

SAF-RC-051
100 & 300 Area Component of the
RCBRA - Incremental Soil Sampling
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Jeanette Duncan (2) H9-02

mjr 03/13/06
INITIAL/DATE

SDG K0102

Revalidate/Re-report Pest/PCBs

SAF-RC-051

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Date: 8 February 2006
To: Washington Closure Hanford (technical representative)
From: TechLaw, Inc.
Project: 100 Area and 300 Area Component of the RCBRA – Incremental Soil Sampling
Subject: PCB/Pesticide - Data Package No. K0102-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K0102 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Data
J10DN0	11/8/05	Soil	C	See note 1
J10DN1	11/8/05	Soil	C	See note 1
J10DN2	11/8/05	Soil	C	See note 1
J10DN3	11/8/05	Soil	C	See note 1
J10DN4	11/8/05	Soil	C	See note 1

1 - Pesticides by 8081A and PCBs by 8082.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area and 300 Area Component of the RCBRA Water Sampling Plan (DOE/RL-2005, Rev. 0, October 2005). Appendices 1 through 5 provide the following information as indicated below:

- Appendix 1. Glossary of Data Reporting Qualifiers
- Appendix 2. Summary of Data Qualification
- Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
- Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
- Appendix 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

• Holding Times & Sample Preservation

Sample data were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded by less than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all

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associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

Due to the samples not being properly preserved (cooler temperature 8-9 °C) but analyzed within the holding time, all results were qualified as estimates and flagged "J".

• **Method Blank**

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than required quantitation limit (RQL). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than RQL, the result is qualified as undetected and elevated to the RQL.

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

• **Accuracy**

Matrix Spike & Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data . The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 80% to 120%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all toxaphene results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

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Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

All surrogate results were acceptable.

· **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For soil samples, results must be within RPD limits of plus/minus 20%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to the lack of a matrix spike and matrix spike duplicate analysis, all toxaphene results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

No field duplicates were submitted for analysis.

· **Analytical Detection Levels**

Reported analytical detection levels are compared against the project specific RQLs to ensure that laboratory detection levels meet the required criteria. The toxaphene

result in all samples exceeded the RQL. Under the WCH validation statement of work, no qualification is required. All other analytes met the RQL.

• **Completeness**

Data Package No. K0102 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Due to the samples not being properly preserved (cooler temperature 8-9 °C) but analyzed within the holding time, all results were qualified as estimates and flagged "J". Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all toxaphene results were qualified as estimates and flagged "J". Data flagged "J" indicates that the associated concentration is an estimate, but under the BHI statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

The toxaphene result in all samples exceeded the RQL. Under the WCH validation statement of work, no qualification is required.

REFERENCES

WCH, Contract #20266, *Validation Statement of Work*, Washington Closure Hanford Incorporated, July 7, 2003.

DOE/RL-2005, Rev. 0, October 2005, *100 Area and 300 Area Component of the RCBRA Water Sampling Plan*.

Appendix 1

Glossary of Data Reporting Qualifiers

000005

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows:

- U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.
- UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.
- J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.
- R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.
- UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.
- NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).
- N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2
Summary of Data Qualification

000007

PESTICIDE/PCB DATA QUALIFICATION SUMMARY*

SDG K0102	REVIEWER: Project RCBRA	PAGE 1 OF 1	
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All PCBs & pesticides	J	All	Sample preservation
Toxaphene	J	All	No MS, MSD or LCS

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

000009

Project: WASHINGTON CLOSURE HANFORD											
Laboratory: LLI		SDG: K0102									
Sample Number		J10DN0		J10DN1		J10DN2		J10DN3		J10DN4	
Remarks											
Sample Date		11/8/05		11/8/05		11/8/05		11/8/05		11/8/05	
Extraction Date		11/16/05		11/16/05		11/16/05		11/16/05		11/16/05	
Analysis Date		11/18/05		11/18/05		11/18/05		11/18/05		11/18/05	
PCB	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aroclor-1016		13	UJ	13	UJ	13	UJ	13	UJ	13	UJ
Aroclor-1221		13	UJ	13	UJ	13	UJ	13	UJ	13	UJ
Aroclor-1232	16.5	13	UJ	13	UJ	13	UJ	13	UJ	13	UJ
Aroclor-1242	16.5	13	UJ	13	UJ	13	UJ	13	UJ	13	UJ
Aroclor-1248		13	UJ	13	UJ	13	UJ	13	UJ	13	UJ
Aroclor-1254	16.5	13	UJ	13	UJ	13	UJ	13	UJ	13	UJ
Aroclor-1260	16.5	13	UJ	13	UJ	13	UJ	13	UJ	13	UJ
Sample Number		J10DN0		J10DN1		J10DN2		J10DN3		J10DN4	
Remarks											
Sample Date		11/8/05		11/8/05		11/8/05		11/8/05		11/8/05	
Extraction Date		11/13/05		11/13/05		11/13/05		11/13/05		11/13/05	
Analysis Date		11/16/05		11/16/05		11/16/05		11/16/05		11/16/05	
Pesticide	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Alpha-BHC	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Gamma-BHC (Lindane)	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Beta-BHC	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Heptachlor	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Delta-BHC	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Aldrin	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Heptachlor Epoxide	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Endosulfan I	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Dieldrin	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
4,4'-DDE	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Endrin	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Endosulfan II	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
4,4'-DDD	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Endosulfan Sulfate	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
4,4'-DDT	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Methoxychlor	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Endrin Ketone	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Endrin Aldehyde	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
alpha-Chlordane	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
gamma-Chlordane	5	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ	1.3	UJ
Toxaphene	5	13	UJ	13	UJ	13	UJ	13	UJ	13	UJ

000010

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize miss-interpretation of results. All other qualifiers shown were applied during validation.

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 11/25/05 11:13

RFW Batch Number: 0511L690

Client: TMOHANFORD RC-051 K0102

Work Order: 11343606001 Page: 1

Cust ID:	J10DN0	J10DN1	J10DN1	J10DN1	J10DN2	J10DN3
Sample Information	RFW#: 001	002	002 MS	002 MSD	003	004
	Matrix: SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.: 1.00	1.00	1.00	1.00	1.00	1.00
	Units: UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	100 %	87 %	95 %	91 %	79 %
	Decachlorobiphenyl	96 %	88 %	93 %	96 %	82 %
		fl	fl	fl	fl	fl
Aroclor-1016	13 U J	13 U J	101 %	101 %	13 U J	13 U J
Aroclor-1221	13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1232	13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1242	13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1248	13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1254	13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1260	13 U	13 U	103 %	109 %	13 U	13 U

Cust ID:	J10DN4	PBLKWL	PBLKWL BS
Sample Information	RFW#: 005	05LE0907-MB1	05LE0907-MB1
	Matrix: SOIL	SOIL	SOIL
	D.F.: 1.00	1.00	1.00
	Units: UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	80 %	94 %
	Decachlorobiphenyl	80 %	96 %
		fl	fl
Aroclor-1016	13 U J	13 U	90 %
Aroclor-1221	13 U	13 U	13 U
Aroclor-1232	13 U	13 U	13 U
Aroclor-1242	13 U	13 U	13 U
Aroclor-1248	13 U	13 U	13 U
Aroclor-1254	13 U	13 U	13 U
Aroclor-1260	13 U	13 U	94 %

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

000011

2/8/06

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Lionville Laboratory, Inc.
Pesticide/PCBs by GC, CLP List

Report Date: 02/22/06 12:57

RFW Batch Number: 0511L690

Client: TNUHANFORD RC-051 K0102 Work Order: 11343606001 Page: 1

04

Cust ID:	J10DN0	J10DN1	J10DN2	J10DN3	J10DN3	J10DN3
Sample Information	RFW#: 001	002	003	004	004 MS	004 MSD
	Matrix: SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.: 4.00	4.00	4.00	4.00	4.00	4.00
	Units: UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene 77 %	88 %	84 %	86 %	74 %	70 %
	Decachlorobiphenyl 76 %	97 %	96 %	92 %	84 %	85 %
-----fl-----fl-----fl-----fl-----fl-----fl						
Alpha-BHC	1.3 U J	1.3 U J	1.3 U J	1.3 U J	77 %	73 %
gamma-BHC (Lindane)	1.3 U	1.3 U	1.3 U	1.3 U	83 %	78 %
Beta-BHC	1.3 U	1.3 U	1.3 U	1.3 U	82 %	76 %
Heptachlor	1.3 U	1.3 U	1.3 U	1.3 U	96 %	91 %
Delta-BHC	1.3 U	1.3 U	1.3 U	1.3 U	80 %	76 %
Aldrin	1.3 U	1.3 U	1.3 U	1.3 U	84 %	82 %
Heptachlor epoxide	1.3 U	1.3 U	1.3 U	1.3 U	91 %	85 %
gamma-Chlordane	1.3 U	1.3 U	1.3 U	1.3 U	88 %	82 %
Endosulfan I	1.3 U	1.3 U	1.3 U	1.3 U	98 %	88 %
alpha-Chlordane	1.3 U	1.3 U	1.3 U	1.3 U	90 %	84 %
4,4'-DDE	1.3 U	1.3 U	1.3 U	1.3 U	85 %	81 %
Dieldrin	1.3 U	1.3 U	1.3 U	1.3 U	92 %	86 %
Endrin	1.3 U	1.3 U	1.3 U	1.3 U	95 %	91 %
4,4'-DDD	1.3 U	1.3 U	1.3 U	1.3 U	105 %	102 %
Endosulfan II	1.3 U	1.3 U	1.3 U	1.3 U	112 %	107 %
4,4'-DDT	1.3 U	1.3 U	1.3 U	1.3 U	84 %	81 %
Endrin aldehyde	1.3 U	1.3 U	1.3 U	1.3 U	65 %	73 %
Endosulfan sulfate	1.3 U	1.3 U	1.3 U	1.3 U	88 %	82 %
Methoxychlor	1.3 U	1.3 U	1.3 U	1.3 U	91 %	86 %
Endrin ketone	1.3 U	1.3 U	1.3 U	1.3 U	90 %	83 %
Toxaphene	13 U	13 U J	13 U J	13 U	13 U	13 U

000011A

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

3/7/06

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

000013



Case Narrative
REVISION

Client: TNU-HANFORD RC-051
LVL #: 0511L690
SDG/SAF # K0102/RC-051

W.O. #: 11343-606-001-9999-00
Date Received: 11-10-2005

CHLORINATED PESTICIDES

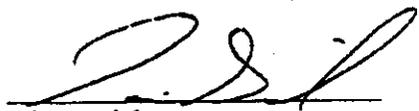
This report has been revised to report surrogate recoveries for samples J10DN0, J10DN3 and J10DN4.

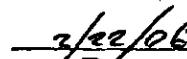
Five (5) soil samples were collected on 11-08-2005.

The samples and their associated QC samples were extracted on 11-13-2005 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 11-16-2005. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

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

1. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
2. The required holding time for extraction and analysis was met.
3. The samples and their associated QC samples received a Copper-Sulfur cleanup according to Lionville Laboratory SOPs based on SW846 method 3660A.
4. The method blank was below the reporting limits for all target compounds.
5. All surrogate recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. All samples required a 4-fold dilution due to the nature of the sample matrix. The reporting limits were adjusted to reflect the necessary dilution.
9. The initial calibrations associated with this data set were within acceptance criteria.
10. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
11. LVL is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
12. 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


Date

son:\r\group\data\pest\tnu_hanford\0511-690.pst-rev

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.

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Case Narrative

Client: TNU-HANFORD RC-051
LVL #: 0511L690
SDG/SAF # K0102/RC-051

W.O. #: 11343-606-001-9999-00
Date Received: 11-10-2005

PCB

Five (5) soil samples were collected on 11-08-2005.

The samples and their associated QC samples were extracted on 11-16-2005 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 11-18-2005. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

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

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
4. The method blank was below the reporting limits for all target compounds.
5. All surrogate recoveries were within acceptance criteria.
6. The blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. The initial calibrations associated with this data set were within acceptance criteria; however, the initial calibration of Aroclor-1660 performed on 11-14-2005 was inadvertently analyzed using the curve, which was expired on 11-11-2005. There is no significant impact on the data. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
9. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
11. 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


Date

som\l:\group\data\pest\tnu_hanford\0511-690.pcb
The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 9 pages.

000016

Washington Closure Hanford			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-051-5		Page 1 of 1				
Collector L. COLLOM			Company Contact JOAN KESSNER			Telephone No. 375-4688			Project Coordinator KESSNER, JH		Price Code 8L		Data Turnaround 45 Days		
Project Designation 100 & 300 Area Component of the RCBRA - Incremental So			Sampling Location PIT 23			SAF No. RC-051			Air Quality <input type="checkbox"/>						
Ice Chest No.			Field Logbook No. EL-1596			COA BESRAS6520			Method of Shipment FED EX						
Shipped To LIONVILLE			Offsite Property No. A060151			Bill of Lading/Air Bill No.									
POSSIBLE SAMPLE HAZARDS/REMARKS NONE			Preservation	None	None	None	None	None	None	None	None	None			
Special Handling and/or Storage NONE			Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	aG	aG			
			No. of Container(s)	NA	NA	7	7	7	7	7	7	7			
			Volume	300g	30g	30g	30g	30g	30g	30g	30g	30g			
				I-L	M-C	A-C	P-R	D-F	G-I						
SAMPLE ANALYSIS			See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	PAHs - 8310	Pesticides - 8081	PCRs - 8082					
000018	Sample No.	Matrix *	Sample Date	Sample Time											
	J10DN0	SOIL	11-8-05	9:45		3	1	1	1	1	1	1	1	1	
	J10DN1	SOIL	11-8-05	12:00		1	3	1	1	1	3	1	1	3	
	J10DN2	SOIL	11-8-05	8:05		1	1	3	3	1	1	1	1	1	
	J10DN3	SOIL	11-8-05	9:15		1	1	1	1	3	1	1	1	1	
	J10DN4	SOIL	11-8-05	14:00		1	1	1	1	1	1	1	1	1	
CHAIN OF POSSESSION			Sign/Print Names			SPECIAL INSTRUCTIONS						Matrix *			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>This chain of custody form documents the transfer of bulk field collected soils to the CH2M Hill Corvallis laboratory for incremental preparation and aliquoting.</p> <p>(1) German Spec - (Full List) (Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Radium-226, Radium-228)</p> <p>(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Isotopic Plutonium</p> <p>(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc)</p> <p>See attached sample weights & I.D's ET 11/9/05</p>						s=Soil	
Elizabeth M. Tyme		11-9-05 12:00												SE=Sediment	
Ted Sp		11/10/05 0900												SO=Solid	
														St=Sludge	
														W=Water	
								O=Oil							
								DS=Drawn Solids							
								DL=Drawn Liquids							
								T=Time							
								Wp=Wipe							
								L=Liquid							
								V=Vegetation							
								X=Other							
LABORATORY SECTION	Received By	Title	Date/Time												
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time												

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-051-5	Page 1 of 1
Collector L. COLLOM	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 8L	Data Turnaround 45 Days	
Project Designation 100 & 300 Area Component of the RCBRA - Incremental So	Sampling Location PIT 23	SAF No. RC-051	Air Quality <input type="checkbox"/>				
Ice Chest No. 5 gal Bucket	Field Logbook No. EL-1596	COA BBSRAS6520	Method of Shipment FEDEX - Oak Harbor Freight / Ground				
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060151	Bill of Lading/Air Bill No. See DSPC					

POSSIBLE SAMPLE HAZARDS/REMARKS NONE	Preservation	None							
	Type of Container	G/P	G/P	G/P	G/P	a/G	a/G	a/G	a/G
	No. of Container(s)	1	1	1	1	1	1	1	1
	Volume	500g	30g						

SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	Semi-VOA - 8276A (TCL)	PAHs - 8330	Pesticides - 8081	PCBs - 8082
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Sample No.	Matrix *	Sample Date	Sample Time						
J10DN0	SOIL	11-7-05	1005						
J10DN1	SOIL		1105						
J10DN2	SOIL		1220						
J10DN3	SOIL		1330						
J10DN4	SOIL		1440						

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From L. Colлом	Date/Time 11-2-05 1540	Received By/Stored In S. GALE	Date/Time 11-2-05 1540	<p>This chain of custody form documents the transfer of bulk field collected soils to the CH2M Hill, Corvallis laboratory for incremental preparation and aliquoting.</p> <p>(1) Gamma Spec - (Full List) (Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Radium-226, Radium-228)</p> <p>(2) Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-231/234, Uranium-235, Uranium-238); Isotopic Plutonium</p> <p>(3) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc)</p>				<ul style="list-style-type: none"> S-Soil SE-Sediment SO-Solid SI-Sludge W-Water O-Oil A-Air DS-Dry Solids DL-Dry Liquids T-Tissue WL-Wipe L-Liquid V-Vegetation X-Other
Relinquished By/Removed From S. GALE	Date/Time 11/3/05 0900	Received By/Stored In S. GALE	Date/Time 11/3/05 0900					
Relinquished By/Removed From Oak Harbor Freight	Date/Time 11/3/05 0900	Received By/Stored In Oak Harbor Freight	Date/Time 11/3/05 0900					
Relinquished By/Removed From S. GALE	Date/Time 11/4/05 1445	Received By/Stored In S. GALE	Date/Time 11/4/05 1445					
Relinquished By/Removed From S. GALE	Date/Time 11/10/05 0900	Received By/Stored In S. GALE	Date/Time 11/10/05 0900					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

BENVIET LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *TNU Hanford*

Date: *11/10/05*

Purchase Order / Project# /
 SAF# / SOW# / Release #: *RC-051*

LvLI Batch #: *0511L690*

Sample Custodian: *[Signature]*

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | |
|---|---|---|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier <i>Red Ee</i> | Airbill#
6595 0628 8725 |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals Comments |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 5. Samples received cooled or ambient? | Temp <i>8-9 °C</i> | Cooler # <i>N/A</i> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> No Seals |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 11. Samples properly preserved? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 13. VOA, TOC, TOX free of headspace? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 14. QC stickers placed on bottles designated by client? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Discrepancies |



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Appendix 5

Data Validation Supporting Documentation

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PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT:	RCBRA		DATA PACKAGE: K0102		
VALIDATOR:	TZI	LAB:	LLI	DATE: 2/2/04	
			SDG:	K0102	
ANALYSES PERFORMED					
SW-846 8081	SW-846 8081 (TCLP)	SW-846 8082	SW-846 8081 (TCLP)		
SAMPLES/MATRIX					
J10DU0 J10DN1 J10DN2 J10DN3 J10DNY					
Soil					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present?..... Yes No N/A

Comments: _____

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations acceptable?..... Yes No N/A
 Continuing calibrations acceptable?..... Yes No N/A
 Standards traceable?..... Yes No N/A
 Standards expired?..... Yes No N/A
 Calculation check acceptable?..... Yes No N/A
 DDT and endrin breakdowns acceptable?..... Yes No N/A

Comments: _____

PCB DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E)..... Yes No N/A
 Calibration blank results acceptable? (Levels D, E)..... Yes No N/A
 Laboratory blanks analyzed?..... Yes No N/A
 Laboratory blank results acceptable? Yes No N/A
 Field/trip blanks analyzed? (Levels C, D, E) Yes No N/A
 Field/trip blank results acceptable? (Levels C, D, E) Yes No N/A
 Transcription/calculation errors? (Levels D, E) Yes No N/A
 Comments: no FB

4. ACCURACY (Levels C, D, and E)

Surrogates analyzed?..... Yes No N/A
 Surrogate recoveries acceptable? Yes No N/A
 Surrogates traceable? (Levels D, E)..... Yes No N/A
 Surrogates expired? (Levels D, E) Yes No N/A
 MS/MSD samples analyzed? Yes No N/A
 MS/MSD results acceptable? Yes No N/A
 MS/MSD standards NIST traceable? (Levels D, E)..... Yes No N/A
 MS/MSD standards expired? (Levels D, E)..... Yes No N/A
 LCS/BSS samples analyzed? Yes No N/A
 LCS/BSS results acceptable? Yes No N/A
 Standards traceable? (Levels D, E) Yes No N/A
 Standards expired? (Levels D, E)..... Yes No N/A
 Transcription/calculation errors? (Levels D, E) Yes No N/A
 Performance audit sample(s) analyzed? Yes No N/A
 Performance audit sample results acceptable? Yes No N/A
 Comments: NO + N3 + N4 surr diturb low = J all (post)
3/1/06

no toxaphen MS/MSD/LCS - J all NO P/B

PCB DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

- Duplicate RPD values acceptable? Yes No N/A
- Duplicate results acceptable? Yes No N/A
- MS/MSD standards NIST traceable? (Levels D, E)..... Yes No N/A
- MS/MSD standards expired? (Levels D, E)..... Yes No N/A
- Field duplicate RPD values acceptable?..... Yes No N/A
- Field split RPD values acceptable? Yes No N/A
- Transcription/calculation errors? (Levels D, E) Yes No N/A

Comments: no overlap ms/msd - J all

6. SYSTEM PERFORMANCE (Levels D and E)

- Chromatographic performance acceptable? Yes No N/A
- Positive results resolved acceptably? Yes No N/A

Comments: _____

7. HOLDING TIMES (all levels)

- Samples properly preserved?..... Yes No N/A
- Sample holding times acceptable? Yes No N/A

Comments: Cooler temp 8-9°C - J all PCB + pesticides

PCB DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

- Compound identification acceptable? (Levels D, E)..... Yes No N/A
- Compound quantitation acceptable? (Levels D, E)..... Yes No N/A
- Results reported for all requested analyses?..... Yes No N/A
- Results supported in the raw data? (Levels D, E)..... Yes No N/A
- Samples properly prepared? (Levels D, E)..... Yes No N/A
- Detection limits meet RDL?..... Yes No N/A
- Transcription/calculation errors? (Levels D, E)..... Yes No N/A

Comments: toxicophan run

9. SAMPLE CLEANUP (Levels D and E)

- Fluorilic ® (or other absorbent) cleanup performed?..... Yes No N/A
- Lot check performed?..... Yes No N/A
- Check recoveries acceptable?..... Yes No N/A
- GPC cleanup performed?..... Yes No N/A
- GPC check performed?..... Yes No N/A
- GPC check recoveries acceptable?..... Yes No N/A
- GPC calibration performed?..... Yes No N/A
- GPC calibration check performed?..... Yes No N/A
- GPC calibration check retention times acceptable?..... Yes No N/A
- Check/calibration materials traceable?..... Yes No N/A
- Check/calibration materials Expired?..... Yes No N/A
- Analytical batch QC given similar cleanup?..... Yes No N/A
- Transcription/Calculation Errors?..... Yes No N/A

Comments: _____
