SAF-RC-075
100-D/DR Burial Grounds & Remaining Sites – Soil Full Protocol
FINAL VALIDATION PACKAGE

COMPLETE COPY OF FINAL VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG KP0128 SAF-RC-075

Waste Site: 100-D-50:1

Date: 15 October 2012
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-D/DR Burial Ground and Remaining Sites – Soil Full Protocol - Waste Subsite 100-D-50:1
Subject: Wet Chemistry - Data Package No. KP0128-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. KP0128 prepared by Lionville Laboratories 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	Analyte
J1R0T2	8/30/12	Soil	C	See note 1
J1R0T3	8/30/12	Soil	C	See note 1
J1R0T4	8/30/12	Soil	C	See note 1
J1R0T5	8/30/12	Soil	C	See note 1
J1R0T6	8/30/12	Soil	C	See note 1
J1R0T7	8/30/12	Soil	C	See note 1
J1R0T8	8/30/12	Soil	C	See note 1
J1R0T9	8/30/12	Soil	C	See note 1
J1R0V0	8/30/12	Soil	C	See note 1
J1R0V1	8/30/12	Soil	C	See note 1
J1R0V2	8/30/12	Soil	C	See note 1
J1R0V3	8/30/12	Soil	C	See note 1
J1R0V5	8/30/12	Soil	C	See note 1

1 – Chromium VI by 7196A, IC anions by 300.3, nitrate/nitrite by 353.2 and pH by 9045C.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, Rev. 4, February 2005). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as

follows: Soil samples must be analyzed within 30 days for chromium VI, nitrate/nitrite, chloride, fluoride, bromide, sulfate; 48 hours for nitrate, nitrite and orthophosphate; and immediate (24 hours) for pH.

If holding times are exceeded, but not by greater 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 associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

Due to the holding time being exceeded by greater than twice the limit, all detected pH, nitrate, nitrite and orthophosphate results were qualified as estimates and flagged "J".

Due to the holding time being exceeded by greater than twice the limit, all undetected nitrate, nitrite and orthophosphate results were qualified as rejected and flagged "UR".

All other holding times were acceptable.

Method Blanks

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

Accuracy

Matrix Spike and 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 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is

required.

All accuracy results were acceptable.

Precision

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J1R0V0/J1R0V5) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory results. All field duplicate results are acceptable.

Analytical Detection Levels

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

Completeness

Data package KP0128 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 88%.

MAJOR DEFICIENCIES

The following major deficiency was noted:

- Due to the holding time being exceeded by greater than twice the limit, all undetected nitrate, nitrite and orthophosphate results were qualified as rejected and flagged "UR".

Rejected data is unusable and should not be reported.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the holding time being exceeded by greater than twice the limit, all detected pH, nitrate, nitrite and orthophosphate results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH 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.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services.*

DOE/RL-96-22, Rev. 4, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, February 2005.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW 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 concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

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

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: KP0128	**REVIEWER: ELR**	**Project: 100-D-50:1**	**PAGE_1_OF_1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
pH	J	All	Hold time
Nitrate	J	All	Hold time
Nitrite	UR	All	Hold time
Orthophosphate	J	J1R0T2, J1R0T3 J1R0T6, J1R0T7 J1R0T8, J1R0T9 J1R0V0, J1R0V1 J1R0V2 J1R0T5	Hold time
Orthophosphate	UR	J1R0T4, J1R0T3	Hold time

* - 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

Annotated Laboratory Reports

Lionville Laboratory, PADEP Lab ID# 15-00009
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-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/11/2012 15:46

✓ 10/14/12

Wet Chemistry

Lionville Laboratory

Analyte	Result and Qualifier	LOD	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method
J1R0T2 (1209003-01) Soil									
%Solids	**98.9**		0.1	% by Weight	1	L209023	09/05/2012 15:40	09/05/2012 15:40	SM2540G
Bromide	1.0 U	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Chloride	**1.2** B	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Fluoride	1.0 U	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate	**7.9** J	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrite	1.0 U R	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Orthophosphate	**3.8** B J	2.0	9.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Sulfate	**10.2**	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate/Nitrite as N	**1.79**	0.10	0.50	mg/kg dry	1	L209047	09/06/2012 12:00	09/07/2012 17:02	EPA 353.2
Hexavalent Chromium	0.20 U	0.20	0.51	mg/kg dry	1	L209033	09/06/2012 12:55	09/07/2012 12:45	SW846 7196A
pH	**9.28** J	0.10	0.10	pH Units	1	L209039	09/06/2012 20:02	09/06/2012 20:02	SW846 9045D
J1R0T3 (1209003-02) Soil									
%Solids	**99.5**		0.1	% by Weight	1	L209023	09/05/2012 15:40	09/05/2012 15:40	SM2540G
Bromide	0.9 U	0.9	4.5	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Chloride	**1.2** B	0.9	4.5	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Fluoride	0.9 U	0.9	4.5	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate	**5.6** J	0.9	4.5	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrite	0.9 U R	0.9	4.5	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Orthophosphate	**3.5** B J	1.8	8.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Sulfate	**12.0**	0.9	4.5	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate/Nitrite as N	**1.39**	0.09	0.45	mg/kg dry	1	L209047	09/06/2012 12:00	09/07/2012 17:06	EPA 353.2
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg dry	1	L209033	09/06/2012 12:55	09/07/2012 12:45	SW846 7196A
pH	**9.17** J	0.10	0.10	pH Units	1	L209039	09/06/2012 20:02	09/06/2012 20:02	SW846 9045D

Lionville Laboratory, PADEP Lab ID# 15-00009
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 15:46

Wet Chemistry
Lionville Laboratory

V 10/14/12

Analyte	Result and Qualifier	LOD	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method
J1R0T4 (1209003-03) Soil									
%Solids	99.6		0.1	% by Weight	1	L209023	09/05/2012 15:40	09/05/2012 15:40	SM2540G
Bromide	1.0 U	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Chloride	1.0 U	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Fluoride	1.0 U	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate	2.6 B J	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrite	1.0 U R	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Orthophosphate	2.0 U R	2.0	9.8	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Sulfate	5.7	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate/Nitrite as N	0.65	0.10	0.49	mg/kg dry	1	L209047	09/06/2012 12:00	09/07/2012 17:08	EPA 353.2
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg dry	1	L209033	09/06/2012 12:55	09/07/2012 12:45	SW846 7196A
pH	9.15 J	0.10	0.10	pH Units	1	L209039	09/06/2012 20:02	09/06/2012 20:02	SW846 9045D
J1R0T5 (1209003-04) Soil									
%Solids	99.7		0.1	% by Weight	1	L209023	09/05/2012 15:40	09/05/2012 15:40	SM2540G
Bromide	1.0 U	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Chloride	1.1 B	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Fluoride	1.0 U	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate	7.1 J	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrite	1.0 U R	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Orthophosphate	3.6 B J	2.0	10.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Sulfate	8.4	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate/Nitrite as N	1.69	0.10	0.50	mg/kg dry	1	L209047	09/06/2012 12:00	09/07/2012 17:09	EPA 353.2
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg dry	1	L209033	09/06/2012 12:55	09/07/2012 12:45	SW846 7196A
pH	9.00 J	0.10	0.10	pH Units	1	L209039	09/06/2012 20:02	09/06/2012 20:02	SW846 9045D

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Wet Chemistry
Lionville Laboratory

10/14/12

Analyte	Result and Qualifier	LOD	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method
J1R0T6 (1209003-05) Soil									
%Solids	**99.9**		0.1	% by Weight	1	L209023	09/05/2012 15:40	09/05/2012 15:40	SM2540G
Bromide	1.0 U	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Chloride	**1.0** B	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Fluoride	1.0 U	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate	**4.6** B J	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrite	1.0 U R	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Orthophosphate	**4.4** B J	2.0	9.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Sulfate	**6.1**	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate/Nitrite as N	**1.19**	0.10	0.50	mg/kg dry	1	L209047	09/06/2012 12:00	09/07/2012 17:10	EPA 353.2
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg dry	1	L209033	09/06/2012 12:55	09/07/2012 12:45	SW846 7196A
pH	**9.12** J	0.10	0.10	pH Units	1	L209039	09/06/2012 20:02	09/06/2012 20:02	SW846 9045D
J1R0T7 (1209003-06) Soil									
%Solids	**99.6**		0.1	% by Weight	1	L209023	09/05/2012 15:40	09/05/2012 15:40	SM2540G
Bromide	1.0 U	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Chloride	**1.2** B	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Fluoride	1.0 U	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate	**2.1** B J	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrite	1.0 U R	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Orthophosphate	**4.8** B J	2.0	10.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Sulfate	**6.2**	1.0	5.0	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate/Nitrite as N	**0.55**	0.10	0.50	mg/kg dry	1	L209047	09/06/2012 12:00	09/07/2012 17:14	EPA 353.2
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg dry	1	L209033	09/06/2012 12:55	09/07/2012 12:45	SW846 7196A
pH	**8.88** J	0.10	0.10	pH Units	1	L209039	09/06/2012 20:02	09/06/2012 20:02	SW846 9045D

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Wet Chemistry
Lionville Laboratory

V 10/14/12

Analyte	Result and Qualifier	LOD	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method
J1R0T8 (1209003-07) Soil									
%Solids	**99.8**		0.1	% by Weight	1	L209023	09/05/2012 15:40	09/05/2012 15:40	SM2540G
Bromide	1.0 U	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Chloride	**1.5** B	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Fluoride	1.0 U	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate	**6.2** J	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrite	1.0 U R	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Orthophosphate	**4.0** B J	2.0	9.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Sulfate	**14.7**	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate/Nitrite as N	**1.40**	0.10	0.49	mg/kg dry	1	L209047	09/06/2012 12:00	09/07/2012 17:15	EPA 353.2
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg dry	1	L209033	09/06/2012 12:55	09/07/2012 12:45	SW846 7196A
pH	**9.01** J	0.10	0.10	pH Units	1	L209039	09/06/2012 20:02	09/06/2012 20:02	SW846 9045D
J1R0T9 (1209003-08) Soil									
%Solids	**99.6**		0.1	% by Weight	1	L209023	09/05/2012 15:40	09/05/2012 15:40	SM2540G
Bromide	1.0 U	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Chloride	**1.0** B	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Fluoride	1.0 U	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate	**2.7** B J	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrite	1.0 U R	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Orthophosphate	**2.8** B J	2.0	9.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Sulfate	**13.7**	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate/Nitrite as N	**0.68**	0.10	0.49	mg/kg dry	1	L209047	09/06/2012 12:00	09/07/2012 17:17	EPA 353.2
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg dry	1	L209033	09/06/2012 12:55	09/07/2012 12:45	SW846 7196A
pH	**9.10** J	0.10	0.10	pH Units	1	L209039	09/06/2012 20:02	09/06/2012 20:02	SW846 9045D

Lionville Laboratory, PADEP Lab ID# 15-00009
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-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 15:46

Wet Chemistry

R 10/14/12

Lionville Laboratory

Analyte	Result and Qualifier	LOD	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method
J1R0V0 (1209003-09) Soil									
%Solids	99.7		0.1	% by Weight	1	L209023	09/05/2012 15:40	09/05/2012 15:40	SM2540G
Bromide	0.9 U	0.9	4.7	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Chloride	1.0 B	0.9	4.7	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Fluoride	0.9 U	0.9	4.7	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate	8.7 J	0.9	4.7	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrite	0.9 U R	0.9	4.7	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Orthophosphate	2.8 B J	1.9	9.3	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Sulfate	9.1	0.9	4.7	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate/Nitrite as N	1.68	0.09	0.47	mg/kg dry	1	L209047	09/06/2012 12:00	09/07/2012 17:18	EPA 353.2
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg dry	1	L209033	09/06/2012 12:55	09/07/2012 12:45	SW846 7196A
pH	9.09 J	0.10	0.10	pH Units	1	L209039	09/06/2012 20:02	09/06/2012 20:02	SW846 9045D
J1R0V1 (1209003-10) Soil									
%Solids	99.7		0.1	% by Weight	1	L209023	09/05/2012 15:40	09/05/2012 15:40	SM2540G
Bromide	1.0 U	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Chloride	1.1 B	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Fluoride	1.0 U	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate	3.9 B J	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrite	1.0 U R	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Orthophosphate	3.9 B J	2.0	9.8	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Sulfate	7.1	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate/Nitrite as N	0.88	0.10	0.49	mg/kg dry	1	L209047	09/06/2012 12:00	09/07/2012 17:19	EPA 353.2
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg dry	1	L209033	09/06/2012 12:55	09/07/2012 12:45	SW846 7196A
pH	8.94 J	0.10	0.10	pH Units	1	L209039	09/06/2012 20:02	09/06/2012 20:02	SW846 9045D

Lionville Laboratory, PADEP Lab ID# 15-00009
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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 15:46

Wet Chemistry

√ 10/14/12

Lionville Laboratory

Analyte	Result and Qualifier	LOD	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method
J1R0V2 (1209003-11) Soil									
%Solids	99.9		0.1	% by Weight	1	L209023	09/05/2012 15:40	09/05/2012 15:40	SM2540G
Bromide	1.0 U	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Chloride	1.7 B	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Fluoride	1.0 U	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate	5.7 J	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrite	1.0 U R	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Orthophosphate	2.7 B J	2.0	9.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Sulfate	12.1	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate/Nitrite as N	1.30	0.10	0.49	mg/kg dry	1	L209047	09/06/2012 12:00	09/07/2012 17:20	EPA 353.2
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg dry	1	L209033	09/06/2012 12:55	09/07/2012 12:45	SW846 7196A
pH	9.01 J	0.10	0.10	pH Units	1	L209039	09/06/2012 20:02	09/06/2012 20:02	SW846 9045D
J1R0V3 (1209003-12) Soil									
%Solids	99.5		0.1	% by Weight	1	L209023	09/05/2012 15:40	09/05/2012 15:40	SM2540G
Bromide	1.0 U	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Chloride	2.2 B	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Fluoride	1.0 U	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate	14.1 J	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrite	1.0 U R	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Orthophosphate	2.0 U R	2.0	9.8	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Sulfate	16.8	1.0	4.9	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate/Nitrite as N	3.14	0.10	0.49	mg/kg dry	1	L209047	09/06/2012 12:00	09/07/2012 17:22	EPA 353.2
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg dry	1	L209033	09/06/2012 12:55	09/07/2012 12:45	SW846 7196A
pH	9.12 J	0.10	0.10	pH Units	1	L209039	09/06/2012 20:02	09/06/2012 20:02	SW846 9045D

Lionville Laboratory, PADEP Lab ID# 15-00009
264 Welsh Pool Road
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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 15:46

Wet Chemistry

V 10/14/12

Lionville Laboratory

Analyte	Result and Qualifier	LOD	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method
J1R0V5 (1209003-13) Soil									
%Solids	99.2		0.1	% by Weight	1	L209023	09/05/2012 15:40	09/05/2012 15:40	SM2540G
Bromide	1.0 U	1.0	5.1	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Chloride	1.1 B	1.0	5.1	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Fluoride	1.0 U	1.0	5.1	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate	8.2 J	1.0	5.1	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrite	1.0 U R	1.0	5.1	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Orthophosphate	3.2 B J	2.0	10.1	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Sulfate	9.4	1.0	5.1	mg/kg dry	1	L209049	09/06/2012 12:00	09/06/2012 13:17	EPA 300.0 (1993)
Nitrate/Nitrite as N	1.90	0.10	0.51	mg/kg dry	1	L209047	09/06/2012 12:00	09/07/2012 17:23	EPA 353.2
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg dry	1	L209033	09/06/2012 12:55	09/07/2012 12:45	SW846 7196A
pH	9.07 J	0.10	0.10	pH Units	1	L209039	09/06/2012 20:02	09/06/2012 20:02	SW846 9045D

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

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-075 KP0128
LVL#: 1209003 **Date Received:** 09-05-12

INORGANIC NARRATIVE

1. This narrative covers the analyses of 13 soil samples.

2. The samples were prepared and analyzed in accordance with the methods indicated on the data summary report. Results for soil or solid pH are measured in water at 25°C unless otherwise specified.

   The ending Continuing Calibration Verification (CCV) for Nitrate Nitrite samples J1R0T7, JIR0T8, J1R0T9, J1R0V0, J1R0V1, J1R0V2, J1R0V3 and J1R0V5 was at 89.2% recovery that was below the 90-110% acceptance, however the results were within 0-16% Relative Percent Difference (RPD) with respect to the results obtained for Nitrate by ion chromatoghraphy for the same samples and therefore was no apparent impact to these data.

   Lionville Lab (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 with the exceptions of Nitrate, Nitrite and Orthophosphate that were received past hold.

4. The results presented in this report are derived from samples that met LvL's sample acceptance policy with the exceptions 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 and method criteria.

7. The matrix spike recoveries were within the 75-125% control limit.

8. The replicate analyses were within the 20% RPD control limit.

9. Results for soil samples are reported on a dry weight basis.

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

for Iain Daniels
Laboratory Manager
Lionville Laboratory

9/25/12
Date

njp\i09-003

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.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-319	Page 1 of 3

Collector: Lucas	Company Contact: J Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L 8B 8-27-12	Data Turnaround: 21 Days 8-27-12		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation		SAF No.: RC-075
Ice Chest No.: WCH-11-014	Field Logbook No.: EL-1607-14	COA: R00D502000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A110523		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

~~Potential Rad <DOT~~ TRE 8/4/12
N/A

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - HD Low Level Sml	Nickel-63; Strontium-89/90 -- Total Sr	Isotopic Uranium

Sample No.	Matrix *	Sample Date	Sample Time										
J1R0T2	SOIL	8-30-12	0955	X	X	X	X	X	X		X		
J1R0T3	SOIL		1000	X	X	X	X	X	X				
J1R0T4	SOIL		1010	X	X	X	X	X	X				
J1R0T5	SOIL		1015	X	X	X	X	X	X				
J1R0T6	SOIL		1025	X	X	X	X	X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Kilwas Kinson Quece	8-30-12 BHO	WCH MZD mstakouch	8/30/12 1340
WCH mstakouch	Date/Time 1500 8/30/12	1060#1 A. Freer A. Freer	Date/Time 1500 8-30-12
1060#1 See Special Inst.	Date/Time 1300 9/4/12	JR Edmondson JR Edmondson	Date/Time 9/4/12 1300
WCH JR Edmondson	Date/Time 9/4/12 1500	Fed Ex	Date/Time
Fed Ex	Date/Time 9-5-12 0800	VICTOR HERNANDEZ	Date/Time 9-5-12 1000
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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); Mercury - 7471 - (CV) (Mercury)
(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

KP0128

REVIEWED BY lwosha DATE 9/4/12

Matrix *
S=Soil
SD=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

19

500000005

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-319	Page 2 of 3

Collector: Lucas	Company Contact: J Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L 8B 8-27-12 — Data Turnaround: 21 Days 7 8-27-12
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation	SAF No.: RC-075	
Ice Chest No.: WCH-11-014	Field Logbook No.: EL-1607-14 — COA: R00D502000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A110 523	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

~~Potential Rad <DOT~~ N/A TMG 9/4/12

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - H3 Low Level Soil	Nickel-63; Strontium-89,90 -- Total Sr	Isotopic Uranium

Sample No.	Matrix *	Sample Date	Sample Time										
J1R0T7	SOIL	8-30-12	1035	X	X	X	X	X	X		X		
J1R0T8	SOIL		1040	X	X	X	X	X	X				
J1R0T9	SOIL		1050	X	X	X	X	X	X				
J1R0V0	SOIL		1100	X	X	X	X	X	X				
J1R0V1	SOIL		1105	X	X	X	X	X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
J Lucas	8-30-12 1340	WCH MSTanlouch	8/30/12 1340
MSTanlouch	8/30/12 1500	1060#1 A. Freier	8-30-12 1500
1060#1 See Inst.	9/4/12 1300	LR Edmondson	9/4/12 1300
WCH LR Edmondson	9/4/12 1500	Fed Ex	
Fed Ex	9-5-12 1000	Victor Hernandez	9-5-12 1000

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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); Mercury - 7471 - (CV) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

REVIEWED BY Mushea DATE 9/4/12

KP0128

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

20

000000006

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-319	Page 3 of 3

Collector: Lucas	Company Contact: J Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: ~~8L~~ 8B 8-27-12 — Data Turnaround: ~~21~~ 7 Days 8-27-12
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Pull Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation	SAF No.: RC-075	
Ice Chest No.: WCH-11-04	Field Logbook No.: EL-1607-14 — COA: R00D502000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: M110523	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

~~Potential Rad~~ <DOT N/A PER 9/4/12

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - H3 Low Level Soil	(Ni)-63; Strontium-89/90 -- Total Sr	Isotopic Uranium

Sample No.	Matrix *	Sample Date	Sample Time										
J1R0V2	SOIL	8-30-12	~~1035~~ 1110	X	X	X	X	X	X				
J1R0V3	SOIL		~~1040~~ 1120	X	X	X	X	X	X				
~~J1R0V4~~ NO 8/30/12	~~SOIL~~		~~1050~~	X	X	X	X	X	X				
J1R0V5	SOIL		1100	X	X	X	X	X	X				

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: Kilmas Hanson Sheet	Received By/Stored In: well / MSTankoovich	8-30-12 1340 / 8/30/12
Relinquished By/Removed From: WCH / MSTankoovich	Received By/Stored In: 1000#1 / A. Freier	8/30/12 1500 / 8-30-12 1500
Relinquished By/Removed From: 1060#1 See Inst.	Received By/Stored In: JR Sheridan	9/4/12 1300 / 9/4/12 1300
Relinquished By/Removed From: WCH / JR Sheridan	Received By/Stored In: Fed Ex	9/4/12 1500
Relinquished By/Removed From: [illegible]	Received By/Stored In: VICTOR HERNANDEZ	9-5-12 1000 / 9-5-12 1000
Relinquished By/Removed From	Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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}; Mercury - 7471 - (CV) {Mercury}

(2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

REVIEWED BY Mushee DATE 9/4/12

KP0128

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

21

D
RS-1

2000000000

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 100-D-501			DATA PACKAGE: KP0128		
VALIDATOR: ELR		LAB: LLI		DATE: 10/11/12	
			SDG: KP0128		
ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		
SAMPLES/MATRIX					
J1ROT2	J1ROT3	J1ROT4	J1ROT5	J1ROT6	
J1ROT7	J1ROT8	J1ROT9	J1ROU6	J1ROU1	
J1ROU2	J1ROU3	J1ROU5			
					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 performed on all instruments? ..... Yes No N/A

Initial calibrations acceptable? ..... Yes No N/A

ICV and CCV checks performed on all instruments? ..... Yes No N/A

ICV and CCV checks acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

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

ICB and CCB checks performed for all applicable analyses? (Levels D, E) ..... Yes No N/A

ICB and CCB 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 blanks analyzed? (Levels C, D, E) ..... Yes No N/A

Field 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)

Spike samples analyzed? ..... Yes No N/A

Spike recoveries acceptable? ..... Yes No N/A

Sike standards NIST traceable? (Levels D, E) ..... Yes No N/A

Spike 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 PAS

GENERAL CHEMISTRY ANALYSIS 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:

6. HOLDING TIMES (all levels)

Samples properly preserved? ..... Yes No N/A

Sample holding times acceptable? ..... Yes No N/A

Comments: nitrite, nitrate, ortho, pH - >2x J/UR

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

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:

Appendix 6

Additional Documentation Requested by Client

Lionville Laboratory, PADEP Lab ID# 15-00009
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-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 15:46

Wet Chemistry - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209023 - % Solids										
Duplicate (L209023-DUP2)		Source: 1209003-01		Prepared: 09/05/2012 15:40 Analyzed: 09/05/2012 15:40						
%Solids	99.4		0.1	% by Weight		98.9			0.6	20
Batch L209033 - Default Prep GenChem										
Blank (L209033-BLK1)				Prepared: 09/06/2012 12:55 Analyzed: 09/07/2012 12:45						
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg wet						
LCS (L209033-BS1)				Prepared: 09/06/2012 12:55 Analyzed: 09/07/2012 12:45						
Hexavalent Chromium	4.52	0.20	0.50	mg/kg wet	4.0000		113	80-120		
LCS (L209033-BS2)				Prepared: 09/06/2012 12:55 Analyzed: 09/07/2012 12:45						
Hexavalent Chromium	955 D	20.0	50.0	mg/kg wet	1127.0		85	80-120		
Duplicate (L209033-DUP1)		Source: 1209003-01		Prepared: 09/06/2012 12:55 Analyzed: 09/07/2012 12:45						
Hexavalent Chromium	0.20 U	0.20	0.51	mg/kg dry		0.20 U				20
Matrix Spike (L209033-MS1)		Source: 1209003-01		Prepared: 09/06/2012 12:55 Analyzed: 09/07/2012 12:45						
Hexavalent Chromium	4.47	0.20	0.51	mg/kg dry	4.0450	0.20 U	110	75-125		
Matrix Spike (L209033-MS2)		Source: 1209003-01		Prepared: 09/06/2012 12:55 Analyzed: 09/07/2012 12:45						
Hexavalent Chromium	865 D	20.2	50.6	mg/kg dry	1022.5	0.20 U	85	75-125		
Batch L209039 - Default Prep GenChem										
Duplicate (L209039-DUP2)		Source: 1209003-01		Prepared: 09/06/2012 20:02 Analyzed: 09/06/2012 20:02						
pH	9.26	0.10	0.10	pH Units		9.28			0.216	20

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Lionville Laboratory, PADEP Lab ID# 15-00009
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-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/11/2012 15:46

Wet Chemistry - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209039 - Default Prep GenChem										
Reference (L209039-SRM1)				Prepared: 09/06/2012 20:02 Analyzed: 09/06/2012 20:02						
pH	10.0	0.10	0.10	pH Units	10.000		100	99-101		
Batch L209047 - Default Prep GenChem										
Blank (L209047-BLK1)				Prepared: 09/06/2012 12:00 Analyzed: 09/07/2012 16:52						
Nitrate/Nitrite as N	0.10 U	0.10	0.50	mg/kg wet						
LCS (L209047-BS1)				Prepared: 09/06/2012 12:00 Analyzed: 09/07/2012 16:51						
Nitrate/Nitrite as N	5.05	0.10	0.50	mg/kg wet	5.0000		101	90-110		
Duplicate (L209047-DUP1)		Source: 1209003-01		Prepared: 09/06/2012 12:00 Analyzed: 09/07/2012 17:04						
Nitrate/Nitrite as N	2.07	0.10	0.49	mg/kg dry		1.79			14.5	20
Matrix Spike (L209047-MS1)		Source: 1209003-01		Prepared: 09/06/2012 12:00 Analyzed: 09/07/2012 17:05						
Nitrate/Nitrite as N	6.51	0.10	0.50	mg/kg dry	5.0062	1.79	94.3	75-125		
Batch L209049 - Default Prep GenChem										
Blank (L209049-BLK1)				Prepared: 09/06/2012 12:00 Analyzed: 09/06/2012 13:17						
Fluoride	1.0 U	1.0	5.0	mg/kg wet						
Chloride	1.0 U	1.0	5.0	mg/kg wet						
Bromide	1.0 U	1.0	5.0	mg/kg wet						
Orthophosphate	2.0 U	2.0	10.0	mg/kg wet						
Sulfate	1.0 U	1.0	5.0	mg/kg wet						
Nitrate	1.0 U	1.0	5.0	mg/kg wet						
Nitrite	1.0 U	1.0	5.0	mg/kg wet						

Lionville Laboratory, PADEP Lab ID# 15-00009
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Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 15:46

Wet Chemistry - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209049 - Default Prep GenChem										
LCS (L209049-BS1)					Prepared: 09/06/2012 12:00 Analyzed: 09/06/2012 13:17					
Fluoride	52.1	1.0	5.0	mg/kg wet	50.000		104	80-120		
Chloride	56.9	1.0	5.0	mg/kg wet	50.000		114	80-120		
Bromide	48.3	1.0	5.0	mg/kg wet	50.000		96.6	80-120		
Orthophosphate	50.5	2.0	10.0	mg/kg wet	50.000		101	80-120		
Sulfate	51.6	1.0	5.0	mg/kg wet	50.000		103	80-120		
Nitrate	49.9	1.0	5.0	mg/kg wet	50.000		99.8	80-120		
Nitrite	49.1	1.0	5.0	mg/kg wet	50.000		98.2	80-120		
Duplicate (L209049-DUP1)		Source: 1209003-01			Prepared: 09/06/2012 12:00 Analyzed: 09/06/2012 13:17					
Fluoride	1.0 U	1.0	4.9	mg/kg dry		1.0 U				20
Chloride	1.2 B	1.0	4.9	mg/kg dry		1.2			0.848	20
Bromide	1.0 U	1.0	4.9	mg/kg dry		1.0 U				20
Orthophosphate	4.5 B	2.0	9.8	mg/kg dry		3.8			18.2	20
Sulfate	11.3	1.0	4.9	mg/kg dry		10.2			10.2	20
Nitrate	9.5	1.0	4.9	mg/kg dry		7.9			17.3	20
Nitrite	1.0 U	1.0	4.9	mg/kg dry		1.0 U				20
Matrix Spike (L209049-MS1)		Source: 1209003-01			Prepared: 09/06/2012 12:00 Analyzed: 09/06/2012 13:17					
Fluoride	50.1	1.0	5.0	mg/kg dry	50.062	1.0 U	100	75-125		
Chloride	48.2	1.0	5.0	mg/kg dry	50.062	1.2	93.8	75-125		
Bromide	47.9	1.0	5.0	mg/kg dry	50.062	1.0 U	95.6	75-125		
Orthophosphate	54.2	2.0	10.0	mg/kg dry	50.062	3.8	101	75-125		
Sulfate	59.9	1.0	5.0	mg/kg dry	50.062	10.2	99.2	75-125		
Nitrate	56.9	1.0	5.0	mg/kg dry	50.062	7.9	97.7	75-125		
Nitrite	49.7	1.0	5.0	mg/kg dry	50.062	1.0 U	99.2	75-125		

Date: 15 October 2012
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-D/DR Burial Ground and Remaining Sites – Soil Full Protocol - Waste Subsite 100-D-50:1
Subject: Inorganics - Data Package No. KP0128-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. KP0128 prepared by Eberline Services (EB). 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	Analyte
J1R0T2	8/30/12	Soil	C	See note 1
J1R0T3	8/30/12	Soil	C	See note 1
J1R0T4	8/30/12	Soil	C	See note 1
J1R0T5	8/30/12	Soil	C	See note 1
J1R0T6	8/30/12	Soil	C	See note 1
J1R0T7	8/30/12	Soil	C	See note 1
J1R0T8	8/30/12	Soil	C	See note 1
J1R0T9	8/30/12	Soil	C	See note 1
J1R0V0	8/30/12	Soil	C	See note 1
J1R0V1	8/30/12	Soil	C	See note 1
J1R0V2	8/30/12	Soil	C	See note 1
J1R0V3	8/30/12	Soil	C	See note 1
J1R0V5	8/30/12	Soil	C	See note 1

1 - ICP metals (6010B) mercury by 7471A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, February 2005). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 6 months for ICP metals and 28 days for mercury.

All holding times were acceptable.

Preparation (Method) Blanks

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "UJ". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

All preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

Accuracy

Matrix Spike and 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 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to a matrix spike recovery outside QC limits, all antimony (34.7%) and calcium (143%) results were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits, all aluminum (142%) results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J1R0V0/J1R0V5) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory results. The RPD for silicon (51%) was outside QC limits. Under the WCH statement of work, no qualification is required. All other field duplicate results are acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the 100 Area RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data package No. KP0128 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

The following minor deficiencies were noted:

- Due to a matrix spike recovery outside QC limits, all antimony (34.7%) and calcium (143%) results were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits, all aluminum (142%) results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH 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.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-96-22, Rev. 4, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, February 2005.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW 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 concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

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

INORGANIC DATA QUALIFICATION SUMMARY*

SDG: KP0128	**REVIEWER: ELR**	**Project: 100-D-50:1**	**PAGE_1_OF_1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Antimony Calcium	J	All	MS recovery
Aluminum	J	All	LCS recovery

* - 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

Annotated Laboratory Reports

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

LIONVILLE LABORATORY
A division of Phenova Analytical Corporation

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 13:23

J1R0T2
1209003-01 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	7760	J	12.6	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Antimony	1.52	U J	1.52	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Arsenic	2.50	B	2.53	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Barium	74.9		1.26	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Beryllium	0.308	B	0.506	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Boron	1.44	B	5.06	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cadmium	0.506	U	0.506	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Calcium	6400	J	253	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Chromium	9.09		0.506	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cobalt	7.97		5.06	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Copper	14.4		2.53	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Iron	26300		50.6	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Lead	3.96		1.26	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Magnesium	4950		190	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Manganese	375		12.6	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Molybdenum	5.06	U	5.06	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Nickel	10.2		10.1	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Potassium	1390		1010	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Selenium	0.758	U	0.758	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silicon	514		5.06	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silver	0.506	U	0.506	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Sodium	340		126	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Vanadium	68.5		6.32	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Zinc	46.1		25.3	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Mercury	0.0268	U	0.0268	mg/kg dry	1	L209026	09/06/2012	09/07/2012	7471A

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LIONVILLE LABORATORY
A Division of Eberline Analytical Corporation

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-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 13:23

J1R0T3
1209003-02 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	**7450**	J	13.0	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Antimony	1.56	U J	1.56	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Arsenic	**2.70**		2.60	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Barium	**70.7**		1.30	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Beryllium	**0.289**	B	0.520	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Boron	**1.38**	B	5.20	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cadmium	0.520	U	0.520	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Calcium	**6590**	J	260	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Chromium	**9.42**		0.520	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cobalt	**8.45**		5.20	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Copper	**14.8**		2.60	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Iron	**25400**		52.0	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Lead	**3.91**		1.30	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Magnesium	**4970**		195	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Manganese	**366**		13.0	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Molybdenum	**0.561**	B	5.20	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Nickel	**9.85**	B	10.4	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Potassium	**1310**		1040	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Selenium	0.780	U	0.780	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silicon	**552**		5.20	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silver	0.520	U	0.520	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Sodium	**338**		130	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Vanadium	**66.1**		6.50	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Zinc	**45.8**		26.0	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Mercury	0.0238	U	0.0238	mg/kg dry	1	L209026	09/06/2012	09/07/2012	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 13:23

J1R0T4
1209003-03 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	**6260**	J	13.0	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Antimony	1.56	U J	1.56	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Arsenic	**2.38**	B	2.60	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Barium	**60.0**		1.30	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Beryllium	**0.254**	B	0.519	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Boron	5.19	U	5.19	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cadmium	0.519	U	0.519	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Calcium	**6940**	J	260	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Chromium	**8.61**		0.519	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cobalt	**8.51**		5.19	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Copper	**14.6**		2.60	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Iron	**25200**		51.9	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Lead	**3.30**		1.30	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Magnesium	**4740**		195	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Manganese	**329**		13.0	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Molybdenum	5.19	U	5.19	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Nickel	**9.04**	B	10.4	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Potassium	**983**	B	1040	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Selenium	0.779	U	0.779	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silicon	**405**		5.19	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silver	0.519	U	0.519	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Sodium	**288**		130	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Vanadium	**70.1**		6.49	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Zinc	**43.8**		26.0	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Mercury	0.0266	U	0.0266	mg/kg dry	1	L209026	09/06/2012	09/07/2012	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 13:23

J1R0T5
1209003-04 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	**8080**	J	13.0	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Antimony	1.56	UJ	1.56	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Arsenic	**2.56**	B	2.59	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Barium	**82.6**		1.30	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Beryllium	**0.323**	B	0.519	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Boron	**1.45**	B	5.19	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cadmium	0.519	U	0.519	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Calcium	**5370**	J	259	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Chromium	**8.98**		0.519	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cobalt	**8.67**		5.19	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Copper	**15.3**		2.59	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Iron	**26300**		51.9	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Lead	**4.74**		1.30	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Magnesium	**4640**		195	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Manganese	**355**		13.0	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Molybdenum	5.19	U	5.19	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Nickel	**9.91**	B	10.4	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Potassium	**1470**		1040	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Selenium	0.778	U	0.778	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silicon	**682**		5.19	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silver	0.519	U	0.519	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Sodium	**331**		130	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Vanadium	**66.1**		6.48	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Zinc	**45.3**		25.9	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Mercury	0.0258	U	0.0258	mg/kg dry	1	L209026	09/06/2012	09/07/2012	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 13:23

J1R0T6
1209003-05 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	**7700**	J	13.4	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Antimony	1.61	U J	1.61	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Arsenic	**3.04**		2.68	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Barium	**78.6**		1.34	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Beryllium	**0.335**	B	0.536	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Boron	**1.49**	B	5.36	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cadmium	0.536	U	0.536	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Calcium	**7800**	J	268	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Chromium	**10.3**		0.536	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cobalt	**7.97**		5.36	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Copper	**14.1**		2.68	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Iron	**25100**		53.6	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Lead	**4.64**		1.34	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Magnesium	**5010**		201	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Manganese	**339**		13.4	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Molybdenum	5.36	U	5.36	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Nickel	**10.2**	B	10.7	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Potassium	**1350**		1070	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Selenium	0.805	U	0.805	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silicon	**834**		5.36	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silver	0.536	U	0.536	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Sodium	**300**		134	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Vanadium	**65.4**		6.71	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Zinc	**44.5**		26.8	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Mercury	0.0273	U	0.0273	mg/kg dry	1	L209026	09/06/2012	09/07/2012	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 13:23

J1R0T7
1209003-06 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	**8130**	J	12.8	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Antimony	1.53	U J	1.53	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Arsenic	**2.93**		2.55	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Barium	**81.7**		1.28	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Beryllium	**0.352**	B	0.510	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Boron	**1.61**	B	5.10	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cadmium	0.510	U	0.510	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Calcium	**7220**	J	255	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Chromium	**10.4**		0.510	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cobalt	**7.80**		5.10	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Copper	**14.1**		2.55	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Iron	**24500**		51.0	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Lead	**4.40**		1.28	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Magnesium	**4840**		191	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Manganese	**341**		12.8	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Molybdenum	5.10	U	5.10	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Nickel	**10.3**		10.2	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Potassium	**1480**		1020	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Selenium	0.766	U	0.766	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silicon	**813**		5.10	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silver	0.510	U	0.510	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Sodium	**292**		128	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Vanadium	**62.4**		6.38	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Zinc	**44.3**		25.5	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Mercury	0.0238	U	0.0238	mg/kg dry	1	L209026	09/06/2012	09/07/2012	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 13:23

J1R0T8
1209003-07 (Soil)

V 10/14/12

Lionville Laboratory

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Metals by SW846 6000/7000 series									
Aluminum	7760	J	12.3	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Antimony	1.48	U J	1.48	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Arsenic	2.74		2.46	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Barium	80.6		1.23	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Beryllium	0.332	B	0.493	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Boron	1.44	B	4.93	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cadmium	0.493	U	0.493	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Calcium	6640	J	246	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Chromium	8.96		0.493	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cobalt	8.21		4.93	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Copper	13.8		2.46	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Iron	25700		49.3	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Lead	4.44		1.23	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Magnesium	4920		185	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Manganese	360		12.3	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Molybdenum	4.93	U	4.93	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Nickel	10.1		9.86	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Potassium	1410		986	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Selenium	0.739	U	0.739	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silicon	745		4.93	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silver	0.493	U	0.493	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Sodium	301		123	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Vanadium	64.6		6.16	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Zinc	45.1		24.6	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Mercury	0.0258	U	0.0258	mg/kg dry	1	L209026	09/06/2012	09/07/2012	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 13:23

J1R0T9
1209003-08 (Soil)

10/19/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	**7790**	J	12.8	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Antimony	1.53	UJ	1.53	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Arsenic	**2.64**		2.55	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Barium	**82.4**		1.28	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Beryllium	**0.311**	B	0.510	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Boron	**1.39**	B	5.10	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cadmium	0.510	U	0.510	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Calcium	**8590**	J	255	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Chromium	**10.0**		0.510	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cobalt	**7.98**		5.10	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Copper	**13.5**		2.55	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Iron	**24900**		51.0	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Lead	**4.11**		1.28	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Magnesium	**5120**		191	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Manganese	**347**		12.8	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Molybdenum	5.10	U	5.10	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Nickel	**11.9**		10.2	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Potassium	**1390**		1020	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Selenium	0.766	U	0.766	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silicon	**747**		5.10	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silver	0.510	U	0.510	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Sodium	**308**		128	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Vanadium	**66.7**		6.38	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Zinc	**44.8**		25.5	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Mercury	0.0232	U	0.0232	mg/kg dry	1	L209026	09/06/2012	09/07/2012	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 13:23

J1R0V0
1209003-09 (Soil)

10/16/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	**6320**	J	11.4	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Antimony	1.37	U J	1.37	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Arsenic	**2.48**		2.28	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Barium	**71.6**		1.14	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Beryllium	**0.260**	B	0.456	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Boron	4.56	U	4.56	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cadmium	0.456	U	0.456	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Calcium	**6940**	J	228	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Chromium	**9.51**		0.456	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cobalt	**7.58**		4.56	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Copper	**12.9**		2.28	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Iron	**23400**		45.6	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Lead	**3.47**		1.14	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Magnesium	**4620**		171	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Manganese	**331**		11.4	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Molybdenum	4.56	U	4.56	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Nickel	**10.4**		9.11	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Potassium	**1060**		911	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Selenium	0.684	U	0.684	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silicon	**590**		4.56	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silver	0.456	U	0.456	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Sodium	**291**		114	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Vanadium	**64.4**		5.70	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Zinc	**41.1**		22.8	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Mercury	0.0237	U	0.0237	mg/kg dry	1	L209026	09/06/2012	09/07/2012	7471A

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-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 13:23

J1R0V1
1209003-10 (Soil)

10/ve/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	**8050**	J	12.5	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Antimony	1.50	UJ	1.50	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Arsenic	**2.71**		2.51	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Barium	**80.7**		1.25	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Beryllium	**0.322**	B	0.502	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Boron	**1.55**	B	5.02	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cadmium	0.502	U	0.502	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Calcium	**7180**	J	251	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Chromium	**10.1**		0.502	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cobalt	**8.31**		5.02	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Copper	**14.3**		2.51	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Iron	**26000**		50.2	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Lead	**4.34**		1.25	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Magnesium	**4910**		188	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Manganese	**359**		12.5	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Molybdenum	5.02	U	5.02	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Nickel	**10.5**		10.0	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Potassium	**1450**		1000	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Selenium	0.752	U	0.752	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silicon	**796**		5.02	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silver	0.502	U	0.502	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Sodium	**333**		125	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Vanadium	**69.4**		6.27	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Zinc	**47.2**		25.1	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Mercury	0.0266	U	0.0266	mg/kg dry	1	L209026	09/06/2012	09/07/2012	7471A

000000130

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/10/2012 13:23

J1R0V2
1209003-11 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	**6460**	J	12.1	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Antimony	1.45	U J	1.45	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Arsenic	**2.32**	B	2.42	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Barium	**68.8**		1.21	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Beryllium	**0.281**	B	0.485	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Boron	4.85	U	4.85	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cadmium	0.485	U	0.485	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Calcium	**6580**	J	242	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Chromium	**7.11**		0.485	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cobalt	**8.32**		4.85	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Copper	**14.7**		2.42	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Iron	**26800**		48.5	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Lead	**3.62**		1.21	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Magnesium	**4670**		182	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Manganese	**345**		12.1	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Molybdenum	4.85	U	4.85	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Nickel	**8.83**	B	9.69	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Potassium	**1090**		969	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Selenium	0.727	U	0.727	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silicon	**660**		4.85	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silver	0.485	U	0.485	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Sodium	**330**		121	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Vanadium	**72.3**		6.06	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Zinc	**46.4**		24.2	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Mercury	0.0244	U	0.0244	mg/kg dry	1	L209026	09/06/2012	09/07/2012	7471A

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 13:23

J1R0V3
1209003-12 (Soil) 10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	**6790**	J	13.5	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Antimony	1.62	UJ	1.62	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Arsenic	**3.02**		2.69	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Barium	**62.0**		1.35	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Beryllium	**0.266**	B	0.539	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Boron	5.39	U	5.39	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cadmium	0.539	U	0.539	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Calcium	**8800**	J	269	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Chromium	**9.13**		0.539	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cobalt	**7.13**		5.39	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Copper	**13.6**		2.69	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Iron	**21300**		53.9	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Lead	**3.79**		1.35	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Magnesium	**4490**		202	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Manganese	**312**		13.5	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Molybdenum	5.39	U	5.39	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Nickel	**9.24**	B	10.8	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Potassium	**1210**		1080	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Selenium	0.808	U	0.808	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silicon	**719**		5.39	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silver	0.539	U	0.539	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Sodium	**303**		135	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Vanadium	**56.9**		6.73	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Zinc	**40.2**		26.9	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Mercury	0.0251	U	0.0251	mg/kg dry	1	L209026	09/06/2012	09/07/2012	7471A

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WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/10/2012 13:23

J1R0V5
1209003-13 (Soil)

10/09/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	**5990**	J	13.3	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Antimony	1.59	U J	1.59	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Arsenic	**2.21**	B	2.65	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Barium	**66.1**		1.33	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Beryllium	**0.241**	B	0.531	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Boron	5.31	U	5.31	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cadmium	0.531	U	0.531	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Calcium	**6200**	J	265	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Chromium	**7.52**		0.531	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Cobalt	**7.28**		5.31	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Copper	**12.7**		2.65	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Iron	**22200**		53.1	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Lead	**3.25**		1.33	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Magnesium	**4310**		199	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Manganese	**312**		13.3	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Molybdenum	5.31	U	5.31	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Nickel	**8.81**	B	10.6	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Potassium	**993**	B	1060	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Selenium	0.796	U	0.796	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silicon	**349**		5.31	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Silver	0.531	U	0.531	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Sodium	**271**		133	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Vanadium	**62.6**		6.63	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Zinc	**38.7**		26.5	mg/kg dry	3	L209025	09/06/2012	09/07/2012	6010B
Mercury	0.0239	U	0.0239	mg/kg dry	1	L209026	09/06/2012	09/07/2012	7471A

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

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-075
LVL#: 1209003
SDG/SAF#: KP0128/RC-075

W.O.#: 60049-001-001-0001-00
Date Received: 09-05-12

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) 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 analyses of 13 soil samples.

2. The samples were prepared and analyzed in accordance with methods listed on the data report forms.

   The samples were analyzed and reported with 3-fold dilutions for ICP metals due to sample matrix.

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

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

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

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

7. All preparation/method blanks (MB) were within method criteria {less than the Limit of Quantitation, samples were greater than 20X MB value}.

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

9. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits supplied by the manufacturer.

10. The matrix spike (MS) recoveries for 5 analytes were outside the 75-125% control limits.

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. 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 levels for the following analytes: Aluminum, Calcium, Iron, Antimony, and Manganese.

12. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limit critieria. The ± 20% RPD control limit applies to sample results greater than ten times the MDL.

13. For the purposes of this report, the data have 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.

14. 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.

15. 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

9/11/12
Date

alm/09-003hg%

000000119

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-319	Page 1 of 3

Collector: Lucas	Company Contact: J Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L 8B 8-27-12	Data Turnaround: 21 Days 7 8-27-12		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation		SAF No.: RC-075
Ice Chest No.: WCH-11-014	Field Logbook No.: EL-1607-14	COA: R00D502000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES/ LIONVILLE	Offsite Property No.: A110523		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

~~Potential Rad~~ <DOT TRB 8/4/12
N/A

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - HP Low Level Soil	Nickel-63; Strontium-89/90 -- Total Sr	Isotopic Uranium

Sample No.	Matrix *	Sample Date	Sample Time										
J1R0T2	SOIL	8-30-12	0955	X	X	X	X	X	X		X		
J1R0T3	SOIL		1000	X	X	X	X	X	X				
J1R0T4	SOIL		1010	X	X	X	X	X	X				
J1R0T5	SOIL		1015	X	X	X	X	X	X				
J1R0T6	SOIL		1025	X	X	X	X	X	X				

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Lucas Kenon Lucas	8-30-12 1340	WCH M Stadowich	8/30/12 1340
WCH M Stadowich	8/30/12 1500	1060#1 A. Freier	8-30-12 1500
1060#1 See Special Inst.	9/4/12 1300	JC Edmondson JC Edmondson	9/4/12 1300
WCH JR Bernstein JR Bernstein	9/4/12 1500	Fed Ex	
Fed Ex	9-5-12 1000	Victor Hernandez	9-5-12 1000

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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}; Mercury - 7471 - (CV) {Mercury}

(2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

KP0128

REVIEWED BY Mosha DATE 9/4/12

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

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Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-319	Page 2 of 3

Collector: Lucas	Company Contact: J Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L 8B 8-27-12 — Data Turnaround: ~~21~~ 7 Days 8-27-12
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation	SAF No.: RC-075	
Ice Chest No.: WCH-11-014	Field Logbook No.: EL-1607-14 — COA: R00D502000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A110 523	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

~~Potential Rad +DOT~~ N/A TMG 9/4/12

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - H3 Low Level Soil	Nickel-63; Strontium-89,90 -- Total Sr	Isotopic Uranium
Sample No. / Matrix * / Sample Date / Sample Time										
J1R0T7 / SOIL / 8-30-12 / 1035	X	X	X	X	X	X		X		
J1R0T8 / SOIL / / 1040	X	X	X	X	X	X				
J1R0T9 / SOIL / / 1050	X	X	X	X	X	X				
J1R0V0 / SOIL / / 1100	X	X	X	X	X	X				
J1R0V1 / SOIL / / 1105	X	X	X	X	X	X				

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: Lucas Burial Ground	Received By/Stored In: WCH M Stanlouch	8-30-12 1340
Relinquished By/Removed From: WCH M Stanlouch	Received By/Stored In: 1060#1 A. Freier	8/30/12 1500 / 8-30-12 1500
Relinquished By/Removed From: 1060#1 See Inst.	Received By/Stored In: J R Edmondson	9/4/12 1300 / 9/4/12 1300
Relinquished By/Removed From: WCH J R Edmondson	Received By/Stored In: Fed Ex	9/4/12 1500
Relinquished By/Removed From: Fed Ex	Received By/Stored In: Victor Hernandez	9-5-12 1000 / 9-5-12 1000
Relinquished By/Removed From:	Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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); Mercury - 7471 - (CV) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

KP0128

REVIEWED BY Mwshea DATE 9/4/12

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

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Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-319	Page 3 of 3

Collector: Lucas	Company Contact: J Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L 8B 08-27-12 — Data Turnaround: ~~21~~ 7 Days 08-27-12
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Pull Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation	SAF No.: RC-075	
Ice Chest No.: WCH-11-04	Field Logbook No.: EL-1607-14 — COA: R00D502000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: M110523	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad <DOT N/A PER 9/4/12

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - H3 Low Level Soil	(Nickel-63; Strontium-90 -- Total Sr	Isotopic Uranium

Sample No.	Matrix *	Sample Date	Sample Time										
J1R0V2	SOIL	8-30-12	~~1035~~ 1110	X	X	X	X	X	X				
J1R0V3	SOIL		~~1040~~ 1120	X	X	X	X	X	X				
~~J1R0V4~~ RD 8/30/12	~~SOIL~~		~~1050~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~				
J1R0V5	SOIL		1100	X	X	X	X	X	X				

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Sign/Print Names	Date/Time
Relinquished By/Removed From	Lucas Kessner	8-30-12 1340	Received By/Stored In	well	1340
Relinquished By/Removed From	WCH	1500	Received By/Stored In	1000#1	1500
	mstankovich	8/30/12		A. Freier	8-30-12
Relinquished By/Removed From	1060#1 See Inst.	9/4/12 1300	Received By/Stored In	J R Sheridan	9/4/12 1300
Relinquished By/Removed From	WCH J R Sheridan	9/4/12 1500	Received By/Stored In	Fed Ex	
Relinquished By/Removed From		9-5-12 1000	Received By/Stored In	VICTOR HERNANDEZ	9-5-12 1000
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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}; Mercury - 7471 - (CV) {Mercury}

(2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

REVIEWED BY MJS DATE 9/4/12

KP0128

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

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D PS-1

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Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT:	100-D-501	DATA PACKAGE:	KP0128
VALIDATOR: BLR	LAB: LLF	DATE:	10/11/12
		SDG:	KP0128

ANALYSES PERFORMED

SW-846/ICP	SW-846/GFAA	SW-846/Hg	SW-846 Cyanide		

SAMPLES/MATRIX

J1ROT2	J1ROT3	J1ROT4	J1ROT5	J1ROT6
J1ROT7	J1ROT8	J1ROT9	J1ROV0	J1ROV1
J1ROV2	J1ROV3	J1ROV5		
				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 performed on all instruments? ..... Yes No (N/A)

Initial calibrations acceptable? ..... Yes No (N/A)

ICP interference checks acceptable? ..... Yes No (N/A)

ICV and CCV checks performed on all instruments? ..... Yes No (N/A)

ICV and CCV checks acceptable? ..... Yes No (N/A)

Standards traceable? ..... Yes No (N/A)

Standards expired? ..... Yes No (N/A)

Calculation check acceptable? ..... Yes No (N/A)

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

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

ICB and CCB checks performed for all applicable analyses? (Levels D, E) ..... Yes No N/A
ICB and CCB 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 blanks analyzed? (Levels C, D, E) ..... Yes No N/A
Field 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)

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: MS- antimony, calcium, - J all
LCS- aluminum - J all

no PDS

INORGANIC ANALYSIS 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:

FD - silica (5/5)

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? ..... Yes No N/A

ICP serial dilution %D values acceptable? ..... Yes No N/A

ICP post digestion spike required? ..... Yes No N/A

ICP post digestion spike values acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Transcription/calculation errors? ..... Yes No N/A

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? ..... Yes No N/A

Duplicate injection %RSD values acceptable? ..... Yes No N/A

Analytical spikes performed as required? ..... Yes No N/A

Analytical spike recoveries acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

MSA performed as required? ..... Yes No N/A

MSA results acceptable? ..... Yes No N/A

Transcription/calculation errors? ..... Yes No N/A

Comments: _____

8. HOLDING TIMES (all levels)

Samples properly preserved? ..... Yes No N/A

Sample holding times acceptable? ..... Yes No N/A

Comments: _____

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

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:

Appendix 6

Additional Documentation Requested by Client

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

WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	09/10/2012 13:23

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209025 - SW 3050B										
Blank (L209025-BLK1)				Prepared: 09/06/2012 Analyzed: 09/07/2012						
Aluminum	4.90	U	4.90	mg/kg wet						
Antimony	0.588	U	0.588	mg/kg wet						
Arsenic	0.980	U	0.980	mg/kg wet						
Barium	0.490	U	0.490	mg/kg wet						
Beryllium	0.196	U	0.196	mg/kg wet						
Boron	1.96	U	1.96	mg/kg wet						
Cadmium	0.196	U	0.196	mg/kg wet						
Calcium	98.0	U	98.0	mg/kg wet						
Chromium	0.196	U	0.196	mg/kg wet						
Cobalt	1.96	U	1.96	mg/kg wet						
Copper	0.980	U	0.980	mg/kg wet						
Iron	19.6	U	19.6	mg/kg wet						
Lead	0.490	U	0.490	mg/kg wet						
Magnesium	73.5	U	73.5	mg/kg wet						
Manganese	4.90	U	4.90	mg/kg wet						
Molybdenum	1.96	U	1.96	mg/kg wet						
Nickel	3.92	U	3.92	mg/kg wet						
Potassium	392	U	392	mg/kg wet						
Selenium	0.294	U	0.294	mg/kg wet						
Silicon	1.96	U	1.96	mg/kg wet						
Silver	0.196	U	0.196	mg/kg wet						
Sodium	49.0	U	49.0	mg/kg wet						
Vanadium	2.45	U	2.45	mg/kg wet						
Zinc	9.80	U	9.80	mg/kg wet						
Duplicate (L209025-DUP1)			**Source: 1209003-01**	Prepared: 09/06/2012 Analyzed: 09/07/2012						
Aluminum	7650		12.9	mg/kg dry		7760			1.43	20
Antimony	1.54	U	1.54	mg/kg dry		1.52 U				20
Arsenic	2.92		2.57	mg/kg dry		2.50			15.2	20
Barium	77.7		1.29	mg/kg dry		74.9			3.79	20
Beryllium	0.301	B	0.514	mg/kg dry		0.308			2.59	20
Boron	1.52	B	5.14	mg/kg dry		1.44			5.13	20
Cadmium	0.514	U	0.514	mg/kg dry		0.506 U				20
Calcium	6510		257	mg/kg dry		6400			1.72	20
Chromium	9.40		0.514	mg/kg dry		9.09			3.36	20
Cobalt	8.15		5.14	mg/kg dry		7.97			2.22	20
Copper	14.4		2.57	mg/kg dry		14.4			0.302	20

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

WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/10/2012 13:23

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209025 - SW 3050B										
Duplicate (L209025-DUP1)		**Source: 1209003-01**		Prepared: 09/06/2012 Analyzed: 09/07/2012						
Iron	25200		51.4	mg/kg dry		26300			4.13	20
Lead	3.93		1.29	mg/kg dry		3.96			0.905	20
Magnesium	5080		193	mg/kg dry		4950			2.65	20
Manganese	451		12.9	mg/kg dry		375			18.4	20
Molybdenum	5.14	U	5.14	mg/kg dry		5.06 U				20
Nickel	11.6		10.3	mg/kg dry		10.2			12.6	20
Potassium	1380		1030	mg/kg dry		1390			1.26	20
Selenium	0.771	U	0.771	mg/kg dry		0.758 U				20
Silicon	551		5.14	mg/kg dry		514			7.04	20
Silver	0.514	U	0.514	mg/kg dry		0.506 U				20
Sodium	348		129	mg/kg dry		340			2.42	20
Vanadium	64.5		6.43	mg/kg dry		68.5			5.91	20
Zinc	46.3		25.7	mg/kg dry		46.1			0.357	20
Matrix Spike (L209025-MS1)		**Source: 1209003-01**		Prepared: 09/06/2012 Analyzed: 09/07/2012						
Aluminum	9230		12.4	mg/kg dry	165.78	7760	886*	75-125		
Antimony	14.4		1.49	mg/kg dry	41.445	1.52 U	34.7*	75-125		
Arsenic	152		2.49	mg/kg dry	165.78	2.50	90.1	75-125		
Barium	245		1.24	mg/kg dry	165.78	74.9	103	75-125		
Beryllium	4.17		0.497	mg/kg dry	4.1445	0.308	93.1	75-125		
Boron	71.5		4.97	mg/kg dry	82.890	1.44	84.5	75-125		
Cadmium	3.70		0.497	mg/kg dry	4.1445	0.506 U	89.2	75-125		
Calcium	9360		249	mg/kg dry	2072.2	6400	143*	75-125		
Chromium	25.0		0.497	mg/kg dry	16.578	9.09	95.9	75-125		
Cobalt	45.5		4.97	mg/kg dry	41.445	7.97	90.4	75-125		
Copper	33.7		2.49	mg/kg dry	20.722	14.4	93.1	75-125		
Iron	25700		49.7	mg/kg dry	82.890	26300	-760*	75-125		
Lead	41.0		1.24	mg/kg dry	41.445	3.96	89.4	75-125		
Magnesium	6960		187	mg/kg dry	2072.2	4950	96.9	75-125		
Manganese	392		12.4	mg/kg dry	41.445	375	41.6*	75-125		
Molybdenum	74.5		4.97	mg/kg dry	82.890	5.06 U	89.8	75-125		
Nickel	48.1		9.95	mg/kg dry	41.445	10.2	91.6	75-125		
Potassium	3350		995	mg/kg dry	2072.2	1390	94.3	75-125		
Selenium	144		0.746	mg/kg dry	165.78	0.758 U	86.7	75-125		
Silicon	615		4.97	mg/kg dry	82.890	514	122	75-125		
Silver	3.71		0.497	mg/kg dry	4.1445	0.506 U	89.4	75-125		
Sodium	2320		124	mg/kg dry	2072.2	340	95.6	75-125		

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

WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/10/2012 13:23

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209025 - SW 3050B									
Matrix Spike (L209025-MS1)		**Source: 1209003-01**	Prepared: 09/06/2012 Analyzed: 09/07/2012						
Vanadium	104	6.22	mg/kg dry	41.445	68.5	84.8	75-125		
Zinc	83.9	24.9	mg/kg dry	41.445	46.1	91.1	75-125		
Post Spike (L209025-PS1)		**Source: 1209003-01**	Prepared: 09/06/2012 Analyzed: 09/07/2012						
Aluminum	144000		ug/L	66000	92100	79.0	0-200		
Antimony	260		ug/L	300.00	1.81	86.2	0-200		
Calcium	125000		ug/L	62400	76000	79.0	0-200		
Iron	395000		ug/L	126000	312000	66.2	0-200		
Manganese	6720		ug/L	3000.0	4450	75.5	0-200		
Reference (L209025-SRM1)			Prepared: 09/06/2012 Analyzed: 09/07/2012						
Aluminum	9470	14.4	mg/kg wet	6670.0		142	0-200.89		
Antimony	40.9	1.73	mg/kg wet	53.000		77.1	0-235.8		
Arsenic	113	2.88	mg/kg wet	114.00		98.7	82.8-117.54		
Barium	292	1.44	mg/kg wet	307.00		95.2	79.8-120.2		
Beryllium	106	0.577	mg/kg wet	108.00		98.3	82.8-117.6		
Boron	78.4	5.77	mg/kg wet	85.100		92.1	67.5-132.8		
Cadmium	220	0.577	mg/kg wet	225.00		97.9	83.6-116.4		
Calcium	3380	288	mg/kg wet	3360.0		101	83.3-116.9		
Chromium	80.4	0.577	mg/kg wet	77.200		104	73.3-126.4		
Cobalt	161	5.77	mg/kg wet	166.00		97.2	80.7-118.7		
Copper	260	2.88	mg/kg wet	271.00		96.0	80.8-119.2		
Iron	8580	57.7	mg/kg wet	8420.0		102	78.6-121.1		
Lead	179	1.44	mg/kg wet	190.00		94.3	81.6-118.4		
Magnesium	8460	216	mg/kg wet	8570.0		98.8	83.2-116.7		
Manganese	1060	14.4	mg/kg wet	965.00		110	69.3-130.5		
Molybdenum	230	5.77	mg/kg wet	235.00		97.8	76.2-123.8		
Nickel	219	11.5	mg/kg wet	221.00		99.3	79.6-120.8		
Potassium	14500	1150	mg/kg wet	14400		100	81.9-118.1		
Selenium	183	0.865	mg/kg wet	187.00		98.0	75.9-124.6		
Silicon	731	5.77	mg/kg wet	807.00		90.5	0-219.3		
Silver	81.5	0.577	mg/kg wet	83.500		97.6	82.7-117.1		
Sodium	9140	144	mg/kg wet	9730.0		94.0	82.5-117.2		
Vanadium	105	7.21	mg/kg wet	98.700		106	75.9-123.6		
Zinc	195	28.8	mg/kg wet	199.00		98.2	78.4-121.6		

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-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/10/2012 13:23

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209026 - SW 7471A Prep										
Blank (L209026-BLK1)				Prepared: 09/06/2012 Analyzed: 09/07/2012						
Mercury	0.0290	U	0.0290	mg/kg wet						
Duplicate (L209026-DUP1)		**Source: 1209003-01**		Prepared: 09/06/2012 Analyzed: 09/07/2012						
Mercury	0.0246	U	0.0246	mg/kg dry		0.0268 U				20
Matrix Spike (L209026-MS1)		**Source: 1209003-01**		Prepared: 09/06/2012 Analyzed: 09/07/2012						
Mercury	0.163		0.0253	mg/kg dry	0.14045	0.0268 U	116	75-125		20
Reference (L209026-SRM1)				Prepared: 09/06/2012 Analyzed: 09/07/2012						
Mercury	1.34		0.0290	mg/kg wet	1.2900		104	62.6-138		

000000137

Date: 15 October 2012
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-D/DR Burial Ground and Remaining Sites – Soil Full Protocol - Waste Subsite 100-D-50:1
Subject: Pesticides/PCB - Data Package No. KP0128-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. KP0128 prepared by Eberline Services (EB). 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	Analyte
J1R0T2	8/30/12	Soil	C	See note 1
J1R0T3	8/30/12	Soil	C	See note 1
J1R0T4	8/30/12	Soil	C	See note 1
J1R0T5	8/30/12	Soil	C	See note 1
J1R0T6	8/30/12	Soil	C	See note 1
J1R0T7	8/30/12	Soil	C	See note 1
J1R0T8	8/30/12	Soil	C	See note 1
J1R0T9	8/30/12	Soil	C	See note 1
J1R0V0	8/30/12	Soil	C	See note 1
J1R0V1	8/30/12	Soil	C	See note 1
J1R0V2	8/30/12	Soil	C	See note 1
J1R0V3	8/30/12	Soil	C	See note 1
J1R0V5	8/30/12	Soil	C	See note 1

1 – Pesticides by 8081A and PCBs by 8082.

Data validation was conducted in accordance with the Washington Closure Hanford Incorporated (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, February 2005). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY OBJECTIVES

Holding Times

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Pesticide samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction. Holding times are not applicable to PCB analytes.

If holding times are exceeded, but not by greater 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 associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

Method Blanks

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

Accuracy

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify

sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. 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.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable.

Precision

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. 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 laboratory results were acceptable.

Field Duplicate Samples

One set of field duplicates (J1R0V0/J1R0V5) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory results. All field duplicate results are acceptable.

Analytical Detection Levels

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

Completeness

Data package No. KP0128 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

The following minor deficiencies were noted:

- 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 WCH 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.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-96-22, Rev. 4, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, February 2005.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same 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 usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

PESTICIDE/PCB DATA QUALIFICATION SUMMARY*

SDG: KP0128	REVIEWER: ELR	Project: 100-D-50:1	PAGE 1 OF 1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Toxaphene	J	All	No MS, MSD or LCS analysis

* - 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

Annotated Laboratory Reports

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-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/11/2012 20:44

J1R0T2
1209003-01 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.4	U	13.4	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1221	13.4	U	13.4	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1232	13.4	U	13.4	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1242	13.4	U	13.4	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1248	13.4	U	13.4	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1254	13.4	U	13.4	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1260	13.4	U	13.4	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1262	13.4	U	13.4	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1268	13.4	U	13.4	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Surrogate: Decachlorobiphenyl	*94 %*		*43-144*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*104 %*		*52-141*			*L209036*	*09/06/2012*	*09/10/2012*	*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-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:44

J1R0T3
1209003-02 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.0	U	13.0	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1221	13.0	U	13.0	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1232	13.0	U	13.0	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1242	13.0	U	13.0	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1248	13.0	U	13.0	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1254	13.0	U	13.0	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1260	13.0	U	13.0	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1262	13.0	U	13.0	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1268	13.0	U	13.0	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Surrogate: Decachlorobiphenyl	*98 %*		*43-144*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*103 %*		*52-141*			*L209036*	*09/06/2012*	*09/10/2012*	*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-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/11/2012 20:44

J1R0T4
1209003-03 (Soil)

10/11/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1221	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1232	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1242	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1248	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1254	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1260	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1262	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1268	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Surrogate: Decachlorobiphenyl	*100 %*		*43-144*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*103 %*		*52-141*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*

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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:44

J1R0T5
1209003-04 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1221	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1232	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1242	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1248	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1254	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1260	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1262	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1268	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Surrogate: Decachlorobiphenyl	*95 %*		*43-144*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*98 %*		*52-141*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*

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WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/11/2012 20:44

J1R0T6
1209003-05 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1221	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1232	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1242	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1248	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1254	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1260	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1262	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1268	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Surrogate: Decachlorobiphenyl	*96 %*		*43-144*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*99 %*		*52-141*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*

LIONVILLE LABORATORY
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:44

J1R0T7
1209003-06 (Soil)

10/11/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1221	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1232	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1242	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1248	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1254	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1260	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1262	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1268	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Surrogate: Decachlorobiphenyl	*106 %*		*43-144*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*107 %*		*52-141*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/11/2012 20:44

J1R0T8
1209003-07 (Soil)

V 10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1221	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1232	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1242	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1248	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1254	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1260	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1262	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1268	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Surrogate: Decachlorobiphenyl	*100 %*		*43-144*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*98 %*		*52-141*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/11/2012 20:44

J1R0T9
1209003-08 (Soil)

10/ulto2

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1221	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1232	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1242	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1248	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1254	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1260	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1262	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1268	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Surrogate: Decachlorobiphenyl	*106 %*		*43-144*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*103 %*		*52-141*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/11/2012 20:44

J1R0V0
1209003-09 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1221	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1232	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1242	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1248	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1254	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1260	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1262	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1268	13.3	U	13.3	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Surrogate: Decachlorobiphenyl	*105 %*		*43-144*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*101 %*		*52-141*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*

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WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/11/2012 20:44

J1R0V1
1209003-10 (Soil)

V 10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1221	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1232	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1242	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1248	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1254	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1260	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1262	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1268	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Surrogate: Decachlorobiphenyl	*103 %*		*43-144*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*102 %*		*52-141*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:44

10/14/12

J1R0V2
1209003-11 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1221	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1232	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1242	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1248	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1254	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1260	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1262	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1268	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Surrogate: Decachlorobiphenyl	*105 %*		*43-144*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*106 %*		*52-141*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*

000000110

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WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	09/11/2012 20:44

J1R0V3
1209003-12 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1221	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1232	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1242	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1248	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1254	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1260	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1262	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1268	13.1	U	13.1	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Surrogate: Decachlorobiphenyl	*91 %*		*43-144*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*91 %*		*52-141*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:44

J1R0V5
1209003-13 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1221	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1232	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1242	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1248	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1254	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1260	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1262	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Aroclor 1268	13.2	U	13.2	ug/kg dry	1	L209036	09/06/2012	09/10/2012	8082
Surrogate: Decachlorobiphenyl	*98 %*		*43-144*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*94 %*		*52-141*			*L209036*	*09/06/2012*	*09/10/2012*	*8082*

000000112

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:29

J1R0T2

1209003-01 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
gamma-BHC	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
beta-BHC	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
delta-BHC	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Heptachlor	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Aldrin	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Heptachlor epoxide	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
gamma-Chlordane	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
alpha-Chlordane	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endosulfan I	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
4,4'-DDE	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Dieldrin	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endrin	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
4,4'-DDD	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endosulfan II	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
4,4'-DDT	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endrin aldehyde	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endosulfan sulfate	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Methoxychlor	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endrin ketone	1.33	U	1.33	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Toxaphene	13.3	U J	13.3	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Surrogate: Tetrachloro-meta-xylene	*92.4 %*		*28-166*			*L209036*	*09/06/2012*	*09/10/2012*	*8081A*
Surrogate: Decachlorobiphenyl	*95.0 %*		*37-153*			*L209036*	*09/06/2012*	*09/10/2012*	*8081A*

10/14/12

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/11/2012 20:29

J1R0T3
1209003-02 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
gamma-BHC	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
beta-BHC	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
delta-BHC	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Heptachlor	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Aldrin	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Heptachlor epoxide	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
gamma-Chlordane	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
alpha-Chlordane	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endosulfan I	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
4,4'-DDE	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Dieldrin	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endrin	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
4,4'-DDD	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endosulfan II	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
4,4'-DDT	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endrin aldehyde	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endosulfan sulfate	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Methoxychlor	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endrin ketone	1.29	U	1.29	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Toxaphene	12.9	U J	12.9	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Surrogate: Tetrachloro-meta-xylene	*87.9 %*		*28-166*			*L209036*	*09/06/2012*	*09/10/2012*	*8081A*
Surrogate: Decachlorobiphenyl	*89.6 %*		*37-153*			*L209036*	*09/06/2012*	*09/10/2012*	*8081A*

10/14/12

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:29

J1R0T4
1209003-03 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
gamma-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
beta-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
delta-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Heptachlor	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Aldrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Heptachlor epoxide	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
gamma-Chlordane	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
alpha-Chlordane	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endosulfan I	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
4,4'-DDE	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Dieldrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
4,4'-DDD	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endosulfan II	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
4,4'-DDT	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endrin aldehyde	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endosulfan sulfate	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Methoxychlor	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endrin ketone	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Toxaphene	13.2	U J	13.2	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Surrogate: Tetrachloro-meta-xylene	*88.8 %*		*28-166*			*L209036*	*09/06/2012*	*09/10/2012*	*8081A*
Surrogate: Decachlorobiphenyl	*88.2 %*		*37-153*			*L209036*	*09/06/2012*	*09/10/2012*	*8081A*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/11/2012 20:29

J1R0T5

1209003-04 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
gamma-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
beta-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
delta-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Heptachlor	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Aldrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Heptachlor epoxide	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
gamma-Chlordane	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
alpha-Chlordane	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endosulfan I	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
4,4'-DDE	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Dieldrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
4,4'-DDD	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endosulfan II	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
4,4'-DDT	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endrin aldehyde	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endosulfan sulfate	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Methoxychlor	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Endrin ketone	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Toxaphene	13.2	U J	13.2	ug/kg dry	4	L209036	09/06/2012	09/10/2012	8081A
Surrogate: Tetrachloro-meta-xylene	*82.8 %*		*28-166*			*L209036*	*09/06/2012*	*09/10/2012*	*8081A*
Surrogate: Decachlorobiphenyl	*81.7 %*		*37-153*			*L209036*	*09/06/2012*	*09/10/2012*	*8081A*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:29

J1R0T6
1209003-05 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-BHC	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
beta-BHC	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
delta-BHC	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Aldrin	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor epoxide	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-Chlordane	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
alpha-Chlordane	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan I	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDE	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Dieldrin	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDD	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan II	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDT	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin aldehyde	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan sulfate	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Methoxychlor	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin ketone	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Toxaphene	13.1	U J	13.1	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Surrogate: Tetrachloro-meta-xylene	*83.8 %*		*28-166*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*
Surrogate: Decachlorobiphenyl	*84.4 %*		*37-153*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*

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LIONVILLE LABORATORY
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:29

J1R0T7
1209003-06 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
beta-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
delta-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Aldrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor epoxide	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-Chlordane	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
alpha-Chlordane	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan I	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDE	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Dieldrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDD	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan II	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDT	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin aldehyde	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan sulfate	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Methoxychlor	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin ketone	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Toxaphene	13.2	U J	13.2	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Surrogate: Tetrachloro-meta-xylene	*91.7 %*		*28-166*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*
Surrogate: Decachlorobiphenyl	*93.7 %*		*37-153*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*

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WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/11/2012 20:29

J1R0T8
1209003-07 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
beta-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
delta-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Aldrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor epoxide	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-Chlordane	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
alpha-Chlordane	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan I	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDE	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Dieldrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDD	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan II	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDT	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin aldehyde	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan sulfate	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Methoxychlor	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin ketone	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Toxaphene	13.2	U J	13.2	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Surrogate: Tetrachloro-meta-xylene	*90.8 %*		*28-166*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*
Surrogate: Decachlorobiphenyl	*97.5 %*		*37-153*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:29

J1R0T9
1209003-08 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-BHC	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
beta-BHC	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
delta-BHC	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Aldrin	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor epoxide	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-Chlordane	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
alpha-Chlordane	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan I	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDE	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Dieldrin	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDD	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan II	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDT	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin aldehyde	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan sulfate	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Methoxychlor	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin ketone	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Toxaphene	13.0	U J	13.0	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Surrogate: Tetrachloro-meta-xylene	*94.0 %*		*28-166*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*
Surrogate: Decachlorobiphenyl	*100 %*		*37-153*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:29

J1R0V0

1209003-09 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
beta-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
delta-BHC	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Aldrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor epoxide	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-Chlordane	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
alpha-Chlordane	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan I	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDE	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Dieldrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDD	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan II	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDT	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin aldehyde	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan sulfate	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Methoxychlor	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin ketone	1.32	U	1.32	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Toxaphene	13.2	U J	13.2	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Surrogate: Tetrachloro-meta-xylene	*91.0 %*		*28-166*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*
Surrogate: Decachlorobiphenyl	*94.6 %*		*37-153*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/11/2012 20:29

J1R0V1
1209003-10 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-BHC	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
beta-BHC	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
delta-BHC	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Aldrin	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor epoxide	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-Chlordane	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
alpha-Chlordane	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan I	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDE	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Dieldrin	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDD	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan II	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDT	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin aldehyde	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan sulfate	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Methoxychlor	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin ketone	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Toxaphene	13.0	U J	13.0	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Surrogate: Tetrachloro-meta-xylene	*86.2 %*		*28-166*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*
Surrogate: Decachlorobiphenyl	*93.3 %*		*37-153*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:29

J1R0V2

1209003-11 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-BHC	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
beta-BHC	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
delta-BHC	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Aldrin	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor epoxide	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-Chlordane	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
alpha-Chlordane	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan I	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDE	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Dieldrin	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDD	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan II	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDT	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin aldehyde	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan sulfate	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Methoxychlor	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin ketone	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Toxaphene	13.1	U J	13.1	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Surrogate: Tetrachloro-meta-xylene	*93.3 %*		*28-166*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*
Surrogate: Decachlorobiphenyl	*95.6 %*		*37-153*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*

10/14/12

000000086

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-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:29

J1R0V3
1209003-12 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-BHC	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
beta-BHC	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
delta-BHC	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Aldrin	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor epoxide	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-Chlordane	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
alpha-Chlordane	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan I	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDE	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Dieldrin	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDD	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan II	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDT	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin aldehyde	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan sulfate	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Methoxychlor	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin ketone	1.30	U	1.30	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Toxaphene	13.0	U J	13.0	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Surrogate: Tetrachloro-meta-xylene	*82.0 %*		*28-166*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*
Surrogate: Decachlorobiphenyl	*87.7 %*		*37-153*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*

10/14/12

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-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:29

J1R0V5
1209003-13 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Organochlorine Pesticides by SW846 8081A									
alpha-BHC	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-BHC	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
beta-BHC	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
delta-BHC	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Aldrin	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Heptachlor epoxide	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
gamma-Chlordane	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
alpha-Chlordane	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan I	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDE	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Dieldrin	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDD	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan II	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
4,4'-DDT	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin aldehyde	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endosulfan sulfate	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Methoxychlor	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Endrin ketone	1.31	U	1.31	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Toxaphene	13.1	U J	13.1	ug/kg dry	4	L209036	09/06/2012	09/11/2012	8081A
Surrogate: Tetrachloro-meta-xylene	*84.8 %*		*28-166*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*
Surrogate: Decachlorobiphenyl	*92.8 %*		*37-153*			*L209036*	*09/06/2012*	*09/11/2012*	*8081A*

10/14/12

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

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-075 KP0128
LVL #: 1209003

W.O. #: 60049-001-001-0001-00
Received: 09-05-2012

PCBs

Thirteen (13) soil samples were collected on 08-30-2012.

The samples and associated QC samples were extracted 09-06-2012 and analyzed 09-10-2012 according to criteria set forth in Lionville Laboratory SOPs. The extraction procedure was based on SW846 Method 3540C and the analysis procedure was based on SW846 Method 8082. All samples 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. Discrepancies from the sample acceptance policy have been recorded on the Sample Receipt Checklist.
2. All required holding times for extraction and analysis have been met.
3. All obtainable surrogate recoveries were within acceptance criteria.
4. The method blank was below the reporting limits for all target compounds.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. The samples are reported on a dry weight 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.

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.

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

Iain Daniels
LvL Laboratory Manager

9/16/12
Date

000000097

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-075 KP0128
LVL #: 1209003

W.O. #: 60049-001-001-0001-00
Date Received: 09-05-2012

CHLORINATED PESTICIDES

Thirteen (13) soil samples were collected on 08-30-2012.

The samples and associated QC samples were extracted 09-06-2012 and analyzed 09-10,11-2012 according to criteria set forth in Lionville Laboratory SOPs. The extraction procedure was based on SW846 Method 3540C, and the analysis procedure was based on SW846 Method 8081A for client specified target compounds. All samples received Copper-Sulfur cleanup based on SW846 method 3660A.

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. Discrepancies from the sample acceptance policy have been recorded on the Sample Receipt Checklist.
2. All required holding times for extraction and analysis have been met.
3. The samples required a 4-fold instrument dilution due to the nature of the matrix. Reporting limits have been adjusted to reflect the necessary dilutions.
4. All obtainable surrogate recoveries were within acceptance criteria.
5. The method blank was below the reporting limit for all target compounds.
6. All blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. The samples are reported on a dry weight basis.
9. All initial calibrations associated with this data set were within acceptance criteria.

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.

10. 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.

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

9/16/12
Date

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-319	Page 1 of 3
Collector: Lucas	Company Contact: J Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L 8B 8-27-12
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation	SAF No.: RC-075	Data Turnaround: ~~21~~ 7 Days 8-27-12
Ice Chest No.: WCH-11-014	Field Logbook No.: EL-1607-14; COA: R00D502000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A110523	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

~~Potential Rad~~ DOT TRB 8/4/12 N/A

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - H3 Low Level Soil	Nickel-63; Strontium-89/90 — Total Sr	Isotopic Uranium
Sample No. / Matrix * / Sample Date / Sample Time										
J1R0T2 / SOIL / 8-30-12 / 0955	X	X	X	X	X	X		X		
J1R0T3 / SOIL / ↓ / 1000	X	X	X	X	X	X				
J1R0T4 / SOIL / ↓ / 1010	X	X	X	X	X	X				
J1R0T5 / SOIL / ↓ / 1015	X	X	X	X	X	X				
J1R0T6 / SOIL / ↓ / 1025	X	X	X	X	X	X				

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Lucas Kenon Lucas	8-30-12 1340	WCH M Stadbouck	8/30/12 1340
WCH M Stadbouck	8/30/12 1500	1060#1 A. Freier	8-30-12 1500
1060#1 See Special Inst.	9/4/12 1300	JR Edmondson	9/4/12 1300
WCH JR Edmondson	9/4/12 1500	Fed Ex	
Fed Ex	9-5-12 1000	Victor Hernandez	9-5-12 1000

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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); Mercury - 7471 - (CV) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

KP0128

REVIEWED BY Inusha DATE 9/4/12

Matrix *: S=Soil; SB=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

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Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-319	Page 2 of 3
Collector: Lucas	Company Contact: J Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L 8B 8-27-12
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation	SAF No.: RC-075	Data Turnaround: ~~21~~ 7 Days 8-27-12
Ice Chest No.: WCH-11-014	Field Logbook No.: EL-1607-14; COA: R00D502000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A110 523	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

~~Potential Rad - DOT~~ N/A TMG 9/5/12

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - H3 Low Level Soil	Nickel-63; Strontium-89/90 – Total Sr	Isotopic Uranium

Sample No.	Matrix *	Sample Date	Sample Time										
J1R0T7	SOIL	8-30-12	1035	X	X	X	X	X	X				
J1R0T8	SOIL		1040	X	X	X	X	X	X				
J1R0T9	SOIL		1050	X	X	X	X	X	X				
J1R0V0	SOIL		1100	X	X	X	X	X	X				
J1R0V1	SOIL		1105	X	X	X	X	X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Lucas	8-30-12 1340	WCH M Stanlewick	8/30/12 1540
M Stanlewick	8/30/12 1500	1060#1 A. Freier	8-30-12 1500
1060#1 See Inst.	9/4/12 1300	J R Edmondson	9/4/12 1300
J R Edmondson	9/4/12 1500	Fed Ex	
Fed Ex	9-5-12 1000	Victor Hernandez	9-5-12 1000
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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); Mercury - 7471 - (CV) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

KP0128

REVIEWED BY Mushea DATE 9/4/12

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

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Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-075-319

Collector: Lucas	Company Contact: J Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: ~~8L~~ 8B 08-27-12	Data Turnaround: ~~21~~ 7 Days 08-27-12		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation		SAF No.: RC-075
Ice Chest No.: WCH-11-014	Field Logbook No.: EL-1607-14	COA: R00D502000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: M110523		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

~~Potential Rad <DOT~~ N/A PER 9/4/12

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - H3 Low Level Soil	(Nickel-63; Strontium-89/90 – Total Sr	Isotopic Uranium

Sample No.	Matrix *	Sample Date	Sample Time										
J1R0V2	SOIL	8-30-12	~~1035~~ 1110	X	X	X	X	X	X				
J1R0V3	SOIL		~~1040~~ 1120	X	X	X	X	X	X				
~~J1R0V4~~ NO 8/30/12	~~SOIL~~		~~1050~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~				
J1R0V5	SOIL		1100	X	X	X	X	X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Lucas	8-30-12 1340	WCH MStankovich	1340 9/30/12
WCH MStankovich	8/30/12 1500	1000#1 A. Freier	1500 8-30-12
1060#1 See Inst.	9/4/12 1300	JR Sheridan	9/4/12 1300
JR Sheridan	9/4/12 1500	Fed Ex	
	9-5-12 1000	VICTOR HERNANDEZ	9-5-12 1000
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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}; Mercury - 7471 - (CV) {Mercury}

(2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

REVIEWED BY Mwshea DATE 9/4/12

KP0128

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

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D
RS-1

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Appendix 5

Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 100-D-50:1		DATA PACKAGE: KP0128	
VALIDATOR: FLR	LAB: LLI		DATE: 10/11/12
		SDG: KP0128	

ANALYSES PERFORMED					
SW-846 8081	SW-846 8081 (TCLP)	SW-846 8082	SW-846 8081 (TCLP)		

SAMPLES/MATRIX			
J1ROT2	J1ROT3	J1ROT4	J1ROT5
J1ROT6	J1ROT7	J1ROT8	J1ROT9
J1ROU0	J1ROU1	J1ROU2	J1ROU3
J1ROU5			
			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 PAS

no tox MS/MSD/LCS - J all

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 dux MS/MSD - Jall

volus

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:

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:

9. SAMPLE CLEANUP (Levels D and E)

Fluoricil ® (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:

Appendix 6

Additional Documentation Requested by Client

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-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:44

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 L209036 - SW 3540C										
Blank (L209036-BLK2)				Prepared: 09/06/2012 Analyzed: 09/10/2012						
Aroclor 1016	13.3	U	13.3	ug/kg wet						
Aroclor 1221	13.3	U	13.3	ug/kg wet						
Aroclor 1232	13.3	U	13.3	ug/kg wet						
Aroclor 1242	13.3	U	13.3	ug/kg wet						
Aroclor 1248	13.3	U	13.3	ug/kg wet						
Aroclor 1254	13.3	U	13.3	ug/kg wet						
Aroclor 1260	13.3	U	13.3	ug/kg wet						
Aroclor 1262	13.3	U	13.3	ug/kg wet						
Aroclor 1268	13.3	U	13.3	ug/kg wet						
Surrogate: Decachlorobiphenyl	*31.4*			*ug/kg wet*	*33.333*		*94*	*43-144*		
Surrogate: Tetrachloro-meta-xylene	*35.0*			*ug/kg wet*	*33.337*		*105*	*52-141*		
LCS (L209036-BS2)				Prepared: 09/06/2012 Analyzed: 09/10/2012						
Aroclor 1016	155		13.3	ug/kg wet	166.67		93	50-138		
Aroclor 1260	168		13.3	ug/kg wet	166.67		101	50-148		
Surrogate: Decachlorobiphenyl	*32.3*			*ug/kg wet*	*33.333*		*97*	*43-144*		
Surrogate: Tetrachloro-meta-xylene	*36.6*			*ug/kg wet*	*33.337*		*110*	*52-141*		
Matrix Spike (L209036-MS2)		**Source: 1209003-01**		Prepared: 09/06/2012 Analyzed: 09/10/2012						
Aroclor 1016	137		13.3	ug/kg dry	167.20	13.4 U	82	50-138		
Aroclor 1260	149		13.3	ug/kg dry	167.20	13.4 U	89	50-148		
Surrogate: Decachlorobiphenyl	*30.3*			*ug/kg dry*	*33.441*		*90*	*43-144*		
Surrogate: Tetrachloro-meta-xylene	*32.2*			*ug/kg dry*	*33.444*		*96*	*52-141*		
Matrix Spike Dup (L209036-MSD2)		**Source: 1209003-01**		Prepared: 09/06/2012 Analyzed: 09/10/2012						
Aroclor 1016	135		13.1	ug/kg dry	164.54	13.4 U	82	50-138	0.1	40
Aroclor 1260	152		13.1	ug/kg dry	164.54	13.4 U	93	50-148	4	40
Surrogate: Decachlorobiphenyl	*31.4*			*ug/kg dry*	*32.908*		*95*	*43-144*		
Surrogate: Tetrachloro-meta-xylene	*32.0*			*ug/kg dry*	*32.911*		*97*	*52-141*		

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LIONVILLE LABORATORY
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Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/11/2012 20:29

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209036 - SW 3540C										
Blank (L209036-BLK1)				Prepared: 09/06/2012 Analyzed: 09/10/2012						
alpha-BHC	0.330	U	0.330	ug/kg wet						
gamma-BHC	0.330	U	0.330	ug/kg wet						
beta-BHC	0.330	U	0.330	ug/kg wet						
delta-BHC	0.330	U	0.330	ug/kg wet						
Heptachlor	0.330	U	0.330	ug/kg wet						
Aldrin	0.330	U	0.330	ug/kg wet						
Heptachlor epoxide	0.330	U	0.330	ug/kg wet						
gamma-Chlordane	0.330	U	0.330	ug/kg wet						
alpha-Chlordane	0.330	U	0.330	ug/kg wet						
Endosulfan I	0.330	U	0.330	ug/kg wet						
4,4'-DDE	0.330	U	0.330	ug/kg wet						
Dieldrin	0.330	U	0.330	ug/kg wet						
Endrin	0.330	U	0.330	ug/kg wet						
4,4'-DDD	0.330	U	0.330	ug/kg wet						
Endosulfan II	0.330	U	0.330	ug/kg wet						
4,4'-DDT	0.330	U	0.330	ug/kg wet						
Endrin aldehyde	0.330	U	0.330	ug/kg wet						
Endosulfan sulfate	0.330	U	0.330	ug/kg wet						
Methoxychlor	0.330	U	0.330	ug/kg wet						
Endrin ketone	0.330	U	0.330	ug/kg wet						
Toxaphene	3.30	U	3.30	ug/kg wet						
Surrogate: Tetrachloro-meta-xylene	*26.7*			*ug/kg wet*	*33.337*		*80.0*	*28-166*		
Surrogate: Decachlorobiphenyl	*25.9*			*ug/kg wet*	*33.333*		*77.7*	*37-153*		
LCS (L209036-BS1)				Prepared: 09/06/2012 Analyzed: 09/10/2012						
alpha-BHC	31.1		0.330	ug/kg wet	33.333		93.4	65-145		
gamma-BHC	30.4		0.330	ug/kg wet	33.333		91.2	70-143		
beta-BHC	28.1		0.330	ug/kg wet	33.333		84.4	75-143		
delta-BHC	29.1		0.330	ug/kg wet	33.333		87.3	65-143		
Heptachlor	27.7		0.330	ug/kg wet	33.333		83.0	70-139		
Aldrin	27.4		0.330	ug/kg wet	33.333		82.2	70-143		
Heptachlor epoxide	28.0		0.330	ug/kg wet	33.333		84.1	71-138		
gamma-Chlordane	28.3		0.330	ug/kg wet	33.333		84.8	71-137		
alpha-Chlordane	28.2		0.330	ug/kg wet	33.333		84.5	72-136		
Endosulfan I	27.7		0.330	ug/kg wet	33.333		83.0	72-139		
4,4'-DDE	31.0		0.330	ug/kg wet	33.333		93.1	70-154		
Dieldrin	28.0		0.330	ug/kg wet	33.333		84.0	73-143		

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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-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/11/2012 20:29

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209036 - SW 3540C										
LCS (L209036-BS1)				Prepared: 09/06/2012 Analyzed: 09/10/2012						
Endrin	28.7		0.330	ug/kg wet	33.333		86.1	74-137		
4,4'-DDD	29.5		0.330	ug/kg wet	33.333		88.6	52-153		
Endosulfan II	27.6		0.330	ug/kg wet	33.333		82.7	72-139		
4,4'-DDT	28.8		0.330	ug/kg wet	33.333		86.5	58-148		
Endrin aldehyde	19.3		0.330	ug/kg wet	33.333		58.0	49-129		
Endosulfan sulfate	26.7		0.330	ug/kg wet	33.333		80.0	66-139		
Methoxychlor	28.0		0.330	ug/kg wet	33.333		84.0	50-144		
Endrin ketone	27.7		0.330	ug/kg wet	33.333		83.2	70-139		
Surrogate: Tetrachloro-meta-xylene	*27.4*			*ug/kg wet*	*33.337*		*82.1*	*28-166*		
Surrogate: Decachlorobiphenyl	*27.8*			*ug/kg wet*	*33.333*		*83.5*	*37-153*		
Matrix Spike (L209036-MS1)		**Source: 1209003-01**		Prepared: 09/06/2012 Analyzed: 09/10/2012						
alpha-BHC	29.5	D	1.33	ug/kg dry	33.563	1.33 U	88.0	65-145		
gamma-BHC	30.3	D	1.33	ug/kg dry	33.563	1.33 U	90.2	70-143		
beta-BHC	30.9	D	1.33	ug/kg dry	33.563	1.33 U	92.0	75-143		
delta-BHC	26.7	D	1.33	ug/kg dry	33.563	1.33 U	79.7	65-143		
Heptachlor	31.0	D	1.33	ug/kg dry	33.563	1.33 U	92.5	70-139		
Aldrin	29.0	D	1.33	ug/kg dry	33.563	1.33 U	86.3	70-143		
Heptachlor epoxide	29.9	D	1.33	ug/kg dry	33.563	1.33 U	89.2	71-138		
gamma-Chlordane	29.3	D	1.33	ug/kg dry	33.563	1.33 U	87.3	71-137		
alpha-Chlordane	29.9	D	1.33	ug/kg dry	33.563	1.33 U	89.1	72-136		
Endosulfan I	30.2	D	1.33	ug/kg dry	33.563	1.33 U	90.0	72-139		
4,4'-DDE	30.3	D	1.33	ug/kg dry	33.563	1.33 U	90.2	70-154		
Dieldrin	29.4	D	1.33	ug/kg dry	33.563	1.33 U	87.6	73-143		
Endrin	32.1	D	1.33	ug/kg dry	33.563	1.33 U	95.7	74-137		
4,4'-DDD	27.2	D	1.33	ug/kg dry	33.563	1.33 U	81.0	52-153		
Endosulfan II	29.5	D	1.33	ug/kg dry	33.563	1.33 U	88.0	72-139		
4,4'-DDT	30.7	D	1.33	ug/kg dry	33.563	1.33 U	91.5	58-148		
Endrin aldehyde	24.7	D	1.33	ug/kg dry	33.563	1.33 U	73.7	49-129		
Endosulfan sulfate	29.4	D	1.33	ug/kg dry	33.563	1.33 U	87.5	66-139		
Methoxychlor	33.1	D	1.33	ug/kg dry	33.563	1.33 U	98.5	50-144		
Endrin ketone	30.4	D	1.33	ug/kg dry	33.563	1.33 U	90.5	70-139		
Surrogate: Tetrachloro-meta-xylene	*31.1*			*ug/kg dry*	*33.566*		*92.8*	*28-166*		
Surrogate: Decachlorobiphenyl	*29.5*			*ug/kg dry*	*33.563*		*87.8*	*37-153*		

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LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/11/2012 20:29

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209036 - SW 3540C										
Matrix Spike Dup (L209036-MSD1)		**Source: 1209003-01**		Prepared: 09/06/2012 Analyzed: 09/10/2012						
alpha-BHC	31.9	D	1.32	ug/kg dry	33.386	1.33 U	95.6	65-145	8.28	40
gamma-BHC	32.8	D	1.32	ug/kg dry	33.386	1.33 U	98.1	70-143	8.39	40
beta-BHC	33.1	D	1.32	ug/kg dry	33.386	1.33 U	99.0	75-143	7.33	40
delta-BHC	29.5	D	1.32	ug/kg dry	33.386	1.33 U	88.5	65-143	10.5	40
Heptachlor	33.4	D	1.32	ug/kg dry	33.386	1.33 U	100	70-139	7.89	40
Aldrin	30.4	D	1.32	ug/kg dry	33.386	1.33 U	91.0	70-143	5.30	40
Heptachlor epoxide	32.8	D	1.32	ug/kg dry	33.386	1.33 U	98.1	71-138	9.50	40
gamma-Chlordane	32.0	D	1.32	ug/kg dry	33.386	1.33 U	95.8	71-137	9.28	40
alpha-Chlordane	32.8	D	1.32	ug/kg dry	33.386	1.33 U	98.2	72-136	9.72	40
Endosulfan I	32.7	D	1.32	ug/kg dry	33.386	1.33 U	98.0	72-139	8.51	40
4,4'-DDE	33.7	D	1.32	ug/kg dry	33.386	1.33 U	101	70-154	11.1	40
Dieldrin	32.5	D	1.32	ug/kg dry	33.386	1.33 U	97.3	73-143	10.5	40
Endrin	35.1	D	1.32	ug/kg dry	33.386	1.33 U	105	74-137	9.36	40
4,4'-DDD	31.7	D	1.32	ug/kg dry	33.386	1.33 U	95.0	52-153	15.9	40
Endosulfan II	32.8	D	1.32	ug/kg dry	33.386	1.33 U	98.3	72-139	11.1	40
4,4'-DDT	33.0	D	1.32	ug/kg dry	33.386	1.33 U	98.8	58-148	7.67	40
Endrin aldehyde	25.8	D	1.32	ug/kg dry	33.386	1.33 U	77.3	49-129	4.77	40
Endosulfan sulfate	32.5	D	1.32	ug/kg dry	33.386	1.33 U	97.3	66-139	10.6	40
Methoxychlor	36.7	D	1.32	ug/kg dry	33.386	1.33 U	110	50-144	10.8	40
Endrin ketone	33.8	D	1.32	ug/kg dry	33.386	1.33 U	101	70-139	11.3	40
Surrogate: Tetrachloro-meta-xylene	*31.9*			*ug/kg dry*	*33.389*		*95.6*	*28-166*		
Surrogate: Decachlorobiphenyl	*32.7*			*ug/kg dry*	*33.386*		*97.8*	*37-153*		

Date: 15 October 2012
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-D/DR Burial Grounds and Remaining Sites – Soil Full Protocol - Waste Subsite 100-D-50:1
Subject: Radiochemistry - Data Package No. KP0128-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. KP0128 prepared by Eberline Services (EB). 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	Analyte
J1R0T2	8/30/12	Soil	C	See note 1
J1R0T3	8/30/12	Soil	C	See note 1
J1R0T4	8/30/12	Soil	C	See note 1
J1R0T5	8/30/12	Soil	C	See note 1
J1R0T6	8/30/12	Soil	C	See note 1
J1R0T7	8/30/12	Soil	C	See note 1
J1R0T8	8/30/12	Soil	C	See note 1
J1R0T9	8/30/12	Soil	C	See note 1
J1R0V0	8/30/12	Soil	C	See note 1
J1R0V1	8/30/12	Soil	C	See note 1
J1R0V2	8/30/12	Soil	C	See note 1
J1R0V3	8/30/12	Soil	C	See note 1
J1R0V5	8/30/12	Soil	C	See note 1

1 – Tritium, carbon-14, nickel-63, total strontium, alpha spectroscopy and gamma spectroscopy.

Data validation was conducted in accordance with the Washington Closure Hanford Incorporated (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, February 2005). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

· Holding Times

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

· Preparation (Method) Blanks

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All laboratory blank results were acceptable.

Field (Equipment) Blank

No equipment blanks were submitted for analysis.

· Accuracy

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of an LCS analysis, all uranium-235 (aspec) results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike analysis, all tritium and carbon-14 results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

One set of field duplicates (J1R0V0/J1R0V5) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory results. All field duplicate results are acceptable.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the remaining waste sites RQLs to ensure that laboratory detection levels meet the required criteria. Thirteen analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

- **Completeness**

Data package No. KP0128 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

The following minor deficiencies were noted:

- Due to the lack of an LCS analysis, all uranium-235 (aspec) results were qualified as estimates and flagged "J".

- Due to the lack of a matrix spike analysis, all tritium and carbon-14 results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH 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.

Thirteen analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-96-22, Rev. 4, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, February 2005.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

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.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: KP0128	**REVIEWER: ELR**	**Project: 100-D-50:1**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Tritium Carbon-14	J	All	No MS analysis
Uranium-235 (aspec)	J	All	No LCS analysis

* - 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

Annotated Laboratory Reports

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-001 J1R0T2

DATA SHEET

SDG	7765	Client/Case no	Hanford SDG KP0128
Contact	Joseph Verville	Contract	No. S00W235A01
Lab sample id	S209003-01	Client sample id	J1R0T2
Dept sample id	7765-001	Location/Matrix	100-D-50:1 Emer Dis.Pipe SOIL
Received	09/05/12	Collected/Weight	08/30/12 09:55 920 g
% solids	99.0	Custody/SAF No	RC-075-319 RC-075

10/14/12

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	1.21	1.8	2.96	10.0	U J	H
Carbon 14	14762-75-5	0.819	0.51	0.829	1.00	U J	C
Nickel 63	13981-37-8	0.804	3.2	5.52	30.0	U	NI_L
Total Strontium	SR-RAD	-0.019	0.15	0.282	1.00	U	SR
Uranium 233/234	U-233/234	0.725	0.27	0.198	1.00		U
Uranium 235	15117-96-1	0	0.063	0.240	1.00	U J	U
Uranium 238	U-238	0.414	0.21	0.198	1.00		U
Potassium 40	13966-00-2	12.9	0.60	0.249			GAM
Cobalt 60	10198-40-0	U		0.027	0.050	U	GAM
Cesium 137	10045-97-3	U		0.024	0.100	U	GAM
Europium 152	14683-23-9	U		0.067	0.100	U	GAM
Europium 154	15585-10-1	U		0.095	0.100	U	GAM
Europium 155	14391-16-3	U		0.082	0.100	U	GAM
Radium 226	13982-63-3	0.485	0.049	0.045	0.100		GAM
Radium 228	15262-20-1	0.828	0.13	0.114	0.200		GAM
Thorium 228	14274-82-9	0.802	0.044	0.039			GAM
Thorium 232	TH-232	0.828	0.13	0.114			GAM
Uranium 235	15117-96-1	U		0.151	0.300	U	GAM
Uranium 238	U-238	U		3.23	10.0	U	GAM
Americium 241	14596-10-2	U		0.164	0.300	U	GAM

100-D/DR Burial Grounds & Remaining Sites-
Soil Full Protocol

Lab id	EBRLNE
Protocol	RC-075
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/13/12

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-002 J1R0T3

DATA SHEET

SDG	7765	Client/Case no	Hanford SDG KP0128
Contact	Joseph Verville	Contract	No. S00W235A01
Lab sample id	S209003-02	Client sample id	J1R0T3
Dept sample id	7765-002	Location/Matrix	100-D-50:1 Emer Dis.Pipe SOIL
Received	09/05/12	Collected/Weight	08/30/12 10:00 878 g
% solids	99.0	Custody/SAF No	RC-075-319 RC-075

10/14/12

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.84	2.0	3.20	10.0	U J	H
Carbon 14	14762-75-5	1.05	0.50	0.803	1.00	J	C
Nickel 63	13981-37-8	1.85	3.1	5.24	30.0	U	NI_L
Total Strontium	SR-RAD	0.098	0.15	0.279	1.00	U	SR
Uranium 233/234	U-233/234	0.476	0.22	0.165	1.00		U
Uranium 235	15117-96-1	0.052	0.053	0.200	1.00	U J	U
Uranium 238	U-238	0.432	0.18	0.165	1.00		U
Potassium 40	13966-00-2	11.3	0.64	0.299			GAM
Cobalt 60	10198-40-0	U		0.026	0.050	U	GAM
Cesium 137	10045-97-3	U		0.026	0.100	U	GAM
Europium 152	14683-23-9	U		0.061	0.100	U	GAM
Europium 154	15585-10-1	U		0.096	0.100	U	GAM
Europium 155	14391-16-3	U		0.095	0.100	U	GAM
Radium 226	13982-63-3	0.453	0.059	0.053	0.100		GAM
Radium 228	15262-20-1	0.716	0.13	0.130	0.200		GAM
Thorium 228	14274-82-9	0.648	0.037	0.032			GAM
Thorium 232	TH-232	0.716	0.13	0.130			GAM
Uranium 235	15117-96-1	U		0.156	0.300	U	GAM
Uranium 238	U-238	U		3.21	10.0	U	GAM
Americium 241	14596-10-2	U		0.090	0.300	U	GAM

100-D/DR Burial Grounds & Remaining Sites-
Soil Full Protocol

Lab id	EBRLNE
Protocol	RC-075
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Form	DVD-DS
Version	3.06
Report date	09/13/12

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-003 J1R0T4

DATA SHEET

SDG	7765	Client/Case no	Hanford SDG KP0128
Contact	Joseph Verville	Contract	No. S00W235A01
Lab sample id	S209003-03	Client sample id	J1R0T4
Dept sample id	7765-003	Location/Matrix	100-D-50:1 Emer Dis.Pipe SOIL
Received	09/05/12	Collected/Weight	08/30/12 10:10 990 g
% solids	99.1	Custody/SAF No	RC-075-319 RC-075

10/14/12

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	2.26	2.0	3.21	10.0	U J	H
Carbon 14	14762-75-5	0.682	0.50	0.823	1.00	U J	C
Nickel 63	13981-37-8	0.416	2.9	5.00	30.0	U	NI_L
Total Strontium	SR-RAD	-0.099	0.14	0.313	1.00	U	SR
Uranium 233/234	U-233/234	0.455	0.21	0.158	1.00		U
Uranium 235	15117-96-1	0.050	0.050	0.192	1.00	U J	U
Uranium 238	U-238	0.600	0.21	0.158	1.00		U
Potassium 40	13966-00-2	12.0	0.50	0.199			GAM
Cobalt 60	10198-40-0	U		0.021	0.050	U	GAM
Cesium 137	10045-97-3	U		0.019	0.100	U	GAM
Europium 152	14683-23-9	U		0.057	0.100	U	GAM
Europium 154	15585-10-1	U		0.072	0.100	U	GAM
Europium 155	14391-16-3	U		0.079	0.100	U	GAM
Radium 226	13982-63-3	0.417	0.042	0.040	0.100		GAM
Radium 228	15262-20-1	0.705	0.10	0.088	0.200		GAM
Thorium 228	14274-82-9	0.636	0.033	0.030			GAM
Thorium 232	TH-232	0.705	0.10	0.088			GAM
Uranium 235	15117-96-1	U		0.155	0.300	U	GAM
Uranium 238	U-238	U		2.56	10.0	U	GAM
Americium 241	14596-10-2	U		0.097	0.300	U	GAM

100-D/DR Burial Grounds & Remaining Sites-
Soil Full Protocol

Lab id	EBRLNE
Protocol	RC-075
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/13/12

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-004 J1R0T5

DATA SHEET

SDG	7765	Client/Case no	Hanford SDG_KP0128
Contact	Joseph Verville	Contract	No. S00W235A01
Lab sample id	S209003-04	Client sample id	J1R0T5
Dept sample id	7765-004	Location/Matrix	100-D-50:1 Emer Dis.Pipe SOIL
Received	09/05/12	Collected/Weight	08/30/12 10:15 849 g
% solids	99.2	Custody/SAF No	RC-075-319 RC-075

10/14/12

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	1.18	2.0	3.34	10.0	U J	H
Carbon 14	14762-75-5	0.899	0.54	0.886	1.00	J	C
Nickel 63	13981-37-8	1.28	3.0	5.12	30.0	U	NI_L
Total Strontium	SR-RAD	-0.067	0.14	0.296	1.00	U	SR
Uranium 233/234	U-233/234	0.574	0.22	0.163	1.00		U
Uranium 235	15117-96-1	0	0.051	0.197	1.00	U J	U
Uranium 238	U-238	0.766	0.26	0.163	1.00		U
Potassium 40	13966-00-2	13.6	0.82	0.386			GAM
Cobalt 60	10198-40-0	U		0.037	0.050	U	GAM
Cesium 137	10045-97-3	U		0.033	0.100	U	GAM
Europium 152	14683-23-9	U		0.105	0.100	U	GAM
Europium 154	15585-10-1	U		0.117	0.100	U	GAM
Europium 155	14391-16-3	U		0.089	0.100	U	GAM
Radium 226	13982-63-3	0.616	0.076	0.070	0.100		GAM
Radium 228	15262-20-1	0.893	0.16	0.140	0.200		GAM
Thorium 228	14274-82-9	0.998	0.060	0.050			GAM
Thorium 232	TH-232	0.893	0.16	0.140			GAM
Uranium 235	15117-96-1	U		0.392	0.300	U	GAM
Uranium 238	U-238	U		4.10	10.0	U	GAM
Americium 241	14596-10-2	U		0.044	0.300	U	GAM

100-D/DR Burial Grounds & Remaining Sites-
Soil Full Protocol

Lab id	EBRLNE
Protocol	RC-075
Version	Ver 1.0
Form	DVD-DS
Version	3.06
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EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-005 J1R0T6

DATA SHEET

SDG	7765	Client/Case no	Hanford SDG KP0128
Contact	Joseph Verville	Contract	No. S00W235A01
Lab sample id	S209003-05	Client sample id	J1R0T6
Dept sample id	7765-005	Location/Matrix	100-D-50:1 Emer Dis.Pipe SOIL
Received	09/05/12	Collected/Weight	08/29/12 09:50 857 g
% solids	99.3	Custody/SAF No	RC-075-319 RC-075

10/14/12

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	2.62	2.0	3.22	10.0	U J	H
Carbon 14	14762-75-5	1.12	0.49	0.795	1.00	J	C
Nickel 63	13981-37-8	1.99	3.2	5.32	30.0	U	NI_L
Total Strontium	SR-RAD	0.102	0.17	0.313	1.00	U	SR
Uranium 233/234	U-233/234	0.510	0.23	0.170	1.00		U
Uranium 235	15117-96-1	0	0.054	0.206	1.00	U J	U
Uranium 238	U-238	0.311	0.18	0.170	1.00		U
Potassium 40	13966-00-2	10.5	0.90	0.468			GAM
Cobalt 60	10198-40-0	U		0.054	0.050	U	GAM
Cesium 137	10045-97-3	U		0.049	0.100	U	GAM
Europium 152	14683-23-9	U		0.135	0.100	U	GAM
Europium 154	15585-10-1	U		0.182	0.100	U	GAM
Europium 155	14391-16-3	U		0.158	0.100	U	GAM
Radium 226	13982-63-3	0.509	0.11	0.102	0.100		GAM
Radium 228	15262-20-1	0.566	0.20	0.214	0.200		GAM
Thorium 228	14274-82-9	0.973	0.10	0.093			GAM
Thorium 232	TH-232	0.566	0.20	0.214			GAM
Uranium 235	15117-96-1	U		0.311	0.300	U	GAM
Uranium 238	U-238	U		5.71	10.0	U	GAM
Americium 241	14596-10-2	U		0.437	0.300	U	GAM

100-D/DR Burial Grounds & Remaining Sites-
Soil Full Protocol

Lab id	EBRLNE
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EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-006 J1R0T7

DATA SHEET

SDG	7765	Client/Case no	Hanford SDG KP0128
Contact	Joseph Verville	Contract	No. S00W235A01
Lab sample id	S209003-06	Client sample id	J1R0T7
Dept sample id	7765-006	Location/Matrix	100-D-50:1 Emer Dis.Pipe SOIL
Received	09/05/12	Collected/Weight	08/30/12 10:35 803 g
% solids	99.2	Custody/SAF No	RC-075-319 RC-075

10/14/12

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	0	1.8	3.15	10.0	U J	H
Carbon 14	14762-75-5	0.734	0.53	0.862	1.00	U J	C
Nickel 63	13981-37-8	-0.105	2.9	5.04	30.0	U	NI_L
Total Strontium	SR-RAD	-0.069	0.13	0.296	1.00	U	SR
Uranium 233/234	U-233/234	0.596	0.24	0.182	1.00		U
Uranium 235	15117-96-1	0.029	0.058	0.221	1.00	U J	U
Uranium 238	U-238	0.715	0.24	0.182	1.00		U
Potassium 40	13966-00-2	13.8	0.65	0.262			GAM
Cobalt 60	10198-40-0	U		0.027	0.050	U	GAM
Cesium 137	10045-97-3	U		0.025	0.100	U	GAM
Europium 152	14683-23-9	U		0.077	0.100	U	GAM
Europium 154	15585-10-1	U		0.079	0.100	U	GAM
Europium 155	14391-16-3	U		0.081	0.100	U	GAM
Radium 226	13982-63-3	0.581	0.062	0.059	0.100		GAM
Radium 228	15262-20-1	0.832	0.12	0.118	0.200		GAM
Thorium 228	14274-82-9	0.882	0.042	0.034			GAM
Thorium 232	TH-232	0.832	0.12	0.118			GAM
Uranium 235	15117-96-1	U		0.160	0.300	U	GAM
Uranium 238	U-238	U		5.19	10.0	U	GAM
Americium 241	14596-10-2	U		0.053	0.300	U	GAM

100-D/DR Burial Grounds & Remaining Sites-
Soil Full Protocol

Lab id	EBRLNE
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EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-007 J1R0T8

DATA SHEET

SDG	7765	Client/Case no	Hanford SDG_KP0128
Contact	Joseph Verville	Contract	No. S00W235A01
Lab sample id	S209003-07	Client sample id	J1R0T8
Dept sample id	7765-007	Location/Matrix	100-D-50:1 Emer Dis.Pipe SOIL
Received	09/05/12	Collected/Weight	08/30/12 10:40 806 g
% solids	99.2	Custody/SAF No	RC-075-319 RC-075

10/14/12

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	3.08	2.0	3.20	10.0	U J	H
Carbon 14	14762-75-5	0.429	0.52	0.857	1.00	U J	C
Nickel 63	13981-37-8	1.65	3.0	4.97	30.0	U	NI_L
Total Strontium	SR-RAD	-0.040	0.13	0.279	1.00	U	SR
Uranium 233/234	U-233/234	0.635	0.23	0.174	1.00		U
Uranium 235	15117-96-1	0.027	0.055	0.210	1.00	U J	U
Uranium 238	U-238	0.839	0.28	0.174	1.00		U
Potassium 40	13966-00-2	13.0	0.64	0.330			GAM
Cobalt 60	10198-40-0	U		0.028	0.050	U	GAM
Cesium 137	10045-97-3	U		0.025	0.100	U	GAM
Europium 152	14683-23-9	U		0.066	0.100	U	GAM
Europium 154	15585-10-1	U		0.094	0.100	U	GAM
Europium 155	14391-16-3	U		0.085	0.100	U	GAM
Radium 226	13982-63-3	0.569	0.061	0.056	0.100		GAM
Radium 228	15262-20-1	0.940	0.14	0.129	0.200		GAM
Thorium 228	14274-82-9	0.892	0.043	0.037			GAM
Thorium 232	TH-232	0.940	0.14	0.129			GAM
Uranium 235	15117-96-1	U		0.154	0.300	U	GAM
Uranium 238	U-238	U		3.09	10.0	U	GAM
Americium 241	14596-10-2	U		0.169	0.300	U	GAM

100-D/DR Burial Grounds & Remaining Sites-
Soil Full Protocol

Lab id	EBRLNE
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EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-008 J1R0T9

DATA SHEET

SDG	7765	Client/Case no	Hanford SDG KP0128
Contact	Joseph Verville	Contract	No. S00W235A01
Lab sample id	S209003-08	Client sample id	J1R0T9
Dept sample id	7765-008	Location/Matrix	100-D-50:1 Emer Dis.Pipe SOIL
Received	09/05/12	Collected/Weight	08/30/12 10:50 849 g
% solids	99.1	Custody/SAF No	RC-075-319 RC-075

10/14/12

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	2.92	2.0	3.14	10.0	U J	H
Carbon 14	14762-75-5	1.64	0.53	0.852	1.00	J	C
Nickel 63	13981-37-8	0.515	2.9	4.95	30.0	U	NI_L
Total Strontium	SR-RAD	0.072	0.14	0.274	1.00	U	SR
Uranium 233/234	U-233/234	0.669	0.25	0.190	1.00		U
Uranium 235	15117-96-1	0.060	0.060	0.230	1.00	U J	U
Uranium 238	U-238	0.520	0.25	0.190	1.00		U
Potassium 40	13966-00-2	11.9	0.62	0.229			GAM
Cobalt 60	10198-40-0	U		0.031	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.100	U	GAM
Europium 152	14683-23-9	U		0.064	0.100	U	GAM
Europium 154	15585-10-1	U		0.112	0.100	U	GAM
Europium 155	14391-16-3	U		0.076	0.100	U	GAM
Radium 226	13982-63-3	0.467	0.059	0.054	0.100		GAM
Radium 228	15262-20-1	0.769	0.14	0.126	0.200		GAM
Thorium 228	14274-82-9	0.724	0.040	0.034			GAM
Thorium 232	TH-232	0.769	0.14	0.126			GAM
Uranium 235	15117-96-1	U		0.164	0.300	U	GAM
Uranium 238	U-238	U		3.50	10.0	U	GAM
Americium 241	14596-10-2	U		0.091	0.300	U	GAM

100-D/DR Burial Grounds & Remaining Sites-
Soil Full Protocol

Lab id	EBRLNE
Protocol	RC-075
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/13/12

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-009 J1R0V0

DATA SHEET

SDG	7765	Client/Case no	Hanford SDG KP0128
Contact	Joseph Verville	Contract	No. S00W235A01
Lab sample id	S209003-09	Client sample id	J1R0V0
Dept sample id	7765-009	Location/Matrix	100-D-50:1 Emer Dis.Pipe SOIL
Received	09/05/12	Collected/Weight	08/30/12 11:00 961 g
% solids	99.3	Custody/SAF No	RC-075-319 RC-075

10/14/12

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	2.42	2.0	3.27	10.0	U J	H
Carbon 14	14762-75-5	0.510	0.55	0.903	1.00	U J	C
Nickel 63	13981-37-8	0.966	3.0	5.16	30.0	U	NI_L
Total Strontium	SR-RAD	-0.060	0.16	0.343	1.00	U	SR
Uranium 233/234	U-233/234	0.610	0.25	0.187	1.00		U
Uranium 235	15117-96-1	0	0.059	0.226	1.00	U J	U
Uranium 238	U-238	0.610	0.25	0.187	1.00		U
Potassium 40	13966-00-2	12.2	0.46	0.159			GAM
Cobalt 60	10198-40-0	U		0.018	0.050	U	GAM
Cesium 137	10045-97-3	U		0.018	0.100	U	GAM
Europium 152	14683-23-9	U		0.048	0.100	U	GAM
Europium 154	15585-10-1	U		0.062	0.100	U	GAM
Europium 155	14391-16-3	U		0.070	0.100	U	GAM
Radium 226	13982-63-3	0.442	0.038	0.034	0.100		GAM
Radium 228	15262-20-1	0.733	0.083	0.069	0.200		GAM
Thorium 228	14274-82-9	0.597	0.032	0.029			GAM
Thorium 232	TH-232	0.733	0.083	0.069			GAM
Uranium 235	15117-96-1	U		0.136	0.300	U	GAM
Uranium 238	U-238	U		2.23	10.0	U	GAM
Americium 241	14596-10-2	U		0.089	0.300	U	GAM

100-D/DR Burial Grounds & Remaining Sites-
Soil Full Protocol

Lab id	EBRLNE
Protocol	RC-075
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/13/12

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-010 J1R0V1

DATA SHEET

SDG	7765	Client/Case no	Hanford SDG KP0128
Contact	Joseph Verville	Contract	No. S00W235A01
Lab sample id	S209003-10	Client sample id	J1R0V1
Dept sample id	7765-010	Location/Matrix	100-D-50:1 Emer Dis.Pipe SOIL
Received	09/05/12	Collected/Weight	08/30/12 11:05 833 g
% solids	99.2	Custody/SAF No	RC-075-319 RC-075

10/14/12

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.54	2.0	3.19	10.0	U J	H
Carbon 14	14762-75-5	0.481	0.54	0.890	1.00	U J	C
Nickel 63	13981-37-8	1.49	3.0	5.12	30.0	U	NI_L
Total Strontium	SR-RAD	-0.079	0.14	0.301	1.00	U	SR
Uranium 233/234	U-233/234	0.524	0.21	0.200	1.00		U
Uranium 235	15117-96-1	0.095	0.13	0.242	1.00	U J	U
Uranium 238	U-238	0.602	0.27	0.200	1.00		U
Potassium 40	13966-00-2	16.9	0.89	0.458			GAM
Cobalt 60	10198-40-0	U		0.037	0.050	U	GAM
Cesium 137	10045-97-3	U		0.036	0.100	U	GAM
Europium 152	14683-23-9	U		0.100	0.100	U	GAM
Europium 154	15585-10-1	U		0.122	0.100	U	GAM
Europium 155	14391-16-3	U		0.160	0.100	U	GAM
Radium 226	13982-63-3	0.662	0.074	0.066	0.100		GAM
Radium 228	15262-20-1	1.03	0.16	0.142	0.200		GAM
Thorium 228	14274-82-9	1.30	0.064	0.053			GAM
Thorium 232	TH-232	1.03	0.16	0.142			GAM
Uranium 235	15117-96-1	U		0.234	0.300	U	GAM
Uranium 238	U-238	U		4.12	10.0	U	GAM
Americium 241	14596-10-2	U		0.048	0.300	U	GAM

100-D/DR Burial Grounds & Remaining Sites-
Soil Full Protocol

Lab id	EBRLNE
Protocol	RC-075
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/13/12

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-011 J1R0V2

DATA SHEET

SDG	7765	Client/Case no	Hanford SDG KP0128
Contact	Joseph Verville	Contract	No. S00W235A01
Lab sample id	S209003-11	Client sample id	J1R0V2
Dept sample id	7765-011	Location/Matrix	100-D-50:1 Emer Dis.Pipe SOIL
Received	09/05/12	Collected/Weight	08/30/12 11:10 945 g
% solids	99.3	Custody/SAF No	RC-075-319 RC-075

✓ 10/14/12

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	1.57	1.9	3.13	10.0	U J	H
Carbon 14	14762-75-5	0.726	0.53	0.864	1.00	U J	C
Nickel 63	13981-37-8	0.420	2.9	5.05	30.0	U	NI_L
Total Strontium	SR-RAD	-0.024	0.15	0.302	1.00	U	SR
Uranium 233/234	U-233/234	0.702	0.26	0.192	1.00		U
Uranium 235	15117-96-1	0.030	0.061	0.232	1.00	U J	U
Uranium 238	U-238	0.251	0.15	0.192	1.00		U
Potassium 40	13966-00-2	10.2	0.82	0.362			GAM
Cobalt 60	10198-40-0	U		0.051	0.050	U	GAM
Cesium 137	10045-97-3	U		0.044	0.100	U	GAM
Europium 152	14683-23-9	U		0.121	0.100	U	GAM
Europium 154	15585-10-1	U		0.153	0.100	U	GAM
Europium 155	14391-16-3	U		0.144	0.100	U	GAM
Radium 226	13982-63-3	0.536	0.10	0.096	0.100		GAM
Radium 228	15262-20-1	0.743	0.19	0.167	0.200		GAM
Thorium 228	14274-82-9	0.921	0.096	0.087			GAM
Thorium 232	TH-232	0.743	0.19	0.167			GAM
Uranium 235	15117-96-1	U		0.284	0.300	U	GAM
Uranium 238	U-238	U		5.21	10.0	U	GAM
Americium 241	14596-10-2	U		0.368	0.300	U	GAM

100-D/DR Burial Grounds & Remaining Sites-
Soil Full Protocol

Lab id	EBRLNE
Protocol	RC-075
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/13/12

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-012 J1R0V3

DATA SHEET

SDG	7765	Client/Case no	Hanford SDG KP0128
Contact	Joseph Verville	Contract	No. S00W235A01
Lab sample id	S209003-12	Client sample id	J1R0V3
Dept sample id	7765-012	Location/Matrix	100-D-50:1 Emer Dis.Pipe SOIL
Received	09/05/12	Collected/Weight	08/30/12 11:20 975 g
% solids	98.9	Custody/SAF No	RC-075-319 RC-075

V 10/14/12

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	2.27	1.9	3.14	10.0	U J	H
Carbon 14	14762-75-5	0.106	0.53	0.880	1.00	U J	C
Nickel 63	13981-37-8	0.102	2.8	4.93	30.0	U	NI_L
Total Strontium	SR-RAD	-0.062	0.14	0.298	1.00	U	SR
Uranium 233/234	U-233/234	0.546	0.23	0.174	1.00		U
Uranium 235	15117-96-1	0.055	0.055	0.211	1.00	U J	U
Uranium 238	U-238	0.523	0.23	0.174	1.00		U
Potassium 40	13966-00-2	15.1	0.71	0.236			GAM
Cobalt 60	10198-40-0	U		0.026	0.050	U	GAM
Cesium 137	10045-97-3	U		0.029	0.100	U	GAM
Europium 152	14683-23-9	U		0.079	0.100	U	GAM
Europium 154	15585-10-1	U		0.089	0.100	U	GAM
Europium 155	14391-16-3	U		0.085	0.100	U	GAM
Radium 226	13982-63-3	0.513	0.058	0.050	0.100		GAM
Radium 228	15262-20-1	0.840	0.13	0.119	0.200		GAM
Thorium 228	14274-82-9	0.809	0.047	0.039			GAM
Thorium 232	TH-232	0.840	0.13	0.119			GAM
Uranium 235	15117-96-1	U		0.174	0.300	U	GAM
Uranium 238	U-238	U		3.76	10.0	U	GAM
Americium 241	14596-10-2	U		0.055	0.300	U	GAM

100-D/DR Burial Grounds & Remaining Sites-
Soil Full Protocol

Lab id	EBRLNE
Protocol	RC-075
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/13/12

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-013 J1R0V5

DATA SHEET

SDG	7765	Client/Case no	Hanford SDG KP0128
Contact	Joseph Verville	Contract	No. S00W235A01
Lab sample id	S209003-13	Client sample id	J1R0V5
Dept sample id	7765-013	Location/Matrix	100-D-50:1 Emer Dis.Pipe SOIL
Received	09/05/12	Collected/Weight	08/30/12 11:00 960 g
% solids	99.3	Custody/SAF No	RC-075-319 RC-075

V 10/14/12

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	2.60	1.9	3.11	10.0	U J	H
Carbon 14	14762-75-5	0.788	0.53	0.863	1.00	U J	C
Nickel 63	13981-37-8	2.59	3.0	4.98	30.0	U	NI_L
Total Strontium	SR-RAD	0.020	0.15	0.302	1.00	U	SR
Uranium 233/234	U-233/234	0.544	0.26	0.198	1.00		U
Uranium 235	15117-96-1	0.094	0.13	0.240	1.00	U J	U
Uranium 238	U-238	0.674	0.26	0.198	1.00		U
Potassium 40	13966-00-2	12.7	0.50	0.232			GAM
Cobalt 60	10198-40-0	U		0.022	0.050	U	GAM
Cesium 137	10045-97-3	U		0.019	0.100	U	GAM
Europium 152	14683-23-9	U		0.054	0.100	U	GAM
Europium 154	15585-10-1	U		0.079	0.100	U	GAM
Europium 155	14391-16-3	U		0.071	0.100	U	GAM
Radium 226	13982-63-3	0.465	0.046	0.041	0.100		GAM
Radium 228	15262-20-1	0.700	0.090	0.080	0.200		GAM
Thorium 228	14274-82-9	0.691	0.033	0.030			GAM
Thorium 232	TH-232	0.700	0.090	0.080			GAM
Uranium 235	15117-96-1	U		0.128	0.300	U	GAM
Uranium 238	U-238	U		2.60	10.0	U	GAM
Americium 241	14596-10-2	U		0.135	0.300	U	GAM

100-D/DR Burial Grounds & Remaining Sites-
Soil Full Protocol

Lab id	EBRLNE
Protocol	RC-075
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/13/12

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group KP0128 was composed of thirteen soil samples designated under SAF No. RC-075 with a Project Designation of: 100-D/DR Burial Grounds & Remaining Sites – Soil Full Protocol.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were transmitted to WCH via e-mail on September 13, 2012.

2.0 ANALYSIS NOTES

2.1 Tritium Analysis, Low Level

No problems were encountered during the course of the analyses.

2.2 Carbon-14 Analysis, Low Level

No problems were encountered during the course of the analyses.

2.3 Nickel-63 Analysis

No problems were encountered during the course of the analyses.

2.4 Isotopic Strontium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Uranium Analysis

No other problems were encountered during the course of the analyses.

2.6 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy

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."

9/13/12

Joseph Verville
Client Services Manager

Date

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-319	Page 1 of 2

Collector: Lucas	Company Contact: J Kessner — Telephone No.: 509-375-4688 (7765)	Project Coordinator: KESSNER, JH	Price Code: ~~8L~~ 8B 8-27-12 — Data Turnaround: ~~21~~ 7 Days 8-27-12
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation KP0128	SAF No.: RC-075	
Ice Chest No.: RCC-07-009	Field Logbook No.: EL-1607-14 — COA: R00D502000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A110546	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

~~Potential Rad <DOT~~ TRE 8/4/12
N/A

Special Handling and/or Storage

~~Cool 4 Deg C~~ N/A
TRE 8/30/12

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - H3 Low Level Soil	Nickel-63; Strontium-89,90 -- Total Sr	Isotopic Uranium
Sample No. / Matrix * / Sample Date / Sample Time										
J1R0T2 / SOIL / 8-30-12 / 0955			X				X	X	X	X
J1R0T3 / SOIL /			X				X	X	X	X
J1R0T4 / SOIL / 1010			X				X	X	X	X
J1R0T5 / SOIL / 1015			X				X	X	X	X
J1R0T6 / SOIL / 1025			X				X	X	X	X

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CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Lucas Lucas	Date/Time: 8-30-12 1340	Received By/Stored In: WCH MSTankovich	Date/Time: 1340 8/30/12
Relinquished By/Removed From: WCH MSTankovich	Date/Time: 1500 8/30/12	Received By/Stored In: 1000 #1 A. Freier	Date/Time: 1500 8-30-12
Relinquished By/Removed From: 1000 #1, see special	Date/Time: 9/4/12 1320	Received By/Stored In: DWSHEA	Date/Time: 9/4/12 1320
Relinquished By/Removed From: WCH DWSHEA	Date/Time: 9/4/12 1345	Received By/Stored In: Fed Ex	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time:	Received By/Stored In:	Date/Time: 09/05/12 0930
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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); Mercury - 7471 - (CV) (Mercury)
(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

KP0128

REVIEWED BY TRE
DATE 9/4/12

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-319	Page 2 of 3

Collector: Lucas	Company Contact: J Kessner — Telephone No.: 509-375-4688 (7765)	Project Coordinator: KESSNER, JH	Price Code: ~~8L~~ 8B — Data Turnaround: ~~21~~ 7 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation KP0128	SAF No.: RC-075	8-27-12
Ice Chest No.: RCC-07-009	Field Logbook No.: EL-1607-14 — COA: R00D502000	Method of Shipment: Fed Ex	8-27-12
Shipped To: EBERLINE SERVICES/ LIONVILLE	Offsite Property No.: A110546	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

~~Potential Rad <DOT~~ TRR 9/4/12
N/A

Special Handling and/or Storage

~~Cool 4 Deg C~~ NA
TRR 9/4/12

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL

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SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - H3 Low Level Soil	Nickel-63; Strontium-89,90 – Total Sr	Isotopic Uranium
J1R0T7	SOIL	8-30-12	1035							X	X	X	X
J1R0T8	SOIL	↓	1040							X	X	X	X
J1R0T9	SOIL		1050							X	X	X	X
J1R0V0	SOIL		1100							X	X	X	X
J1R0V1	SOIL	↓	1105							X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: Lucas Lucas — Date/Time: 8-30-12 1340	Received By/Stored In: WCH — Date/Time: 1340 — MS Stankovich 8/30/12
Relinquished By/Removed From: WCH — Date/Time: 1500 — MS Stankovich 8/30/12	Received By/Stored In: 1060#1 — Date/Time: 1500 — A. Freier A. Freier 8-30-12
Relinquished By/Removed From: 1060#1, See special inst. — Date/Time: 9/4/12 1320	Received By/Stored In: DWSHEA DWSHEA — Date/Time: 9/4/12 1320
Relinquished By/Removed From: WCH DWSHEA DWSHEA — Date/Time: 9/4/12 1345	Received By/Stored In: Fed Ex — Date/Time:
Relinquished By/Removed From: Fed Ex — Date/Time:	Received By/Stored In: [illegible] — Date/Time: 09/05/12 0920
Relinquished By/Removed From: — Date/Time:	Received By/Stored In: — Date/Time:

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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); Mercury - 7471 - (CV) (Mercury)
(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

KP0128

REVIEWED BY JRR
DATE 9/4/12

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-319	Page 3 of 3
Collector: Lucas	Company Contact: J Kessner; Telephone No.: 509-375-4688 (7765)	Project Coordinator: KESSNER, JH	Price Code: ~~8L~~ 8B 8-27-12; Data Turnaround: ~~21~~ 7 Days 8-27-12
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation KP0128	SAF No.: RC-075	
Ice Chest No.: RCC-07-009	Field Logbook No.: EL-1607-14; COA: R00D502000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A110546	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
~~Potential Rad <DOT~~ TRE 9-4-12
N/A

Special Handling and/or Storage
~~Cool 4 Deg C~~ TRE 9/4/12
N/A

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	SemaVOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - H3 Low Level Soil	Nickel-63; Strontium-89,90 -- Total Sr	Isotopic Uranium
27										
Sample No. / Matrix * / Sample Date / Sample Time										
J1R0V2 / SOIL / 8-30-12 / ~~0955~~ 1110							X	X	X	X
J1R0V3 / SOIL / 1120							X	X	X	X
~~J1R0V4 / SOIL~~							~~X~~	~~X~~	~~X~~	~~X~~
J1R0V5 / SOIL / 1100							X	X	X	X

MO 8/30/12

D
FS-1

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: Lucas Bellon Lucas	Received By/Stored In: WCH MSTankovich	8-30-12 1340
Relinquished By/Removed From: WCH MSTankovich	Received By/Stored In: 1060#1 A-Freier A Freier	1500 8/30/12 1508 8-30-12
Relinquished By/Removed From: 1060#1 see special inst.	Received By/Stored In: DWSHEA DWSHEA	9/4/12 1320 9/4/12 1320
Relinquished By/Removed From: WCH DWSHEA	Received By/Stored In: Fed Ex	9/4/12 1345
Relinquished By/Removed From: FED EX	Received By/Stored In: TT Bertha Amin	09/05/12 0970
Relinquished By/Removed From:	Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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}; Mercury - 7471 - (CV) (Mercury)
(2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

KP0128

REVIEWED BY TRE
DATE 9/4/12

Matrix *
S=Soil
SE=Sediment
SO=Solid
SJ=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

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT:	100-D-50:1		DATA PACKAGE:	KP0128	
VALIDATOR:	ELR	LAB: EB		DATE: 10/7/12	
			SDG:	KP0128	

ANALYSES PERFORMED					
☐ Gross Alpha/Beta	☐ Strontium-90	☐ Technetium-99	☐ Alpha Spectroscopy	☐ Gamma Spectroscopy	
☐ Total Uranium	☐ Radium-22	☐ Tritium			

SAMPLES/MATRIX			
J1ROT2	J1ROT3	J1ROT4	J1ROT5
J1ROT6	J1ROT7	J1ROT8	J1ROT9
J1ROU0	J1ROU1	J1ROU2	J1ROU3
J1ROU5			
			Soil

1. Completeness ..... ☐ N/A

Technical verification forms present? ..... Yes (No) N/A

Comments: _____

2. Initial Calibration (Levels D, E) ..... ☒ N/A

Instruments/detectors calibrated? ..... Yes No N/A

Initial calibration acceptable? ..... Yes No N/A

Standards NIST traceable? ..... Yes No N/A

Standards Expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments: _____

3. Continuing Calibration (Levels D, E) ☐ N/A

Calibration checked within required frequency? ..... Yes No N/A

Calibration check acceptable? ..... Yes No N/A

Calibration check standards traceable? ..... Yes No N/A

Calibration check standards expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments: _____

_____

_____

_____

_____

4. Background Counts (Levels D, E) ..... ☐ N/A

Background Counts checked within required frequency? ..... Yes No N/A

Background Counts acceptable? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments: _____

_____

_____

_____

_____

5. Blanks (Levels B, C, D, E) ..... ☐ N/A

Method blank analyzed within required frequency? ..... Yes No N/A

Method blank results acceptable? ..... Yes No N/A

Analytes detected in method blank? ..... Yes No N/A

Field blank(s) analyzed? ..... Yes No N/A

Field blank results acceptable? ..... Yes No N/A

Analytes detected in field blank(s)? ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: no FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ..... ☐ N/A

LCS /BSS analyzed within required frequency? ..... Yes No N/A

LCS/BSS recoveries acceptable? ..... Yes No N/A

LCS/BSS traceable? (Levels D,E) ..... Yes No N/A

LCS/BSS expired? (Levels D,E) ..... Yes No N/A

LCS/BSS levels correct? (Levels D,E) ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: no 0-233 LCS - J all (espec)

7. Chemical Carrier Recovery (Levels C, D, E) ..... ☒ N/A

Chemical carrier added? ..... Yes No N/A

Chemical recovery acceptable? ..... Yes No N/A

Chemical carrier traceable? (Levels D, E) ..... Yes No N/A

Chemical carrier expired? (Levels D, E) ..... Yes No N/A

Transcription/Calculation errors? (Levels D, E) ..... Yes No N/A

Comments: _____

8. Tracer Recovery (Levels C, D, E) ..... ☐ N/A

Tracer added? ..... Yes No N/A

Tracer recovery acceptable? ..... Yes No N/A

Tracer traceable? (Levels D, E) ..... Yes No N/A

Tracer expired? (Levels D, E) ..... Yes No N/A

Transcription/Calculation errors? (Levels D, E) ..... Yes No N/A

Comments: _____

9. Matrix Spikes (Levels C, D, E) ..... ☐ N/A

Matrix spike analyzed? ..... Yes No N/A

Spike recoveries acceptable? ..... Yes No N/A

Spike source traceable? (Levels D, E) ..... Yes No N/A

Spike source expired? Levels D, E) ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: No 3H MS, C14 } J all

10. Duplicates (Levels C, D, E) ..... ☐ N/A

Duplicates Analyzed at required frequency? ..... Yes No N/A

RPD Values Acceptable? ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: _____

11. Field QC Samples (Levels C, D E) ..... ☐ N/A

Field duplicate sample(s) analyzed? ..... Yes No N/A

Field duplicate RPD values acceptable? ..... Yes No N/A

Field split sample(s) analyzed? ..... Yes No N/A

Field split RPD values acceptable? ..... Yes No N/A

Performance audit sample(s) analyzed? ..... Yes No N/A

Performance audit sample results acceptable? ..... Yes No N/A

Comments: no FS or PA

12. Holding Times (All levels)

Are sample holding times acceptable? ..... Yes No N/A

Comments: _____

13. Results and Detection Limits (All Levels) ..... ☐ N/A

Results reported for all required sample analyses? ..... Yes No N/A

Results supported in raw data?(Levels D, E) ..... Yes No N/A

Results Acceptable? (Levels D, E) ..... Yes No N/A

Transcription/Calculation errors? (Levels D, E) ..... Yes No N/A

MDA's meet required detection limits? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: 13 over

Appendix 6

Additional Documentation Requested by Client

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-015 Method Blank

METHOD BLANK

SDG	7765	Client/Case no	Hanford SDG KP0128
Contact	Joseph Verville	Contract	No. S00W235A01
Lab sample id	S209003-15	Client sample id	Method Blank
Dept sample id	7765-015	Material/Matrix	SOIL
		SAF No	RC-075

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	1.34	1.8	2.98	10.0	U	H
Carbon 14	14762-75-5	-0.143	0.53	0.892	1.00	U	C
Nickel 63	13981-37-8	-1.03	2.7	4.95	30.0	U	NI_L
Total Strontium	SR-RAD	-0.075	0.13	0.291	1.00	U	SR
Uranium 233/234	U-233/234	0	0.049	0.186	1.00	U	U
Uranium 235	15117-96-1	0	0.059	0.226	1.00	U	U
Uranium 238	U-238	0.024	0.049	0.186	1.00	U	U
Potassium 40	13966-00-2	U		0.088		U	GAM
Cobalt 60	10198-40-0	U		0.004	0.050	U	GAM
Cesium 137	10045-97-3	U		0.004	0.100	U	GAM
Europium 152	14683-23-9	U		0.013	0.100	U	GAM
Europium 154	15585-10-1	U		0.013	0.100	U	GAM
Europium 155	14391-16-3	U		0.014	0.100	U	GAM
Radium 226	13982-63-3	U		0.010	0.100	U	GAM
Radium 228	15262-20-1	U		0.020	0.200	U	GAM
Thorium 228	14274-82-9	U		0.009		U	GAM
Thorium 232	TH-232	U		0.020		U	GAM
Uranium 235	15117-96-1	U		0.030	0.300	U	GAM
Uranium 238	U-238	U		0.511	10.0	U	GAM
Americium 241	14596-10-2	U		0.017	0.300	U	GAM

QC-BLANK #82485

Lab id	EBRLNE
Protocol	RC-075
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/13/12

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-014

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7765

Contact Joseph Verville

Client/Case no Hanford SDG KP0128

Contract No. 900W235A01

Lab sample id S209003-14

Dept sample id 7765-014

Client sample id Lab Control Sample

Material/Matrix SOIL

SAF No RC-075

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	120	5.4	3.09	10.0		H	129	5.2	93	84-116	80-120
Carbon 14	1020	21	5.18	1.00		C	1060	42	96	84-116	80-120
Nickel 63	256	11	4.98	30.0		NI_L	258	10	99	81-119	80-120
Total Strontium	8.80	0.54	0.298	1.00		SR	9.26	0.37	95	82-118	80-120
Uranium 233/234	10.2	1.2	0.240	1.00		U	10.7	0.43	95	79-121	80-120
Uranium 238	10.1	1.2	0.240	1.00		U	10.7	0.43	94	79-121	80-120
Cobalt 60	0.469	0.015	0.006	0.050		GAM	0.494	0.020	95	87-113	80-120
Cesium 137	0.556	0.014	0.009	0.100		GAM	0.582	0.023	96	88-112	80-120

QC-LCS #82484

Lab id EBRLNE

Protocol RC-075

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 09/13/12

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP KP0128

7765-016

J1R0T2

DUPLICATE

SDG	7765			Client/Case no	Hanford SDG KP0128
Contact	Joseph Verville			Contract	No. S00W235A01
	DUPLICATE		ORIGINAL		
Lab sample id	S209003-16	Lab sample id	S209003-01	Client sample id	J1R0T2
Dept sample id	7765-016	Dept sample id	7765-001	Location/Matrix	100-D-50:1 Emer Dis.Pipe SOIL
		Received	09/05/12	Collected/Weight	08/30/12 09:55 920 g
% solids	99.0	% solids	99.0	Custody/SAF No	RC-075-319 RC-075

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Tritium	1.94	1.8	2.99	10.0	U	H	1.21	1.8	2.96	U	-		0.6
Carbon 14	0.400	0.53	0.874	1.00	U	C	0.819	0.51	0.829	U	-		1.1
Nickel 63	2.16	3.0	4.94	30.0	U	NI_L	0.804	3.2	5.52	U	-		0.6
Total Strontium	-0.058	0.17	0.322	1.00	U	SR	-0.019	0.15	0.282	U	-		0.3
Uranium 233/234	0.587	0.24	0.180	1.00		U	0.725	0.27	0.198		21	84	0.7
Uranium 235	0	0.057	0.218	1.00	U	U	0	0.063	0.240	U	-		0
Uranium 238	0.634	0.24	0.180	1.00		U	0.414	0.21	0.198		42	93	1.4
Potassium 40	11.3	0.32	0.157			GAM	12.9	0.60	0.249		13	17	2.3
Cobalt 60	U		0.017	0.050	U	GAM	U		0.027	U	-		0.6
Cesium 137	U		0.016	0.100	U	GAM	U		0.024	U	-		0.6
Europium 152	U		0.044	0.100	U	GAM	U		0.067	U	-		0.6
Europium 154	U		0.058	0.100	U	GAM	U		0.095	U	-		0.7
Europium 155	U		0.052	0.100	U	GAM	U		0.082	U	-		0.6
Radium 226	0.462	0.030	0.029	0.100		GAM	0.485	0.049	0.045		5	23	0.6
Radium 228	0.714	0.087	0.077	0.200		GAM	0.828	0.13	0.114		15	34	1.3
Thorium 228	0.913	0.037	0.034			GAM	0.802	0.044	0.039		13	18	2.2
Thorium 232	0.714	0.087	0.077			GAM	0.828	0.13	0.114		15	34	1.3
Uranium 235	U		0.163	0.300	U	GAM	U		0.151	U	-		0.1
Uranium 238	U		1.92	10.0	U	GAM	U		3.23	U	-		0.7
Americium 241	U		0.136	0.300	U	GAM	U		0.164	U	-		0.3

QC-DUP#1 82486

100-D/DR Burial Grounds & Remaining Sites-
Soil Full Protocol

Lab id EBRLNE
Protocol RC-075
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 09/13/12

Date: 15 October 2012
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-D/DR Burial Ground and Remaining Sites – Soil Full Protocol - Waste Subsite 100-D-50:1
Subject: Semivolatile Organic - Data Package No. KP0128-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. KP0128 prepared by Eberline Services (EB). 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	Analyte
J1R0T2	8/30/12	Soil	C	See note 1
J1R0T3	8/30/12	Soil	C	See note 1
J1R0T4	8/30/12	Soil	C	See note 1
J1R0T5	8/30/12	Soil	C	See note 1
J1R0T6	8/30/12	Soil	C	See note 1
J1R0T7	8/30/12	Soil	C	See note 1
J1R0T8	8/30/12	Soil	C	See note 1
J1R0T9	8/30/12	Soil	C	See note 1
J1R0V0	8/30/12	Soil	C	See note 1
J1R0V1	8/30/12	Soil	C	See note 1
J1R0V2	8/30/12	Soil	C	See note 1
J1R0V3	8/30/12	Soil	C	See note 1
J1R0V5	8/30/12	Soil	C	See note 1

1 – Semivolatile organics by 8270.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, September 2009). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY OBJECTIVES

- **Holding Times**

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: 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, but not by greater 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 associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

All method blank results were acceptable.

Field (equipment) Blanks

No field blank was submitted for analysis.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in

duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

Due to a matrix spike recovery outside QC limits, all 2,4-dinitrophenol (36%), results were qualified as estimates and flagged "J".

Due to a matrix spike duplicate recovery outside QC limits, all 2,4-dinitrophenol (37%) results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable.

Precision

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. 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.

All laboratory duplicate results were acceptable.

Field Duplicate Samples

One set of field duplicates (J1R0V0/J1R0V5) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory results. All field duplicate results are acceptable.

Analytical Detection Levels

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. Ninety-one analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

Completeness

Data package No. KP0128 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

The following minor deficiencies were noted:

- Due to a matrix spike recovery outside QC limits, all 2,4-dinitrophenol (36%), results were qualified as estimates and flagged "J".
- Due to a matrix spike duplicate recovery outside QC limits, all 2,4-dinitrophenol (37%) results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH 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.

Ninety-one analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, September 2009.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same 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 usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

SEMIVOLATILE ORGANIC DATA QUALIFICATION SUMMARY*

SDG: KP0128	**REVIEWER: ELR**	**Project: 100-D-50:1**	**PAGE_1_OF_1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
2,4-dinitrophenol	J	All	MS & MSD recovery

* - 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

Annotated Laboratory Reports

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-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0T2
1209003-01 (Soil)

10/14/12

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,2-Dichlorobenzene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,3-Dichlorobenzene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,4-Dichlorobenzene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,5-Trichlorophenol	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,6-Trichlorophenol	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dichlorophenol	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dimethylphenol	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrophenol	1660	U J	1660	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrotoluene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,6-Dinitrotoluene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chloronaphthalene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chlorophenol	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylnaphthalene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylphenol	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitroaniline	1660	U	1660	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitrophenol	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3,3'-Dichlorobenzidine	666	U	666	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3-Nitroaniline	1660	U	1660	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4,6-Dinitro-2-methylphenol	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Bromophenyl Phenyl Ether	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloro-3-methylphenol	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloroaniline	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chlorophenyl Phenyl Ether	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3- and/or 4-Methylphenol	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitroaniline	1660	U	1660	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitrophenol	1660	U	1660	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthylene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Anthracene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benz[a]anthracene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[a] pyrene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[b] fluoranthene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[g,h,i] perylene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[k] fluoranthene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroethoxy) methane	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

10/14/12

J1R0T2

1209003-01 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
Bis(2-chloroethyl) ether	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroisopropyl) ether	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-ethylhexyl) phthalate	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Butyl Benzyl Phthalate	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Carbazole	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Chrysene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenz[a,h]anthracene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenzofuran	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Diethyl Phthalate	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dimethyl Phthalate	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-butyl Phthalate	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-octyl Phthalate	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluoranthene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluorene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobenzene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobutadiene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorocyclopentadiene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachloroethane	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Indeno[1,2,3-cd]pyrene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Isophorone	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Naphthalene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Nitrobenzene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodi-n-propylamine	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodiphenylamine	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pentachlorophenol	1660	U	1660	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenanthrene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenol	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pyrene	333	U	333	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 2	**654**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 1	**322**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 3	**216**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 2	**30500**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 1	**882**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Surrogate: 2-Fluorophenol	*61 %*		*25-121*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Phenol-d5	*65 %*		*24-113*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Nitrobenzene-d5	*63 %*		*23-120*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/10/2012 10:50

J1R0T2
1209003-01 (Soil)

10/14/12

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C								
Surrogate: 2-Fluorobiphenyl	*64 %*	*30-115*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*54 %*	*19-122*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: p-Terphenyl-d14	*65 %*	*18-137*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0T3
1209003-02 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,2-Dichlorobenzene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,3-Dichlorobenzene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,4-Dichlorobenzene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,5-Trichlorophenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,6-Trichlorophenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dichlorophenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dimethylphenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrophenol	1650	U J	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrotoluene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,6-Dinitrotoluene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chloronaphthalene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chlorophenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylnaphthalene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylphenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitrophenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3,3'-Dichlorobenzidine	662	U	662	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4,6-Dinitro-2-methylphenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Bromophenyl Phenyl Ether	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloro-3-methylphenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloroaniline	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chlorophenyl Phenyl Ether	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3- and/or 4-Methylphenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitrophenol	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthylene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Anthracene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benz[a]anthracene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[a] pyrene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[b] fluoranthene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[g,h,i] perylene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[k] fluoranthene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroethoxy) methane	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0T3
1209003-02 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
Bis(2-chloroethyl) ether	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroisopropyl) ether	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-ethylhexyl) phthalate	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Butyl Benzyl Phthalate	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Carbazole	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Chrysene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenz[a,h]anthracene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenzofuran	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Diethyl Phthalate	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dimethyl Phthalate	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-butyl Phthalate	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-octyl Phthalate	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluoranthene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluorene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobenzene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobutadiene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorocyclopentadiene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachloroethane	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Indeno[1,2,3-cd]pyrene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Isophorone	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Naphthalene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Nitrobenzene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodi-n-propylamine	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodiphenylamine	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pentachlorophenol	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenanthrene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pyrene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 1	**574**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 2	**44000**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 3	**591**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 1	**2540**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 4	**924**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Surrogate: 2-Fluorophenol	*63 %*		*25-121*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Phenol-d5	*66 %*		*24-113*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Nitrobenzene-d5	*63 %*		*23-120*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/10/2012 10:50

J1R0T3
1209003-02 (Soil)

10/14/12

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Semivolatile Organic Compounds by SW846 8270C								
Surrogate: 2-Fluorobiphenyl	*64 %*	*30-115*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*60 %*	*19-122*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: p-Terphenyl-d14	*62 %*	*18-137*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0T4
1209003-03 (Soil)

✓ 10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,2-Dichlorobenzene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,3-Dichlorobenzene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,4-Dichlorobenzene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,5-Trichlorophenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,6-Trichlorophenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dichlorophenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dimethylphenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrophenol	1650	U J	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrotoluene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,6-Dinitrotoluene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chloronaphthalene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chlorophenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylnaphthalene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylphenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitrophenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3,3'-Dichlorobenzidine	660	U	660	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4,6-Dinitro-2-methylphenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Bromophenyl Phenyl Ether	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloro-3-methylphenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloroaniline	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chlorophenyl Phenyl Ether	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3- and/or 4-Methylphenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitrophenol	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthylene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Anthracene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benz[a]anthracene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[a] pyrene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[b] fluoranthene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[g,h,i] perylene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[k] fluoranthene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroethoxy) methane	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0T4
1209003-03 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C									
Bis(2-chloroethyl) ether	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroisopropyl) ether	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-ethylhexyl) phthalate	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Butyl Benzyl Phthalate	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Carbazole	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Chrysene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenz[a,h]anthracene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenzofuran	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Diethyl Phthalate	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dimethyl Phthalate	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-butyl Phthalate	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-octyl Phthalate	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluoranthene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluorene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobenzene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobutadiene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorocyclopentadiene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachloroethane	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Indeno[1,2,3-cd]pyrene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Isophorone	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Naphthalene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Nitrobenzene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodi-n-propylamine	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodiphenylamine	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pentachlorophenol	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenanthrene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pyrene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 1	**340**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Trichloro-1-propene	**324**	B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 3	**676**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 2	**18400**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 1	**726**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Surrogate: 2-Fluorophenol	*61 %*		*25-121*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Phenol-d5	*62 %*		*24-113*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Nitrobenzene-d5	*61 %*		*23-120*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0T4
1209003-03 (Soil)

V 10/14/12

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C								
Surrogate: 2-Fluorobiphenyl	*63 %*	*30-115*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*56 %*	*19-122*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: p-Terphenyl-d14	*63 %*	*18-137*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0T5
1209003-04 (Soil)

V 10/04/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,2-Dichlorobenzene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,3-Dichlorobenzene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,4-Dichlorobenzene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,5-Trichlorophenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,6-Trichlorophenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dichlorophenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dimethylphenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrophenol	1650	U J	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrotoluene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,6-Dinitrotoluene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chloronaphthalene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chlorophenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylnaphthalene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylphenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitrophenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3,3'-Dichlorobenzidine	661	U	661	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4,6-Dinitro-2-methylphenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Bromophenyl Phenyl Ether	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloro-3-methylphenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloroaniline	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chlorophenyl Phenyl Ether	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3- and/or 4-Methylphenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitrophenol	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthylene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Anthracene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benz[a]anthracene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[a] pyrene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[b] fluoranthene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[g,h,i] perylene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[k] fluoranthene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroethoxy) methane	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0T5
1209003-04 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C									
Bis(2-chloroethyl) ether	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroisopropyl) ether	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-ethylhexyl) phthalate	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Butyl Benzyl Phthalate	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Carbazole	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Chrysene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenz[a,h]anthracene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenzofuran	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Diethyl Phthalate	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dimethyl Phthalate	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-butyl Phthalate	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-octyl Phthalate	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluoranthene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluorene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobenzene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobutadiene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorocyclopentadiene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachloroethane	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Indeno[1,2,3-cd]pyrene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Isophorone	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Naphthalene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Nitrobenzene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodi-n-propylamine	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodiphenylamine	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pentachlorophenol	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenanthrene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenol	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pyrene	331	U	331	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 1	**532**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Trichloro-1-propene	**546**	B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 3	**1210**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 1	**2070**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 2	**46400**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Surrogate: 2-Fluorophenol	*68 %*		*25-121*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Phenol-d5	*74 %*		*24-113*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Nitrobenzene-d5	*64 %*		*23-120*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/10/2012 10:50

J1R0T5
1209003-04 (Soil)

10/14/12

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Semivolatile Organic Compounds by SW846 8270C								
Surrogate: 2-Fluorobiphenyl	*69 %*	*30-115*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*56 %*	*19-122*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: p-Terphenyl-d14	*67 %*	*18-137*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0T6
1209003-05 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,2-Dichlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,3-Dichlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,4-Dichlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,5-Trichlorophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,6-Trichlorophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dichlorophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dimethylphenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrophenol	1640	U J	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrotoluene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,6-Dinitrotoluene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chloronaphthalene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chlorophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylnaphthalene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylphenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitroaniline	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitrophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3,3'-Dichlorobenzidine	657	U	657	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3-Nitroaniline	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4,6-Dinitro-2-methylphenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Bromophenyl Phenyl Ether	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloro-3-methylphenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloroaniline	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chlorophenyl Phenyl Ether	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3- and/or 4-Methylphenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitroaniline	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitrophenol	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthylene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Anthracene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benz[a]anthracene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[a] pyrene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[b] fluoranthene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[g,h,i] perylene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[k] fluoranthene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroethoxy) methane	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0T6
1209003-05 (Soil)

V 10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C									
Bis(2-chloroethyl) ether	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroisopropyl) ether	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-ethylhexyl) phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Butyl Benzyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Carbazole	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Chrysene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenz[a,h]anthracene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenzofuran	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Diethyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dimethyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-butyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-octyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluoranthene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluorene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobutadiene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorocyclopentadiene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachloroethane	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Indeno[1,2,3-cd]pyrene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Isophorone	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Naphthalene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Nitrobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodi-n-propylamine	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodiphenylamine	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pentachlorophenol	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenanthrene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pyrene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 1	**530**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 3	**312**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 2	**46100**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 4	**567**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 1	**2730**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Surrogate: 2-Fluorophenol	*66 %*		*25-121*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Phenol-d5	*70 %*		*24-113*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Nitrobenzene-d5	*68 %*		*23-120*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/10/2012 10:50

J1R0T6
1209003-05 (Soil)

10/14/12

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Semivolatile Organic Compounds by SW846 8270C								
Surrogate: 2-Fluorobiphenyl	*68 %*	*30-115*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*58 %*	*19-122*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: p-Terphenyl-d14	*63 %*	*18-137*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0T7
1209003-06 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,2-Dichlorobenzene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,3-Dichlorobenzene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,4-Dichlorobenzene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,5-Trichlorophenol	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,6-Trichlorophenol	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dichlorophenol	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dimethylphenol	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrophenol	1610	U J	1610	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrotoluene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,6-Dinitrotoluene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chloronaphthalene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chlorophenol	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylnaphthalene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylphenol	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitroaniline	1610	U	1610	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitrophenol	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3,3'-Dichlorobenzidine	644	U	644	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3-Nitroaniline	1610	U	1610	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4,6-Dinitro-2-methylphenol	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Bromophenyl Phenyl Ether	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloro-3-methylphenol	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloroaniline	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chlorophenyl Phenyl Ether	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3- and/or 4-Methylphenol	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitroaniline	1610	U	1610	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitrophenol	1610	U	1610	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthylene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Anthracene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benz[a]anthracene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[a] pyrene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[b] fluoranthene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[g,h,i] perylene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[k] fluoranthene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroethoxy) methane	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/10/2012 10:50

J1R0T7
1209003-06 (Soil)

V 10/14/12

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Bis(2-chloroethyl) ether	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroisopropyl) ether	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-ethylhexyl) phthalate	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Butyl Benzyl Phthalate	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Carbazole	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Chrysene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenz[a,h]anthracene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenzofuran	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Diethyl Phthalate	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dimethyl Phthalate	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-butyl Phthalate	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-octyl Phthalate	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluoranthene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluorene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobenzene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobutadiene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorocyclopentadiene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachloroethane	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Indeno[1,2,3-cd]pyrene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Isophorone	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Naphthalene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Nitrobenzene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodi-n-propylamine	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodiphenylamine	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pentachlorophenol	1610	U	1610	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenanthrene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenol	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pyrene	322	U	322	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 1	**808**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 2	**303**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 3	**663**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 2	**45000**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 1	**2190**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Surrogate: 2-Fluorophenol	*68 %*		*25-121*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Phenol-d5	*75 %*		*24-113*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Nitrobenzene-d5	*68 %*		*23-120*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/10/2012 10:50

J1R0T7
1209003-06 (Soil)

Volatile

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Semivolatile Organic Compounds by SW846 8270C								
Surrogate: 2-Fluorobiphenyl	*69 %*	*30-115*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*52 %*	*19-122*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: p-Terphenyl-d14	*67 %*	*18-137*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0T8
1209003-07 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,2-Dichlorobenzene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,3-Dichlorobenzene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,4-Dichlorobenzene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,5-Trichlorophenol	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,6-Trichlorophenol	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dichlorophenol	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dimethylphenol	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrophenol	1600	U J	1600	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrotoluene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,6-Dinitrotoluene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chloronaphthalene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chlorophenol	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylnaphthalene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylphenol	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitroaniline	1600	U	1600	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitrophenol	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3,3'-Dichlorobenzidine	640	U	640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3-Nitroaniline	1600	U	1600	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4,6-Dinitro-2-methylphenol	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Bromophenyl Phenyl Ether	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloro-3-methylphenol	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloroaniline	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chlorophenyl Phenyl Ether	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3- and/or 4-Methylphenol	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitroaniline	1600	U	1600	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitrophenol	1600	U	1600	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthylene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Anthracene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benz[a]anthracene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[a] pyrene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[b] fluoranthene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[g,h,i] perylene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[k] fluoranthene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroethoxy) methane	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C

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WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/10/2012 10:50

10/04/12

J1R0T8
1209003-07 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C									
Bis(2-chloroethyl) ether	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroisopropyl) ether	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-ethylhexyl) phthalate	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Butyl Benzyl Phthalate	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Carbazole	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Chrysene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenz[a,h]anthracene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenzofuran	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Diethyl Phthalate	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dimethyl Phthalate	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-butyl Phthalate	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-octyl Phthalate	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluoranthene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluorene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobenzene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobutadiene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorocyclopentadiene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachloroethane	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Indeno[1,2,3-cd]pyrene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Isophorone	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Naphthalene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Nitrobenzene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodi-n-propylamine	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodiphenylamine	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pentachlorophenol	1600	U	1600	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenanthrene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenol	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pyrene	320	U	320	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 1	**2270**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 2	**42300**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 3	**617**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 1	**393**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 2	**370**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Surrogate: 2-Fluorophenol	*71 %*		*25-121*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Phenol-d5	*76 %*		*24-113*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Nitrobenzene-d5	*69 %*		*23-120*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/10/2012 10:50

J1R0T8
1209003-07 (Soil)

10/14/12

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Semivolatile Organic Compounds by SW846 8270C								
Surrogate: 2-Fluorobiphenyl	*70 %*	*30-115*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*56 %*	*19-122*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: p-Terphenyl-d14	*68 %*	*18-137*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0T9
1209003-08 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,2-Dichlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,3-Dichlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,4-Dichlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,5-Trichlorophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,6-Trichlorophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dichlorophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dimethylphenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrophenol	1640	U J	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrotoluene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,6-Dinitrotoluene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chloronaphthalene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chlorophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylnaphthalene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylphenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitroaniline	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitrophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3,3'-Dichlorobenzidine	658	U	658	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3-Nitroaniline	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4,6-Dinitro-2-methylphenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Bromophenyl Phenyl Ether	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloro-3-methylphenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloroaniline	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chlorophenyl Phenyl Ether	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3- and/or 4-Methylphenol.	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitroaniline	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitrophenol	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthylene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Anthracene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benz[a]anthracene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[a] pyrene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[b] fluoranthene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[g,h,i] perylene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[k] fluoranthene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroethoxy) methane	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C

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WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/10/2012 10:50

J1R0T9
1209003-08 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C									
Bis(2-chloroethyl) ether	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroisopropyl) ether	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-ethylhexyl) phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Butyl Benzyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Carbazole	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Chrysene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenz[a,h]anthracene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenzofuran	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Diethyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dimethyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-butyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-octyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluoranthene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluorene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobutadiene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorocyclopentadiene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachloroethane	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Indeno[1,2,3-cd]pyrene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Isophorone	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Naphthalene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Nitrobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodi-n-propylamine	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodiphenylamine	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pentachlorophenol	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenanthrene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pyrene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Trichloro-1-propene	**320**	B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 1	**336**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 3	**671**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 2	**32900**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 1	**855**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Surrogate: 2-Fluorophenol	*64 %*		*25-121*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Phenol-d5	*69 %*		*24-113*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Nitrobenzene-d5	*62 %*		*23-120*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/10/2012 10:50

J1R0T9

1209003-08 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Semivolatile Organic Compounds by SW846 8270C								
Surrogate: 2-Fluorobiphenyl	*63 %*	*30-115*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*50 %*	*19-122*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: p-Terphenyl-d14	*60 %*	*18-137*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0V0
1209003-09 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,2-Dichlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,3-Dichlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,4-Dichlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,5-Trichlorophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,6-Trichlorophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dichlorophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dimethylphenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrophenol	1650	U J	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrotoluene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,6-Dinitrotoluene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chloronaphthalene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chlorophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylnaphthalene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylphenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitrophenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3,3'-Dichlorobenzidine	658	U	658	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4,6-Dinitro-2-methylphenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Bromophenyl Phenyl Ether	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloro-3-methylphenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloroaniline	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chlorophenyl Phenyl Ether	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3- and/or 4-Methylphenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitrophenol	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthylene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Anthracene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benz[a]anthracene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[a] pyrene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[b] fluoranthene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[g,h,i] perylene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[k] fluoranthene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroethoxy) methane	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0V0
1209003-09 (Soil)

10/04/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C									
Bis(2-chloroethyl) ether	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroisopropyl) ether	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-ethylhexyl) phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Butyl Benzyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Carbazole	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Chrysene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenz[a,h]anthracene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenzofuran	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Diethyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dimethyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-butyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-octyl Phthalate	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluoranthene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluorene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobutadiene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorocyclopentadiene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachloroethane	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Indeno[1,2,3-cd]pyrene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Isophorone	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Naphthalene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Nitrobenzene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodi-n-propylamine	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodiphenylamine	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pentachlorophenol	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenanthrene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenol	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pyrene	329	U	329	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 2	**471**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 1	**383**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 2	**40400**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 3	**1000**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 1	**2130**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Surrogate: 2-Fluorophenol	*62 %*		*25-121*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Phenol-d5	*65 %*		*24-113*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Nitrobenzene-d5	*57 %*		*23-120*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/10/2012 10:50

J1R0V0
1209003-09 (Soil)

10/14/12

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C								
Surrogate: 2-Fluorobiphenyl	*58 %*	*30-115*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*38 %*	*19-122*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: p-Terphenyl-d14	*57 %*	*18-137*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0V1

1209003-10 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,2-Dichlorobenzene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,3-Dichlorobenzene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
1,4-Dichlorobenzene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,5-Trichlorophenol	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4,6-Trichlorophenol	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dichlorophenol	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dimethylphenol	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrophenol	1640	U J	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,4-Dinitrotoluene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2,6-Dinitrotoluene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chloronaphthalene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Chlorophenol	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylnaphthalene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Methylphenol	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitroaniline	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
2-Nitrophenol	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3,3'-Dichlorobenzidine	657	U	657	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3-Nitroaniline	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4,6-Dinitro-2-methylphenol	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Bromophenyl Phenyl Ether	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloro-3-methylphenol	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chloroaniline	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Chlorophenyl Phenyl Ether	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
3- and/or 4-Methylphenol	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitroaniline	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
4-Nitrophenol	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Acenaphthylene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Anthracene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benz[a]anthracene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[a] pyrene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[b] fluoranthene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[g,h,i] perylene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Benzo[k] fluoranthene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroethoxy) methane	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0V1
1209003-10 (Soil)

V 10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C									
Bis(2-chloroethyl) ether	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-chloroisopropyl) ether	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Bis(2-ethylhexyl) phthalate	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Butyl Benzyl Phthalate	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Carbazole	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Chrysene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenz[a,h]anthracene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dibenzofuran	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Diethyl Phthalate	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Dimethyl Phthalate	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-butyl Phthalate	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Di-n-octyl Phthalate	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluoranthene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Fluorene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobenzene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorobutadiene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachlorocyclopentadiene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Hexachloroethane	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Indeno[1,2,3-cd]pyrene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Isophorone	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Naphthalene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Nitrobenzene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodi-n-propylamine	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
N-Nitrosodiphenylamine	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pentachlorophenol	1640	U	1640	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenanthrene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Phenol	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Pyrene	328	U	328	ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 1	**619**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Unknown 2	**391**	J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 3	**849**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 2	**53500**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
TIC:Aldol Condensate 1	**2680**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/06/2012	8270C
Surrogate: 2-Fluorophenol	*75 %*		*25-121*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Phenol-d5	*79 %*		*24-113*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: Nitrobenzene-d5	*73 %*		*23-120*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/10/2012 10:50

J1R0V1
1209003-10 (Soil)

10/14/12

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C								
Surrogate: 2-Fluorobiphenyl	*73 %*	*30-115*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*51 %*	*19-122*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*
Surrogate: p-Terphenyl-d14	*71 %*	*18-137*			*L209020*	*09/05/2012*	*09/06/2012*	*8270C*

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WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/10/2012 10:50

J1R0V2
1209003-11 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
1,2-Dichlorobenzene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
1,3-Dichlorobenzene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
1,4-Dichlorobenzene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4,5-Trichlorophenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4,6-Trichlorophenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4-Dichlorophenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4-Dimethylphenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4-Dinitrophenol	1650	U J	1650	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4-Dinitrotoluene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,6-Dinitrotoluene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Chloronaphthalene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Chlorophenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Methylnaphthalene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Methylphenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Nitrophenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
3,3'-Dichlorobenzidine	660	U	660	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
3-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4,6-Dinitro-2-methylphenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Bromophenyl Phenyl Ether	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Chloro-3-methylphenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Chloroaniline	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Chlorophenyl Phenyl Ether	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
3- and/or 4-Methylphenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Nitroaniline	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Nitrophenol	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Acenaphthene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Acenaphthylene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Anthracene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benz[a]anthracene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benzo[a] pyrene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benzo[b] fluoranthene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benzo[g,h,i] perylene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benzo[k] fluoranthene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Bis(2-chloroethoxy) methane	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C

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WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/10/2012 10:50

J1R0V2
1209003-11 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C									
Bis(2-chloroethyl) ether	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Bis(2-chloroisopropyl) ether	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Bis(2-ethylhexyl) phthalate	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Butyl Benzyl Phthalate	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Carbazole	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Chrysene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Dibenz[a,h]anthracene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Dibenzofuran	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Diethyl Phthalate	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Dimethyl Phthalate	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Di-n-butyl Phthalate	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Di-n-octyl Phthalate	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Fluoranthene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Fluorene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Hexachlorobenzene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Hexachlorobutadiene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Hexachlorocyclopentadiene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Hexachloroethane	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Indeno[1,2,3-cd]pyrene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Isophorone	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Naphthalene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Nitrobenzene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
N-Nitrosodi-n-propylamine	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
N-Nitrosodiphenylamine	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Pentachlorophenol	1650	U	1650	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Phenanthrene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Phenol	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Pyrene	330	U	330	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Unknown 1	**600**	J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Trichloro-1-propene	**593**	B, J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Aldol Condensate 3	**1360**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Aldol Condensate 1	**2470**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Aldol Condensate 2	**48800**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Surrogate: 2-Fluorophenol	*74 %*		*25-121*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*
Surrogate: Phenol-d5	*76 %*		*24-113*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*
Surrogate: Nitrobenzene-d5	*66 %*		*23-120*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0V2
1209003-11 (Soil)

10/19/12

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Semivolatile Organic Compounds by SW846 8270C								
Surrogate: 2-Fluorobiphenyl	*69 %*	*30-115*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*52 %*	*19-122*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*
Surrogate: p-Terphenyl-d14	*65 %*	*18-137*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*

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WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/10/2012 10:50

J1R0V3
1209003-12 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
1,2-Dichlorobenzene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
1,3-Dichlorobenzene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
1,4-Dichlorobenzene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4,5-Trichlorophenol	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4,6-Trichlorophenol	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4-Dichlorophenol	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4-Dimethylphenol	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4-Dinitrophenol	1630	U J	1630	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4-Dinitrotoluene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,6-Dinitrotoluene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Chloronaphthalene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Chlorophenol	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Methylnaphthalene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Methylphenol	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Nitroaniline	1630	U	1630	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Nitrophenol	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
3,3'-Dichlorobenzidine	650	U	650	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
3-Nitroaniline	1630	U	1630	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4,6-Dinitro-2-methylphenol	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Bromophenyl Phenyl Ether	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Chloro-3-methylphenol	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Chloroaniline	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Chlorophenyl Phenyl Ether	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
3- and/or 4-Methylphenol	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Nitroaniline	1630	U	1630	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Nitrophenol	1630	U	1630	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Acenaphthene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Acenaphthylene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Anthracene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benz[a]anthracene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benzo[a] pyrene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benzo[b] fluoranthene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benzo[g,h,i] perylene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benzo[k] fluoranthene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Bis(2-chloroethoxy) methane	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C

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WC-Hanford, Inc.	Project: RC-075	
2620 Fermi Avenue	Project Number: KP0128	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/10/2012 10:50

J1R0V3
1209003-12 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C									
Bis(2-chloroethyl) ether	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Bis(2-chloroisopropyl) ether	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Bis(2-ethylhexyl) phthalate	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Butyl Benzyl Phthalate	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Carbazole	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Chrysene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Dibenz[a,h]anthracene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Dibenzofuran	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Diethyl Phthalate	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Dimethyl Phthalate	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Di-n-butyl Phthalate	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Di-n-octyl Phthalate	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Fluoranthene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Fluorene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Hexachlorobenzene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Hexachlorobutadiene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Hexachlorocyclopentadiene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Hexachloroethane	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Indeno[1,2,3-cd]pyrene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Isophorone	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Naphthalene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Nitrobenzene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
N-Nitrosodi-n-propylamine	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
N-Nitrosodiphenylamine	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Pentachlorophenol	1630	U	1630	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Phenanthrene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Phenol	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Pyrene	325	U	325	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Unknown 1	**661**	J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Trichloro-1-propene	**627**	B, J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Aldol Condensate 3	**1310**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Aldol Condensate 2	**43800**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Aldol Condensate 1	**2240**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Surrogate: 2-Fluorophenol	*62 %*		*25-121*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*
Surrogate: Phenol-d5	*54 %*		*24-113*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*
Surrogate: Nitrobenzene-d5	*62 %*		*23-120*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0V3
1209003-12 (Soil)

10/14/12

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Semivolatile Organic Compounds by SW846 8270C								
Surrogate: 2-Fluorobiphenyl	*64 %*	*30-115*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*56 %*	*19-122*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*
Surrogate: p-Terphenyl-d14	*65 %*	*18-137*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0V5
1209003-13 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
1,2,4-Trichlorobenzene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
1,2-Dichlorobenzene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
1,3-Dichlorobenzene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
1,4-Dichlorobenzene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4,5-Trichlorophenol	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4,6-Trichlorophenol	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4-Dichlorophenol	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4-Dimethylphenol	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4-Dinitrophenol	1660	U J	1660	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,4-Dinitrotoluene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2,6-Dinitrotoluene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Chloronaphthalene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Chlorophenol	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Methylnaphthalene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Methylphenol	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Nitroaniline	1660	U	1660	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
2-Nitrophenol	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
3,3'-Dichlorobenzidine	665	U	665	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
3-Nitroaniline	1660	U	1660	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4,6-Dinitro-2-methylphenol	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Bromophenyl Phenyl Ether	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Chloro-3-methylphenol	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Chloroaniline	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Chlorophenyl Phenyl Ether	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
3- and/or 4-Methylphenol	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Nitroaniline	1660	U	1660	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
4-Nitrophenol	1660	U	1660	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Acenaphthene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Acenaphthylene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Anthracene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benz[a]anthracene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benzo[a] pyrene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benzo[b] fluoranthene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benzo[g,h,i] perylene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Benzo[k] fluoranthene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Bis(2-chloroethoxy) methane	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

J1R0V5
1209003-13 (Soil)

10/14/12

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C									
Bis(2-chloroethyl) ether	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Bis(2-chloroisopropyl) ether	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Bis(2-ethylhexyl) phthalate	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Butyl Benzyl Phthalate	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Carbazole	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Chrysene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Dibenz[a,h]anthracene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Dibenzofuran	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Diethyl Phthalate	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Dimethyl Phthalate	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Di-n-butyl Phthalate	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Di-n-octyl Phthalate	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Fluoranthene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Fluorene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Hexachlorobenzene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Hexachlorobutadiene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Hexachlorocyclopentadiene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Hexachloroethane	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Indeno[1,2,3-cd]pyrene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Isophorone	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Naphthalene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Nitrobenzene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
N-Nitrosodi-n-propylamine	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
N-Nitrosodiphenylamine	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Pentachlorophenol	1660	U	1660	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Phenanthrene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Phenol	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Pyrene	332	U	332	ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Trichloro-1-propene	**462**	B, J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Unknown 1	**549**	J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Aldol Condensate 3	**1090**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Aldol Condensate 2	**43700**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
TIC:Aldol Condensate 1	**1870**	A, B, J		ug/kg dry	1	L209020	09/05/2012	09/07/2012	8270C
Surrogate: 2-Fluorophenol	*58 %*		*25-121*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*
Surrogate: Phenol-d5	*51 %*		*24-113*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*
Surrogate: Nitrobenzene-d5	*61 %*		*23-120*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*

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-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/10/2012 10:50

J1R0V5 V 10/14/12

1209003-13 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Semivolatile Organic Compounds by SW846 8270C								
Surrogate: 2-Fluorobiphenyl	*63 %*	*30-115*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*46 %*	*19-122*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*
Surrogate: p-Terphenyl-d14	*64 %*	*18-137*			*L209020*	*09/05/2012*	*09/07/2012*	*8270C*

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

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-075 KP0128
LVL #: 1209003

W.O. #: 60049-001-001-0001-00
Date Received: 09-05-2012

SEMIVOLATILE

Thirteen (13) soil samples were collected on 08-30-2012.

The samples and associated QC samples were extracted 09-05-2012 and analyzed 09-06,07-2012 according to Lionville Laboratory SOPs. The extraction procedure was based on SW846 Method 3540C, and the analysis procedure was based on SW846 Method 8270C for TCL Semivolatile target compounds.

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. Discrepancies from the sample acceptance policy have been recorded on the Sample Receipt Checklist.

2. Samples were extracted and analyzed within holding time.

3. Non-target compounds were detected in these samples.

4. All obtainable surrogate recoveries were within acceptance criteria.

5. The method blank was below the reporting limit for all target compounds.

6. All blank spike recoveries were within acceptance criteria.

7. All obtainable matrix spike recoveries were within acceptance criteria.

8. The samples were reported on a dry weight basis.

9. All initial calibrations associated with this data set were within acceptance criteria. Per method 8000B/8270C, the attached Table 1 shows the target compounds where the RSD exceeded 15%, and the mean RSD was used for evaluation of the initial calibration. Results associated with these compounds are considered to have greater uncertainty. Refer to the Analysis Batch Sequence Summary Forms to associate the calibration with client samples.

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.

10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

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

12. 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").

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 hardcopy package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Iain Daniels
LvL Laboratory Manager

9/25/12
Date

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-319	Page 1 of 3
Collector: Lucas	Company Contact: J Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L 8B DB 8-27-12
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation	SAF No.: RC-075	Data Turnaround: 21 Days DB-27-12
Ice Chest No.: WCH-11-014	Field Logbook No.: EL-1607-14; COA: R00D502000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A110523	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

~~Potential Rad <DOT~~ TRB 9/4/12
N/A

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - H3 Low Level Soil	Nickel-63; Strontium-89,90 -- Total Sr	Isotopic Uranium
Sample No. / Matrix * / Sample Date / Sample Time										
J1R0T2 / SOIL / 8-30-12 / 0955	X	X	X	X	X	X		X		
J1R0T3 / SOIL / ↓ / 1000	X	X	X	X	X	X				
J1R0T4 / SOIL / ↓ / 1010	X	X	X	X	X	X				
J1R0T5 / SOIL / ↓ / 1015	X	X	X	X	X	X				
J1R0T6 / SOIL / ↓ / 1025	X	X	X	X	X	X				

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Lucas Burnett Duncan	8-30-12 1340	WCH MZ Mstabouch	8/30/12 1340
WCH MZ Mstabouch	8/30/12 1500	1060H1 A. Freier A. Freier	8-30-12 1500
1060H1 See Special Inst.	9/4/12 1300	JR Edwardson JR Edwardson	9/4/12 1300
WCH JR Edwardson	9/4/12 1500	Fed Ex	
Fed Ex	9-5-12 1000	VICTOR HERNANDEZ	9-5-12 1000

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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}; Mercury - 7471 - (CV) {Mercury}
(2). Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

KP0128

REVIEWED BY lwshe DATE 9/4/12

Matrix *: S=Soil; SB=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

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Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-319	Page 2 of 3
Collector: Lucas	Company Contact: J Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L, 8B; Data Turnaround: 21 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation	SAF No.: RC-075	8-27-12
Ice Chest No.: WCH-11-014	Field Logbook No.: EL-1607-14; COA: R00D502000	Method of Shipment: Fed Ex	8-27-12
Shipped To: EBERLINE SERVICES/LIONVILLE	Offsite Property No.: A110 5523	Bill of Lading/Air Bill No.: See OSPC	

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POSSIBLE SAMPLE HAZARDS/REMARKS

~~Potential Rad <DOT~~
N/A TMS 9/4/12

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - H3 Low Level Soil	Nickel-63; Strontium-89/90 -- Total Sr	Isotopic Uranium

Sample No.	Matrix *	Sample Date	Sample Time										
J1R0T7	SOIL	8-30-12	1035	X	X	X	X	X	X		X		
J1R0T8	SOIL		1040	X	X	X	X	X	X				
J1R0T9	SOIL		1050	X	X	X	X	X	X				
J1R0V0	SOIL		1100	X	X	X	X	X	X				
J1R0V1	SOIL		1105	X	X	X	X	X	X				

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Lucas Lucas	8-30-12 1340	WCH M Stankovich	8/30/12 1340
WCH M Stankovich	8/30/12 1500	1060#1 A. Freier	8-30-12 1500
1060#1 See Inst.	9/4/12 1300	J R Edmondson	9/4/12 1300
WCH J R Edmondson	9/4/12 1500	Fed Ex	
Fed Ex	9-5-12 1000	VICTOR HERNANDEZ	9-5-12 1000
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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); Mercury - 7471 - (CV) (Mercury)
(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

REVIEWED BY Mushea DATE 9/4/12

KP0128

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

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Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-319	Page 3 of 3

Collector: Lucas	Company Contact: J Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: ~~8L~~ 8B 8-27-12 — Data Turnaround: ~~21~~ 7 Days 8-27-12
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-50:1 Emer Discharge Pipelines- Excavation	SAF No.: RC-075	
Ice Chest No.: WCH-11-04	Field Logbook No.: EL-1607-14 — COA: R00D502000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A110523	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

~~Potential Rad <DOT~~ N/A PER 9/4/12

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	125mL	125mL	120mL	125mL	120mL	125mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 300.0; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	See item (2) in Special Instructions.	Carbon-14 Low Level; Tritium - H3 Low Level Soil	~~Nickel-63;~~ Strontium-~~89/90~~ – Total Sr	Isotopic Uranium

Sample No.	Matrix *	Sample Date	Sample Time										
J1R0V2	SOIL	8-30-12	~~1035~~ 1110	X	X	X	X	X	X				
J1R0V3	SOIL		~~1040~~ 1120	X	X	X	X	X	X				
~~J1R0V4~~ NO 8/30/12	~~SOIL~~		~~1050~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~				
J1R0V5	SOIL		1100	X	X	X	X	X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Lucas Hanford Fleet	8-30-12 1340	wcH MSTankoovich	1340 8/30/12
WCH MSTankoovich	1500 8/30/12	1000#1 A. Freier	1500 8-30-12
1060#1 See Inst.	9/4/12 1300	J.R. Blundon	9/4/12 1300
WCH J.R. Blundon	9/4/12 1500	Fed Ex	
	9-5-12 1000	VICTOR HERNANDEZ	9-5-12 1000
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out 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}; Mercury - 7471 - (CV) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

REVIEWED BY Mushee DATE 9/4/12

KP0128

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

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D PS-1

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Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 100-D-50:1			DATA PACKAGE: KP0128		
VALIDATOR: ELR		LAB: LLI		DATE: 10/7/12	
			SDG: KP0128		

ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)

SAMPLES/MATRIX			
J1ROT2	J1ROT3	J1ROT4	J1ROT5
J1ROT6	J1ROT7	J1ROT8	J1ROT9
J1ROV0	J1ROV1	J1ROV2	J1ROV3
J1ROV5			
			soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? ..... Yes No (N/A)

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)

Comments:

GC/MS ORGANIC 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/system monitoring compounds analyzed? ..... Yes No N/A

Surrogate/system monitoring compound 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? (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: MS - 2,4-dinitrophl (36%) ~ J all
MSD - 2,4-dinitrophenol (37%) - J all

no PAS

GC/MS ORGANIC DATA VALIDATION CHECKLIST

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

MS/MSD samples analyzed? ..... Yes No N/A

MS/MSD RPD values 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: _____

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? ..... Yes No N/A

Iinternal standard areas acceptable? ..... Yes No N/A

Internal standard retention times acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Transcription/calculation errors? ..... 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: _____

GC/MS ORGANIC 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
Laboratory properly identified and coded all TIC? (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: 91 over

9. SAMPLE CLEANUP (Levels D and E)

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:

Appendix 6

Additional Documentation Requested by Client

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-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209020 - SW 3540C										
Blank (L209020-BLK1)				Prepared: 09/05/2012 Analyzed: 09/06/2012						
1,2,4-Trichlorobenzene	330	U	330	ug/kg wet						
1,2-Dichlorobenzene	330	U	330	ug/kg wet						
1,3-Dichlorobenzene	330	U	330	ug/kg wet						
1,4-Dichlorobenzene	330	U	330	ug/kg wet						
2,4,5-Trichlorophenol	330	U	330	ug/kg wet						
2,4,6-Trichlorophenol	330	U	330	ug/kg wet						
2,4-Dichlorophenol	330	U	330	ug/kg wet						
2,4-Dimethylphenol	330	U	330	ug/kg wet						
2,4-Dinitrophenol	1650	U	1650	ug/kg wet						
2,4-Dinitrotoluene	330	U	330	ug/kg wet						
2,6-Dinitrotoluene	330	U	330	ug/kg wet						
2-Chloronaphthalene	330	U	330	ug/kg wet						
2-Chlorophenol	330	U	330	ug/kg wet						
2-Methylnaphthalene	330	U	330	ug/kg wet						
2-Methylphenol	330	U	330	ug/kg wet						
2-Nitroaniline	1650	U	1650	ug/kg wet						
2-Nitrophenol	330	U	330	ug/kg wet						
3,3'-Dichlorobenzidine	660	U	660	ug/kg wet						
3-Nitroaniline	1650	U	1650	ug/kg wet						
4,6-Dinitro-2-methylphenol	330	U	330	ug/kg wet						
4-Bromophenyl Phenyl Ether	330	U	330	ug/kg wet						
4-Chloro-3-methylphenol	330	U	330	ug/kg wet						
4-Chloroaniline	330	U	330	ug/kg wet						
4-Chlorophenyl Phenyl Ether	330	U	330	ug/kg wet						
3- and/or 4-Methylphenol	330	U	330	ug/kg wet						
4-Nitroaniline	1650	U	1650	ug/kg wet						
4-Nitrophenol	1650	U	1650	ug/kg wet						
Acenaphthene	330	U	330	ug/kg wet						
Acenaphthylene	330	U	330	ug/kg wet						
Anthracene	330	U	330	ug/kg wet						
Benz[a]anthracene	330	U	330	ug/kg wet						
Benzo[a] pyrene	330	U	330	ug/kg wet						
Benzo[b] fluoranthene	330	U	330	ug/kg wet						
Benzo[g,h,i] perylene	330	U	330	ug/kg wet						
Benzo[k] fluoranthene	330	U	330	ug/kg wet						
Bis(2-chloroethoxy) methane	330	U	330	ug/kg wet						

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

Semivolatile Organic Compounds by SW846 8270C - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209020 - SW 3540C										
Blank (L209020-BLK1)				Prepared: 09/05/2012 Analyzed: 09/06/2012						
Bis(2-chloroethyl) ether	330	U	330	ug/kg wet						
Bis(2-chloroisopropyl) ether	330	U	330	ug/kg wet						
Bis(2-ethylhexyl) phthalate	330	U	330	ug/kg wet						
Butyl Benzyl Phthalate	330	U	330	ug/kg wet						
Carbazole	330	U	330	ug/kg wet						
Chrysene	330	U	330	ug/kg wet						
Dibenz[a,h]anthracene	330	U	330	ug/kg wet						
Dibenzofuran	330	U	330	ug/kg wet						
Diethyl Phthalate	330	U	330	ug/kg wet						
Dimethyl Phthalate	330	U	330	ug/kg wet						
Di-n-butyl Phthalate	330	U	330	ug/kg wet						
Di-n-octyl Phthalate	330	U	330	ug/kg wet						
Fluoranthene	330	U	330	ug/kg wet						
Fluorene	330	U	330	ug/kg wet						
Hexachlorobenzene	330	U	330	ug/kg wet						
Hexachlorobutadiene	330	U	330	ug/kg wet						
Hexachlorocyclopentadiene	330	U	330	ug/kg wet						
Hexachloroethane	330	U	330	ug/kg wet						
Indeno[1,2,3-cd]pyrene	330	U	330	ug/kg wet						
Isophorone	330	U	330	ug/kg wet						
Naphthalene	330	U	330	ug/kg wet						
Nitrobenzene	330	U	330	ug/kg wet						
N-Nitrosodi-n-propylamine	330	U	330	ug/kg wet						
N-Nitrosodiphenylamine	330	U	330	ug/kg wet						
Pentachlorophenol	1650	U	1650	ug/kg wet						
Phenanthrene	330	U	330	ug/kg wet						
Phenol	330	U	330	ug/kg wet						
Pyrene	330	U	330	ug/kg wet						
Trichloro-1-propene TICS	103	J		ug/kg wet						
Aldol Condensate 4	207	A, J		ug/kg wet						
Aldol Condensate 3	190	A, J		ug/kg wet						
Aldol Condensate 2	17000	A, J		ug/kg wet						
Aldol Condensate 1 RLW 9/10/12	704	A, J		ug/kg wet						
Surrogate: 2-Fluorophenol	*1480*			*ug/kg wet*	*2500.0*		*59*	*25-121*		
Surrogate: Phenol-d5	*1540*			*ug/kg wet*	*2500.0*		*62*	*24-113*		
Surrogate: Nitrobenzene-d5	*1010*			*ug/kg wet*	*1666.7*		*61*	*23-120*		

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209020 - SW 3540C										
Blank (L209020-BLK1)				Prepared: 09/05/2012 Analyzed: 09/06/2012						
Surrogate: 2-Fluorobiphenyl	*1050*			*ug/kg wet*	*1666.7*		*63*	*30-115*		
Surrogate: 2,4,6-Tribromophenol	*1240*			*ug/kg wet*	*2500.0*		*49*	*19-122*		
Surrogate: p-Terphenyl-d14	*1000*			*ug/kg wet*	*1666.7*		*60*	*18-137*		
LCS (L209020-BS1)				Prepared: 09/05/2012 Analyzed: 09/06/2012						
1,2,4-Trichlorobenzene	1440		330	ug/kg wet	2000.0		72	45-110		
1,2-Dichlorobenzene	1580		330	ug/kg wet	2000.0		79	45-105		
1,3-Dichlorobenzene	1560		330	ug/kg wet	2000.0		78	40-100		
1,4-Dichlorobenzene	1530		330	ug/kg wet	2000.0		77	35-105		
2,4,5-Trichlorophenol	2050		330	ug/kg wet	2000.0		103	30-140		
2,4,6-Trichlorophenol	1650		330	ug/kg wet	2000.0		82	20-110		
2,4-Dichlorophenol	1590		330	ug/kg wet	2000.0		79	40-110		
2,4-Dimethylphenol	1410		330	ug/kg wet	2000.0		70	30-105		
2,4-Dinitrophenol	1730		1650	ug/kg wet	2000.0		86	25-130		
2,4-Dinitrotoluene	1930		330	ug/kg wet	2000.0		97	50-115		
2,6-Dinitrotoluene	1840		330	ug/kg wet	2000.0		92	40-120		
2-Chloronaphthalene	1610		330	ug/kg wet	2000.0		80	45-115		
2-Chlorophenol	1570		330	ug/kg wet	2000.0		79	45-105		
2-Methylnaphthalene	1440		330	ug/kg wet	2000.0		72	45-110		
2-Methylphenol	1680		330	ug/kg wet	2000.0		84	40-120		
2-Nitroaniline	1930		1650	ug/kg wet	2000.0		96	45-120		
2-Nitrophenol	1500		330	ug/kg wet	2000.0		75	40-110		
3,3'-Dichlorobenzidine	1700		660	ug/kg wet	2000.0		85	15-130		
3-Nitroaniline	1630	J	1650	ug/kg wet	2000.0		81	40-130		
4,6-Dinitro-2-methylphenol	1840		330	ug/kg wet	2000.0		92	20-140		
4-Bromophenyl Phenyl Ether	1750		330	ug/kg wet	2000.0		88	45-115		
4-Chloro-3-methylphenol	1660		330	ug/kg wet	2000.0		83	35-115		
4-Chloroaniline	1180		330	ug/kg wet	2000.0		59	10-100		
4-Chlorophenyl Phenyl Ether	1670		330	ug/kg wet	2000.0		84	45-110		
3- and/or 4-Methylphenol	1730		330	ug/kg wet	2000.0		87	40-120		
4-Nitroaniline	1950		1650	ug/kg wet	2000.0		97	40-130		
4-Nitrophenol	2460		1650	ug/kg wet	2000.0		123	15-140		
Acenaphthene	1650		330	ug/kg wet	2000.0		82	45-110		
Acenaphthylene	1730		330	ug/kg wet	2000.0		86	45-115		
Anthracene	1610		330	ug/kg wet	2000.0		80	45-130		
Benz[a]anthracene	1750		330	ug/kg wet	2000.0		87	45-130		
Benzo[a] pyrene	1760		330	ug/kg wet	2000.0		88	45-130		

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	**Reported:** 09/10/2012 10:50

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209020 - SW 3540C									
LCS (L209020-BS1)			Prepared: 09/05/2012 Analyzed: 09/06/2012						
Benzo[b] fluoranthene	1700	330	ug/kg wet	2000.0		85	40-130		
Benzo[g,h,i] perylene	1930	330	ug/kg wet	2000.0		96	45-125		
Benzo[k] fluoranthene	1830	330	ug/kg wet	2000.0		91	45-125		
Bis(2-chloroethoxy) methane	1440	330	ug/kg wet	2000.0		72	45-110		
Bis(2-chloroethyl) ether	1550	330	ug/kg wet	2000.0		77	40-110		
Bis(2-chloroisopropyl) ether	1500	330	ug/kg wet	2000.0		75	30-115		
Bis(2-ethylhexyl) phthalate	1610	330	ug/kg wet	2000.0		81	40-145		
Butyl Benzyl Phthalate	1520	330	ug/kg wet	2000.0		76	50-125		
Carbazole	1780	330	ug/kg wet	2000.0		89	40-140		
Chrysene	1790	330	ug/kg wet	2000.0		90	45-130		
Dibenz[a,h]anthracene	1640	330	ug/kg wet	2000.0		82	45-125		
Dibenzofuran	1710	330	ug/kg wet	2000.0		86	45-120		
Diethyl Phthalate	1830	330	ug/kg wet	2000.0		91	50-125		
Dimethyl Phthalate	1710	330	ug/kg wet	2000.0		86	45-130		
Di-n-butyl Phthalate	1520	330	ug/kg wet	2000.0		76	50-130		
Di-n-octyl Phthalate	1560	330	ug/kg wet	2000.0		78	40-150		
Fluoranthene	1750	330	ug/kg wet	2000.0		87	45-130		
Fluorene	1690	330	ug/kg wet	2000.0		84	45-120		
Hexachlorobenzene	1820	330	ug/kg wet	2000.0		91	45-130		
Hexachlorobutadiene	1570	330	ug/kg wet	2000.0		78	45-105		
Hexachlorocyclopentadiene	1390	330	ug/kg wet	2000.0		69	10-100		
Hexachloroethane	1570	330	ug/kg wet	2000.0		79	35-110		
Indeno[1,2,3-cd]pyrene	1890	330	ug/kg wet	2000.0		95	45-130		
Isophorone	1460	330	ug/kg wet	2000.0		73	40-110		
Naphthalene	1510	330	ug/kg wet	2000.0		75	40-110		
Nitrobenzene	1420	330	ug/kg wet	2000.0		71	40-105		
N-Nitrosodi-n-propylamine	1690	330	ug/kg wet	2000.0		84	30-130		
N-Nitrosodiphenylamine	1710	330	ug/kg wet	2000.0		86	50-120		
Pentachlorophenol	1830	1650	ug/kg wet	2000.0		92	25-120		
Phenanthrene	1690	330	ug/kg wet	2000.0		85	50-120		
Phenol	1600	330	ug/kg wet	2000.0		80	40-115		
Pyrene	1470	330	ug/kg wet	2000.0		74	45-125		
Surrogate: 2-Fluorophenol	*2080*		*ug/kg wet*	*2500.0*		*83*	*25-121*		
Surrogate: Phenol-d5	*2090*		*ug/kg wet*	*2500.0*		*83*	*24-113*		
Surrogate: Nitrobenzene-d5	*1340*		*ug/kg wet*	*1666.7*		*80*	*23-120*		
Surrogate: 2-Fluorobiphenyl	*1490*		*ug/kg wet*	*1666.7*		*89*	*30-115*		
Surrogate: 2,4,6-Tribromophenol	*2380*		*ug/kg wet*	*2500.0*		*95*	*19-122*		

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

Semivolatile Organic Compounds by SW846 8270C - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209020 - SW 3540C									
LCS (L209020-BS1)			Prepared: 09/05/2012 Analyzed: 09/06/2012						
Surrogate: p-Terphenyl-d14	*1260*		*ug/kg wet*	*1666.7*		*76*	*18-137*		
Matrix Spike (L209020-MS1)		Source: 1209003-13	Prepared: 09/05/2012 Analyzed: 09/06/2012						
1,2,4-Trichlorobenzene	1050		ug/kg dry	2004.3	332 U	52	45-110		
1,2-Dichlorobenzene	1270		ug/kg dry	2004.3	332 U	63	45-105		
1,3-Dichlorobenzene	1220		ug/kg dry	2004.3	332 U	61	40-100		
1,4-Dichlorobenzene	1230		ug/kg dry	2004.3	332 U	61	35-105		
2,4,5-Trichlorophenol	1350		ug/kg dry	2004.3	332 U	67	30-140		
2,4,6-Trichlorophenol	1080		ug/kg dry	2004.3	332 U	54	20-110		
2,4-Dichlorophenol	1060		ug/kg dry	2004.3	332 U	53	40-110		
2,4-Dimethylphenol	1000		ug/kg dry	2004.3	332 U	50	30-105		
2,4-Dinitrophenol	720		ug/kg dry	2004.3	1660 U	36	25-130		
2,4-Dinitrotoluene	1440		ug/kg dry	2004.3	332 U	72	50-115		
2,6-Dinitrotoluene	1420		ug/kg dry	2004.3	332 U	71	40-120		
2-Chloronaphthalene	1310		ug/kg dry	2004.3	332 U	65	45-115		
2-Chlorophenol	1310		ug/kg dry	2004.3	332 U	65	45-105		
2-Methylnaphthalene	1060		ug/kg dry	2004.3	332 U	53	45-110		
2-Methylphenol	1320		ug/kg dry	2004.3	332 U	66	40-120		
2-Nitroaniline	1450		ug/kg dry	2004.3	1660 U	73	45-120		
2-Nitrophenol	1060		ug/kg dry	2004.3	332 U	53	40-110		
3,3'-Dichlorobenzidine	1570		ug/kg dry	2004.3	665 U	78	15-130		
3-Nitroaniline	1420		ug/kg dry	2004.3	1660 U	71	40-130		
4,6-Dinitro-2-methylphenol	1150		ug/kg dry	2004.3	332 U	57	20-140		
4-Bromophenyl Phenyl Ether	1350		ug/kg dry	2004.3	332 U	68	45-115		
4-Chloro-3-methylphenol	1110		ug/kg dry	2004.3	332 U	55	35-115		
4-Chloroaniline	1080		ug/kg dry	2004.3	332 U	54	10-100		
4-Chlorophenyl Phenyl Ether	1370		ug/kg dry	2004.3	332 U	68	45-110		
3- and/or 4-Methylphenol	1340		ug/kg dry	2004.3	332 U	67	40-120		
4-Nitroaniline	1570		ug/kg dry	2004.3	1660 U	78	40-130		
4-Nitrophenol	1300		ug/kg dry	2004.3	1660 U	65	15-140		
Acenaphthene	1350		ug/kg dry	2004.3	332 U	67	45-110		
Acenaphthylene	1420		ug/kg dry	2004.3	332 U	71	45-115		
Anthracene	1370		ug/kg dry	2004.3	332 U	69	45-130		
Benz[a]anthracene	1420		ug/kg dry	2004.3	332 U	71	45-130		
Benzo[a] pyrene	1380		ug/kg dry	2004.3	332 U	69	45-130		
Benzo[b] fluoranthene	1490		ug/kg dry	2004.3	332 U	75	40-130		
Benzo[g,h,i] perylene	1490		ug/kg dry	2004.3	332 U	74	45-125		

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209020 - SW 3540C									
Matrix Spike (L209020-MS1)	**Source: 1209003-13**		Prepared: 09/05/2012 Analyzed: 09/06/2012						
Benzo[k] fluoranthene	1390		ug/kg dry	2004.3	332 U	69	45-125		
Bis(2-chloroethoxy) methane	1030		ug/kg dry	2004.3	332 U	52	45-110		
Bis(2-chloroethyl) ether	1250		ug/kg dry	2004.3	332 U	62	40-110		
Bis(2-chloroisopropyl) ether	1250		ug/kg dry	2004.3	332 U	62	30-115		
Bis(2-ethylhexyl) phthalate	1430		ug/kg dry	2004.3	332 U	72	40-145		
Butyl Benzyl Phthalate	1340		ug/kg dry	2004.3	332 U	67	50-125		
Carbazole	1460		ug/kg dry	2004.3	332 U	73	40-140		
Chrysene	1480		ug/kg dry	2004.3	332 U	74	45-130		
Dibenz[a,h]anthracene	1280		ug/kg dry	2004.3	332 U	64	45-125		
Dibenzofuran	1410		ug/kg dry	2004.3	332 U	70	45-120		
Diethyl Phthalate	1350		ug/kg dry	2004.3	332 U	68	50-125		
Dimethyl Phthalate	1330		ug/kg dry	2004.3	332 U	66	45-130		
Di-n-butyl Phthalate	1300		ug/kg dry	2004.3	332 U	65	50-130		
Di-n-octyl Phthalate	1430		ug/kg dry	2004.3	332 U	71	40-150		
Fluoranthene	1400		ug/kg dry	2004.3	332 U	70	45-130		
Fluorene	1370		ug/kg dry	2004.3	332 U	68	45-120		
Hexachlorobenzene	1480		ug/kg dry	2004.3	332 U	74	45-130		
Hexachlorobutadiene	1140		ug/kg dry	2004.3	332 U	57	45-105		
Hexachlorocyclopentadiene	1080		ug/kg dry	2004.3	332 U	54	10-100		
Hexachloroethane	1210		ug/kg dry	2004.3	332 U	60	35-110		
Indeno[1,2,3-cd]pyrene	1430		ug/kg dry	2004.3	332 U	71	45-130		
Isophorone	1040		ug/kg dry	2004.3	332 U	52	40-110		
Naphthalene	1160		ug/kg dry	2004.3	332 U	58	40-110		
Nitrobenzene	1030		ug/kg dry	2004.3	332 U	51	40-105		
N-Nitrosodi-n-propylamine	1330		ug/kg dry	2004.3	332 U	66	30-130		
N-Nitrosodiphenylamine	1340		ug/kg dry	2004.3	332 U	67	50-120		
Pentachlorophenol	993		ug/kg dry	2004.3	1660 U	50	25-120		
Phenanthrene	1420		ug/kg dry	2004.3	332 U	71	50-120		
Phenol	1340		ug/kg dry	2004.3	332 U	67	40-115		
Pyrene	1340		ug/kg dry	2004.3	332 U	67	45-125		
Surrogate: 2-Fluorophenol	*1580*		*ug/kg dry*	*2505.4*		*63*	*25-121*		
Surrogate: Phenol-d5	*1630*		*ug/kg dry*	*2505.4*		*65*	*24-113*		
Surrogate: Nitrobenzene-d5	*920*		*ug/kg dry*	*1670.3*		*55*	*23-120*		
Surrogate: 2-Fluorobiphenyl	*1160*		*ug/kg dry*	*1670.3*		*69*	*30-115*		
Surrogate: 2,4,6-Tribromophenol	*1210*		*ug/kg dry*	*2505.4*		*48*	*19-122*		
Surrogate: p-Terphenyl-d14	*1030*		*ug/kg dry*	*1670.3*		*62*	*18-137*		

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-075 Project Number: KP0128 Project Manager: Joan Kessner	Reported: 09/10/2012 10:50

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209020 - SW 3540C									
Matrix Spike Dup (L209020-MSD1)	**Source: 1209003-13**		Prepared: 09/05/2012 Analyzed: 09/06/2012						
1,2,4-Trichlorobenzene	1070		ug/kg dry	1978.1	332 U	54	45-110	4	40
1,2-Dichlorobenzene	1250		ug/kg dry	1978.1	332 U	63	45-105	0.008	40
1,3-Dichlorobenzene	1210		ug/kg dry	1978.1	332 U	61	40-100	1	40
1,4-Dichlorobenzene	1240		ug/kg dry	1978.1	332 U	63	35-105	2	40
2,4,5-Trichlorophenol	1380		ug/kg dry	1978.1	332 U	70	30-140	4	40
2,4,6-Trichlorophenol	1090		ug/kg dry	1978.1	332 U	55	20-110	3	40
2,4-Dichlorophenol	1050		ug/kg dry	1978.1	332 U	53	40-110	1	40
2,4-Dimethylphenol	989		ug/kg dry	1978.1	332 U	50	30-105	0.2	40
2,4-Dinitrophenol	727		ug/kg dry	1978.1	1660 U	37	25-130	2	40
2,4-Dinitrotoluene	1410		ug/kg dry	1978.1	332 U	71	50-115	0.5	40
2,6-Dinitrotoluene	1450		ug/kg dry	1978.1	332 U	73	40-120	3	40
2-Chloronaphthalene	1380		ug/kg dry	1978.1	332 U	70	45-115	6	40
2-Chlorophenol	1230		ug/kg dry	1978.1	332 U	62	45-105	5	40
2-Methylnaphthalene	1050		ug/kg dry	1978.1	332 U	53	45-110	0.2	40
2-Methylphenol	1100		ug/kg dry	1978.1	332 U	56	40-120	17	40
2-Nitroaniline	1530		ug/kg dry	1978.1	1660 U	77	45-120	6	40
2-Nitrophenol	1080		ug/kg dry	1978.1	332 U	55	40-110	3	40
3,3'-Dichlorobenzidine	1550		ug/kg dry	1978.1	665 U	78	15-130	0.06	40
3-Nitroaniline	1370		ug/kg dry	1978.1	1660 U	69	40-130	2	40
4,6-Dinitro-2-methylphenol	1150		ug/kg dry	1978.1	332 U	58	20-140	1	40
4-Bromophenyl Phenyl Ether	1430		ug/kg dry	1978.1	332 U	72	45-115	7	40
4-Chloro-3-methylphenol	1100		ug/kg dry	1978.1	332 U	56	35-115	0.6	40
4-Chloroaniline	1040		ug/kg dry	1978.1	332 U	52	10-100	3	40
4-Chlorophenyl Phenyl Ether	1390		ug/kg dry	1978.1	332 U	71	45-110	3	40
3- and/or 4-Methylphenol	1240		ug/kg dry	1978.1	332 U	63	40-120	7	40
4-Nitroaniline	1480		ug/kg dry	1978.1	1660 U	75	40-130	5	40
4-Nitrophenol	1180		ug/kg dry	1978.1	1660 U	59	15-140	9	40
Acenaphthene	1400		ug/kg dry	1978.1	332 U	71	45-110	5	40
Acenaphthylene	1490		ug/kg dry	1978.1	332 U	75	45-115	6	40
Anthracene	1380		ug/kg dry	1978.1	332 U	70	45-130	2	40
Benz[a]anthracene	1470		ug/kg dry	1978.1	332 U	74	45-130	5	40
Benzo[a] pyrene	1460		ug/kg dry	1978.1	332 U	74	45-130	8	40
Benzo[b] fluoranthene	1620		ug/kg dry	1978.1	332 U	82	40-130	9	40
Benzo[g,h,i] perylene	1510		ug/kg dry	1978.1	332 U	76	45-125	3	40
Benzo[k] fluoranthene	1470		ug/kg dry	1978.1	332 U	74	45-125	7	40
Bis(2-chloroethoxy) methane	1050		ug/kg dry	1978.1	332 U	53	45-110	3	40

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Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209020 - SW 3540C									
Matrix Spike Dup (L209020-MSD1)	**Source: 1209003-13**		Prepared: 09/05/2012 Analyzed: 09/06/2012						
Bis(2-chloroethyl) ether	1230		ug/kg dry	1978.1	332 U	62	40-110	0.2	40
Bis(2-chloroisopropyl) ether	1230		ug/kg dry	1978.1	332 U	62	30-115	0.5	40
Bis(2-ethylhexyl) phthalate	1470		ug/kg dry	1978.1	332 U	74	40-145	4	40
Butyl Benzyl Phthalate	1410		ug/kg dry	1978.1	332 U	72	50-125	7	40
Carbazole	1460		ug/kg dry	1978.1	332 U	74	40-140	1	40
Chrysene	1510		ug/kg dry	1978.1	332 U	76	45-130	3	40
Dibenz[a,h]anthracene	1330		ug/kg dry	1978.1	332 U	67	45-125	5	40
Dibenzofuran	1470		ug/kg dry	1978.1	332 U	74	45-120	6	40
Diethyl Phthalate	1370		ug/kg dry	1978.1	332 U	69	50-125	2	40
Dimethyl Phthalate	1350		ug/kg dry	1978.1	332 U	68	45-130	3	40
Di-n-butyl Phthalate	1320		ug/kg dry	1978.1	332 U	67	50-130	2	40
Di-n-octyl Phthalate	1520		ug/kg dry	1978.1	332 U	77	40-150	7	40
Fluoranthene	1420		ug/kg dry	1978.1	332 U	72	45-130	3	40
Fluorene	1410		ug/kg dry	1978.1	332 U	71	45-120	4	40
Hexachlorobenzene	1530		ug/kg dry	1978.1	332 U	78	45-130	5	40
Hexachlorobutadiene	1180		ug/kg dry	1978.1	332 U	60	45-105	5	40
Hexachlorocyclopentadiene	1210		ug/kg dry	1978.1	332 U	61	10-100	13	40
Hexachloroethane	1190		ug/kg dry	1978.1	332 U	60	35-110	0.2	40
Indeno[1,2,3-cd]pyrene	1480		ug/kg dry	1978.1	332 U	75	45-130	4	40
Isophorone	1060		ug/kg dry	1978.1	332 U	54	40-110	3	40
Naphthalene	1180		ug/kg dry	1978.1	332 U	60	40-110	3	40
Nitrobenzene	1070		ug/kg dry	1978.1	332 U	54	40-105	5	40
N-Nitrosodi-n-propylamine	1280		ug/kg dry	1978.1	332 U	65	30-130	3	40
N-Nitrosodiphenylamine	1360		ug/kg dry	1978.1	332 U	69	50-120	3	40
Pentachlorophenol	980		ug/kg dry	1978.1	1660 U	50	25-120	0.006	40
Phenanthrene	1440		ug/kg dry	1978.1	332 U	73	50-120	3	40
Phenol	1240		ug/kg dry	1978.1	332 U	63	40-115	6	40
Pyrene	1450		ug/kg dry	1978.1	332 U	73	45-125	10	40
Surrogate: 2-Fluorophenol	*1500*		*ug/kg dry*	*2472.7*		*61*	*25-121*		
Surrogate: Phenol-d5	*1540*		*ug/kg dry*	*2472.7*		*62*	*24-113*		
Surrogate: Nitrobenzene-d5	*943*		*ug/kg dry*	*1648.4*		*57*	*23-120*		
Surrogate: 2-Fluorobiphenyl	*1210*		*ug/kg dry*	*1648.4*		*74*	*30-115*		
Surrogate: 2,4,6-Tribromophenol	*1300*		*ug/kg dry*	*2472.7*		*53*	*19-122*		
Surrogate: p-Terphenyl-d14	*1100*		*ug/kg dry*	*1648.4*		*67*	*18-137*		