0078933

SAF-RC-073
100-D/DR Burial Grounds & Remaining Sites – Other Solid Quick Turn
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 10/16/08
INITIAL/DATE

COMMENTS:

SDG K1313 SAF RC-073

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: 118-D-3, yellow powder

RECEIVED
OCT 2 2 2008
EDMC

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
2030 Wright Avenue
Richmond, California 94804-3849
Phone (510) 235-2633 Fax (510) 235-0438
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September 17, 2008

rcvd 9/22/08

Ms. Joan Kessner
Washington Closure Hanford
2620 Fermi Avenue
MSIN H4-21
Richland, WA 99352

Reference: **P.O. #S00W235A00**
Eberline Services R8-09-014-7879, SDG K1313

Dear Ms. Kessner:

Enclosed is a data report for one solid (other solid) sample designated under SAF No. RC-073 received at Eberline Services on September 3, 2008. The sample was analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1313 was composed of one solid (other solid) sample designated under SAF No. RC-073 with a Project Designation of: 100-D/DR Burial Grounds & Remaining Sites – Other Solid Q.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on September 17, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

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

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

09/17/08

Date

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K1313

SDG	7879
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1313

SUMMARY DATA SECTION

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Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	09/17/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1313

SDG 7879
ontact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1313

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 Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/17/08

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1313

SDG 7879
:act Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1313

LE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
014-01	J177J3	118-D-3, yellow powder	SOLID		RC-073	RC-073-044	08/27/08 09:35
014-02	Lab Control Sample		SOLID		RC-073		
014-03	Method Blank		SOLID		RC-073		
014-04	Duplicate (R809014-01)	118-D-3, yellow powder	SOLID		RC-073		08/27/08 09:35

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 09/17/08

BERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1313

SDG 7879
tact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1313

CH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
	RC-073-044	J177J3	SOLID		50 g		09/03/08	7	R809014-01	7879-001
		Method Blank	SOLID						R809014-03	7879-003
		Lab Control Sample	SOLID						R809014-02	7879-002
		Duplicate (R809014-01)	SOLID		50 g		09/03/08	7	R809014-04	7879-004

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 09/17/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1313

SDG 7879
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1313

EST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
as Proportional Counting												
3A	SOLID	Gross Alpha in Solids	6160-116	20.6	1			1	1	1/1		
3B	SOLID	Gross Beta in Solids	6160-116	11.0	1			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 09/17/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1313

SDG 7879
tact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1313

MPLE ECTED EIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
4-01	J177J3			7879-001	93A/93		09/12/08	09/15/08	BW	Gross Alpha in Solids
27/08	118-D-3, yellow powder		SOLID	7879-001	93B/93		09/12/08	09/15/08	BW	Gross Beta in Solids
03/08	RC-073-044	RC-073								
.4-02	Lab Control Sample			7879-002	93A/93		09/12/08	09/15/08	BW	Gross Alpha in Solids
			SOLID	7879-002	93B/93		09/12/08	09/15/08	BW	Gross Beta in Solids
		RC-073								
14-03	Method Blank			7879-003	93A/93		09/12/08	09/15/08	BW	Gross Alpha in Solids
			SOLID	7879-003	93B/93		09/12/08	09/15/08	BW	Gross Beta in Solids
		RC-073								
14-04	Duplicate (R809014-01)			7879-004	93A/93		09/12/08	09/15/08	BW	Gross Alpha in Solids
/27/08	118-D-3, yellow powder		SOLID	7879-004	93B/93		09/12/08	09/15/08	BW	Gross Beta in Solids
/03/08		RC-073								

COUNTS OF TESTS BY SAMPLE TYPE

T	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
./93	RC-073	Gross Alpha in Solids	900.0_ALPHABETA_GPC	1			1	1	1	4
ı/93	RC-073	Gross Beta in Solids	900.0_ALPHABETA_GPC	1			1	1	1	4
ALS				2			2	2	2	8

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/17/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1313

7879-003

Method Blank

METHOD BLANK

SDG	7879	Client/Case no	Hanford	SDG_K1313	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R809014-03	Client sample id	Method Blank		
Dept sample id	7879-003	Material/Matrix		SOLID	
		SAF No	RC-073		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	0.338	2.8	6.02	10.0	U	93A
Gross Beta	12587-47-2	0.774	3.3	5.66	15.0	U	93B

100D/DR BurialGrnds&RemainSites-OSQT

QC-BLANK #67096

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/17/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1313

7879-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7879
Contact Melissa C. Mannion

Client/Case no Hanford SDG K1313
Contract No. S00W235A00

Lab sample id R809014-02
Dept sample id 7879-002

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No RC-073

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	122	18	6.82	10.0		93A	102	4.1	120	54-146	70-130
Gross Beta	90.9	8.1	8.62	15.0		93B	92.6	3.7	98	78-122	80-120

100D/DR BurialGrnds&RemainSites-OSQT

QC-LCS #67095

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 09/17/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1313

7879-004 J177J3

DUPLICATE

SDG 7879
Contact Melissa C. Mannion

DUPLICATE
ab sample id R809014-04
pt sample id 7879-004

ORIGINAL
Lab sample id R809014-01
Dept sample id 7879-001
Received 09/03/08

Client/Case no Hanford SDG K1313
Contract No. S00W235A00

Client sample id J177J3
Location/Matrix 118-D-3, yellow powder SOLID
Collected/Weight 08/27/08 09:35 50 g
Custody/SAF No RC-073-044 RC-073

ALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
oss Alpha	9.45	6.7	7.26	10.0		93A	16.7	8.0	7.24		55	128	1.3
oss Beta	118	8.8	8.91	15.0		93B	126	9.0	8.91		7	28	0.7

)0D/DR BurialGrnds&RemainSites-OSQT

C-DUP#1 67097

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 09/17/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1313

7879-001 J177J3

DATA SHEET

SDG	7879	Client/Case no	Hanford	SDG K1313	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R809014-01	Client sample id	J177J3		
Dept sample id	7879-001	Location/Matrix	118-D-3, yellow powder	SOLID	
Received	09/03/08	Collected/Weight	08/27/08 09:35	50 g	
		Custody/SAF No	RC-073-044	RC-073	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	16.7	8.0	7.24	10.0		93A
Gross Beta	12587-47-2	126	9.0	8.91	15.0		93B

100D/DR BurialGrnds&RemainSites-OSQT

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/17/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1313

Test 93A Matrix SOLID
SDG 7879
tact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1313

ULTS

ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
ation batch 6160-116					
.4-01	93		7879-001	J177J3	16.7
.4-02	93		7879-002	Lab Control Sample	ok
.4-03	93		7879-003	Method Blank	U
.4-04	93		7879-004	Duplicate (R809014-01)	ok

al values and limits from method RDLs (pCi/g) 10.0
OR BurialGrnds&RemainSites-OSQT

HOD PERFORMANCE

E ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
ration batch 6160-116			2σ prep error 20.6 % Reference Lab Notebook #6160, pg. 116													
14-01	93		J177J3	7.24	0.100			69		100			16	09/11/08	09/12	GRB-213
14-02	93		Lab Control Sample	6.82	0.100			62		100				09/11/08	09/12	GRB-214
14-03	93		Method Blank	6.02	0.100			62		100				09/11/08	09/12	GRB-216
14-04	93		Duplicate (R809014-01)	7.26	0.100			70		100			16	09/11/08	09/12	GRB-213
al values and limits from method				10.0	0.100			5-250		100			180			

OCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 6.84 ± 1.16
RESIDUE 66 ± 9

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/17/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1313

:est 93B Matrix SOLID
SDG 7879
:act Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1313

ULTS

ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
ation batch 6160-116					
.4-01	93		7879-001	J177J3	126
.4-02	93		7879-002	Lab Control Sample	ok
.4-03	93		7879-003	Method Blank	U
.4-04	93		7879-004	Duplicate (R809014-01)	ok

ıl values and limits from method RDLs (pCi/g) 15.0
DR BurialGrnds&RemainSites-OSQT

:HOD PERFORMANCE

E ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
ration batch 6160-116			2σ prep error 11.0 % Reference Lab Notebook #6160, pg. 116													
)14-01	93		J177J3	8.91	0.100			69		100			16	09/11/08	09/12	GRB-213
)14-02	93		Lab Control Sample	8.62	0.100			62		100				09/11/08	09/12	GRB-214
)14-03	93		Method Blank	5.66	0.100			62		100				09/11/08	09/12	GRB-216
)14-04	93		Duplicate (R809014-01)	8.91	0.100			70		100			16	09/11/08	09/12	GRB-213
ıal values and limits from method				15.0	0.100			5-250		100			180			

OCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 8.02 ± 3.17
RESIDUE 66 ± 9

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/17/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1313

SDG 7879
ontact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1313

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

* LAB SAMPLE ID is the lab's primary identification for a sample.

* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.

* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.

* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/17/08

SDG 7879
ontact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1313

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

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

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

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

  These qualifiers should be reviewed as follows:

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

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/17/08

SDG 7879
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REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1313

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/17/08

SDG 7879
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REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1313

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).

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
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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.

SDG 7879
ontact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1313

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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Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/17/08

SDG 7879
ontact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1313

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/17/08

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.

DUPLICATE

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

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

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

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

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

SDG 7879
ontact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1313

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/17/08

SDG 7879
ontact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1313

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 Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/17/08

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'

METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-073-044

Collector: D.W.Shea / D. Rios SEC	Company Contact: D.W.Shea	Telephone No.: 521-6014	Project Coordinator: KESSNER, JH
Price Code: 8K	Data Turnaround: 15 days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location: 118-D-3, yellow powder K1313 (7879)		SAF No.: RC-073
Ice Chest No.: SmL-191	Field Logbook No.: EL-1607-4	COA: R118D32600	Method of Shipment: Company Vhicle
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A080333		Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

potentially radioactive

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	
Type of Container	G/P	G	aG	aG	aG	G/P	G	G/P	G/P	
No. of Container(s)	1	1	1	1	01	1	1	1	1	
Volume	60mL	60mL	60mL	~~60mL~~ 250mL	~~125mL~~	60mL	60mL	5g	60g	
SAMPLE ANALYSIS	See item (1) in Special Instructions	~~VOA - 8260A~~ (TCL) SVOA 8270A DWS 7/8/08	TOX - 9020	Pesticides - 8081	Chloro-Herbicides - EPA8151	IC Anions - 300.0; pH - 9045	Total Cyanide - 9010; Sulfides - 9030	Gross Alpha; Gross Beta	See item (2) in Special Instructions.	

Sample No.	Matrix *	Sample Date	Sample Time
J177J3	OTHER SOLID	8/27/08	0935

DWShea 8/27/08

DWS 7/8/08

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: [signature] Date/Time: 8-27-08 1037	Received By/Stored In: DWSHEA DWSHEA 8/27/08 1037
Relinquished By/Removed From: DWSHEA DWSHEA 8/27/08 1737	Received By/Stored In: Fridsh IB 8/27/08 1737
Relinquished By/Removed From: [signature] Date/Time: SEP 0 2 2008 1130	Received By/Stored In: MSTankoun SEP 0 2 2008 1130
Relinquished By/Removed From: well Date/Time: 1130 MSTankoun SEP 0 2 2008	Received By/Stored In: FedEx
Relinquished By/Removed From: FED EX Date/Time:	Received By/Stored In: [signature] Date/Time: 09/03/08 09:30
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:

SPECIAL INSTRUCTIONS

DWShea 7/8/08

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc} and Hg via CVAA
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

BM

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

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

WCH-EE-011

EBERLINE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 09/03/08 04:30 CoC No. RC-073-044

Container I.D. No. SML-191 Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

INSPECTION

1 Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]

2 Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]

3 Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]

4 Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]

5 Packing material is: Wet [ ] Dry [X]

6 Number of samples in shipping container 1 Sample Matrix X SOLID

7 Number of containers per sample 1 (Or see CoC ____)

8 Samples are in correct container Yes [X] No [ ]

9 Paperwork agrees with samples? Yes [X] No [ ]

10 Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]

11 Samples are In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]

12 Samples are Preserved [ ] Not preserved [ ] pH ____ Preservative ____

13 Describe any anomalies:

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

15. Inspected by [signature] Date 09/03/08 Time 10:30

Customer Sample No	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
J177J3	<60						

Ion Chamber Ser. No ____ Calibration date ____

Alpha Meter Ser. No. ____ Calibration date ____

Beta/Gamma Meter Ser. No. 100482 Calibration date 10JUL08

Form SCP-02, 07-30-07

"over 55 years of quality nuclear services"

LIONVILLE LABORATORY INC.

RECEIVED OCT 2008

14 October 2008

Joan Kessner
WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H9-03
Richland, WA 99354

Subject: Analytical Data Package

Dear Ms. Kessner:

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

Lv LI Batch #	0809L009
SDG #	K1313
SAF #	RC-073
Date Received	9/03/08
# Samples	1
Matrix	OTHER
Volatiles	
Semivolatiles	X
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	X
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
d:\k1328.doc

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

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-073 K1313

RECEIVED OCT 2008

DATE RECEIVED: 09/03/08 LVL LOT # :0809L006

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177J3	001	SO	08LE0424	08/27/08	09/09/08	09/15/08
J177J3	001 MS	SO	08LE0424	08/27/08	09/09/08	09/15/08
J177J3	001 MSD	SO	08LE0424	08/27/08	09/09/08	09/15/08
LAB QC:						
SBLKXR	MB1	S	08LE0424	N/A	09/09/08	09/15/08
SBLKXR	MB1 BS	S	08LE0424	N/A	09/09/08	09/15/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-073
LVL #: 0809L009
SDG/SAF # K1313/ RC-073

W.O. #: 60049-001-001-0001-00
Date Received: 09-03-2008

SEMIVOLATILE

One (1) solid sample was collected on 08-27-2008.

The sample and its associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 09-09-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 09-15-2008.

All solid samples are reported on a wet weight basis. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within holding time.
3. Non-target compounds were detected in these samples.
4. All surrogate recoveries were within acceptance criteria.
5. Four (4) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS205) has been enclosed.
6. All blank spike recoveries were within acceptance criteria.
7. The method blank was below the reporting limit for all target compounds.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. Internal standard area and retention time criteria were met.
11. 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").

r:\group\data\2008\bna\tnu\0809-006ojsol1.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 14 pages.

LvLI
LIONVILLE LABORATORY INC.

12. LvLI is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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.

for Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

9/23/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08MS205

Initiator: Sharon Saylor
Date: 9-18-08
Client: WC-Hanford
RC073 F1313

Batch: 08092006
Samples: MS MSD
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: SOLID
Prep Batch: 08IE0424

1. Reason for SDR

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

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

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

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

① low spike recoveries of several analytes (1,2,4-trichlorobenzene, phenanthrene, + fluoranthene) in the msd but BS is ok

② low recovery of fluoranthene in the MS but BS is ok

2. Known or Probable Causes(s)

elevated PAH levels in sample J177J3

3. Discussion and Proposed Action

Other Description: narrate

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

4. Project Manager Instructions...signature/date: 9/18/08
✓ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

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

Other Explanation:

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

When Final Action has been recorded, forward original to QA for diposition.

Route
__ Lab Manager: Daniels
① Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-in: King

Route
__ Metals: Welsh / _____
__ Inorganic: Perrone / _____
__ GC/LC: Carey / _____
__ MS VOA: Rubino / _____
② MS BNA: Carden / _____
__ Other: _____

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.

	Cust ID:	J177J3	J177J3	J177J3	SBLKXR	SBLKXR BS
Sample Information	RFW#:	001	001 MS	001 MSD	08LE0424-MB1	08LE0424-MB1
	Matrix:	SOLID	SOLID	SOLID	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	55 %	55 %	58 %	65 %	76 %
	2-Fluorobiphenyl	51 %	68 %	75 %	63 %	75 %
	Terphenyl-d14	54 %	82 %	93 %	75 %	105 %
	Phenol-d5	65 %	74 %	76 %	64 %	82 %
	2-Fluorophenol	70 %	71 %	76 %	69 %	84 %
	2,4,6-Tribromophenol	45 %	48 %	43 %	24 %	41 %
Phenol		330 U	93 %	80 %	330 U	77 %
bis(2-Chloroethyl)ether		330 U	83 %	75 %	330 U	74 %
2-Chlorophenol		330 U	83 %	71 %	330 U	69 %
1,3-Dichlorobenzene		330 U	70 %	60 %	330 U	67 %
1,4-Dichlorobenzene		330 U	71 %	61 %	330 U	66 %
1,2-Dichlorobenzene		330 U	75 %	64 %	330 U	69 %
2-Methylphenol		330 U	93 %	81 %	330 U	73 %
2,2'-oxybis(1-Chloropropane)		330 U	87 %	75 %	330 U	76 %
3/4 Methylphenol		330 U	97 %	82 %	330 U	75 %
N-Nitroso-di-n-propylamine		330 U	93 %	80 %	330 U	73 %
Hexachloroethane		330 U	69 %	60 %	330 U	68 %
Nitrobenzene		330 U	70 %	57 %	330 U	69 %
Isophorone		330 U	73 %	60 %	330 U	66 %
2-Nitrophenol		330 U	73 %	58 %	330 U	68 %
2,4-Dimethylphenol		330 U	94 %	72 %	330 U	70 %
bis(2-Chloroethoxy)methane		330 U	75 %	62 %	330 U	67 %
2,4-Dichlorophenol		330 U	89 %	66 %	330 U	72 %
1,2,4-Trichlorobenzene		330 U	68 %	52 * %	330 U	64 %
Naphthalene		330 U	70 %	55 %	330 U	65 %
4-Chloroaniline		330 U	71 %	56 %	330 U	63 %
Hexachlorobutadiene		330 U	64 %	50 %	330 U	63 %
4-Chloro-3-methylphenol		330 U	95 %	74 %	330 U	78 %
2-Methylnaphthalene		330 U	77 %	61 %	330 U	68 %
Hexachlorocyclopentadiene		330 U	41 %	36 %	330 U	54 %
2,4,6-Trichlorophenol		330 U	57 %	47 %	330 U	41 %
2,4,5-Trichlorophenol		830 U	85 %	78 %	830 U	70 %

*= Outside of EPA CLP QC limits.

000000008

Cust ID:	J177J3		J177J3		J177J3		SBLKXR		SBLKXR BS	
RFW#:	001		001 MS		001 MSD		08LE0424-MB1		08LE0424-MB1	
2-Chloronaphthalene	330	U	88	%	79	%	330	U	71	%
2-Nitroaniline	830	U	103	%	95	%	830	U	80	%
Dimethylphthalate	330	U	94	%	84	%	330	U	76	%
Acenaphthylene	330	U	94	%	83	%	330	U	71	%
2,6-Dinitrotoluene	330	U	96	%	86	%	330	U	75	%
3-Nitroaniline	830	U	97	%	89	%	830	U	82	%
Acenaphthene	330	U	94	%	82	%	330	U	74	%
2,4-Dinitrophenol	830	U	82	%	63	%	830	U	47	%
4-Nitrophenol	830	U	90	%	85	%	830	U	79	%
Dibenzofuran	330	U	98	%	85	%	330	U	75	%
2,4-Dinitrotoluene	330	U	102	%	91	%	330	U	83	%
Diethylphthalate	330	U	99	%	85	%	330	U	78	%
4-Chlorophenyl-phenylether	330	U	91	%	79	%	330	U	72	%
Fluorene	62	J	92	%	79	%	330	U	75	%
4-Nitroaniline	830	U	87	%	83	%	830	U	81	%
4,6-Dinitro-2-methylphenol	830	U	101	%	77	%	830	U	70	%
N-Nitrosodiphenylamine (1)	330	U	99	%	77	%	330	U	68	%
4-Bromophenyl-phenylether	330	U	92	%	76	%	330	U	66	%
Hexachlorobenzene	330	U	112	%	89	%	330	U	83	%
Pentachlorophenol	830	U	85	%	76	%	830	U	67	%
Phenanthrene	820		69	%	47 *	%	330	U	82	%
Anthracene	350		89	%	70	%	330	U	81	%
Carbazole	24	J	100	%	83	%	330	U	83	%
Di-n-butylphthalate	330	U	107	%	90	%	330	U	90	%
Fluoranthene	1100		44 *	%	22 *	%	330	U	87	%
Pyrene	730		63	%	56	%	330	U	90	%
Butylbenzylphthalate	330	U	113	%	101	%	330	U	97	%
3,3'-Dichlorobenzidine	330	U	82	%	78	%	330	U	69	%
Benzo(a)anthracene	210	J	88	%	79	%	330	U	80	%
Chrysene	240	J	92	%	79	%	330	U	82	%
bis(2-Ethylhexyl)phthalate	130	J	118	%	99	%	330	U	94	%
Di-n-octyl phthalate	330	U	90	%	82	%	330	U	85	%
Benzo(b)fluoranthene	140	J	84	%	74	%	330	U	77	%
Benzo(k)fluoranthene	150	J	82	%	73	%	330	U	77	%
Benzo(a)pyrene	95	J	90	%	76	%	330	U	76	%
Indeno(1,2,3-cd)pyrene	60	J	117	%	90	%	330	U	75	%
Dibenz(a,h)anthracene	18	J	120	%	93	%	330	U	79	%
Benzo(g,h,i)perylene	63	J	116	%	90	%	330	U	79	%

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

000000009

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J177J3

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-073 K1313

Matrix: (soil/water) SOLID

Lab Sample ID: 0809L006-001

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

Lab File ID: C091507

Level: (low/med) LOW

Date Received: 09/03/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 09/09/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/15/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.135	900	JAB
2.	UNKNOWN	6.773	80000	JB
3.	ALDOL CONDENSATE	8.323	200	JAB
4.	PAH	21.973	90	J
5.	UNKNOWN	22.205	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKXR

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-073 K1313

Matrix: (soil/water) SOIL

Lab Sample ID: 08LE0424-MB1

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

Lab File ID: C091504

Level: (low/med) LOW

Date Received: 09/09/08

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

Date Extracted: 09/09/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/15/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.153	800	JA
2.	UNKNOWN	6.773	70000	J
3.	UNKNOWN	6.807	30000	J
4.	ALDOL CONDENSATE	8.323	200	JA
5.	UNKNOWN	21.447	500	J

onville Laboratory Use Only

38091006

Custody Transfer Record/Lab Work Request

Page 1 of 1

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

ent Washington Closure Hanford RC.073

t. Final Proj. Sampling Date

ject# 60049-001-001-0001-00

ject Contact/Phone#

nville Laboratory Project Manager Arlotta Johnson

SW846 Del STD TAT 15 days

te Rec'd 9.3.08 Date Due 9-18-08

		A	B		C	D	E	F			
Refrigerator #		3	3	—	3	3	6	3	—		
#/Type Container	Liquid / Solid	1gl	1gl	—	1gl	1gl	1gl	1gl	—		
Volume	Solid	60	250	—	60	60	60	60	—		
Preservatives		—	—	—	—	—	—	—	—		
ANALYSES REQUESTED		ORGANIC			INORG						
		VOA	BNA	Pest/PCB	Herb	Metal + Hg	CN, SFD	TOX	IC Anions	pH	
		Lionville Laboratory Use Only									
			062514	060814	0HBEX	Met①	ACNTO ISFD	ITOX	IC①	IPH	

TRIX DES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected														
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	001	J177J3	✓	✓	SO	8.27.08	0935		X	X	X				X	X	X	X	X		

ecial Instructions:

Met① = HSL + B, Mo, Si
NOTL

IC① = Br, CL, FL, SO4, PO4
NO2, NO3

Special Instructions:

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

Relinquished by	Received by	Date	Time
FedEx	[illegible]	9.30.08	0950

Relinquished by	Received by	Date	Time

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

000000012

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-073-044 | Page 1 of 1

llector D.W.Shea / D. Rios S.E.C.	Company Contact D.W.Shea	Telephone No. 521-6014	Project Coordinator KESSNER, JH
Price Code S/C	Data Turnaround 15 days		
ıject Designation 100-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location 118-D-3, yellow powder		SAF No. RC-073
Chest No. 6W-1	Field Logbook No. EL-1607-4	COA R118D32600	Method of Shipment ~~Company Vehicle~~ FedEx 9/2/08
ıipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A080343		Bill of Lading/Air Bill No. SCC OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

ıentially radioactive

ɔecial Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	
Type of Container	G/P	G	aG	aG	aG	G/P	G	G/P	G/P	
No. of Container(s)	1	1	1	1	01	1	1	1	1	
Volume	60mL	60mL	60mL	~~60mL~~ 250mL	~~125mL~~	60mL	60mL	5g	60g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~VOA - 8260A~~ (TCL) SVOA 8270A DWS 7/8/08	TOX - 9020	Pesticides - 8081	Chloro-Herbicides - EPA8151	IC Anions - 300.0; pH - 9045	Total Cyanide - 9010; Sulfides - 9030	Gross Alpha; Gross Beta	See item (2) in Special Instructions.	
Sample No.	Matrix *	Sample Date	Sample Time							
7J3	OTHER SOLID	8/27/08	0935	✓	✓	✓	✓	✓	✓	✓

DWS 8/27/08

CHAIN OF POSSESSION	Sign/Print Names	
ıquished By/Removed From — Date/Time 1037 8-27-08	Received By/Stored In — Date/Time 8/27/08 1037	
ıquished By/Removed From — Date/Time 8/27/08 1737	Received By/Stored In — Date/Time 8/27/08 1737	
quished By/Removed From — Date/Time 1115 SEP 0 2 2008	Received By/Stored In — Date/Time 1115 SEP 0 2 2008	
quished By/Removed From — Date/Time 1115 SEP 0 2 2008	Received By/Stored In — Date/Time FedEx	
quished By/Removed From — Date/Time 9.3.08 0950	Received By/Stored In — Date/Time 9.3.08 0950	
quished By/Removed From — Date/Time	Received By/Stored In — Date/Time	

SPECIAL INSTRUCTIONS

DWS 7/8/08

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc} and Hg via CVAA
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPD

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

BORATORY SECTION	Received By	Title	Date/Time
IAL SAMPLE SPOSITION	Disposal Method	Disposed By	Date/Time

000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford
Project/SAF/SOW/Release #: RC-073

Date: 9.3.08

LvLI Batch #: OP09L006

Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7911 2960 951
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.0	°C	Cooler # GW1
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted_____		Date_____	

LvLI LIONVILLE LABORATORY INC.

RECEIVED OCT 2008

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-073 K1313

DATE RECEIVED: 09/03/08 LVL LOT # :0809L006

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177J3	001	SO	08LE0423	08/27/08	09/09/08	09/12/08
J177J3	001 MS	SO	08LE0423	08/27/08	09/09/08	09/12/08
J177J3	001 MSD	SO	08LE0423	08/27/08	09/09/08	09/12/08
LAB QC:						
PBLKUL	MB1	S	08LE0423	N/A	09/09/08	09/12/08
PBLKUL	MB1 BS	S	08LE0423	N/A	09/09/08	09/12/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-073
LVL #: 0809L006
SDG/SAF # K1313 / RC-073

W.O. #: 60049-001-001-0001-00
Date Received: 09-03-2008

CHLORINATED PESTICIDES

One (1) solid sample was collected on 08-27-2008.

The sample and its associated QC samples were extracted on 09-09-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 09-12-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

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

1. All required holding times for extraction and analysis have been met.
2. The method blank was below the reporting limits for all target compounds.
3. All surrogate recoveries were within acceptance criteria.
4. All blank spike recoveries were within acceptance criteria.
5. Two (2) of forty (40)matrix spike recoveries were outside acceptance criteria.
6. All samples required a 4-fold instrument dilution due to matrix.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. LvLI is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

r:\group\data\2008\pest\tmu\0809-006csol1.pest.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 10 pages.

LIONVILLE LABORATORY INC.

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

9/16/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08GC111

Initiator: CAC
Date: 09/15/08
Client: WC Hanford

Batch: 0809L006
Samples: 001 MSD
Method: SW846/MCAWW/CLP/

Parameter: Pest
Matrix: Solid
Prep Batch: 08LE0423

1. Reason for SDR

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

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

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

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

4,4-DDT and Endosulfan sulfate recoveries are low in MSD

BS/MS good

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description:
__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

Narrate 2B.

4. Project Manager Instructions...signature/date: 9/15/08
__ 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: 9/15/08 Other Explanation:
__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

When Final Action has been recorded, forward original to QA for diposition.

Route
__ Lab Manager: Daniels
__ Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-in: King

Route
__ Metals: Welsh / _____
__ Inorganic: Perrone / _____
__ GC/LC: Carey / _____
__ MS VOA: Rubino / _____
__ MS BNA: Carden / _____
__ Other: _____

QA-139-A-0208

000000004

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.
MPM	=	No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 09/15/08 12:41

RFW Batch Number: **0809L006** Client: **WC-HANFORD RC-073 K1313** Work Order: 60049001001 Page: 1

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	Cust ID:	J177J3	J177J3	J177J3	PBLKUL	PBLKUL BS
Sample Information	RFW#:	001	001 MS	001 MSD	08LE0423-MB1	08LE0423-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	4.00	4.00	4.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	87 %	86 %	78 %	73 %	77 %
	Decachlorobiphenyl	108 %	99 %	88 %	71 %	78 %
		fl	fl	fl	fl	fl
Alpha-BHC		1.3 U	80 %	76 %	0.33 U	91 %
gamma-BHC (Lindane)		1.3 U	85 %	81 %	0.33 U	92 %
Beta-BHC		1.3 U	92 %	88 %	0.33 U	87 %
Heptachlor		1.3 U	89 %	86 %	0.33 U	90 %
Delta-BHC		1.3 U	58 %	55 %	0.33 U	70 %
Aldrin		1.3 U	85 %	81 %	0.33 U	93 %
Heptachlor epoxide		1.3 U	88 %	84 %	0.33 U	90 %
gamma-Chlordane		1.3 U	89 %	85 %	0.33 U	92 %
Endosulfan I		1.3 U	93 %	88 %	0.33 U	100 %
alpha-Chlordane		1.3 U	89 %	85 %	0.33 U	90 %
4,4'-DDE		1.3 J	86 %	82 %	0.33 U	91 %
Dieldrin		1.3 U	86 %	82 %	0.33 U	94 %
Endrin		1.3 U	94 %	90 %	0.33 U	99 %
4,4'-DDD		1.3 U	84 %	80 %	0.33 U	98 %
Endosulfan II		1.3 U	90 %	85 %	0.33 U	91 %
4,4'-DDT		1.5 J.I	87 %	80 * %	0.33 U	95 %
Endrin aldehyde		1.8 J.I	85 %	82 %	0.33 U	79 %
Endosulfan sulfate		1.3 U	80 %	76 * %	0.33 U	81 %
Methoxychlor		1.3 U	100 %	94 %	0.33 U	94 %
Endrin ketone		1.3 U	92 %	88 %	0.33 U	90 %
Toxaphene		13 U	13 U	13 U	3.3 U	3.3 U

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

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 09/09/09 Extraction Batch No: 08LE0423 Analyst: MF Method: **** SOX 354/6

Test: O608 Cleanup Date: Analyst: Client: WC-HANFORD RC-073 K1313

LIMS Report Date: 09/12/08 Solvent: DCM/ACETONE,HEXANE Adsorbent:

Sample No:	Client Name Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0809L006-	WC-HANFORD RC-073 K1313										
001 H	J177J3		30.0	1.0		10		1.0	N	0.0	333.3
001 HS	J177J3		30.0	1.0	1.0	10		1.0	N	0.0	333.3
001 HT	J177J3		30.0	1.0	1.0	10		1.0	N	0.0	333.3
0809L017-	FLRHANFORD F03-015										
001 H	B1WPK7		30.0	1.0		10		1.0	N	0.0	333.3
001 HS	B1WPK7		30.0	1.0	1.0	10		1.0	N	0.0	333.3
001 HT	B1WPK7		30.0	1.0	1.0	10		1.0	N	0.0	333.3
002 H	B1WPL0		30.0	1.0		10		1.0	N	0.0	333.3
0809L021-	WC-HANFORD RC-029 K1316										
002 H	J17FV6		30.0	1.0		10		1.0	N	96.97	343.7
002 HS	J17FV6		30.0	1.0	1.0	10		1.0	N	96.97	343.7
002 HT	J17FV6		30.0	1.0	1.0	10		1.0	N	96.97	343.7
003 H	J17FV7		30.0	1.0		10		1.0	N	96.99	343.7
004 H	J17FV8		30.0	1.0		10		1.0	N	92.34	361.0
0809L036-	WC-HANFORD RC-029 K1319										
001 H	J17FY5		30.0	1.0		10		1.0	N	98.31	339.1
001 HS	J17FY5		30.0	1.0	1.0	10		1.0	N	98.31	339.1
001 HT	J17FY5		30.0	1.0	1.0	10		1.0	N	98.31	339.1
002 H	J17FY6		30.0	1.0		10		1.0	N	97.75	341.0
08LE0423-MB1 H	PBLKUL		30.0	1.0		10		1.0	N	100.00	333.3
08LE0423-MB1 HS	PBLKUL		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 250 UL OLM PSURR 89916407
Spike: 250 UL FULL LIST PEST SPIKE 89915509

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	9/12/08 905	SZ	9/12/08 9:10	GC

000000007

onville Laboratory Use Only

3809L006

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

ent Washington Closure Hanford RC.073

. Final Proj. Sampling Date

ject# 60049-001-001-0001-00

ject Contact/Phone#

nville Laboratory Project Manager Arlette Johnson

SW846 Del STD TAT 15 days

e Rec'd 9.3.08 Date Due 9-18-08

		A	B		C	D	E	F				
Refrigerator #		3	3	—	3	3	6	3	—			
#/Type Container	Liquid / Solid	1gl	1gl	—	1gl	1gl	1gl	1gl	—			
Volume	Solid	60	250	—	60	60	60	60	—			
Preservatives		—	—	—	—	—	—	—	—			
ANALYSES REQUESTED		ORGANIC: VOA	BNA	Pest/PCB	Herb		INORG: Metal + Hg	CN, SFD	TOX	IC Anions	pH	
Lionville Laboratory Use Only			06257H	06084H	0HBGX		MetO	BCNTO ISFD	ITOX	ICO	IPH	

MATRIX DESC: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb				Metal + Hg	CN, SFD	TOX	IC Anions	pH
	001	J177J3	✓	✓	SO	9.27.08	0935		X	X	X				X	X	X	X	X

Special Instructions:

MetO = HSL + B, Mo, Si
NOTL

ICO = Br, CL, FL, SO4, PO4
NO2, NO3

Special Instructions:

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

Relinquished by	Received by	Date	Time
FedEx	[illegible]	9.30.08	0950

Relinquished by	Received by	Date	Time

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

000000008

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-073-044

ector .W.Shea / D. Ríos SE.C	Company Contact D.W.Shea	Telephone No. 521-6014	Project Coordinator KESSNER, JH
Price Code S/C	Data Turnaround 15 days		
ect Designation 00-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location 118-D-3, yellow powder		SAF No. RC-073
Chest No. 6W-1	Field Logbook No. EL-1607-4	COA R118D32600	Method of Shipment ~~Company Vehicle~~ FedEx 9/2/08
ped To BERLINE SERVICES/ LIONVILLE	Offsite Property No. A080343		Bill of Lading/Air Bill No. SEE OSPC

SSIBLE SAMPLE HAZARDS/REMARKS

entially radioactive

ecial Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	
Type of Container	G/P	G	aG	aG	aG	G/P	G	G/P	G/P	
No. of Container(s)	1	1	1	1	01	1	1	1	1	
Volume	60mL	60mL	60mL	~~60mL~~ 250mL	~~125mL~~	60mL	60mL	5g	60g	

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	~~VOA - 8260A~~ (TCL) SVOA 8270A	TOX - 9020	Pesticides - 8081	Chloro-Herbicides - EPA8151	IC Anions - 300.0; pH - 9045	Total Cyanide - 9010; Sulfides - 9030	Gross Alpha; Gross Beta	See item (2) in Special Instructions.
7J3	OTHER SOLID	8/27/08	0935	✓	✓	✓	✓	✓	✓	✓		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	8-27-08 1037	DWSHEA DWSHEA	8/27/08 1037
DWSHEA DWSHEA	8/27/08 1737	[signature] IB	8/27/08 1737
60/IB	SEP 0 2 2008 1115	MSTANKOVICH	SEP 0 2 2008 1115
MSTANKOVICH	SEP 0 2 2008 1115	FedEx	
FedEx	9.3.08 0950	[signature]	9.3.08 0950

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc} and Hg via CVAA
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

DWSHEA 7/8/08

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPD

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

ORATORY ECTION	Received By	Title	Date/Time
AL SAMPLE SPOSITION	Disposal Method	Disposed By	Date/Time

LEF 011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford Date: 9.3.08

Project/SAF/SOW/Release #: RC-073

LvLI Batch #: OR09L006 Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7911 2960 952
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.0	°C	Cooler # GW1
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted _____		Date _____	

LvLI Lionville Laboratory Inc.

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
HBGX ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-073 K1313

DATE RECEIVED: 09/03/08 LVL LOT # :0809L006

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177J3	001	SO	08LE0428	08/27/08	09/09/08	09/16/08
J177J3	001 MS	SO	08LE0428	08/27/08	09/09/08	09/16/08
J177J3	001 MSD	SO	08LE0428	08/27/08	09/09/08	09/16/08
LAB QC:						
PBLKUO	MB1	S	08LE0428	N/A	09/09/08	09/15/08
PBLKUO	MB1 BS	S	08LE0428	N/A	09/09/08	09/15/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-073 K1313
LVL #: 0809L006

W.O. #: 60049-001-001-0001
Date Received: 09-03-2008

HERBICIDE

One (1) soil sample was collected on 08-27-2008.

The sample and its associated QC samples were extracted on 09-09-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 09-15,16-2008. The extraction was based on method 3550B and analysis procedures were based on method 8151A.

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

1. All required holding times for extraction and analysis have been met.
2. The method blank was below the reporting limits for all target compounds.
3. All surrogate recoveries were within the acceptance criteria.
4. All blank spike recoveries were with acceptance criteria.
5. Two (2) of eighteen (18) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08GC117) has been enclosed.
6. The initial calibrations associated with this data set were within acceptance criteria.
7. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
8. LVL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

9/30/08
Date

r:\group\data\2008\herb\tnu\0809-006ojs1.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 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 Sample Discrepancy Report (SDR)

SDR #: 08GC117

Initiator: CAC
Date: 09/17/08
Client: WC Hanford

Batch: 0809L00L2
Samples: 001 ms/msD
Method: SW846/MCAWW/CLP/

Parameter: Herbs
Matrix: Solid
Prep Batch: 08LE0428

1. Reason for SDR

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

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

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

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

Recovery of Dinoseb is low

OK in Blank Spike

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description:
__ Re-log
__ Entire Batch
__ Following Samples: ____
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to ____
__ Place On/Take Off Hold (circle)
__ Narrate

9/19/08

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

9/29/08

5. Final Action...signature/date: ____ Other Explanation:
✓ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

When Final Action has been recorded, forward original to QA for diposition.

Route
__ Lab Manager: Daniels
__ Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-in: King

Route
__ Metals: Welsh / ____
__ Inorganic: Perrone / ____
__ GC/LC: Carey / ____
__ MS VOA: Rubino / ____
__ MS BNA: Carden / ____
__ Other: ____

QA-139-A-0208

Lionville Laboratory, Inc.

Herbicides, Special List

Report Date: 09/17/08 12:35

RFW Batch Number: **0809L006** Client: **WC-HANFORD RC-073 K1313** Work Order: 60049001001 Page: 1

	Cust ID:	J177J3	J177J3	J177J3	PBLKUO	PBLKUO BS
Sample Information	RFW#:	001	001 MS	001 MSD	08LE0428-MB1	08LE0428-MB1
	Matrix:	SOLID	SOLID	SOLID	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:	DCAA	75 %	70 %	65 %	71 %	65 %
		fl	fl	fl	fl	fl
Dalapon		15 J	52 %	50 %	33 U	47 %
Dicamba		33 U	58 %	60 %	33 U	63 %
Dichloroprop		33 U	60 %	90 %	33 U	48 %
2,4-D		22 J.I	75 %	63 %	33 U	61 %
2,4,5-TP (Silvex)		17 U	67 %	70 %	17 U	65 %
2,4,5-T		17 U	65 %	67 %	17 U	62 %
Dinoseb		17 U	23 * %	21 * %	17 U	39 %
2,4-DB		9.2 J	72 %	60 %	17 U	82 %
Pentachlorophenol		17 U	62 %	67 %	17 U	61 %

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

000000005

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 09/09/08 Extraction Batch No: 08LE0428 Analyst: MF Method: SONC3550

Test: OHBG Cleanup Date: Analyst: Client: WC-HANFORD RC-073 K1313

LIMS Report Date: 09/15/08 Solvent: DCM/ACETONE,HEXANE Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0809L006-	WC-HANFORD RC-073 K1313										
001 X	J177J3		30.0	1.0		10		1.0	N	0.0	333.3
001 XS	J177J3		30.0	1.0	1.0	10		1.0	N	0.0	333.3
001 XT	J177J3		30.0	1.0	1.0	10		1.0	N	0.0	333.3
0809L017-	FLRHANFORD F03-015										
001 X	B1WPK7		30.0	1.0		10		1.0	N	0.0	333.3
001 XS	B1WPK7		30.0	1.0	1.0	10		1.0	N	0.0	333.3
001 XT	B1WPK7		30.0	1.0	1.0	10		1.0	N	0.0	333.3
002 X	B1WPL0		30.0	1.0		10		1.0	N	0.0	333.3
08LE0428-MB1 X	PBLKUO		30.0	1.0		10		1.0	N	100.00	333.3
08LE0428-MB1 XS	PBLKUO		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 100 UL HERB SURR 86971904
Spike: 100 UL HERB SPIKE 89916302

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[signature]	9/15/08 1520	SZ	9/15/08 15:20	ce

000000000

Lionville Laboratory Use Only

0809L006

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: Washington Closure Hanford RC.073

Est. Final Proj. Sampling Date:

Project#: 60049-001-601-0001-00

Project Contact/Phone#:

Lionville Laboratory Project Manager: Arletta Johnson

QC: SW846 Del: STD TAT: 15 days

Date Rec'd: 9.3.08 Date Due: 9-18-08

		A	B					C	D	E	F				
Refrigerator #		3	3	—				3	3	6	3	—			
#/Type Container	Liquid														
	Solid	1gl	1gl	—				1gl	1gl	1gl	1gl	—			
Volume	Solid	60	250	—				60	60	60	60	—			
Preservatives		—	—	—				—	—	—	—				
ANALYSES REQUESTED →		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			Metal + Hg	CN, SFD	TOX	IC Anions	pH			

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	Lionville Laboratory Use Only	0625H	0608H	0HBGX				Met①	BCNTO ISFD	ITOX	ICA①	IPH			
001	J17J3	✓	✓	SO	8.27.08	0935		X	X	X				X	X	X	X	X			

Special Instructions:

Met①=HSL+B, Mo, Si
NOTL

ICA①= Br, CL, FL, SO4, PO4
NO2, NO3

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	9.30.08	0950

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000007

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-073-044	Page 1 of 1

Collector D.W.Shea / D. Reed S.E.C.	Company Contact D.W.Shea	Telephone No. 521-6014	Project Coordinator KESSNER, JH	Price Code S/C	Data Turnaround 15 days
Project Designation 100-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location 118-D-3, yellow powder		SAF No. RC-073		
Ice Chest No. GW-1	Field Logbook No. EL-1607-4	COA R118D32600	Method of Shipment ~~Company Vehicle~~ FedEx 9/2/08		
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A080343		Bill of Lading/Air Bill No. SCC OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

potentially radioactive

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	
Type of Container	G/P	G	aG	aG	aG	G/P	G	G/P	G/P	
No. of Container(s)	1	1	1	1	01	1	1	1	1	
Volume	60mL	60mL	60mL	~~60mL~~ 250mL	~~125mL~~	60mL	60mL	5g	60g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~VOA - 8260A~~ (TCL) SVOA 8270A DWS 7/8/08	TOX - 9020	Pesticides - 8081	Chloro-Herbicides - EPA8151	IC Anions - 300.0; pH - 9045	Total Cyanide - 9010; Sulfides - 9030	Gross Alpha; Gross Beta	See item (2) in Special Instructions.	

Sample No.	Matrix *	Sample Date	Sample Time										
J177J3	OTHER SOLID	8/27/08	0935	✓	✓	✓	✓	✓	✓	✓			
											DWS 8/27/08		

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From [signature]	8-27-08 1037	Received By/Stored In DWSHEA	8/27/08 1037
Relinquished By/Removed From DWSHEA	8/27/08 1737	Received By/Stored In IB	8/27/08 1737
Relinquished By/Removed From 1060/IB	SEP 0 2 2008 1115	Received By/Stored In MStankovich	SEP 0 2 2008 1115
Relinquished By/Removed From MStankovich	SEP 0 2 2008 1115	Received By/Stored In FedEx	
Relinquished By/Removed From FedEx	9.3.08 0950	Received By/Stored In [signature]	9.3.08 0950
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

DWSHEA 7/8/08

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc} and Hg via CVAA
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPD

Matrix *

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

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

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford

Project/SAF/SOW/Release #: RC-073

Date: 9.3.08

LvLI Batch #: 0809L006

Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7911 2960 954
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.0	°C	Cooler # GW1
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LVLI LIONVILLE LABORATORY INC.

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-073 K1313

DATE RECEIVED: 09/03/08 LVL LOT # :0809L006

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177J3						
SILVER, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
SILVER, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
SILVER, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
ALUMINUM, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
ALUMINUM, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
ALUMINUM, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
ARSENIC, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
ARSENIC, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
ARSENIC, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
BORON, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
BORON, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
BORON, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
BARIUM, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
BARIUM, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
BARIUM, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
BERYLLIUM, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
BERYLLIUM, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
BERYLLIUM, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
CALCIUM, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
CALCIUM, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
CALCIUM, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
CADMIUM, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
CADMIUM, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
CADMIUM, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
COBALT, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
COBALT, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
COBALT, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
CHROMIUM, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
CHROMIUM, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
CHROMIUM, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
COPPER, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
COPPER, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
COPPER, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
IRON, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
IRON, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-073 K1313

DATE RECEIVED: 09/03/08 LVL LOT # :0809L006

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
MERCURY, TOTAL	001	SO	08C0157	08/27/08	09/10/08	09/10/08
MERCURY, TOTAL	001 REP	SO	08C0157	08/27/08	09/10/08	09/10/08
MERCURY, TOTAL	001 MS	SO	08C0157	08/27/08	09/10/08	09/10/08
POTASSIUM, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
POTASSIUM, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
POTASSIUM, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
MAGNESIUM, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
MAGNESIUM, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
MAGNESIUM, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
MANGANESE, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
MANGANESE, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
MANGANESE, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
MOLYBDENUM, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
MOLYBDENUM, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
MOLYBDENUM, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
SODIUM, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
SODIUM, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
SODIUM, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
NICKEL, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
NICKEL, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
NICKEL, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
LEAD, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
LEAD, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
LEAD, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
ANTIMONY, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
ANTIMONY, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
ANTIMONY, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
SELENIUM, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
SELENIUM, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
SELENIUM, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
SILICON, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
SILICON, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
SILICON, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
VANADIUM, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08
VANADIUM, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
VANADIUM, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08
ZINC, TOTAL	001	SO	08L0336	08/27/08	09/15/08	09/16/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-073 K1313

ATE RECEIVED: 09/03/08 LVL LOT # :0809L006

LIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
INC, TOTAL	001 REP	SO	08L0336	08/27/08	09/15/08	09/16/08
INC, TOTAL	001 MS	SO	08L0336	08/27/08	09/15/08	09/16/08

3 QC:

SILVER LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
SILVER, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
ALUMINUM LABORTORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
ALUMINUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
ARSENIC LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
ARSENIC, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
BORON LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
BORON, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
BARIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
BARIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
BERYLLIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
CALCIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
CALCIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
CADMIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
CADMIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
COBALT LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
COBALT, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
CHROMIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
CHROMIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
COPPER LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
COPPER, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
IRON LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
IRON, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
MERCURY LABORATORY	LC1 BS	S	08C0157	N/A	09/10/08	09/10/08
MERCURY, TOTAL	MB1	S	08C0157	N/A	09/10/08	09/10/08
POTASSIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
POTASSIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
MAGNESIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
MANGANESE LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
MANGANESE, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
MOLYBDENUM LABORATOR	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-073 K1313

DATE RECEIVED: 09/03/08 LVL LOT # :0809L006

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MOLYBDENUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
SODIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
SODIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
NICKEL LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
NICKEL, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
LEAD LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
LEAD, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
ANTIMONY LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
ANTIMONY, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
SELENIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
SELENIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
SILICON LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
SILICON, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
VANADIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
VANADIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
ZINC LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
ZINC, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-073
LVL#: 0809L006
SDG/SAF#: K1313/RC-073

W.O.#: 60049-001-001-0001-00
Date Received: 09-03-08

METALS CASE NARRATIVE

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

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analysis of 1 solid sample.

2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary. The sample result was reported on a wet weight "as received" basis.

   The sample was run and reported with a 3-fold dilution for ICP metals due to sample matrix.

   The sample was run on a different instrument for Aluminum.

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

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of Potassium and Sodium in file TA0916A. The sample was rerun and reported for Sodium and Potassium in file PS0916B along with Aluminum.

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

6. The preparation/method blank for 1 analyte was outside method criteria. {less than the Limit of Quantitation (3-10X the LOD), the samples read greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

   a.) The MB 08L0336 result for Sodium was greater than the Limit of Quantitation (LOQ) {3-10x the (LOD) Limit of Detection} The sample read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.

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 19 pages.

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

8. All laboratory control samples (LCS) were within the 80-120% control with the exception of Silicon (15.7%). The sample result may be biased low. Refer to the Inorganics Laboratory Control Standards Report.

9. The matrix spike (MS) recoveries for 4 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

10. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J177J3	Aluminum	60,000	97.7
	Iron	60,000	92.2
	Antimony	300	103.5
	Silicon	3,300	105.3

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 Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. LvLI is NELAP accredited by the state of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. 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

9/18/08
Date

alm/m09-006

LvLI
LIONVILLE LABORATORY, INC.

METALS METHOD GLOSSARY

ollowing methods are used as reference for the digestion and analysis of samples contained within thi

0809L006

hing Procedure: __1310 __1311 __1312 __Other:_____

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

ls Digestion Methods: __3005A __3010A __3015 __3020A ✓3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
minum	✓6010B		__200.7				__99
imony	✓6010B	__7041 [5]	__200.7	__204.2			__99
enic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
ium	✓6010B		__200.7				__99
yllium	✓6010B		__200.7				__99
muth	__6010B [1]		__200.7 [1]			__1620	__99
on	✓6010B		__200.7				__99
dmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
cium	✓6010B		__200.7				__99
romium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
balt	✓6010B		__200.7				__99
pper	✓6010B	__7211 [5]	__200.7	__220.2			__99
n	✓6010B		__200.7				__99
ad	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
hium	__6010B	__7430 [4]	__200.7			__1620	__99
agnesium	✓6010B		__200.7				__99
anganese	✓6010B		__200.7				__99
ercury	__7470A [3]	✓__7471A [3]	__245.1 [2]	__245.5 [2]			__99
olybdenum	✓6010B		__200.7				__99
ckel	✓6010B		__200.7				__99
tassium	✓6010B	__7610 [4]	__200.7	__258.1 [4]			__99
are Earths	__6010B [1]		__200.7 [1]			__1620	__99
lenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
licon	✓6010B [1]		__200.7			__1620	__99
lica	__6010B		__200.7			__1620	__99
lver	✓6010B	__7761 [5]	__200.7	__272.2			__99
odium	✓6010B	__7770 [4]	__200.7	__273.1 [4]			__99
rontium	__6010B		__200.7				__99
hallium	__6010B	__7841 [5]	__200.7	__279.2 __200.9			__99
in	__6010B		__200.7				__99
itanium	__6010B		__200.7				__99
ranium	__6010B [1]		__200.7 [1]			__1620	__99
anadium	✓6010B		__200.7				__99
inc	✓6010B		__200.7				__99
irconium	__6010B [1]		__200.7 [1]			__1620	__99

Method: _____

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 09/17/08

:LIENT: WC-HANPORD RC-073 K1313 LVL LOT #: 0809L006

:ORK ORDER: 60049-001-001-0001-00

:AMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J177J3	Silver, Total	0.25 u	MG/KG	0.25	3.0
		Aluminum, Total	5780	MG/KG	9.9	3.0
		Arsenic, Total	2.0	MG/KG	1.2	3.0
		Boron, Total	1.2 u	MG/KG	1.2	3.0
		Barium, Total	55.5	MG/KG	0.25	3.0
		Beryllium, Total	0.12 u	MG/KG	0.12	3.0
		Calcium, Total	8120	MG/KG	9.9	3.0
		Cadmium, Total	0.14	MG/KG	0.12	3.0
		Cobalt, Total	7.9	MG/KG	0.50	3.0
		Chromium, Total	9.8	MG/KG	0.50	3.0
		Copper, Total	15.1	MG/KG	0.50	3.0
		Iron, Total	22800	MG/KG	11.2	3.0
		Mercury, Total	0.1	MG/KG	0.009	1.0
		Potassium, Total	892	MG/KG	122	3.0
		Magnesium, Total	4310	MG/KG	6.2	3.0
		Manganese, Total	298	MG/KG	0.1	3.0
		Molybdenum, Total	0.74 u	MG/KG	0.74	3.0
		Sodium, Total	236	MG/KG	5.0	3.0
		Nickel, Total	10.3	MG/KG	0.50	3.0
		Lead, Total	10.2	MG/KG	0.74	3.0
		Antimony, Total	0.74 u	MG/KG	0.74	3.0
		Selenium, Total	1.5 u	MG/KG	1.5	3.0
		Silicon, Total	302	MG/KG	9.9	3.0
		Vanadium, Total	56.8	MG/KG	0.35	3.0
		Zinc, Total	58.7	MG/KG	1.5	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/17/08

CLIENT: WC-HANFORD RC-073 K1313 LVL LOT #: 0809L006

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0336-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	4.0 u	MG/KG	4.0	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Boron, Total	0.50 u	MG/KG	0.50	1.0
		Barium, Total	0.10 u	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	11.1	MG/KG	4.0	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.20 u	MG/KG	0.20	1.0
		Chromium, Total	0.20 u	MG/KG	0.20	1.0
		Copper, Total	0.20 u	MG/KG	0.20	1.0
		Iron, Total	4.5 u	MG/KG	4.5	1.0
		Potassium, Total	49.3 u	MG/KG	49.3	1.0
		Magnesium, Total	2.5 u	MG/KG	2.5	1.0
		Manganese, Total	0.05	MG/KG	0.04	1.0
		Molybdenum, Total	0.30 u	MG/KG	0.30	1.0
		Sodium, Total	12.7	MG/KG	2.0	1.0
		Nickel, Total	0.20 u	MG/KG	0.20	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.30 u	MG/KG	0.30	1.0
		Selenium, Total	0.60 u	MG/KG	0.60	1.0
		Silicon, Total	4.0 u	MG/KG	4.0	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	1.1	MG/KG	0.60	1.0
BLANK1	08C0157-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 09/17/08

:LIENT: WC-HANFORD RC-073 K1313 LVL LOT #: 0809L006

ORK ORDER: 60049-001-001-0001-00

AMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
=======	==========	==========	========	=======	======	=======	==========
-001	J177J3	Silver, Total	3.8	0.25u	4.0	95.0	3.0
		Aluminum, Total	6270	5780	160	311.1*	3.0
		Arsenic, Total	155	2.0	160	95.4	3.0
		Boron, Total	75.7	1.2 u	80.0	94.6	3.0
		Barium, Total	208	55.5	160	95.3	3.0
		Beryllium, Total	4.0	0.12u	4.0	100	3.0
		Calcium, Total	10100	8120	2000	100.1*	3.0
		Cadmium, Total	4.0	0.14	4.0	96.6	3.0
		Cobalt, Total	47.2	7.9	40.0	98.2	3.0
		Chromium, Total	26.0	9.8	16.0	101.2	3.0
		Copper, Total	35.4	15.1	20.0	101.5	3.0
		Iron, Total	23400	22800	80.0	780.4*	3.0
		Mercury, Total	0.23	0.1	0.15	84.2	1.0
		Potassium, Total	2780	892	2000	94.6	3.0
		Magnesium, Total	6350	4310	2000	101.9	3.0
		Manganese, Total	347	298	40.0	122.0*	3.0
		Molybdenum, Total	75.4	0.74u	80.0	94.2	3.0
		Sodium, Total	2240	236	2000	100	3.0
		Nickel, Total	50.0	10.3	40.0	99.2	3.0
		Lead, Total	49.4	10.2	40.0	98.0	3.0
		Antimony, Total	23.1	0.74u	40.0	57.8	3.0
		Selenium, Total	132	1.5 u	160	82.6	3.0
		Silicon, Total	517	302	80.0	268.5	3.0
		Vanadium, Total	96.2	56.8	40.0	98.5	3.0
		Zinc, Total	101	58.7	40.0	106.5	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 09/17/08

CLIENT: WC-HANFORD RC-073 K1313 LVL LOT #: 0809L006

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J177J3	Silver, Total	0.25u	0.24u	NC	3.0
		Aluminum, Total	5780	5640	2.4	3.0
		Arsenic, Total	2.0	1.9	5.1	3.0
		Boron, Total	1.2 u	1.3	~~NC~~ 200*	3.0
		Barium, Total	55.5	56.6	2.0	3.0
		Beryllium, Total	0.12u	0.12u	NC	3.0
		Calcium, Total	8120	7790	4.2	3.0
		Cadmium, Total	0.14	0.20	37.9	3.0
		Cobalt, Total	7.9	8.1	2.5	3.0
		Chromium, Total	9.8	10.0	2.0	3.0
		Copper, Total	15.1	15.1	0.00	3.0
		Iron, Total	22800	22000	3.5	3.0
		Mercury, Total	0.1	0.06	49.1	1.0
		Potassium, Total	892	849	4.9	3.0
		Magnesium, Total	4310	4190	3.0	3.0
		Manganese, Total	298	285	4.5	3.0
		Molybdenum, Total	0.74u	0.73	~~NC~~ 200*	3.0
		Sodium, Total	236	215	9.5	3.0
		Nickel, Total	10.3	9.7	6.0	3.0
		Lead, Total	10.2	10.6	3.8	3.0
		Antimony, Total	0.74u	0.73u	NC	3.0
		Selenium, Total	1.5 u	1.5 u	NC	3.0
		Silicon, Total	302	304	0.56	3.0
		Vanadium, Total	56.8	55.4	2.5	3.0
		Zinc, Total	58.7	53.4	9.5	3.0

* Corrected RPD
AEM 9/17/08

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 09/17/08

CLIENT: WC-HANFORD RC-073 K1313 LVL LOT #: 0809L006

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0336-LC1	Silver, LCS	48.6	50.0	MG/KG	97.2
		Aluminum, LCS	482	500	MG/KG	96.4
		Arsenic, LCS	941	1000	MG/KG	94.1
		Boron, LCS	458	500	MG/KG	91.6
		Barium, LCS	484	500	MG/KG	96.8
		Beryllium, LCS	24.4	25.0	MG/KG	97.6
		Calcium, LCS	2450	2500	MG/KG	97.8
		Cadmium, LCS	23.8	25.0	MG/KG	95.2
		Cobalt, LCS	240	250	MG/KG	96.2
		Chromium, LCS	49.2	50.0	MG/KG	98.4
		Copper, LCS	122	125	MG/KG	97.9
		Iron, LCS	481	500	MG/KG	96.2
		Potassium, LCS	2330	2500	MG/KG	93.3
		Magnesium, LCS	2370	2500	MG/KG	94.6
		Manganese, LCS	73.3	75.0	MG/KG	97.7
		Molybdenum, LCS	473	500	MG/KG	94.6
		Sodium, LCS	2400	2500	MG/KG	95.9
		Nickel, LCS	194	200	MG/KG	97.0
		Lead, LCS	240	250	MG/KG	96.2
		Antimony, LCS	281	300	MG/KG	93.8
		Selenium, LCS	913	1000	MG/KG	91.3
		Silicon, LCS	78.3	500	MG/KG	15.7
		Vanadium, LCS	240	250	MG/KG	96.0
		Zinc, LCS	97.3	100	MG/KG	97.3
LCS1	08C0157-LC1	Mercury, LCS	4.7	4.7	MG/KG	99.3

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0336
Date/Time Initiated: 9/15/08 1700
Date/Time Completed: 9/15/08 2145
Analyst(s): MW
Matrix: Soil Water Other: liquid
Instr. Type: AA ICP
Parameters: see backlog

Digested / Undigested (circle one)
Balance #: B20
Balance Cal Verif: Y NA
Hot Plate Temp: 91°

Method: SW (circle)
3005A
3010A
3015
3020A
7060A (As/Se)
7760A (Ag)
3050B
3051
CLP ILMO3.0
ILMO4.0

DW 200.7 (1994)
200.9
3113B
MCAWW 200.7 (1982)
200 (AA)
206.2 (As/Se)
SM 3030C (NC)
Other tiffin

TM

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
0809L091-001		1.06gm	100ml	<2	TO	liquid	from oil		RAD
001R		1.07gm							
001S	1.0ml *	1.13gm							
002		1.11gm							
003		1.02gm							RAD
004		1.03gm							
005		1.09gm					tan milky liquid		RAD
006		1.01gm							
0809L086-001		1.14gm				fine	from soil	rocks	RAD
001R		1.10gm							
001S	1.0ml	1.17gm							
0809L086-001		1.21gm							
001R		1.23gm							
001S	1.0 ml	1.25gm							
08L0336-MB1		1.0gm				coarse	boiling chips		
LCS	1.0 ml *	1.0gm							

MW 9/15/08

Spiking IDs:
MS #: 8100-04-01
02
03
6072-78-07
LCS #: 08
09
10
11

Reagent IDs:
HNO_3 G07057
HCL G26054
H_2O_2 G15A18
1:1 HNO_3 9789-053-08
1:1 HCL

File ID#: IC033601, IC036 IC033603. Updated

LIMS Transfer: Y N

Data Review By/Date: 9/17/08

* also 0.5 ml 6072-079-13 (2r)

ionville Laboratory
ncorporated

MERCURY PREPARATION

Logbook # 498

Analyst: TEM
Date 9/10/08
Start Time/Temp: 1005 / 92°
End Time/Temp: 1035 / 92°

Instrument ID HG32
Balance #: B29 / NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0157
Worksheet: HG-091002
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes N/A No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	500			10mL	50mL	
0.2 µg/L	3VG	0.100				
1.0	PC	0.500				
2.0	Gd	1.000				
5.0	R	2.500				
10.0	11A	5.000				
ICV	H3	0.125	2.5			
CCV	8	0.250	5.0			
ICB/CCB	PA/NJ					9.80L
MB1	JC			0.30		PBS157 100.0
LCS1	NR	*	*	0.30		LCSS157
0809L034-001	1721			0.33		R 95.3
001R	K17			0.38		
001S	6J	0.500	1.0	0.35		
0809L006-001	L15			0.33		100.00
001R	NB			0.39		
001S	E7	0.500	1.0	0.33		
0809L021-001	31			0.41		99.98
002	537			0.31		96.97
002R	N2			0.35		
002S	KX	0.500	1.0	0.31		
003	P3			0.31		96.99
004	CM			0.31		92.3
0809L022-001	514			0.31		99.9
002	AP			0.32		98.08
002R	114			0.36		
002S	816	0.500	1.0	0.32		

Standard:	ID	Prep Date/Time
CAL/MS	RI 6077-78-14B	9/10/08 0730
CV/CCV/LCS	US 6077-78-15A	

Reviewed By/Date: [signature] 9/12/08

see book # 9368 for std traceability information

Soil LCS =US Metals in soil No.3; True Value = 4.70 mg/Kg
Catalogue #1RM-021, Lot # E021

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
Water LCS Spiking Concentration: 1.0 µg/ml

ME-HgCVAA-Prep1007

Page #:

000000015

onville Laboratory
ncorporated

MERCURY PREPARATION

Logbook # 498

Analyst: EA
Date 9/10/08
Start Time/Temp:
End Time/Temp: See page 016

Instrument ID HG3.2
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0157
Worksheet: HG091002
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? ___ Yes NA No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
0809L022-003	P1			0.35	50mL	98.07
0809L035-001	40			0.31	↓	78.28
W1R	L53			0.32	↓	↓
W1S	UT	0.500	1.0	0.31	↓	↓
002	205			0.35	↓	82.56
0809L036-001	DX			0.36	↓	98.31
W1R	H2			0.32	↓	↓
W1S	41	0.500	1.0	0.37	↓	↓
002	RU			0.31	↓	97.75
003	194			0.41	↓	99.95

EA 9/10/08

Standard:	ID	Prep Date/Time
CAL/MS		
CV/CCV/LCS	See page 016	

Reviewed By/Date: [signature] 9/12/08

see book # 9369 for std traceability information

Soil LCS =US Metals in soil No.3; True Value = 4.70 mg/Kg
Catalogue #1RM-021, Lot # E021

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
Water LCS Spiking Concentration: 1.0 µg/ml

ME-HgCVAA-Prep1007

Page #:

Lionville Laboratory Use Only

38091006

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI Lionville Laboratory, Inc.

ent Washington Closure Hanford RC.073

Final Proj. Sampling Date

ject# 60049-001-001-0001-00

ject Contact/Phone#

nville Laboratory Project Manager Arletta Johnson

SW846 Del STD TAT 15 days

e Rec'd 9.3.08 Date Due 9-18-08

		A	B		C	D	E	F			
Refrigerator #		3	3	—	3	3	6	3	—		
#/Type Container	Liquid										
	Solid	1gl	1gl	—	1gl	1gl	1gl	1gl	—		
Volume	Solid	60	250	—	60	60	60	60	—		
Preservatives		—	—	—	—	—	—	—	—		
ANALYSES REQUESTED →		ORGANIC			INORG						
		VOA	BNA	Pest/PCB	Herb	Metal + Hg	CN, SFD	TOX	IC Anions	pH	
Lionville Laboratory Use Only			06257H	06084H	0HBGX	MetO	BCNTO ISFD	ITOX	ICO	IPH	

MATRIX CODES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb				Metals + Hg	CN, SFD	TOX	IC Anions	pH			
001	J17TJ3	✓	✓	SO	9.27.08	0935		X	X	X				X	X	X	X	X			

Special Instructions:

MetO = HSL + B, Mo, Si
NOTL

ICO = Br, CL, FL, SO4, PO4
NO2, NO3

Special Instructions:

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

Relinquished by	Received by	Date	Time
ReiEx	[signature]	9.30.08	0950

Relinquished by	Received by	Date	Time

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

000000017

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-073-044 | Page 1 of 1

lector D.W.Shea / D. Ríos S.E.C.	Company Contact D.W.Shea	Telephone No. 521-6014	Project Coordinator KESSNER, JH
Price Code S/C	Data Turnaround 15 days		
ject Designation 00-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location 118-D-3, yellow powder		SAF No. RC-073
Chest No. 6W-1	Field Logbook No. EL-1607-4	COA R118D32600	Method of Shipment ~~Company Vehicle~~ FedEx 9/2/08
oped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080343		Bill of Lading/Air Bill No. SCC OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

entially radioactive

ecial Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None
Type of Container	G/P	G	aG	aG	aG	G/P	G	G/P	G/P
No. of Container(s)	1	1	1	1	01	1	1	1	1
Volume	60mL	60mL	60mL	~~60mL~~ 250ml	~~125mL~~	60mL	60mL	5g	60g

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	~~VOA - 8260A~~ (TCL) SVOA 8270A DWS 7/8/08	TOX - 9020	Pesticides - 8081	Chloro-Herbicides - EPA8151	IC Anions - 300.0; pH - 9045	Total Cyanide - 9010; Sulfides - 9030	Gross Alpha; Gross Beta	See item (2) in Special Instructions.
7J3	OTHER SOLID	8/27/08	0935	✓	✓	✓	✓	✓	✓	✓		

DWS 8/27/08

CHAIN OF POSSESSION	Sign/Print Names
quished By/Removed From — Date/Time 1037 8-27-08	Received By/Stored In — Date/Time DWSHEA 8/27/08 1037
quished By/Removed From — Date/Time 1737 DWSHEA 8/27/08	Received By/Stored In — Date/Time IB 8/27/08 1737
quished By/Removed From — Date/Time 1115 60/IB SEP 0 2 2008	Received By/Stored In — Date/Time 1115 MStankovich SEP 0 2 2008
quished By/Removed From — Date/Time 1115 MStankovich SEP 0 2 2008	Received By/Stored In — Date/Time FedEx
quished By/Removed From — Date/Time FedEx 9.3.08 0950	Received By/Stored In — Date/Time 9.3.08 0950
quished By/Removed From — Date/Time	Received By/Stored In — Date/Time

SPECIAL INSTRUCTIONS

DWSHEA 7/8/08

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc} and Hg via CVAA
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JPD

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

BORATORY SECTION	Received By	Title	Date/Time
AL SAMPLE SPOSITION	Disposal Method	Disposed By	Date/Time

000000018

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford Date: 9.3.08

Project/SAF/SOW/Release #: RC-073

LvLI Batch #: 0P09L006 Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7911 2960 954
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.0	°C	Cooler # GW1
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-073 K1313

RECEIVED
OCT 2008

DATE RECEIVED: 09/03/08 LVL LOT # :0809L006

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177J3						
BROMIDE BY IC	001	SO	08LICS74	08/27/08	09/26/08	09/28/08
BROMIDE BY IC	001 REP	SO	08LICS74	08/27/08	09/26/08	09/28/08
BROMIDE BY IC	001 MS	SO	08LICS74	08/27/08	09/26/08	09/28/08
CHLORIDE BY IC	001	SO	08LICS74	08/27/08	09/26/08	09/28/08
CHLORIDE BY IC	001 REP	SO	08LICS74	08/27/08	09/26/08	09/28/08
CHLORIDE BY IC	001 MS	SO	08LICS74	08/27/08	09/26/08	09/28/08
FLUORIDE BY IC	001	SO	08LICS74	08/27/08	09/26/08	09/28/08
FLUORIDE BY IC	001 REP	SO	08LICS74	08/27/08	09/26/08	09/28/08
FLUORIDE BY IC	001 MS	SO	08LICS74	08/27/08	09/26/08	09/28/08
NITRITE BY IC	001	SO	08LICS74	08/27/08	09/26/08	09/28/08
NITRITE BY IC	001 REP	SO	08LICS74	08/27/08	09/26/08	09/28/08
NITRITE BY IC	001 MS	SO	08LICS74	08/27/08	09/26/08	09/28/08
NITRATE BY IC	001	SO	08LICS74	08/27/08	09/26/08	09/28/08
NITRATE BY IC	001 REP	SO	08LICS74	08/27/08	09/26/08	09/28/08
NITRATE BY IC	001 MS	SO	08LICS74	08/27/08	09/26/08	09/28/08
TOTAL CYANIDE	001	SO	08LC049	08/27/08	09/06/08	09/06/08
TOTAL CYANIDE	001 REP	SO	08LC049	08/27/08	09/06/08	09/06/08
TOTAL CYANIDE	001 MS	SO	08LC049	08/27/08	09/06/08	09/06/08
PHOSPHATE BY IC	001	SO	08LICS74	08/27/08	09/26/08	09/28/08
PHOSPHATE BY IC	001 REP	SO	08LICS74	08/27/08	09/26/08	09/28/08
PHOSPHATE BY IC	001 MS	SO	08LICS74	08/27/08	09/26/08	09/28/08
SULFATE BY IC	001	SO	08LICS74	08/27/08	09/26/08	09/28/08
SULFATE BY IC	001 REP	SO	08LICS74	08/27/08	09/26/08	09/28/08
SULFATE BY IC	001 MS	SO	08LICS74	08/27/08	09/26/08	09/28/08
EXTRACTABLE ORGANIC	001	SO	08LE009	08/27/08	09/20/08	09/20/08
EXTRACTABLE ORGANIC	001 MS	SO	08LE009	08/27/08	09/20/08	09/20/08
EXTRACTABLE ORGANIC	001 MSD	SO	08LE009	08/27/08	09/20/08	09/20/08
PH	001	SO	08LPH043	08/27/08	09/04/08	09/04/08
SULFIDE	001	SO	08LSD051	08/27/08	09/05/08	09/05/08
SULFIDE	001 REP	SO	08LSD051	08/27/08	09/05/08	09/05/08
SULFIDE	001 MS	SO	08LSD051	08/27/08	09/05/08	09/05/08
LB QC:						
BROMIDE BY IC	MB1	S	08LICS74	N/A	09/26/08	09/28/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-073 K1313

DATE RECEIVED: 09/03/08 LVL LOT # :0809L006

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BROMIDE BY IC	MB1 BS	S	08LICS74	N/A	09/26/08	09/28/08
CHLORIDE BY IC	MB1	S	08LICS74	N/A	09/26/08	09/28/08
CHLORIDE BY IC	MB1 BS	S	08LICS74	N/A	09/26/08	09/28/08
FLUORIDE BY IC	MB1	S	08LICS74	N/A	09/26/08	09/28/08
FLUORIDE BY IC	MB1 BS	S	08LICS74	N/A	09/26/08	09/28/08
NITRITE BY IC	MB1	S	08LICS74	N/A	09/26/08	09/28/08
NITRITE BY IC	MB1 BS	S	08LICS74	N/A	09/26/08	09/28/08
NITRATE BY IC	MB1	S	08LICS74	N/A	09/26/08	09/28/08
NITRATE BY IC	MB1 BS	S	08LICS74	N/A	09/26/08	09/28/08
TOTAL CYANIDE	LCS L	S	08LC049	N/A	09/06/08	09/06/08
TOTAL CYANIDE	LCS L	S	08LC049	N/A	09/06/08	09/06/08
TOTAL CYANIDE	MB1	S	08LC049	N/A	09/06/08	09/06/08
PHOSPHATE BY IC	MB1	S	08LICS74	N/A	09/26/08	09/28/08
PHOSPHATE BY IC	MB1 BS	S	08LICS74	N/A	09/26/08	09/28/08
SULFATE BY IC	MB1	S	08LICS74	N/A	09/26/08	09/28/08
SULFATE BY IC	MB1 BS	S	08LICS74	N/A	09/26/08	09/28/08
EXTRACTABLE ORGANIC	MB1	W	08LE009	N/A	09/20/08	09/20/08
EXTRACTABLE ORGANIC	MB1 BS	W	08LE009	N/A	09/20/08	09/20/08
SULFIDE	MB1	W	08LSD051	N/A	09/05/08	09/05/08
SULFIDE	MB1 BS	W	08LSD051	N/A	09/05/08	09/05/08
SULFIDE	MB1 BSD	W	08LSD051	N/A	09/05/08	09/05/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-073 K1313
LVL#: 0809L006

W.O.#: 60049-001-001-0001-00
Date Received: 09-03-08

INORGANIC NARRATIVE

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

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

   Lionville Laboratory (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met, except for sulfide that was received past the holding time.

4. The results presented in this report are derived from samples that met LvL's sample acceptance policy with the exception of Sulfide 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 Sulfide and Extractable Organic Halides (EOX) were within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike recoveries were within the 75-125% control limits. The matrix spike duplicate for EOX was within the 20% RPD control limit.

8. The replicate analyses for were within the 20% Relative Percent Difference (RPD) control limit with the exception of Nitrate at 20.4%.

9. Results for solid samples are reported on an "as-received" 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

10/7/08
Date

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 14 pages.

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~~ 9023 TP 10-7-08	__ EPA 600/4/84-008
Halides, Total		__ 9020B	__ EPA 600/4/84-008
EP Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		__ 1010	
Oil & Grease		__ 9071A	
Carbon, Total Organic		__ 9060	__ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	__ D240-87(mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		__ 9071 JB 10-7-08	__ EPA 418.1
pH, Soil		✓ 9045~~C~~D	
Sulfide, Reactive		__ Section 7.3/9030B	
Sulfide		✓ 9030B(mod)/9034	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Preparation Leach		__ 1312	
Paint Filter		__ 9095A	

Other: Bromide, Chloride, Fluoride } **Method:** EPA 300.0

Other: Nitrite, Nitrate, Phosphate, Sulfate } **Method**

L-WI-034/B-01/01

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/03/08

CLIENT: WC-HANFORD RC-073 K1313 LVL LOT #: 0809L006
WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J177J3	Bromide by IC	5.0	u	MG/KG	5.0	1.0
		Chloride by IC	2.5	u	MG/KG	2.5	1.0
		Fluoride by IC	2.5	u	MG/KG	2.5	1.0
		Nitrite by IC	2.50	u	MG/KG	2.50	1.0
		Nitrate by IC	2.70		MG/KG	2.50	1.0
		Cyanide, Total	0.49	u	MG/KG	0.49	1.0
		Phosphate by IC	2.5	u	MG/KG	2.5	1.0
		Sulfate by IC	11.5		MG/KG	2.4	1.0
		Extr. Organic Halides	39.3	u	MG/KG	39.3	1.0
		pH	8.8		SOIL PH	0.01	1.0
		Sulfide	20.8	u	MG/KG	20.8	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/03/08

LIENT: WC-HANFORD RC-073 K1313 LVL LOT #: 0809L006
ORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LICS74-MB1	Bromide by IC	4.7	u	MG/KG	4.7	1.0
		Chloride by IC	2.4	u	MG/KG	2.4	1.0
		Fluoride by IC	2.4	u	MG/KG	2.4	1.0
		Nitrite by IC	2.36	u	MG/KG	2.36	1.0
		Nitrate by IC	2.36	u	MG/KG	2.36	1.0
		Phosphate by IC	2.4	u	MG/KG	2.4	1.0
		Sulfate by IC	2.6	u	MG/KG	2.6	1.0
BLANK1	08LC049-MB1	Cyanide, Total	0.49	u	MG/KG	0.49	1.0
BLANK1	08LE009-MB1	Extr. Organic Halides	46.6	u	MG/KG	46.6	1.0
BLANK10	08LSD051-MB1	Sulfide	20.3	u	MG/KG	20.3	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/03/08

LIENT: WC-HANFORD RC-073 K1313 LVL LOT #: 0809L006
ORK ORDER: 60049-001-001-0001-00

AMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
001	J177J3	Bromide by IC	96.5	0.0	90.0	107.2	2.0
		Chloride by IC	99.1	2.1	90.0	107.8	2.0
		Fluoride by IC	94.3	0.29	90.0	104.4	2.0
		Nitrite by IC	95.6	2.50u	90.0	106.2	2.0
		Nitrate by IC	102	2.70	90.0	110.7	2.0
		Cyanide, Total	4.89	0.49u	4.99	98.0	1.0
		Phosphate by IC	107	2.5 u	90.0	118.9	2.0
		Sulfate by IC	125	11.5	100	114.0	2.0
		Extr. Organic Halides	2550	22.0	2470	102.2	1.0
		Extr. Organic Halides	2700	22.0	2710	99.0	1.0
		Sulfide	233	12.5	242	91.1	1.0
BLANK10	08LICS74-MB1	Bromide by IC	69.9	4.7 u	67.3	103.9	1.0
		Chloride by IC	71.7	2.4 u	67.3	106.6	1.0
		Fluoride by IC	71.3	2.4 u	67.3	105.9	1.0
		Nitrite by IC	71.9	2.36u	67.3	106.9	1.0
		Nitrate by IC	69.7	2.36u	67.3	103.7	1.0
		Phosphate by IC	69.4	2.4 u	67.3	103.2	1.0
		Sulfate by IC	63.4	2.6 u	66.4	95.5	1.0
BLANK1	08LE009-MB1	Extr. Organic Halides	2690	46.6 u	2720	99.0	1.0
BLANK10	08LSD051-MB1	Sulfide	232	20.3 u	233	99.7	1.0
		Sulfide MSD	235	20.3 u	232	101.4	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 10/03/08

CLIENT: WC-HANFORD RC-073 K1313 LVL LOT #: 0809L006

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
-001	J177J3	Extr. Organic Halides	102.2	99.0	3.2
BLANK10	08LSD051-MB1	Sulfide	99.7	101.4	1.7

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 10/03/08

CLIENT: WC-HANFORD RC-073 K1313 LVL LOT #: 0809L006

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J177J3	Bromide by IC	5.0 u	4.7 u	NC	1.0
		Chloride by IC	2.5 u	2.3 u	NC	1.0
		Fluoride by IC	2.5 u	2.3 u	NC	1.0
		Nitrite by IC	2.50u	2.33u	NC	1.0
		Nitrate by IC	2.70	3.31	20.4	1.0
		Cyanide, Total	0.49u	0.48u	NC	1.0
		Phosphate by IC	2.5 u	2.3 u	NC	1.0
		Sulfate by IC	11.5	13.5	16.0	1.0
		Sulfide	20.8 u	20.8 u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 10/03/08

CLIENT: WC-HANFORD RC-073 K1313 LVL LOT #: 0809L006
WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCSS1	08LC049-LCS1	Cyanide, Total LCS	1.97	2.0	MG/KG	98.4
LCSS2	08LC049-LCS2	Cyanide, Total LCS	9.54	10.0	MG/KG	95.4

·nville Laboratory Use Only

3809L006

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI Lionville Laboratory Inc.

000000012

ınt Washington Closure Hanford RC-073

, Final Proj. Sampling Date

ject# 60049-001-001-0001-00

ject Contact/Phone#

ıville Laboratory Project Manager Arlotta Johnson

SW846 Del STD TAT 15 days

e Rec'd 9.3.08 Date Due 9-18-08

		A	B		C	D	E	F			
Refrigerator #		3	3		3	3	6	3			
#/Type Container	Liquid										
	Solid	1gl	1gl		1gl	1gl	1gl	1gl			
Volume	Solid	60	250		60	60	60	60			
Preservatives		—	—		—	—	—	—			
ANALYSES REQUESTED		ORGANIC			INORG						
		VOA	BNA	Pest/PCB	Herb	Metal + Hg	CN, SFD	TOX	Ic Anions	pH	
Lionville Laboratory Use Only			062584	060884	0HBGX	Met①	BCNTO ISFD	ITOX	IC①	IPH	

·RIX ·ES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	001	J17TJ3	✓	✓	SO	8.27.08	0935		X	X	X				X	X	X	X	X	

ecial Instructions:

Met① = HSL + B, Mo, Si
NOTL

IC① = Br, CL, FL, SO4, PO4
NO2, NO3

Special Instructions:

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

Relinquished by	Received by	Date	Time
FedEx	[illegible]	9.30.08	0950

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-073-044

ector .W.Shea / D. Ries S.E.C.	Company Contact D.W.Shea	Telephone No. 521-6014	Project Coordinator KESSNER, JH
Price Code S/C	Data Turnaround 15 days		
ect Designation 00-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location 118-D-3, yellow powder		SAF No. RC-073
Chest No. 6W-1	Field Logbook No. EL-1607-4	COA R118D32600	Method of Shipment ~~Company Vehicle~~ FedEx WO 9/2/08
ped To BERLINE SERVICES/ LIONVILLE	Offsite Property No. A080343		Bill of Lading/Air Bill No. SCE OSPC

SSIBLE SAMPLE HAZARDS/REMARKS

entially radioactive

ecial Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	
Type of Container	G/P	G	aG	aG	aG	G/P	G	G/P	G/P	
No. of Container(s)	1	1	1	1	01	1	1	1	1	
Volume	60mL	60mL	60mL	~~60mL~~ 250mL	~~125mL~~	60mL	60mL	5g	60g	

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	~~VOA - 8260A~~ (TCL) SVOA 8270A DWS 7/8/08	TOX - 9020	Pesticides - 8081	Chloro-Herbicides - EPA8151	IC Anions - 300.0; pH - 9045	Total Cyanide - 9010; Sulfides - 9030	Gross Alpha; Gross Beta	See item (2) in Special Instructions.
7J3	OTHER SOLID	8/27/08	0935	✓	✓	✓	✓	✓	✓	✓		

MWS 8/27/08

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	8-27-08 1037	DWSHEA DWSHEA	8/27/08 1037
DWSHEA DWSHEA	8/27/08 1737	[signature] IB	8/27/08 1737
60/IB	SEP 0 2 2008 1115	MSTankovich	SEP 0 2 2008 1115
MSTankovich	SEP 0 2 2008 1115	FedEx	
FedEx	9.3.08 0950	[signature]	9.3.08 0950

SPECIAL INSTRUCTIONS

DWSHEA 7/8/08

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc} and Hg via CVAA
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

SPD

Matrix *

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

BORATORY SECTION	Received By	Title	Date/Time
AL SAMPLE SPOSITION	Disposal Method	Disposed By	Date/Time

000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford Date: 9.3.08

Project/SAF/SOW/Release #: RC-073

LvLI Batch #: 0809L006 Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7911 2960 954
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.0	°C	Cooler # GW1
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes 9-7-08	☑ No	Sulfide rec'd past hold
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes 9.09.08	☑ No	See #12
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.