METHOD OF SHIPMENT: Federal Express
SHIPPED TO: Lionville Laboratory Incorporated	OFFSITE PROPERTY NO.: See PTR 15370		BILL OF LADING/AIR BILL NO.: See PTR 15370

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B1C7C8

PRESERVATION	Cool 4C
TYPE OF CONTAINER	aG
NO. OF CONTAINER(S)	1
VOLUME	120mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1C7D2	SOIL	4-13-05	1005	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSPope/JSPope	4-13-05	MO-026 / REF #1	4-13-05 1400
MO-026 / REF #1	4/21/05 0710	M.H. Bauchkar / M.H. Bauchkar	4/21/05 0710
M.H. Bauchkar / M.H. Bauchkar	4/21/05 0710	HO EX	
Fedex	4/25/05 0935	JKlung	

SPECIAL INSTRUCTIONS

(1) ~~NO2/NO3 - 353.2; Chromium Hex - 7196;~~ Oil & Grease - 413.1;

PMG 2/14/05

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

00000047

FLUOR HANFORD INC. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | F04-015-166 | PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT: CS Cearlock	TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ
PRICE CODE: 8N	DATA TURNAROUND: 45 Days / 45 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: 200-E-4; 14-15 ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil	SAF NO.: F04-015	
ICE CHEST NO.: GRP-04-015	FIELD LOGBOOK NO.:	COA: 119144ES10	METHOD OF SHIPMENT: Federal Express
SHIPPED TO: Lionville Laboratory Incorporated	OFFSITE PROPERTY NO.: See PTR 15370		BILL OF LADING/AIR BILL NO.: See PTR 15370

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: ~~B1C7C9~~ MAO B1C7C8 4/21/05

PRESERVATION	Cool 4C
TYPE OF CONTAINER	aG
NO. OF CONTAINER(S)	1
VOLUME	120mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	[redacted]
1C7D4	SOIL	4-13-05	1055	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
TS Pope/TS Pope	4-13-05 1400	MU-026 / RCF #1	4-13-05 1400
MU-026 RCF	4/21/05 0720	M.A. Bauchler / M.A. Bauchler	4/21/05 0720
M.A. Bauchler / M.A. Bauchler	4/21/05 0720	FedEx	
FedEx	4/25/05 0925	JPerry	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

(1) ~~NO2/NO3 - 353.2; Chromium Hex - 7196;~~ Oil & Grease - 413.1;
PMG 2/14/05

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

0000048

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-167 | PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT: CS Cearlock	TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ
PRICE CODE: 8N	DATA TURNAROUND: 45 Days / 45 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: 200-E-4; 14-15 ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil	SAF NO.: F04-015	
ICE CHEST NO.: GRP-04-015	FIELD LOGBOOK NO.:	COA: 119144ES10	METHOD OF SHIPMENT: Federal Express
SHIPPED TO: Lionville Laboratory Incorporated	OFFSITE PROPERTY NO.: 5a PTR 15370		BILL OF LADING/AIR BILL NO.: 5a PTR 15370

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: ~~B1C7C0~~ B1C7C5 MMB 4/21/05

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
TYPE OF CONTAINER	aGs*	aG	aG	aG	aG
NO. OF CONTAINER(S)	~~2~~ 2 ~~1~~ +1 11-05	1	1	1	1
VOLUME	40mL	120mL	120mL	250mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B1C7D5	SOIL	4-13-05	1055	X	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
TSCB RE / [illegible]	4-13-05 1400	MO-026 / REF #1	4-13-05 1400
MO-026 / REF #1	4/21/05 0720	M.H. Bachler / M.G. Bachler	4/21/05 0720
M.H. Bachler / M.G. Bachler	4/21/05 0720	FedEx	
FedEx	4/25/05 0925	J Perry	

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, ~~n-Butylbenzene,~~ trans-1,2-Dichloroethylene} PMG 2/11/05
(2)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range} TPH-Gasoline Range - WTPH-G;
(3)ICP Metals - 6010A (Supertrace) {Cadmium, Chromium, Lead, Silver} ICP Metals - 6010A (Supertrace Add-On) {Copper} Mercury - 7471 - (CV);
(4)IC Anions - 300.0 {~~Fluoride~~, Nitrate, Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045; PMG 2/11/05

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

64000049

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford **Date:** 4/25/05

Purchase Order / Project# /
SAF# / SOW# / Release #:

LvLI Batch #: 0504L297 **Sample Custodian:** JKeung

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped	Carrier FedEx		Airbill# 7909 8897 4268	
2. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5. Samples received cooled or ambient?	Temp 13.0°C all ice melted		Cooler # GRP-04-015	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7. coc signed and dated?	☑ Yes	☐ No		
8. Sample containers are intact?	☑ Yes	☐ No		
9. All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10. All sample label information matches coc?	☑ Yes	☐ No		
11. Samples properly preserved?	☐ Yes	☑ No See #5		
12. Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A	
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A	
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☑ Yes 4/25/05	☑ No See #5, 11		
16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) OJ 4/25/05	☑ Yes	☐ No	☐ No Discrepancies	

SR-002-B

00000050

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD F04-015, H3130

DATE RECEIVED: 04/25/05 LVL LOT # :0504L297

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1C7D5	003	S	05LE0321	04/13/05	04/26/05	04/28/05
B1C7D5	003 MS	S	05LE0321	04/13/05	04/26/05	04/28/05
B1C7D5	003 MSD	S	05LE0321	04/13/05	04/26/05	04/28/05
LAB QC:						
PBLKJV	MB1	S	05LE0321	N/A	04/26/05	04/28/05
PBLKJV	MB1 BS	S	05LE0321	N/A	04/26/05	04/28/05

JUN 2005
RECEIVED

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD F04-015
LVL #: 0504L297
SDG/SAF # H3130/F04-015

W.O. #: 11343-606-001-9999-00
Date Received: 04-25-2005

PCB

One (1) soil sample was collected on 04-13-2005.

The sample and its associated QC samples were extracted on 04-26-2005 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 04-28-2005. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

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 a sample that met LvLI's sample acceptance policy.

2. The sample was extracted and analyzed within required holding time.

3. The sample and its associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.

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

5. All surrogate recoveries were within acceptance criteria.

6. The blank spike recoveries were within acceptance criteria.

7. All matrix spike recoveries were within acceptance criteria.

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

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

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

5/31/05
Date

00000052

som\r:\group\data\pest\tnu hanford\0504-297.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 9 pages.

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

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Laboratory, Inc.

PCBs by GC

Report Date: 04/29/05 09:34

RFW Batch Number: **0504L297** Client: **TNU-HANFORD F04-015**, #3130 Work Order: 11343606001 Page: 1

	Cust ID:	B1C7D5	B1C7D5	B1C7D5	PBLKJV	PBLKJV BS
Sample Information	RFW#:	003	003 MS	003 MSD	05LE0321-MB1	05LE0321-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	91 %	92 %	95 %	84 %	93 %
	Decachlorobiphenyl	99 %	98 %	99 %	92 %	95 %
Aroclor-1016		14 U	84 %	87 %	13 U	84 %
Aroclor-1221		14 U	14 U	14 U	13 U	13 U
Aroclor-1232		14 U	14 U	14 U	13 U	13 U
Aroclor-1242		14 U	14 U	14 U	13 U	13 U
Aroclor-1248		14 U	14 U	14 U	13 U	13 U
Aroclor-1254		14 U	14 U	14 U	13 U	13 U
Aroclor-1260		14 U	88 %	87 %	13 U	86 %

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

0504L297

Custody Transfer Record/Lab Work Request

Page 1 of 1

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNU Hanford, F04-015

Est. Final Proj. Sampling Date:

Project #: 11343-006-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: OJ

QC: Spec Del: Std TAT: 30 Days

Date Rec'd: 4/25/05 Date Due: 5/25/05

		AB	C	D		E			F	G						
Refrigerator #		1	6	6		6			6	6						
#/Type Container	Liquid															
	Solid	AGL	AGL	AGL		1AGL			AGL	AGL	→					
Volume	Liquid															
	Solid	40	120	120		120			250	250	→					
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	~~Pest~~ PCB	Herb	GRO/DRO			Metal	CN	Iodine	pH				
		Lionville Laboratory Use Only														
		OC624H	OC625 OGRO/DRO	OPCB		IDGR			METALS①	ICNTO	ICNO2/ICNO3 ICSO4/ICPO4	IPH				

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	OC624H	OC625 OGRO/DRO	OPCB		IDGR			METALS①	ICNTO	ICNO2/ICNO3 ICSO4/ICPO4	IPH				
001	B1C7D2			S	4/12/05	1005					1										
002	B1C7D4			↓	↓	1055					1										
003	B1C7D5					1055	2	1	1					1	1	✓	✓				

Special Instructions:

METALS① = Cd, Cr, Pb, Ag, Cu, Hg

Run Matrix QC

DATE/REVISIONS:

1. OPCB R
2. OGRO B
3. ODRO Q (+Kero)
4.
5.
6.

Relinquished by	Received by	Date	Time
FedEx	JRuny	4/25/05	0925

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	ORIGINAL REWRITTEN		

0000055

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-161

COLLECTOR Pope/Pfister/Tyra/Wiberg	**COMPANY CONTACT** CS Cearlock	**TELEPHONE NO.** 372-9638	**PROJECT COORDINATOR** TRENT, SJ
SAMPLING LOCATION 200-E-4; 9-10 ft	**PROJECT DESIGNATION** 200-MW-1 Characterization Sampling and Analysis - Soil		**SAF NO.** F04-015
ICE CHEST NO. GRP-04-015	**FIELD LOGBOOK NO.**	**COA** 119144ES10	**METHOD OF SHIPMENT** Federal Express
SHIPPED TO Lionville Laboratory Incorporated	**OFFSITE PROPERTY NO.** See PTR 15370		**BILL OF LADING/AIR BILL NO.** See PTR 15370

PRICE CODE 8N

AIR QUALITY ☐

DATA TURNAROUND 45 Days / 45 Days

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
N/A

SPECIAL HANDLING AND/OR STORAGE
Radioactive Tie To: B1C7C8

PRESERVATION	Cool 4C												
TYPE OF CONTAINER	aG												
NO. OF CONTAINER(S)	1												
VOLUME	120mL												
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS												

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1C7D2	SOIL	4-13-05	1005	X										

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSPOPE / JSPope	4-13-05 1400	MO-026 / REF-H1	4-13-05 1400
MO-026 / [illegible]	4/21/05 0710	M.H. Bauhw / M.H. Bauhw	4/21/05 0710
M.H. Bauhw / M.H. Bauhw	4/21/05 0710	[illegible]	
FedEx	4/25/05 0925	JKlung	

SPECIAL INSTRUCTIONS
(1)~~NO2/NO3 - 353.2; Chromium Hex - 7196;~~ Oil & Grease - 413.1;
PMG 2/14/05

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

A-6003-618(03/03)

0000056

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-166 | PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT: CS Cearlock	TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ
SAMPLING LOCATION: 200-E-4; 14-15 ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil		SAF NO.: F04-015
ICE CHEST NO.: GRP-04-015	FIELD LOGBOOK NO.:	COA: 119144ES10	METHOD OF SHIPMENT: Federal Express
SHIPPED TO: Lionville Laboratory Incorporated	OFFSITE PROPERTY NO.: See PTC 15370		BILL OF LADING/AIR BILL NO.: See PTC 15370

PRICE CODE: 8N | AIR QUALITY: ☐ | DATA TURNAROUND: 45 Days / 45 Days

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: ~~B1C7C8~~ B1C7C8 MAO 4/21/05

PRESERVATION	Cool 4C												
TYPE OF CONTAINER	aG												
NO. OF CONTAINER(S)	1												
VOLUME	120mL												
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS												

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
1C7D4	SOIL	4-13-05	1055	X										

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SPope/A Spfister 4-13-05	1400	MU-026 / Ref #1 4-13-05	1400
MO-026, RJT 4/21/05	0720	M.H. Bauchler M.H. Bauchler 4/21/05	0720
M.H. Bauchler M.H. Bauchler 4/21/05	0720	Fed Ex	
FedEx 4/25/05	0925	JPerry	

SPECIAL INSTRUCTIONS: (1)~~NO2/NO3 - 353.2; Chromium Hex - 7196;~~ Oil & Grease - 413.1;
PMG 2/14/05

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

6003-618/03/03)

00000057

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-167 | PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT: CS Cearlock	TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ
SAMPLING LOCATION: 200-E-4; 14-15 ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil		SAF NO.: F04-015
ICE CHEST NO.: GRP-04-015	FIELD LOGBOOK NO.	COA: 119144ES10	METHOD OF SHIPMENT: Federal Express
SHIPPED TO: Lionville Laboratory Incorporated	OFFSITE PROPERTY NO.: Su PTR 15370		BILL OF LADING/AIR BILL NO.: Su PTR 15370

PRICE CODE: 8N | AIR QUALITY ☐ | DATA TURNAROUND: 45 Days / 45 Days

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: ~~B1C7C0~~ B1C7C5 MMB 4/21/05

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
TYPE OF CONTAINER	aGs*	aG	aG	aG	aG
NO. OF CONTAINER(S)	2 2 4-13-05	1	1	1	1
VOLUME	40mL	120mL	120mL	250mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B1C7D5	SOIL	4-13-05	1055	X	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
TSCoRE/ASP	4-13-05 1400	MO-026/REF #1	4-13-05 1400
MO-026 Rey	4/21/05 0730	M.H. Bauchler/M.G. Bauchler	4/21/05 0730
M.H. Bauchler/M.G. Bauchler	4/21/05 0730	FedEx	
FedEx	4/25/05 0925	JPerry	

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, ~~n-Butylbenzene,~~ trans-1,2-Dichloroethylene} PMG 2/11/05
(2)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range} TPH-Gasoline Range - WTPH-G;
(3)ICP Metals - 6010A (Supertrace) {Cadmium, Chromium, Lead, Silver} ICP Metals - 6010A (Supertrace Add-On) {Copper} Mercury - 7471 - (CV);
(4)IC Anions - 300.0 {~~Fluoride,~~ Nitrate, Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045; PMG 2/11/05

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

A-6003-618(03/03)

000005

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford **Date:** 4/25/05

Purchase Order / Project# /
SAF# / SOW# / Release #:

LvLI Batch #: 0504L297 **Sample Custodian:** JPerry

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier FedEx		Airbill# 7909 8897 4268
2.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals Comments
3.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No	
5.	Samples received cooled or ambient?	Temp 13.0°C all ice melted		Cooler # GRP-04-015
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7.	coc signed and dated?	☑ Yes	☐ No	
8.	Sample containers are intact?	☑ Yes	☐ No	
9.	All samples on coc received? All samples received on coc?	☑ Yes	☐ No	
10.	All sample label information matches coc?	☑ Yes	☐ No	
11.	Samples properly preserved?	☐ Yes	☑ No All #5	
12.	Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No	
13.	VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14.	QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15.	Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☑ Yes JP 4/25/05	☑ No All #5, 11	
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☑ Yes OJ 4/25/05	☐ No	☐ No Discrepancies

SR-002-B

00000059

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F04-015 H3130

DATE RECEIVED: 04/25/05 LVL LOT # :0504L297

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1C7D5	003	S	05LVG108	04/13/05	N/A	04/26/05
B1C7D5	003 MS	S	05LVG108	04/13/05	N/A	04/26/05
B1C7D5	003 MSD	S	05LVG108	04/13/05	N/A	04/26/05

LAB QC:

VBLKPU	MB1	S	05LVG108	N/A	N/A	04/26/05
VBLKPU	MB1 BS	S	05LVG108	N/A	N/A	04/26/05

JUN 2005
RECEIVED

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU HANFORD F04-015
LVL#: 0504L297
SDG/SAF#: H3130/F04-015

W.O.#: 11343-606-001-9999-00
Date Received: 04-25-2005

GC/MS VOLATILE

One (1) soil sample was collected on 04-13-2005.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for TCL volatile target compounds on 04-26-2005.

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

1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
2. The sample was extracted and analyzed within required holding time.
3. A non-target compound was detected in the sample.
4. All surrogate recoveries were within acceptance criteria.
5. All matrix spike recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. The method blank contained the common laboratory contaminant Methylene Chloride at a level less than the CRQL.
8. Internal standard area and retention time criteria were met.
9. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
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

5/31/05
Date

00000061

som\group\data\voa\tnu-hanford\0504-297.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 1 3 pages.

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

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.

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 resolve 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 - **Co-elution/ Background:** Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.

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

Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List

Report Date: 05/23/05 09:51

RFW Batch Number: **0504L297** Client: **TNUHANFORD F04-015 H3130** Work Order: 11343606001 Page: 1a

	Cust ID:	B1C7D5		B1C7D5		B1C7D5		VBLKPU		VBLKPU BS	
Sample Information	RFW#:	003		003 MS		003 MSD		05LVG108-MB1		05LVG108-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.06		1.02		0.980		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Toluene-d8	93	%	97	%	95	%	92	%	99	%
	Bromofluorobenzene	87	%	96	%	91	%	88	%	94	%
	1,2-Dichloroethane-d4	87	%	91	%	92	%	86	%	86	%
Chloromethane		11	U	11	U	10	U	10	U	10	U
Bromomethane		11	U	11	U	10	U	10	U	10	U
Vinyl Chloride		11	U	11	U	10	U	10	U	10	U
Chloroethane		11	U	11	U	10	U	10	U	10	U
Methylene Chloride		5	JB	5	JB	5	B	2	J	3	JB
Acetone		4	J	5	J	5	J	10	U	10	U
Carbon Disulfide		6	U	6	U	5	U	5	U	5	U
1,1-Dichloroethene		6	U	96	%	92	%	5	U	96	%
1,1-Dichloroethane		6	U	6	U	5	U	5	U	5	U
1,2-Dichloroethene (total)		6	U	6	U	5	U	5	U	5	U
Chloroform		6	U	6	U	5	U	5	U	5	U
1,2-Dichloroethane		6	U	6	U	5	U	5	U	5	U
2-Butanone		11	U	11	U	10	U	10	U	10	U
1,1,1-Trichloroethane		6	U	6	U	5	U	5	U	5	U
Carbon Tetrachloride		6	U	6	U	5	U	5	U	5	U
Bromodichloromethane		6	U	6	U	5	U	5	U	5	U
1,2-Dichloropropane		6	U	6	U	5	U	5	U	5	U
cis-1,3-Dichloropropene		6	U	6	U	5	U	5	U	5	U
Trichloroethene		6	U	114	%	104	%	5	U	112	%
Dibromochloromethane		6	U	6	U	5	U	5	U	5	U
1,1,2-Trichloroethane		6	U	6	U	5	U	5	U	5	U
Benzene		6	U	101	%	95	%	5	U	100	%
Trans-1,3-Dichloropropene		6	U	6	U	5	U	5	U	5	U
Bromoform		6	U	6	U	5	U	5	U	5	U
4-Methyl-2-pentanone		11	U	11	U	10	U	10	U	10	U
2-Hexanone		11	U	11	U	10	U	10	U	10	U
Tetrachloroethene		6	U	6	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		6	U	6	U	5	U	5	U	5	U
Toluene		6	U	108	%	103	%	5	U	107	%

*= Outside of EPA CLP QC limits.

RFW Batch Number: **0504L297** Client: **TNUHANFORD F04-015 H3130** Work Order: 11343606001 Page: 1b

Cust ID:	B1C7D5		B1C7D5		B1C7D5		VBLKPU		VBLKPU BS	
RFW#:	003		003 MS		003 MSD		05LVG108-MB1		05LVG108-MB1	
Chlorobenzene	6	U	109	%	104	%	5	U	110	%
Ethylbenzene	6	U	6	U	5	U	5	U	5	U
Styrene	6	U	6	U	5	U	5	U	5	U
Xylene (total)	6	U	6	U	5	U	5	U	5	U
cis-1,2-dichloroethene	6	U	6	U	5	U	5	U	5	U
trans-1,2-dichloroethene	6	U	6	U	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1C7D5

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0504L297-003

Sample wt/vol: 4.70 (g/mL) G Lab File ID: q042608

Level: (low/med) LOW Date Received: 04/25/05

% Moisture: not dec. 3 Date Analyzed: 04/26/05

Column: (pack/cap) CAP Dilution Factor: 1.06

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 141786	ETHYL ACETATE	10.530	70	NJ

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKPU

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 05LVG108-MB1

Sample wt/vol: 5.00 (g/mL) G Lab File ID: g042606

Level: (low/med) LOW Date Received: 04/26/05

% Moisture: not dec. 0 Date Analyzed: 04/26/05

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

Lionville Laboratory Use Only: 0504L297

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNU Hanford F04-015
Est. Final Proj. Sampling Date:
Project #: 11343-006-001-9999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: DJ
QC: Spec Del: Std TAT: 30 Days

Date Rec'd: 4/25/05 Date Due: 5/25/05

		AB	C	D		E			F	G						
Refrigerator #		1	6	6		6			6	6						
#/Type Container	Liquid															
	Solid	AGL	AGL	AGL		1AGL			AGL	AGL	→					
Volume	Liquid															
	Solid	140	120	120		120			250	250	→					
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	~~Pest~~ PCB	Herb	GRO/DRO			Metal	CN	Cyanide	pH				
		Lionville Laboratory Use Only														
		OC24H	OC25X	OGRO/DRO	OPCB	ZDGGR			METALS①	ICNTO	ICNO2/ICNO3 ICSO4/ICPO4	IPH				

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	OC24H	OC25X	OGRO/DRO	OPCB	ZDGGR			METALS①	ICNTO	ICNO2/ICNO3 ICSO4/ICPO4	IPH				
001	BIC7D2			S	4/13/05	1005					1										
002	BIC7D4			↓	↓	1055					1										
003	BIC7D5					1055	2	1	1					1	1	✓	✓				

Special Instructions:

METALS① = Cd, Cr, Pb, Ag, Cu, Hg

Run Matrix QC

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time
FedEx	JRuny	4/25/05	0925

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	ORIGINAL REWRITTEN		

69000009

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-161 | PAGE 1 OF 1

COLLECTOR Pope/Pfister/Tyra/Wiberg	**COMPANY CONTACT** CS Cearlock	**TELEPHONE NO.** 372-9638	**PROJECT COORDINATOR** TRENT, SJ
SAMPLING LOCATION 200-E-4; 9-10 ft	**PROJECT DESIGNATION** 200-MW-1 Characterization Sampling and Analysis - Soil		**SAF NO.** F04-015
ICE CHEST NO. GRP-04-015	**FIELD LOGBOOK NO.**	**COA** 119144ES10	**METHOD OF SHIPMENT** Federal Express
SHIPPED TO Lionville Laboratory Incorporated	**OFFSITE PROPERTY NO.** See PTC 15370		**BILL OF LADING/AIR BILL NO.** See PTC 15370

PRICE CODE 8N | **AIR QUALITY** ☐ | **DATA TURNAROUND** 45 Days / 45 Days

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

POSSIBLE SAMPLE HAZARDS/ REMARKS N/A

SPECIAL HANDLING AND/OR STORAGE Radioactive Tie To: B1C7C8

PRESERVATION	Cool 4C
TYPE OF CONTAINER	aG
NO. OF CONTAINER(S)	1
VOLUME	120mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1C7D2	SOIL	4-13-05	1005	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSPope / JSPope	4-13-05	MO-626 / REF. #1	4-13-05 1400
MO-626, REF #1	4/21/05 0710	M.H. Bauchlin / M.H. Bauchlin	4/21/05 0710
M.H. Bauchlin / M.H. Bauchlin	4/21/05 0710	FedEx	
FedEx	4/25/05 0935	J Kurz	

SPECIAL INSTRUCTIONS

(1)~~NO2/NO3 - 353.2; Chromium Hex - 7196;~~ Oil & Grease - 413.1;

PMG 2/14/05

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

A-6003-618(03/03)

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-166 | PAGE 1 OF 1

COLLECTOR Pope/Pfister/Tyra/Wiberg	**COMPANY CONTACT** CS Cearlock	**TELEPHONE NO.** 372-9638	**PROJECT COORDINATOR** TRENT, SJ
SAMPLING LOCATION 200-E-4; 14-15 ft	**PROJECT DESIGNATION** 200-MW-1 Characterization Sampling and Analysis - Soil		**SAF NO.** F04-015
ICE CHEST NO. GRP-04-015	**FIELD LOGBOOK NO.**	**COA** 119144ES10	**METHOD OF SHIPMENT** Federal Express
SHIPPED TO Lionville Laboratory Incorporated	**OFFSITE PROPERTY NO.** See PTR 15370		**BILL OF LADING/AIR BILL NO.** See PTR 15370

PRICE CODE 8N **AIR QUALITY** ☐ **DATA TURNAROUND** 45 Days / 45 Days

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

POSSIBLE SAMPLE HAZARDS/ REMARKS N/A

SPECIAL HANDLING AND/OR STORAGE Radioactive Tie To: ~~B1C7C9~~ B1C7C8 MAO 4/21/05

PRESERVATION	Cool 4C
TYPE OF CONTAINER	aG
NO. OF CONTAINER(S)	1
VOLUME	120mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1C7D4	SOIL	4-13-05	1055	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSPope/JSPfister 4-13-05	1400	MU-026 / REF #1 4-13-05	1400
MU-026 RLT 4/21/05	0720	M.H. Bauchler M.G. Bauchler 4/21/05	0720
M.H. Bauchler M.G. Bauchler 4/21/05	0720	FedEx	
FedEx 4/25/05	0925	JPerry	

SPECIAL INSTRUCTIONS

(1) ~~NO2/NO3 - 353.2; Chromium Hex - 7196;~~ Oil & Grease - 413.1;
PMG 2/14/05

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

A-6003-618(03/03)

17000071

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-167 | PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT: CS Cearlock	TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ
SAMPLING LOCATION: 200-E-4; 14-15 ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil		SAF NO.: F04-015
ICE CHEST NO.: GRP-04-015	FIELD LOGBOOK NO.:	COA: 119144ES10	METHOD OF SHIPMENT: Federal Express
SHIPPED TO: Lionville Laboratory Incorporated	OFFSITE PROPERTY NO.: Su PTR 15370		BILL OF LADING/AIR BILL NO.: Su PTR 15370

PRICE CODE: 8N | AIR QUALITY: ☐ | DATA TURNAROUND: 45 Days / 45 Days

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: ~~B1C7G0~~ B1C7C5 MMB 4/21/05

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
TYPE OF CONTAINER	aGs*	aG	aG	aG	aG					
NO. OF CONTAINER(S)	~~2~~ 1 4-13-05	1	1	1	1					
VOLUME	40mL	120mL	120mL	250mL	250mL					
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS					

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1C7D5	SOIL	4-13-05	1055	X	X	X	X	X					

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
TSPG Pfister / [illegible]	4-13-05 1400	MO-026 / REF. #1	4-13-05 1400
MO-026 / [illegible]	4/21/05 0720	M.H. Bauchler / M.G. Bauchler	4/21/05 0720
M.H. Bauchler / M.G. Bauchler	4/21/05 0720	FedEx	
FedEx	4/25/05 0925	J Perry	

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, ~~n-Butylbenzene,~~ trans-1,2-Dichloroethylene} PMG 2/11/05
(2)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range} TPH-Gasoline Range - WTPH-G;
(3)ICP Metals - 6010A (Supertrace) {Cadmium, Chromium, Lead, Silver} ICP Metals - 6010A (Supertrace Add-On) {Copper} Mercury - 7471 - (CV);
(4)IC Anions - 300.0 {~~Fluoride,~~ Nitrate, Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045; PMG 2/11/05

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

A-6003-618(03/03)

00000072

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford **Date:** 4/25/05

Purchase Order / Project# /
SAF# / SOW# / Release #:

LvLI Batch #: 0504L297 **Sample Custodian:** JHenry

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier FedEX		Airbill# 7909 8897 4268	
2.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5.	Samples received cooled or ambient?	Temp 13.0°C all ice melted		Cooler # GRP-04-015	
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7.	coc signed and dated?	☑ Yes	☐ No		
8.	Sample containers are intact?	☑ Yes	☐ No		
9.	All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10.	All sample label information matches coc?	☑ Yes	☐ No		
11.	Samples properly preserved?	☐ Yes	☑ No All #5		
12.	Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
13.	VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A	
14.	QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A	
15.	Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☑ Yes JP 4/25/05	☑ No All #5, 11		
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☑ Yes OJ 4/25/05	☐ No	☐ No Discrepancies	

SR-002-B

00000073

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD F04-015, H3130

DATE RECEIVED: 04/25/05 LVL LOT # :0504L297

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1C7D5	003	S	05LE0320	04/13/05	04/26/05	04/27/05
B1C7D5	003 MS	S	05LE0320	04/13/05	04/26/05	04/27/05
B1C7D5	003 MSD	S	05LE0320	04/13/05	04/26/05	04/27/05
LAB QC:						
SBLKIL	MB1	S	05LE0320	N/A	04/26/05	04/27/05
SBLKIL	MB1 BS	S	05LE0320	N/A	04/26/05	04/27/05

JUN 2005
RECEIVED

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD F04-015
LVL #: 0504L297
SDG/SAF # H3130/F04-015

W.O. #: 11343-606-001-9999-00
Date Received: 04-25-2005

SEMIVOLATILE

One (1) soil sample was collected on 04-13-2005.

The sample and its associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 04-26-2005 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for client specified Semivolatile target compound Tributylphosphate on 04-27-2005.

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 a sample that met LvLI's sample acceptance policy.

2. The sample was extracted and analyzed within required holding time.

3. All surrogate recoveries were within acceptance criteria.

4. All matrix spike recoveries were within acceptance criteria.

   All blank spike recoveries were within acceptance criteria.

   The target compound was not included in the spiking solution. The spike recoveries were reported on the form 3s and included in the data package.

5. Internal standard area and retention time criteria were met.

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

7. 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

5/31/05
Date

00000075

som\gorup\data\bna\tnu-hanford\0504-397.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 1 3 pages.

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

GLOSSARY

DATA QUALIFIERS

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, Special List — Report Date: 04/29/05 08:46

RFW Batch Number: **0504L297** — Client: **TNU-HANFORD F04-015**, H3130 — Work Order: 11343606001 — Page: 1a

	Cust ID:	B1C7D5	B1C7D5	B1C7D5	SBLKIL	SBLKIL BS
Sample Information	RFW#:	003	003 MS	003 MSD	05LE0320-MB1	05LE0320-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	65 %	78 %	68 %	73 %	76 %
	2-Fluorobiphenyl	68 %	78 %	67 %	73 %	76 %
	Terphenyl-d14	81 %	84 %	75 %	83 %	83 %
Tributylphosphate		340 U	340 U	340 U	330 U	330 U

*= Outside of EPA CLP QC limits.

00000079

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Lionville Labs, Inc. Contract: 1343-06-01

Case No.: TNU-HANFORD F04-015 RFW Lot No.: 0504L297-003

MATRIX Spike - Sample No.: B1C7D5 Level:(low/med) LOW

COMPOUND	SPIKE ADDED UG/KG	SAMPLE CONCENTRATION UG/KG	MS CONCENTRATION UG/KG	MS % REC #	QC LIMITS REC
Phenol	2580	0	2000	77	26 - 90
2-Chlorophenol	2580	0	2050	80	25 -102
1,4-Dichlorobenzene	1720	0	1310	76	28 -104
N-Nitroso-Di-n-propylamine	1720	0	1450	84	41 -126
1,2,4-Trichlorobenzene	1720	0	1310	76	38 -107
4-Chloro-3-methylphenol	2580	0	2110	82	26 -103
Acenaphthene	1720	0	1350	79	31 -137
4-Nitrophenol	2580	0	1830	71	11 -114
2,4-Dinitrotoluene	1720	0	1380	80	28 - 89
Pentachlorophenol	2580	0	1410	55	17 -109
Pyrene	1720	0	1350	78	35 -142

COMPOUND	SPIKE ADDED UG/KG	MSD CONCENTRATION UG/KG	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC
Phenol	2580	1710	66	15	35	26 - 90
2-Chlorophenol	2580	1750	68	16	50	25 -102
1,4-Dichlorobenzene	1720	1130	66	14	27	28 -104
N-Nitroso-Di-n-propylamine	1720	1300	76	10	38	41 -126
1,2,4-Trichlorobenzene	1720	1120	65	15	23	38 -107
4-Chloro-3-methylphenol	2580	1830	71	14	33	26 -103
Acenaphthene	1720	1180	68	15	19	31 -137
4-Nitrophenol	2580	1640	63	11	50	11 -114
2,4-Dinitrotoluene	1720	1190	69	14	47	28 - 89
Pentachlorophenol	2580	1180	46	18	47	17 -109
Pyrene	1720	1200	70	10	36	35 -142

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

COMMENTS:

3D

SOIL SEMIVOLATILE BLANK SPIKE RECOVERY

Lab Name: Lionville Labs, Inc. Contract: 1343-06-01

Case No.: TNU-HANFORD F04-015 RFW Lot No.: 0504L297

BLANK Spike - Sample No.: SBLKILLE0320-MB1 Level:(low/med) LOW

COMPOUND	SPIKE ADDED UG/KG	SAMPLE CONCENTRATION UG/KG	BS CONCENTRATION UG/KG	BS % REC #	QC LIMITS REC
Phenol	2500	0	1840	73	26 - 90
2-Chlorophenol	2500	0	1880	75	25 -102
1,4-Dichlorobenzene	1670	0	1230	74	28 -104
N-Nitroso-Di-n-propylamine	1670	0	1390	84	41 -126
1,2,4-Trichlorobenzene	1670	0	1210	72	38 -107
4-Chloro-3-methylphenol	2500	0	1830	73	26 -103
Acenaphthene	1670	0	1250	75	31 -137
4-Nitrophenol	2500	0	1560	62	11 -114
2,4-Dinitrotoluene	1670	0	1250	75	28 - 89
Pentachlorophenol	2500	0	715	29	17 -109
Pyrene	1670	0	1280	77	35 -142

Column to be used to flag recovery value with an asterisk
* Values outside of QC limits

Spike Recovery: 0 out of 11 outside limits

COMMENTS:

Lionville Laboratory Use Only

0504L297

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: INU Hanford, F04-015

Est. Final Proj. Sampling Date:

Project #: 11343-0006-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: OJ

QC: Spec Del: Std TAT: 30 Days

Date Rec'd: 4/25/05 Date Due: 5/25/05

		AB	C	D		E			F	G					
Refrigerator #		1	6	6		6			6	6					
#/Type Container	Liquid														
	Solid	AGL	AGL	AGL		1AGL			AGL	AGL	→				
Volume	Liquid														
	Solid	40	120	120		120			250	250	→				
Preservatives															
ANALYSES REQUESTED →		ORGANIC							INORG						
		VOA	BNA	~~Pest~~/PCB	Herb	Gal/Gycol			Metal	CN	Ignition	pH			
		↓ Lionville Laboratory Use Only ↓													
		OC624H	OC35X OGPO/ODRO	OPCB		IDGGR			METALS①	ICNTO	IC NO2/IC NO3 IC SO4/IC PO4	IPH			

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	OC624H	OC35X OGPO/ODRO	OPCB		IDGGR			METALS①	ICNTO	IC NO2/IC NO3 IC SO4/IC PO4	IPH				
001	BIC7D2			S	4/12/05	1005					1										
002	BIC7D4			↓	↓	1055					1										
003	BIC7D5			↓	↓	1055	2	1	1					1	1	✓	✓				

Special Instructions:

METALS① = Cd, Cr, Pb, Ag, Cu, Hg

Run Matrix QC

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time
FedEx	JRuny	4/25/05	0925

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	ORIGINAL REWRITTEN		

0000082

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-161	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Tyra/Wiberg	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
200-E-4; 9-10 ft	200-MW-1 Characterization Sampling and Analysis - Soil	F04-015

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
GRP-04-015		119144ES10	Federal Express

SHIPPED TO	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.
Lionville Laboratory Incorporated	See PTR 15370	See PTR 15370

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
N/A

SPECIAL HANDLING AND/OR STORAGE
Radioactive Tie To: B1C7C8

PRESERVATION	Cool 4C
TYPE OF CONTAINER	aG
NO. OF CONTAINER(S)	1
VOLUME	120mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1C7D2	SOIL	4-13-05	1005	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSPope/JSPope	4-13-05 1400	MO-026 / REF. #1	4-13-05 1400
MO-026 / [illegible]	4/21/05 0710	M.H. Bauchkar / M.H. Bauchkar	4/21/05 0710
M.H. Bauchkar / M.H. Bauchkar	4/21/05 0710	FedEx	
FedEx	4/25/05 0905	JRuny	

SPECIAL INSTRUCTIONS
(1)~~NO2/NO3 - 353.2; Chromium Hex - 7196;~~ Oil & Grease - 413.1;
PMG 2/14/05

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

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Pacific Northwest NL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-166 | PAGE 1 OF 1

COLLECTOR Pope/Pfister/Tyra/Wiberg	**COMPANY CONTACT** CS Cearlock	**TELEPHONE NO.** 372-9638	**PROJECT COORDINATOR** TRENT, SJ
SAMPLING LOCATION 200-E-4; 14-15 ft	**PROJECT DESIGNATION** 200-MW-1 Characterization Sampling and Analysis - Soil		**SAF NO.** F04-015
ICE CHEST NO. GRP-04-015	**FIELD LOGBOOK NO.**	**COA** 119144ES10	**METHOD OF SHIPMENT** Federal Express
SHIPPED TO Lionville Laboratory Incorporated	**OFFSITE PROPERTY NO.** See PTR 15370		**BILL OF LADING/AIR BILL NO.** See PTR 15370

PRICE CODE 8N | **AIR QUALITY** ☐ | **DATA TURNAROUND** 45 Days / 45 Days

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

POSSIBLE SAMPLE HAZARDS/ REMARKS N/A

SPECIAL HANDLING AND/OR STORAGE Radioactive Tie To: ~~B1C7G9~~ B1C7C8 MAD 4/21/05

PRESERVATION	Cool 4C
TYPE OF CONTAINER	aG
NO. OF CONTAINER(S)	1
VOLUME	120mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
31C7D4	SOIL	4-13-05	1055	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSlopa/ASlan 4-13-05	1400	MV-026 / REF #1 4-13-05	1400
MV-026 KLT 4/21/05	0720	M.H. Bauchler M.H. Bauchler 4/21/05	0720
M.H. Bauchler M.H. Bauchler 4/21/05	0720	Fed Ex	
Fed Ex 4/25/05	0925	JPerry	

SPECIAL INSTRUCTIONS

(1)~~NO2/NO3 - 353.2; Chromium Hex - 7196;~~ Oil & Grease - 413.1;
PMG 2/14/05

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

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Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-015-167 | PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT: CS Cearlock	TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ
SAMPLING LOCATION: 200-E-4; 14-15 ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil		SAF NO.: F04-015
ICE CHEST NO.: GRP-04-015	FIELD LOGBOOK NO.:	COA: 119144ES10	METHOD OF SHIPMENT: Federal Express
SHIPPED TO: Lionville Laboratory Incorporated	OFFSITE PROPERTY NO.: 24 PTR 15370		BILL OF LADING/AIR BILL NO.: 24 PTR 15370

PRICE CODE: 8N | AIR QUALITY: ☐ | DATA TURNAROUND: 45 Days / 45 Days

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: ~~B1C7G0~~ B1C7C5 4/21/05

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
TYPE OF CONTAINER	aGs*	aG	aG	aG	aG					
NO. OF CONTAINER(S)	~~1~~ 2 4-13-05	1	1	1	1					
VOLUME	40mL	120mL	120mL	250mL	250mL					
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS					

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1C7D5	SOIL	4-13-05	1055	X	X	X	X	X					

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
TSPOPE/ [illegible] 4-13-05	1400	MO-026 / REF. #1 4-13-05	1400
MO-026 Key 4/21/05	0720	M.H. Bauchler M.G. Bauchler 4/21/05	0720
M.H. Bauchler M.G. Bauchler 4/21/05	0720	FedEx	
FedEx 4/25/05	0925	JPerry	

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, ~~n-Butylbenzene,~~ trans-1,2-Dichloroethylene} PMG 2/11/05
(2)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range} TPH-Gasoline Range - WTPH-G;
(3)ICP Metals - 6010A (Supertrace) {Cadmium, Chromium, Lead, Silver} ICP Metals - 6010A (Supertrace Add-On) {Copper} Mercury - 7471 - (CV);
(4)IC Anions - 300.0 {~~Fluoride~~, Nitrate, Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045; PMG 2/11/05

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

A-6003-618(03/03)

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Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford **Date:** 4/25/05

Purchase Order / Project# /
SAF# / SOW# / Release #:

LvLI Batch #: 0504L297 **Sample Custodian:** [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier FedEx		Airbill# 7909 8897 4268	
2.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5.	Samples received cooled or ambient?	Temp 13.0°C all ice melted		Cooler # GRP-04-015	
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7.	coc signed and dated?	☑ Yes	☐ No		
8.	Sample containers are intact?	☑ Yes	☐ No		
9.	All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10.	All sample label information matches coc?	☑ Yes	☐ No		
11.	Samples properly preserved?	☐ Yes	☑ No All #5		
12.	Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
13.	VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A	
14.	QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A	
15.	Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☑ Yes OJ 4/25/05	☑ No All #5, 11		
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☑ Yes OJ 4/25/05	☐ No	☐ No Discrepancies	

SR-002-B

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