SAF-RC-006
100-N Area D4 – Other
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

No Distribution Required

COMMENTS:

SDG K4066 SAF-RC-006

Rad only ☑ Chem only Rad & Chem

☑ Complete Partial

Waste Site(s): 183-D

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

11 March 2013

Joan Kessner
WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
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:

LvLI Batch #	1302026
SDG #	K4066
SAF #	RC-006
Date Received	02/08/13
# Samples	1
Matrix	OTHER
Volatiles	
Semivolatiles	
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
PAHs	
Herbicides	
Metals	
Inorganics	

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

Sincerely,

Lionville Laboratory
A Division of Eberline Analytical Corporation

Orlette S. Johnson
Project Manager

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

CHAIN OF CUSTODY

Lionville Laboratory Use Only

1302026

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Lionville Laboratory
A Division of Eberline Analytical Corporation

Client: WC Hanford SAFA RC-006

Est. Final Proj. Sampling Date:

Project#:

Project Contact/Phone#:

Lionville Laboratory Project Manager: Q. Johnson

QC: SW Del: STL TAT: 7day

Date Rec'd: 2-8-13 Date Due: 2-15-13

Refrigerator #			A																
#/Type Container	Liquid		2																
	Solid		1AG																
Volume	Liquid																		
	Solid		125																
Preservatives			—																
ANALYSES REQUESTED →		ORGANIC							INORG										
		VOA	BNA	~~Pest~~ PCB	Herb				Metal	CN									
		Lionville Laboratory Use Only																	
				8082															

MATRIX CODES:
- W Water
- WW Waste Water
- GW Groundwater
- WST Waste
- WI Wipe
- SO Solid
- S Soil
- SL Sludge
- SE Sediment
- PC Paint Chips
- O Oil
- NAL Non-Aqueous Liquid
- L Leachate
- A Air
- T Tissue
- F Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected															
01	J1RF10	✓	✓	oil	2/6/13	1025			X												

Special Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	2/8/13	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-006-389	Page 1 of 1

Collector: R. Strickland	Company Contact: Bill Rodgers Telephone No.: 206.251.7439	Project Coordinator: KESSNER, JH	Price Code: 9K Data Turnaround: ~~15~~ 7 Days WHR 2-6-13
Project Designation: 100-N Area D4 - Other	Sampling Location: 183-D and ~~151-D~~ WHR 2-5-13	SAF No.: RC-006	
Ice Chest No.: WCH-11-017	Field Logbook No.: EL-1516-21 COA: RD4MXX2F00	Method of Shipment: FEDEX	
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A120670	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential PCBs

Special Handling and/or Storage

Cool to 4 C

Preservation	Cool 4C										
Type of Container	aG										
No. of Container(s)	1										
Volume	~~60mL~~ WHR 2-6-13	125 mL									
SAMPLE ANALYSIS	PCBs - 8082										

Sample No.	Matrix *	Sample Date	Sample Time										
J1RF10	OTHER	2-6-13	1025	X									
~~J1RF11~~	~~OTHER~~												
~~J1RF12~~	~~OTHER~~												

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Strickland R. Strickland	WCH 02/06/13 1300	R. Strickland R. Strickland MO767 FRIDGE	02/06/13 1300
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
MO-767 Tony Manley Tony Manley	02/07/13 13:05	Tony Manley Tony Manley	02/07/13 1305
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Tony Manley Tony Manley	1500 02/07/13	FEDEX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FedEx	2-8-13 0945	VICTOR HERNANDEZ	2-8-13 0945
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

None

Custodian unavailable to relinquish samples from MO767 temp storage to Shipper on 02/07/13

REVIEWED BY IRE DATE 2-7-13

Matrix *

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

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

WCH-EE-011

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WCH Hanford
Project/SAF/SOW/Release #: RC-006

Date: 2/8/13

LvL Batch #: 1302026

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 794704760285
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 2.9	°C	Cooler # WCH-11-017
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 & LvL) 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, RSK-175, Sulfides, Non-Halogenated VOAs (Alcohol/Glycol) free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvL 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 _____

PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-006 Project Number: K4066 Project Manager: Joan Kessner	**Reported:** 02/25/2013 16:56

Analytical Report for Polychlorinated Biphenyls by SW846 8082

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1RF10	1302026-01	Other Liquid	02/06/2013 10:25	02/08/2013 09:45

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-006 K4066
LVL #: 1302026

W.O. #: 60049-001-001-0001-00
Received: 02-08-2013

PCBs

One (1) oil sample was collected on 02-06-2013.

The sample and associated QC samples were extracted 02-11-2013 and analyzed 02-11-2013 according to criteria set forth in Lionville Laboratory SOPs. The extraction procedure was based on SW846 Method 3580A (waste dilution – 1 gram of sample into 10mLs of hexane) and the analysis procedure was based on SW846 Method 8082. The sample and associated QC received Copper-Sulfur and Sulfuric Acid cleanups based on SW846 methods 3660A and 3665A.

Lionville Laboratory (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. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements:

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

2. All required holding times for extraction and analysis have been met.

3. All surrogate recoveries were within QC acceptance criteria.

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

5. All blank spike recoveries were within QC acceptance criteria.

6. All matrix spike recoveries were within QC acceptance criteria.

7. The sample was reported on a wet weight 'as received' basis.

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. Per SW846 Method 8000B, the attached table lists compounds where the % difference or drift was greater than 15%, and the mean across all compounds was used for evaluation of the continuing calibration. Results associated with these compounds are considered to have greater uncertainty.

10. Patterns of Aroclors 1254 and 1260 were identified in these samples. The reported Aroclors were chosen based on the best pattern match and fit. Quantitation was performed using congeners common to all Aroclors to give the best overall total PCB concentration.

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 pages.

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 hardcopy data package has been authorized by the laboratory manager or a designee as verified by the following signature.

Iain Daniels
LvL Laboratory Manager

3/11/13
Date

8082/A PCBs
Analytes with %Difference or %Drift >15%, Where Mean is Used for Continuing Calibration

Analyte	CCV1 2/11/13 1124 AM		CCV2 2/11/13 659 PM		CCV3		CCV4		CCV5		CCV6		CCV7		CCV8	
	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary
Tetrachloro-meta-xylene (surrogate)																
Decachlorobiphenyl (surrogate)																
Aroclor 1016-1																
Aroclor 1016-2			24.3	23.9												
Aroclor 1016-3			19.7	26.2												
Aroclor 1016-4																
Aroclor 1016-5																
Aroclor 1260-1				17.3												
Aroclor 1260-2				25.6												
Aroclor 1260-3																
Aroclor 1260-4				28.3												
Aroclor 1260-5																
Mean %D or %Drift			10.7	16.9												

Sample results reported from affected CCV:

CCV1: L302078-BLK1, BS1; L302076-BLK2, BS2; 1302027-08, 1302026-01,

CCV2: L302078-MS1, MSD1

CCV3:

CCV4:

CCV5:

CCV6:

CCV7:

CCV8:

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.
P	=	This flag is used for a dual column analysis (i.e. pesticides/PCB/herbicides) when there is greater than 40% difference for detected concentrations between the two GC columns; the lower of the two values is reported on Form 1 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.

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

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-006	
2620 Fermi Avenue	Project Number: K4066	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	02/25/2013 16:56

J1RF10
1302026-01 (Other Liquid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	398	U	398	ug/kg	1	L302078	02/11/2013	02/11/2013	8082
Aroclor 1221	398	U	398	ug/kg	1	L302078	02/11/2013	02/11/2013	8082
Aroclor 1232	398	U	398	ug/kg	1	L302078	02/11/2013	02/11/2013	8082
Aroclor 1242	398	U	398	ug/kg	1	L302078	02/11/2013	02/11/2013	8082
Aroclor 1248	398	U	398	ug/kg	1	L302078	02/11/2013	02/11/2013	8082
Aroclor 1254	**200**	J	398	ug/kg	1	L302078	02/11/2013	02/11/2013	8082
Aroclor 1260	**254**	J	398	ug/kg	1	L302078	02/11/2013	02/11/2013	8082
Aroclor 1262	398	U	398	ug/kg	1	L302078	02/11/2013	02/11/2013	8082
Aroclor 1268	398	U	398	ug/kg	1	L302078	02/11/2013	02/11/2013	8082
Surrogate: Decachlorobiphenyl	*74 %*		*10-150*			*L302078*	*02/11/2013*	*02/11/2013*	*8082*
Surrogate: Tetrachloro-meta-xylene	*52 %*		*10-150*			*L302078*	*02/11/2013*	*02/11/2013*	*8082*

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-006 Project Number: K4066 Project Manager: Joan Kessner	**Reported:** 02/25/2013 16:56

Polychlorinated Biphenyls by SW846 8082 - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L302078 - SW 3580A										
Blank (L302078-BLK1)				Prepared & Analyzed: 02/11/2013						
Aroclor 1016	400	U	400	ug/kg						
Aroclor 1260	400	U	400	ug/kg						
Surrogate: Decachlorobiphenyl	*1110*			*ug/kg*	*1000.0*		*111*	*10-150*		
Surrogate: Tetrachloro-meta-xylene	*1170*			*ug/kg*	*1000.1*		*117*	*10-150*		
LCS (L302078-BS1)				Prepared & Analyzed: 02/11/2013						
Aroclor 1016	4920		400	ug/kg	5000.0		98	10-150		
Aroclor 1260	5470		400	ug/kg	5000.0		109	10-150		
Surrogate: Decachlorobiphenyl	*1240*			*ug/kg*	*1000.0*		*124*	*10-150*		
Surrogate: Tetrachloro-meta-xylene	*1240*			*ug/kg*	*1000.1*		*124*	*10-150*		
Matrix Spike (L302078-MS1)		**Source: 1302026-01**		Prepared & Analyzed: 02/11/2013						
Aroclor 1016	2560		384	ug/kg	4803.5	398 U	53	10-150		
Aroclor 1260	3600		384	ug/kg	4803.5	254	70	10-150		
Surrogate: Decachlorobiphenyl	*723*			*ug/kg*	*960.71*		*75*	*10-150*		
Surrogate: Tetrachloro-meta-xylene	*507*			*ug/kg*	*960.80*		*53*	*10-150*		
Matrix Spike Dup (L302078-MSD1)		**Source: 1302026-01**		Prepared & Analyzed: 02/11/2013						
Aroclor 1016	3310		394	ug/kg	4930.0	398 U	67	10-150	23	40
Aroclor 1260	3580		394	ug/kg	4930.0	254	68	10-150	3	40
Surrogate: Decachlorobiphenyl	*684*			*ug/kg*	*986.00*		*69*	*10-150*		
Surrogate: Tetrachloro-meta-xylene	*507*			*ug/kg*	*986.10*		*51*	*10-150*		

PREPARATION BENCH SHEET

L302078

Lionville Laboratory

Printed: 2/14/2013 1:57:30PM

00000014

Matrix: Waste **Prepared using: GC - SW 3580A** **Surrogate used: 1201397**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1302026-01	8082 PCBs	02/11/2013 10:08	1.0045	10				250	WC-Hanford, Inc.	
L302078-BLK1	QC	02/11/2013 10:08	1	10				250		
L302078-BS1	QC	02/11/2013 10:08	1	10	1300037		250	250		
L302078-MS1	QC	02/11/2013 10:08	1.0409	10	1300037	1302026-01	250	250		
L302078-MSD1	QC	02/11/2013 10:08	1.0142	10	1300037	1302026-01	250	250		

Revision for matrix Rec 2/14/13

Extracts Relinquished By Date

Extracts Received By Date

PREPARATION BENCH SHEET

L302078

Lionville Laboratory

Printed: 2/11/2013 11:54:50AM

00000015

Matrix: Non Aqueous Liquic

Prepared using: GC - SW 3580A

Surrogate used: 1201397

Lab Number	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1302026-01	8082 PCBs	02/11/2013 10:08	1.0045	10				250	WC-Hanford, Inc.	
L302078-BLK1	QC	02/11/2013 10:08	1	10				250		
L302078-BS1	QC	02/11/2013 10:08	1	10	1300037		250	250		
L302078-MS1	QC	02/11/2013 10:08	1.0409	10	1300037	1302026-01	250	250		
L302078-MSD1	QC	02/11/2013 10:08	1.0142	10	1300037	1302026-01	250	250		

S cleaned 02.11.13 SZ
Cu lot# B10X036.

2/11/13 1154
Extracts Relinquished By Date

02.11.13 11:55
Extracts Received By Date