TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. F10-102

F10-102
SDG #: ~~W08575~~
W05875
KB

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TESTAMERICA LABORATORIES, INC.

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Project Manager

May 13, 2010

ANALYTICAL METHODS SUMMARY

W08575

PARAMETER	ANALYTICAL METHOD
Percent Moisture	MCAWW 160.3 MOD
PCB Screen	KNOX PCB Screen
PCBs, HRGC/HRMS	EPA-22 1668A

References:

EPA-22 "METHOD 1668, REVISION A: CHLORINATED BIPHENYL CONGENERS IN WATER, SOIL, SEDIMENT, AND TISSUE BY HRGC/HRMS" EPA-821-R-00-002 12/99

KNOX TestAmerica Laboratories Inc., Knoxville Laboratory Standard Operating Procedure

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SAMPLE SUMMARY

W08575 : H0D120413

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LXTTD	001	B247X6	03/26/10	12:45

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PROJECT NARRATIVE
W08575

The results reported herein are applicable to the samples submitted for analysis only.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

The temperature of the cooler was outside of temperature specifications at 22°C..

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

The method referenced for the analysis was EPA 1668 Revision A.

Nomenclature
The standardization strategy described in this report uses the naming convention of SW-846 Method 8290. This convention differs from Method 1668A in the following manner:

Standard Addition Occurs Prior To:	Method 1668 A	SW-846 Conventions Used in This Report
Sampling	None	Sampling Surrogate
Extraction	Labeled Toxics/LOC/Window Defining	Internal Standard
Cleanups	Labeled Cleanup Standard	Cleanup Standard*
Injection	Labeled Injection Internal Standard	Recovery Standard

TestAmerica Knoxville maintains the following certifications, approvals and accreditations: Arkansas DEQ Lab #88-0688, California DHS ELAP Cert. #2423, Colorado DPHE, Connecticut DPH Lab #PH-0223, Florida DOH Lab #E87177, Georgia DNR Lab #906, Hawaii DOH, Illinois EPA Lab #200012, Indiana DOH Lab #C-TN-02, Iowa DNR Lab #375, Kansas DHE Cert. #E-10349, Kentucky DEP Lab #90101, Louisiana DEQ Cert. #03079, Louisiana DOHH, Maryland DOE Cert. #277, Michigan DEQ Lab #9933, Nevada DEP, New Jersey DEP Lab #TN001, New York DOH Lab #10781, North Carolina DPH Lab #21705, North Carolina DEHNR Cert. #64, Ohio EPA VAP Lab #CL0059, Oklahoma DEQ Lab #9415, Pennsylvania DEP Lab #68-00576, South Carolina DHEC Cert #84001001, Tennessee DOH Lab #02014, Texas CEQ, Utah DOH Lab # QUAN3, Virginia DGS Lab #00165, Washington DOE Lab #C1314, West Virginia DEP Cert. #345, West Virginia DHHR Cert #9955C, Wisconsin DNR Lab #998044300, Naval Facilities Engineering Service Center and USDA Soil Permit #S-46424. This list of approvals is subject to change and does not imply that laboratory certification is available for all parameters reported in this environmental sample data report.

* Cleanup Standard is also referred to as Surrogate Standard on report.

The shorthand notation used for congeners in this report is summarized in Table 2.

Qualifiers:

The following flags are used to qualify results for HRMS PCB results:

J – The reported result is an estimate. The amount reported is below the Estimated Minimum Level (EML). EML is defined by the method as the lowest concentration at which an analyte can be measured reliably with common laboratory interferences present. This value has been determined for each congener by MDL and laboratory method blank studies. The value is adjusted to reflect sample specific initial and final volumes.

E – The reported result is an estimate. The amount reported is above the UCL described below.

The E qualifier is applied on the basis of the **Upper Calibration Level (UCL)**. The quantitative definition of the UCL is listed below:

Upper Calibration Level: The concentration or mass of analyte in the sample that corresponds to the highest calibration level in the initial calibration. It is equivalent to the concentration of the highest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

B – The analyte is present in the associated method blank at a reportable level. For this analysis, there is no method specified reporting level, other than the qualitative criterion that peaks must exhibit a signal-to-noise ratio of 2.5-to-1. Therefore, the presence of any amount of the analyte present in the blank will result a B qualifier on all associated samples.

Note: Some laboratories do not report contamination in the blank unless it is above their lower calibration limit, or an established percentage of the level in the samples, or an established percentage of the regulatory limit. Likewise, some laboratories set a reporting limit at one half the lower calibration limit.

Q – Estimated maximum possible concentration. This qualifier is used when the result is generated from chromatographic data that does not meet all the qualitative criteria for a positive identification given in the method. The criteria include the following areas:
- Ion abundance ratios must be within specified limits (+/-15% of theoretical ion abundance ratio.)
- Retention time criteria (relative to the method-specified isotope labeled retention time

standard).
• Co-maximization criterion. The two quantitation ion peaks must reach their maxima within 2 seconds of each other.

S – Ion suppression evident. The trace indicating the signal from the lock mass of the calibration compound shows a deflection at the retention time of the analyte. This may indicate a temporary suppression of the instrument sensitivity, due to a matrix-borne interference.

C – Coeluting Isomer. The isomer is known to coelute with another member of its homologue group, or the peak shape is shouldered, indicating the likelihood of a coeluting isomer. When the C flag is followed by a number, the number indicates the lowest numbered congener among the coelution set. For example, if 100 pg/L is detected at the retention time of PCB 156, and PCB 157 is known to coelute with PCB 156, the results will be flagged as follows:
PCB 156 100 pg/L C
PCB 157 100 pg/L C156

In certain electronic deliverables the result field for PCB 157 will be null, with "C156" appearing in the qualifier field in accordance with the CARP EDD specification.

X – Other. See explanation in narrative.

Results
The results for the analyses are summarized in the following pages. Please see comments regarding qualifiers, above. Additional information regarding qualifiers is explained in the legends at the end of each result summary. All PCB shorthand identifications are done in accordance with the IUPAC convention. A summary of the IUPAC convention is provided in Table 2.

Detection Limits
For all analyte results a sample specific detection limit is calculated for that analyte. This is done by first determining the GC/MS peak height of the noise or interferent in the expected region of the analyte signal. This value is multiplied by the number 2.5, which serves as a safety factor. The 2.5 safety factor is disregarded if the noise present in the analyte region is a result of chemical interferences. The resulting signal response value is then used to estimate the minimum detectable analyte amount. The result is the estimated sample detection limit.

When an analyte is not detected, an ND appears in place of the result. The value in the detection limit column is the estimated detection limit for the analyte in that particular sample.

EXAMPLE CALCULATIONS

The following formulas were used for sample calculations. Examples are given for calculating the percent recovery for internal standard $^{13}C_{12}$-PCB 1, the concentration of native PCB 1 and the EDL for PCB 1. All values used in the calculations below are typical (i.e. not extracted from a particular sample). Actual values are found on the IsoCalc Preliminary Sample Report (IPSR) at the position indicated (in parentheses, below):

INTERNAL STANDARD RECOVERY ($^{13}C_{12}$-PCB 1)

$$\text{Percent Recovery} = \frac{\Sigma A_{IS} \bullet W_{RS} \bullet 100\%}{\Sigma A_{RS} \bullet W_{IS} \bullet RRF}$$

ΣA_{IS} = Sum of areas for the Internal Standard quantitation ions. (IPSR – Column "Area", Row "13C12-PCB 1")

W_{RS} = Mass in ng of the Recovery Standard. (IPSR – Column "Std Amt", Row "13C12-PCB 9")

ΣA_{RS} = Sum of areas for the Recovery Standard quantitation ions. (IPSR – Column "Area", Row "13C12-PCB 9")

W_{IS} = Mass in ng of the Internal Standard. (IPSR – Column "Std Amt", Row "13C12-PCB 1")

RRF = Internal Standard mean relative response factor from the initial multipoint calibration. (IPSR - Column "RF", Row "13C12-PCB 1".)

Substituting typical values ,
$$\frac{1106275 \bullet 2.000\ (ng) \bullet 100\%}{1205581 \bullet 2.000\ (ng) \bullet 1.412} = 65\%\ \text{Recovery}$$

NATIVE ANALYTE QUANTITATION (PCB 1)

$$\text{Conc} = \frac{\Sigma A_X \bullet W_{IS}}{\Sigma A_{IS} \bullet V \bullet 0.001\ (mL/L) \bullet RRF}$$

ΣA_X = Sum of areas for analyte quantitation ions. (IPSR – Area Column "Area", Row "PCB 1")

W_{IS} = Mass in ng of Internal Standard. (IPSR – Column "Std Amt", Row "13C12-PCB 1")

ΣA_{IS} = Sum areas for the Internal Standard. (IPSR – Column "Area", Row 13C12-PCB 1)

V = Volume of sample extracted in mL. (IPSR – Header Column 2, Row "Initial Wt/Vol")

RRF = Native analyte mean relative response factor from the initial calibration, or daily response factor as appropriate. (IPSR – Column "RF", Row "PCB 1")

Substituting typical values, $\dfrac{8951 \bullet 2.000\ (ng)}{1106275 \bullet 2200\ (mL) \bullet 0.001\ (mL/L) \bullet 1.136}$ = 0.00647 ng/L = 6.47 pg/L

CALCULATION OF SAMPLE SPECIFIC ESTIMATED DETECTION LIMIT

This calculation uses the noise values found on the IsoCalc Preliminary Peak Report (IPPR), which follows the IPSR. All the other values used in the equation are found on the IPSR.)

$$\frac{\Sigma I_X \bullet W_{IS} \bullet T_{SN}}{\Sigma I_{IS} \bullet V \bullet 0.001\ (mL/L) \bullet RRF}$$

ΣI_X = Sum of the intensities of the noise levels of the characteristic ions in the region of analyte elution. (IPPR – Columns "Height1" and "Height2", Row {mass} 188, Sub-Row "Noise").

W_{IS} = Mass in ng of the Internal Standard. (IPSR – Column "Std Amt", Row "13C12-PCB 1").

T_{SN} = Minimum Signal-to-Noise threshold. = 2.5. A constant, specified by the method.

ΣI_{IS} = Intensity of the corresponding ^{13}C ions. (IPSR – Column "Height", Row "13C12-PCB 9")

V = Volume of sample extracted in mL. (IPSR – Header Column 2, Row "Initial Wt/Vol")

RRF = Native analyte mean relative response factor from the initial calibration or daily standard as appropriate. (IPSR – Column "RF", Row "PCB 1")

Substituting typical values $\dfrac{79 \bullet 2000\ (pg) \bullet 2.5}{334600 \bullet 2200\ (mL) \bullet 0.001\ (mL/L) \bullet 1.136} = 0.466\ pg/L$

In sample data, peaks must have an intensity of 2.5 times the height of the background noise in order to be considered. Careful examination of the two equations above, and a bit of algebra reveals that for the concentration of the smallest peak detectable (per the EDL equation) to exactly equal the smallest peaks that are calculated, requires that the average height to area ratio obtained during the calibration must equal the area to height ratio for every peak obtained near 2.5 times the noise. When the area to height ratio on a peak in a sample is less than the average obtained during calibration, the calculated result will correspond to a peak that would have been less than 2.5 X the noise on the calibration. This is the result of normal variability. Because the source method for the EDL (EPA 1668 Revision A) does not provide for censoring of results by any other magnitude standard than being 2.5 times the noise, the laboratory does not censor at the calculated EDL. Hence, detections may be reported below the estimated detection limits.

Table 1
Concentration of PCBs in Calibration Solutions

Analyte Type	BZ/IUPAC[1]	CS 0.5 ng/mL	CS 1 ng/mL	CS 2 ng/mL	CS 3[2] ng/mL	CS 4 ng/mL	CS 5 ng/mL
Congeners							
2-MoCB	1	0.5	1.0	5.0	50	400	2000
4-MoCB	3	0.5	1.0	5.0	50	400	2000
2,2'-DiCB	4	0.5	1.0	5.0	50	400	2000
4,4'-DiCB	15	0.5	1.0	5.0	50	400	2000
2,2',6'-TrCB	19	0.5	1.0	5.0	50	400	2000
3,4,4'-TrCB	37	0.5	1.0	5.0	50	400	2000
2,2',6,6'-TeCB	54	0.5	1.0	5.0	50	400	2000
3,3',4,4'-TeCB	77	0.5	1.0	5.0	50	400	2000
3,4,4',5-TeCB	81	0.5	1.0	5.0	50	400	2000
2,2',4,6,6'-PeCB	104	0.5	1.0	5.0	50	400	2000
2,3,3',4,4'-PeCB	105	0.5	1.0	5.0	50	400	2000
2,3,4,4',5-PeCB	114	0.5	1.0	5.0	50	400	2000
2,3',4,4',5-PeCB	118	0.5	1.0	5.0	50	400	2000
2',3,4,4',5-PeCB	123	0.5	1.0	5.0	50	400	2000
3,3',4,4',5-PeCB	126	0.5	1.0	5.0	50	400	2000
2,2',4,4',6,6'-HxCB	155	0.5	1.0	5.0	50	400	2000
2,3,3',4,4',5-HxCB	156	0.5	1.0	5.0	50	400	2000

PROJECT NARRATIVE
W08575

Table 1							
Concentration of PCBs in Calibration Solutions							
		CS 0.5	CS 1	CS 2	CS 3[2]	CS 4	CS 5
Analyte Type	BZ/IUPAC[1]	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL
Congeners							
2,3,3',4,4',5'-HxCB	157	0.5	1.0	5.0	50	400	2000
2,3',4,4',5,5'-HxCB	167	0.5	1.0	5.0	50	400	2000
3,3',4,4',5,5'-HxCB	169	0.5	1.0	5.0	50	400	2000
2,2',3,4',5,6,6'-HpCB	188	0.5	1.0	5.0	50	400	2000
2,3,3',4,4',5,5'-HpCB	189	0.5	1.0	5.0	50	400	2000
2,2',3,3',5,5',6,6'-OcCB	202	0.5	1.0	5.0	50	400	2000
2,3,3',4,4',5,5',6-OcCB	205	0.5	1.0	5.0	50	400	2000
2,2',3,3',4,4',5,5',6-NoCB	206	0.5	1.0	5.0	50	400	2000
2,2',3,3',4',5,5',6,6'-NoCB	208	0.5	1.0	5.0	50	400	2000
DeCB	209	0.5	1.0	5.0	50	400	2000
All other CB congeners		0.5	1.0	5.0	50	400	2000
Labeled Congeners							
$^{13}C_{12}$-2-MoCB	1L	100	100	100	100	100	100
$^{13}C_{12}$-4-MoCB	3L	100	100	100	100	100	100
$^{13}C_{12}$-2,2'-DiCB	4L	100	100	100	100	100	100
$^{13}C_{12}$-4,4'-DiCB	15L	100	100	100	100	100	100
$^{13}C_{12}$-2,2',6-TrCB	19L	100	100	100	100	100	100
$^{13}C_{12}$-3,4,4'-TrCB	37L	100	100	100	100	100	100
$^{13}C_{12}$-2,2',6,6'-TeCB	54L	100	100	100	100	100	100
$^{13}C_{12}$-3,3',4,4'-TeCB	77L	100	100	100	100	100	100
$^{13}C_{12}$-3,4,4',5-TeCB	81L	100	100	100	100	100	100
$^{13}C_{12}$-2,2',4,6,6'-PeCB	104L	100	100	100	100	100	100
$^{13}C_{12}$-2,3,3',4,4'-PeCB	105L	100	100	100	100	100	100
$^{13}C_{12}$-2,3,4,4',5-PeCB	114L	100	100	100	100	100	100
$^{13}C_{12}$-2,3',4,4',5-PeCB	118L	100	100	100	100	100	100
$^{13}C_{12}$-2',3,4,4',5-PeCB	123L	100	100	100	100	100	100
$^{13}C_{12}$-3,3',4,4',5-PeCB	126L	100	100	100	100	100	100
$^{13}C_{12}$-2,2',4,4',6,6'-HxCB	155L	100	100	100	100	100	100
$^{13}C_{12}$-2,3,3',4,4',5-HxCB	156L	100	100	100	100	100	100
$^{13}C_{12}$-2,3,3',4,4',5'-HxCB	157L	100	100	100	100	100	100
$^{13}C_{12}$-2,3',4,4',5,5'-HxCB	167L	100	100	100	100	100	100
$^{13}C_{12}$-3,3',4,4',5,5'-HxCB	169L	100	100	100	100	100	100
$^{13}C_{12}$-2,2',3,3',4,4',5-HpCB	170L	100	100	100	100	100	100
$^{13}C_{12}$-2,2',3,4',5,6,6'-HpCB	188L	100	100	100	100	100	100
$^{13}C_{12}$-2,3,3',4,4',5,5'-HpCB	189L	100	100	100	100	100	100
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OcCB	202L	100	100	100	100	100	100
$^{13}C_{12}$-2,3,3',4,4',5,5',6-OcCB	205L	100	100	100	100	100	100
$^{13}C_{12}$-2,2',3,3',4,4',5,5',6-NoCB	206L	100	100	100	100	100	100
$^{13}C_{12}$-2,2',3,3',4',5,5',6,6'-NoCB	208L	100	100	100	100	100	100
$^{13}C_{12}$-DeCB	209L	100	100	100	100	100	100
Cleanup Standards							
$^{13}C_{12}$-2,4,4'-TriCB	28L	0.5	1.0	5.0	50	400	--
$^{13}C_{12}$-2,3,3',5,5'-PeCB	111L	0.5	1.0	5.0	50	400	--
$^{13}C_{12}$-2,2',3,3',5,5',6-HpCB	178L	0.5	1.0	5.0	50	400	--
Recovery Standards							
$^{13}C_{12}$-2,5-DiCB	9L	100	100	100	100	100	100
$^{13}C_{12}$-2,4',5-TriCB	31L	100	100	100	100	100	100
$^{13}C_{12}$-2,4',6-TriCB	32L	100	100	100	100	100	100
$^{13}C_{12}$-2,2',5,5'-TeCB	52L	100	100	100	100	100	100
$^{13}C_{12}$-2,2',4',5,5'-PeCB	101L	100	100	100	100	100	100
$^{13}C_{12}$-3,3',4,5,5'-PeCB	127L	100	100	100	100	100	100
$^{13}C_{12}$-2,2',3',4,4',5'-HxCB	138L	100	100	100	100	100	100
$^{13}C_{12}$-2,2',3,4,4',5,5'-HpCB	180L	100	100	100	100	100	100
$^{13}C_{12}$-2,2',3,3',4,4',5,5'-OcCB	194L	100	100	100	100	100	100
Labeled Sampling Surrogates							
$^{13}C_{12}$-2,4'-DiCB	8L	0.5	1.0	5.0	50	400	--

PROJECT NARRATIVE
W08575

Table 1							
Concentration of PCBs in Calibration Solutions							
		CS 0.5	CS 1	CS 2	CS 3[2]	CS 4	CS 5
Analyte Type	BZ/IUPAC[1]	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL
Congeners							
$^{13}C_{12}$-3,3',4,5'-TeCB	79L	0.5	1.0	5.0	50	400	--
$^{13}C_{12}$-2,2',3,5',6-PeCB	95L	0.5	1.0	5.0	50	400	--
$^{13}C_{12}$-2,2',4,4',5,5'-HxCB	153L	0.5	1.0	5.0	50	400	--

Notes:
1. Suffix "L" indicates labeled compound
2. Section 15.3, calibration verification solution

Table 2					
PCB Shorthand Nomenclature Used in this Report					
BZ/IUPAC Number[1].	PCB Chemical Structure Name[2]	CAS Registry[3] Number	BZ/IUPAC Number[1].	PCB Chemical Structure Name[2]	CAS Registry[3] Number
1	2-monochlorobiphenyl	2051-60-7	106	2,3,3',4,5-pentachlorobiphenyl	70424-69-0
2	3-monochlorobiphenyl	2051-61-8	107/109	2,3,3',4,6-pentachlorobiphenyl	74472-35-8
3	4-monochlorobiphenyl	2051-62-9	108/107	2,3,3',4',5-pentachlorobiphenyl	70424-68-9
4	2,2'-dichlorobiphenyl	13029-08-8	109/108	2,3,3',4,5'-pentachlorobiphenyl	70362-41-3
5	2,3-dichlorobiphenyl	16605-91-7	110	2,3,3',4',6-pentachlorobiphenyl	38380-03-9
6	2,3'-dichlorobiphenyl	25569-80-6	111	2,3,3',5,5'-pentachlorobiphenyl	39635-32-0
7	2,4-dichlorobiphenyl	33284-50-3	112	2,3,3',5,6-pentachlorobiphenyl	74472-36-9
8	2,4'-dichlorobiphenyl	34883-43-7	113	2,3,3',5',6-pentachlorobiphenyl	68194-10-5
9	2,5-dichlorobiphenyl	34883-39-1	114	2,3,4,4',5-pentachlorobiphenyl	74472-37-0
10	2,6-dichlorobiphenyl	33146-45-1	115	2,3,4,4',6-pentachlorobiphenyl	74472-38-1
11	3,3'-dichlorobiphenyl	2050-67-1	116	2,3,4,5,6-pentachlorobiphenyl	18259-05-7
12	3,4-dichlorobiphenyl	2974-92-7	117	2,3,4',5,6-pentachlorobiphenyl	68194-11-6
13	3,4'-dichlorobiphenyl	2974-90-5	118	2,3',4,4',5-pentachlorobiphenyl	31508-00-6
14	3,5-dichlorobiphenyl	34883-41-5	119	2,3',4,4',6-pentachlorobiphenyl	56558-17-9
15	4,4'-dichlorobiphenyl	2050-68-2	120	2,3',4,5,5'-pentachlorobiphenyl	68194-12-7
16	2,2',3-trichlorobiphenyl	38444-78-9	121	2,3',4,5',6-pentachlorobiphenyl	56558-18-0
17	2,2',4-trichlorobiphenyl	37680-66-3	122	2',3,3',4,5-pentachlorobiphenyl (2,3,3',4',5'-pentachlorobiphenyl)	76842-07-4
18	2,2',5-trichlorobiphenyl	37680-65-2	123	2',3,4,4',5-pentachlorobiphenyl (2,3',4,4',5'-pentachlorobiphenyl)	65510-44-3
19	2,2',6-trichlorobiphenyl	38444-73-4	124	2',3,4,5,5'-pentachlorobiphenyl (2,3',4',5',5-pentachlorobiphenyl)	70424-70-3
20	2,3,3'-trichlorobiphenyl	38444-84-7	125	2',3,4,5,6'-pentachlorobiphenyl (2,3',4',5',6-pentachlorobiphenyl)	74472-39-2
21	2,3,4-trichlorobiphenyl	55702-46-0	126	3,3',4,4',5-pentachlorobiphenyl	57465-28-8
22	2,3,4'-trichlorobiphenyl	38444-85-8	127	3,3',4,5,5'-pentachlorobiphenyl	39635-33-1
23	2,3,5-trichlorobiphenyl	55720-44-0	128	2,2',3,3',4,4'-hexachlorobiphenyl	38380-07-3
24	2,3,6-trichlorobiphenyl	55702-45-9	129	2,2',3,3',4,5-hexachlorobiphenyl	55215-18-4
25	2,3',4-trichlorobiphenyl	55712-37-3	130	2,2',3,3',4,5'-hexachlorobiphenyl	52663-66-8
26	2,3',5-trichlorobiphenyl	38444-81-4	131	2,2',3,3',4,6-hexachlorobiphenyl	61798-70-7
27	2,3',6-trichlorobiphenyl	38444-76-7	132	2,2',3,3',4,6'-hexachlorobiphenyl	38380-05-1
28	2,4,4'-trichlorobiphenyl	7012-37-5	133	2,2',3,3',5,5'-hexachlorobiphenyl	35694-04-3
29	2,4,5-trichlorobiphenyl	15862-07-4	134	2,2',3,3',5,6-hexachlorobiphenyl	52704-70-8
30	2,4,6-trichlorobiphenyl	35693-92-6	135	2,2',3,3',5,6'-hexachlorobiphenyl	52744-13-5
31	2,4',5-trichlorobiphenyl	16606-02-3	136	2,2',3,3',6,6'-hexachlorobiphenyl	38411-22-2
32	2,4',6-trichlorobiphenyl	38444-77-8	137	2,2',3,4,4',5-hexachlorobiphenyl	35694-06-5
33	2',3,4-trichlorobiphenyl (2,3',4'-trichlorobiphenyl)	38444-86-9	138	2,2',3,4,4',5'-hexachlorobiphenyl	35065-28-2
34	2',3,5-trichlorobiphenyl (2,3',5'-trichlorobiphenyl)	37680-68-5	139	2,2',3,4,4',6-hexachlorobiphenyl	56030-56-9
35	3,3',4-trichlorobiphenyl	37680-69-6	140	2,2',3,4,4',6'-hexachlorobiphenyl	59291-64-4
36	3,3',5-trichlorobiphenyl	38444-87-0	141	2,2',3,4,5,5'-hexachlorobiphenyl	52712-04-6

PROJECT NARRATIVE
W08575

Table 2					
PCB Shorthand Nomenclature Used in this Report					
BZ/IUPAC Number[1].	PCB Chemical Structure Name[2]	CAS Registry[3] Number	BZ/IUPAC Number[1].	PCB Chemical Structure Name[2]	CAS Registry[3] Number
37	3,4,4'-trichlorobiphenyl	38444-90-5	142	2,2',3,4,5,6-hexachlorobiphenyl	41411-61-4
38	3,4,5-trichlorobiphenyl	53555-66-1	143	2,2',3,4,5,6'-hexachlorobiphenyl	68194-15-0
39	3,4',5-trichlorobiphenyl	38444-88-1	144	2,2',3,4,5',6-hexachlorobiphenyl	68194-14-9
40	2,2',3,3'-tetrachlorobiphenyl	38444-93-8	145	2,2',3,4,6,6'-hexachlorobiphenyl	74472-40-5
41	2,2',3,4-tetrachlorobiphenyl	52663-59-9	146	2,2',3,4',5,5'-hexachlorobiphenyl	51908-16-8
42	2,2',3,4'-tetrachlorobiphenyl	36559-22-5	147	2,2',3,4',5,6-hexachlorobiphenyl	68194-13-8
43	2,2',3,5-tetrachlorobiphenyl	70362-46-8	148	2,2',3,4',5,6'-hexachlorobiphenyl	74472-41-6
44	2,2',3,5'-tetrachlorobiphenyl	41464-39-5	149	2,2',3,4',5',6-hexachlorobiphenyl	38380-04-0
45	2,2',3,6-tetrachlorobiphenyl	70362-45-7	150	2,2',3,4',6,6'-hexachlorobiphenyl	68194-08-1
46	2,2',3,6'-tetrachlorobiphenyl	41464-47-5	151	2,2',3,5,5',6-hexachlorobiphenyl	52663-63-5
47	2,2',4,4'-tetrachlorobiphenyl	2437-79-8	152	2,2',3,5,6,6'-hexachlorobiphenyl	68194-09-2
48	2,2',4,5-tetrachlorobiphenyl	70362-47-9	153	2,2',4,4',5,5'-hexachlorobiphenyl	35065-27-1
49	2,2',4,5'-tetrachlorobiphenyl	41464-40-8	154	2,2',4,4',5,6'-hexachlorobiphenyl	60145-22-4
50	2,2',4,6-tetrachlorobiphenyl	62796-65-0	155	2,2',4,4',6,6'-hexachlorobiphenyl	33979-03-2
51	2,2',4,6'-tetrachlorobiphenyl	68194-04-7	156	2,3,3',4,4',5-hexachlorobiphenyl	38380-08-4
52	2,2',5,5'-tetrachlorobiphenyl	35693-99-3	157	2,3,3',4,4',5'-hexachlorobiphenyl	69782-90-7
53	2,2',5,6'-tetrachlorobiphenyl	41464-41-9	158	2,3,3',4,4',6-hexachlorobiphenyl	74472-42-7
54	2,2',6,6'-tetrachlorobiphenyl	15968-05-5	159	2,3,3',4,5,5'-hexachlorobiphenyl	39635-35-3
55	2,3,3',4-tetrachlorobiphenyl	74338-24-2	160	2,3,3',4,5,6-hexachlorobiphenyl	41411-62-5
56	2,3,3',4'-tetrachlorobiphenyl	41464-43-1	161	2,3,3',4,5',6-hexachlorobiphenyl	74472-43-8
57	2,3,3',5-tetrachlorobiphenyl	70424-67-8	162	2,3,3',4',5,5'-hexachlorobiphenyl	39635-34-2
58	2,3,3',5'-tetrachlorobiphenyl	41464-49-7	163	2,3,3',4',5,6-hexachlorobiphenyl	74472-44-9
59	2,3,3',6-tetrachlorobiphenyl	74472-33-6	164	2,3,3',4',5',6-hexachlorobiphenyl	74472-45-0
60	2,3,4,4'-tetrachlorobiphenyl	33025-41-1	165	2,3,3',5,5',6-hexachlorobiphenyl	74472-46-1
61	2,3,4,5-tetrachlorobiphenyl	33284-53-6	166	2,3,4,4',5,6-hexachlorobiphenyl	41411-63-6
62	2,3,4,6-tetrachlorobiphenyl	54230-22-7	167	2,3',4,4',5,5'-hexachlorobiphenyl	52663-72-6
63	2,3,4',5-tetrachlorobiphenyl	74472-34-7	168	2,3',4,4',5',6-hexachlorobiphenyl	59291-65-5
64	2,3,4',6-tetrachlorobiphenyl	52663-58-8	169	3,3',4,4',5,5'-hexachlorobiphenyl	32774-16-6
65	2,3,5,6-tetrachlorobiphenyl	33284-54-7	170	2,2',3,3',4,4',5-heptachlorobiphenyl	35065-30-6
66	2,3',4,4'-tetrachlorobiphenyl	32598-10-0	171	2,2',3,3',4,4',6-heptachlorobiphenyl	52663-71-5
67	2,3',4,5-tetrachlorobiphenyl	73575-53-8	172	2,2',3,3',4,5,5'-heptachlorobiphenyl	52663-74-8
68	2,3',4,5'-tetrachlorobiphenyl	73575-52-7	173	2,2',3,3',4,5,6-heptachlorobiphenyl	68194-16-1
69	2,3',4,6-tetrachlorobiphenyl	60233-24-1	174	2,2',3,3',4,5,6'-heptachlorobiphenyl	38411-25-5
70	2,3',4',5-tetrachlorobiphenyl	32598-11-1	175	2,2',3,3',4,5',6-heptachlorobiphenyl	40186-70-7
71	2,3',4',6-tetrachlorobiphenyl	41464-46-4	176	2,2',3,3',4,6,6'-heptachlorobiphenyl	52663-65-7
72	2,3',5,5'-tetrachlorobiphenyl	41464-42-0	177	2,2',3,3',4',5,6-heptachlorobiphenyl (2,2',3,3',4,5',6'-heptachlorobiphenyl)	52663-70-4
73	2,3',5',6-tetrachlorobiphenyl	74338-23-1	178	2,2',3,3',5,5',6-heptachlorobiphenyl	52663-67-9
74	2,4,4',5-tetrachlorobiphenyl	32690-93-0	179	2,2',3,3',5,6,6'-heptachlorobiphenyl	52663-64-6
75	2,4,4',6-tetrachlorobiphenyl	32598-12-2	180	2,2',3,4,4',5,5'-heptachlorobiphenyl	35065-29-3
76	2',3,4,5-tetrachlorobiphenyl (2,3',4',5'-tetrachlorobiphenyl)	70362-48-0	181	2,2',3,4,4',5,6-heptachlorobiphenyl	74472-47-2
77	3,3',4,4'-tetrachlorobiphenyl	32598-13-3	182	2,2',3,4,4',5,6'-heptachlorobiphenyl	60145-23-5
78	3,3',4,5-tetrachlorobiphenyl	70362-49-1	183	2,2',3,4,4',5',6-heptachlorobiphenyl	52663-69-1
79	3,3',4,5'-tetrachlorobiphenyl	41464-48-6	184	2,2',3,4,4',6,6'-heptachlorobiphenyl	74472-48-3
80	3,3',5,5'-tetrachlorobiphenyl	33284-52-5	185	2,2',3,4,5,5',6-heptachlorobiphenyl	52712-05-7
81	3,4,4',5-tetrachlorobiphenyl	70362-50-4	186	2,2',3,4,5,6,6'-heptachlorobiphenyl	74472-49-4
82	2,2',3,3',4-pentachlorobiphenyl	52663-62-4	187	2,2',3,4',5,5',6-heptachlorobiphenyl	52663-68-0
83	2,2',3,3',5-pentachlorobiphenyl	60145-20-2	188	2,2',3,4',5,6,6'-heptachlorobiphenyl	74487-85-7
84	2,2',3,3',6-pentachlorobiphenyl	52663-60-2	189	2,3,3',4,4',5,5'-heptachlorobiphenyl	39635-31-9
85	2,2',3,4,4'-pentachlorobiphenyl	65510-45-4	190	2,3,3',4,4',5,6-heptachlorobiphenyl	41411-64-7
86	2,2',3,4,5-pentachlorobiphenyl	55312-69-1	191	2,3,3',4,4',5',6-heptachlorobiphenyl	74472-50-7
87	2,2',3,4,5'-pentachlorobiphenyl	38380-02-8	192	2,3,3',4,5,5',6-heptachlorobiphenyl	74472-51-8

Table 2					
PCB Shorthand Nomenclature Used in this Report					
BZ/IUPAC Number[1].	PCB Chemical Structure Name[2]	CAS Registry[3] Number	BZ/IUPAC Number[1].	PCB Chemical Structure Name[2]	CAS Registry[3] Number
88	2,2',3,4,6-pentachlorobiphenyl	55215-17-3	193	2,3,3',4',5,5',6-heptachlorobiphenyl	69782-91-8
89	2,2',3,4,6'-pentachlorobiphenyl	73575-57-2	194	2,2',3,3',4,4',5,5'-octachlorobiphenyl	35694-08-7
90	2,2',3,4',5-pentachlorobiphenyl	68194-07-0	195	2,2',3,3',4,4',5,6-octachlorobiphenyl	52663-78-2
91	2,2',3,4',6-pentachlorobiphenyl	68194-05-8	196	2,2',3,3',4,4',5,6'-octachlorobiphenyl	42740-50-1
92	2,2',3,5,5'-pentachlorobiphenyl	52663-61-3	197	2,2',3,3',4,4',6,6'-octachlorobiphenyl	33091-17-7
93	2,2',3,5,6-pentachlorobiphenyl	73575-56-1	198	2,2',3,3',4,5,5',6-octachlorobiphenyl	68194-17-2
94	2,2',3,5,6'-pentachlorobiphenyl	73575-55-0	199/200	2,2',3,3',4,5,6,6'-octachlorobiphenyl	52663-73-7
95	2,2',3,5',6-pentachlorobiphenyl	38379-99-6	200/201	2,2',3,3',4,5',6,6'-octachlorobiphenyl	40186-71-8
96	2,2',3,6,6'-pentachlorobiphenyl	73575-54-9	201/199	2,2',3,3',4,5,5',6'-octachlorobiphenyl·	52663-75-9
97	2,2',3',4,5-pentachlorobiphenyl (2,2',3,4',5'-pentachlorobiphenyl)	41464-51-1	202	2,2',3,3',5,5',6,6'-octachlorobiphenyl	2136-99-4
98	2,2',3',4,6-pentachlorobiphenyl (2,2',3,4',6'-pentachlorobiphenyl)	60233-25-2	203	2,2',3,4,4',5,5',6-octachlorobiphenyl	52663-76-0
99	2,2',4,4',5-pentachlorobiphenyl	38380-01-7	204	2,2',3,4,4',5,6,6'-octachlorobiphenyl	74472-52-9
100	2,2',4,4',6-pentachlorobiphenyl	39485-83-1	205	2,3,3',4,4',5,5',6-octachlorobiphenyl	74472-53-0
101	2,2',4,5,5'-pentachlorobiphenyl	37680-73-2	206	2,2',3,3',4,4',5,5',6-nonachlorobiphenyl	40186-72-9
102	2,2',4,5,6-pentachlorobiphenyl	68194-06-9	207	2,2',3,3',4,4',5,6,6'-nonachlorobiphenyl	52663-79-3
103	2,2',4,5',6-pentachlorobiphenyl	60145-21-3	208	2,2',3,3',4,5,5',6,6'-nonachlorobiphenyl	52663-77-1
104	2,2',4,6,6'-pentachlorobiphenyl	56558-16-8	209	2,2',3,3',4,4',5,5',6,6'-decachlorobiphenyl	2051-24-3
105	2,3,3',4,4'-pentachlorobiphenyl	32598-14-4			

1. The BZ number is from Ballschmiter and Zell (1980). The IUPAC number, when different from the BZ, follows the recommended changes to the BZ number per Schulte and Malisch (1983) and Guitart et al. (1993).

2. The chemical structure names are from Ballschmiter and Zell (1980). IUPAC nomenclature structure names are listed in parenthesis when different from the BZ name (source CAS Registry).

3. Chemical Abstract Service Registry number (source CAS Registry and 1668A Table 1).

SAMPLE ISSUE RESOLUTION

SIR NUM	SDR10-743
REV NUM	0
DATE INITIATED	6/16/2010

SAMPLE EVENT INFORMATION

SAF NUM(S)	F10-102
OPERABLE UNIT(S)	200-IS-1
PROJECT(S)	200 AREA GRP
SAMPLE EVENT TITLE(S)	200-IS-1 OU
LABORATORY	TestAmerica Knoxville

SAMPLING INFORMATION

NUMBER OF SAMPLES	1
SAMPLE NUMBERS	B247X6
SAMPLE MATRIX	SOIL
COLLECTION DATE	3/26/2010 - 3/26/2010
SDG NUM	W05875

ISSUE BACKGROUND

CLASS	General Laboratory Direction
TYPE	Other General Laboratory Direction (Specify)
DESCRIPTION	The TestAmerica Knoxville data package for SDG W05875 has a consistent typographical error throughout the document referring to the data package in question as "W08575." (LAB ISSUE)

DISPOSITION

DESCRIPTION	A Sample Issue Resolution form was attached to the W05875 data package regarding the afforementioned issue.
JUSTIFICATION	Impact on data quality objectives will be reviewed by the project during their data quality assessment process.

APPROVAL SIGNATURES

WIDRIG, DL

PROJECT COORDINATOR (PRINT/SIGN NAME) **DATE**

SCHUTZENHOFER, JL

TASK MANAGER (PRINT/SIGN NAME) **DATE**

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-094

Date : April 7, 2010 SAF No. F10-102

SDG: W05875 LOGIN No.: TEST: 1668A

Sample No.(s) B247X6

Submitted By:	Jamie McKinney	Submitted To:	Mike Neely
Phone No.	865.291.3051	Phone No.	509-373-5869
Fax No.	865.584.4315	Fax No.	866-252-5816

ISSUE	PROPOSED RESOLUTION
Samples were received outside of temperature specification (received at ambient).	Discuss in the case narrative.

CHPRC/BHI/WMH/PNNL COMMENTS

Please proceed with the analysis and discuss the temperature issue in the case narrative.

Heidi Hampt 4/12/10
Signature and Date

Sample Data Summary

CH2M Hill Plateau Remediation DOE RL

Sample ID: B247X6

Trace Level Organic Compounds

Lot - Sample #....:	H0D120413 - 001	**Work Order #....:**	LXTTD1AA	**Matrix....:**	SOLID
Date Sampled....:	03/26/10	**Date Received....:**	04/07/10	**Dilution Factor:**	1
Prep Date....:	04/15/10	**Analysis Date....:**	05/06/10	**Percent Moisture**	7.1
Prep Batch # ....:	0105192				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	M1D	**Method:**	EPA-22 1668A
Analyst ID....:	Patricia(Trish) M. Parsly				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
PCB 77 (BZ)	ND		0.011	0.00044	ng/g
PCB 81 (BZ)	ND		0.011	0.00041	ng/g
PCB 126 (BZ)	ND		0.011	0.00041	ng/g
PCB 105 (BZ)	ND		0.011	0.00040	ng/g
PCB 118 (BZ)	**0.0011**	**Q J**	**0.011**	**0.00041**	**ng/g**
PCB 123 (BZ)	ND		0.011	0.00043	ng/g
PCB 114 (BZ)	ND		0.011	0.00039	ng/g
PCB 169 (BZ)	ND		0.011	0.00039	ng/g
PCB 156 (BZ)	ND		0.011	0.00070	ng/g
PCB 157 (BZ)	ND		0.011	0.00070	ng/g
PCB 167 (BZ)	ND		0.011	0.00040	ng/g
PCB 189 (BZ)	ND		0.011	0.00041	ng/g

CH2M Hill Plateau Remediation DOE RL

Sample ID: B247X6

Trace Level Organic Compounds

Lot - Sample #....:	H0D120413 - 001	**Work Order #....:**	LXTTD1AA	**Matrix....:**	SOLID
Date Sampled....:	03/26/10	**Date Received....:**	04/07/10	**Dilution Factor:**	1
Prep Date....:	04/15/10	**Analysis Date....:**	05/06/10	**Percent Moisture**	7.1
Prep Batch # ....:	0105192				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	M1D	**Method:**	EPA-22 1668A
Analyst ID....:	Patricia(Trish) M. Parsly				

INTERNAL STANDARDS	PERCENT RECOVERY		RECOVERY LIMITS
13C12-PCB 1	60		30 - 140
13C12-PCB 3	53		30 - 140
13C12-PCB 4	73		30 - 140
13C12-PCB 15	67		30 - 140
13C12-PCB 19	72		30 - 140
13C12-PCB 37	73		30 - 140
13C12-PCB 54	68		30 - 140
13C12-PCB 77	71		30 - 140
13C12-PCB 81	71		30 - 140
13C12-PCB 104	76		30 - 140
13C12-PCB 105	76		30 - 140
13C12-PCB 114	77		30 - 140
13C12-PCB 118	74		30 - 140
13C12-PCB 123	76		30 - 140
13C12-PCB 126	78		30 - 140
13C12-PCB 155	86		30 - 140
13C12-PCB 156	77	C	30 - 140
13C12-PCB 157	77	C	30 - 140
13C12-PCB 167	74		30 - 140
13C12-PCB 169	76		30 - 140
13C12-PCB 170	83		30 - 140
13C12-PCB 188	90		30 - 140
13C12-PCB 189	79		30 - 140
13C12-PCB 202	101		30 - 140
13C12-PCB 205	86		30 - 140
13C12-PCB 206	92		30 - 140
13C12-PCB 208	85		30 - 140
13C12-PCB 209	90		30 - 140

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C12-PCB 28	77	40 - 125
13C12-PCB 111	81	40 - 125
13C12-PCB 178	82	40 - 125

CH2M Hill Plateau Remediation DOE RL

Sample ID: B247X6

Trace Level Organic Compounds

Lot - Sample #....:	H0D120413 - 001	**Work Order #....:**	LXTTD1AA	**Matrix....:**	SOLID
Date Sampled....:	03/26/10	**Date Received....:**	04/07/10	**Dilution Factor:**	1
Prep Date....:	04/15/10	**Analysis Date....:**	05/06/10	**Percent Moisture**	7.1
Prep Batch # ....:	0105192				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	M1D	**Method:**	EPA-22 1668A
Analyst ID....:	Patricia(Trish) M. Parsly				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

Method Blank Report

Trace Level Organic Compounds

Lot - Sample #....:	H0D150000 - 192B	**Work Order #....:**	LX1GL1AA	**Matrix....:**	SOLID
Dilution Factor:	1				
Prep Date....:	04/15/10	**Analysis Date....:**	05/05/10	**Percent Moisture:**	0.0
Prep Batch # ....:	0105192				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	M1D	**Method:**	EPA-22 1668A
Analyst ID....:	Jon M. Nordquist				

PARAMETER	RESULT	MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
PCB 77 (BZ)	ND	0.010	0.00026	ng/g
PCB 81 (BZ)	ND	0.010	0.00026	ng/g
PCB 126 (BZ)	ND	0.010	0.00024	ng/g
PCB 105 (BZ)	ND	0.010	0.00024	ng/g
PCB 118 (BZ)	ND	0.010	0.00024	ng/g
PCB 123 (BZ)	ND	0.010	0.00024	ng/g
PCB 114 (BZ)	ND	0.010	0.00022	ng/g
PCB 169 (BZ)	ND	0.010	0.00022	ng/g
PCB 156 (BZ)	ND	0.010	0.00043	ng/g
PCB 157 (BZ)	ND	0.010	0.00043	ng/g
PCB 167 (BZ)	ND	0.010	0.00024	ng/g
PCB 189 (BZ)	ND	0.010	0.00022	ng/g

Method Blank Report

Trace Level Organic Compounds

Lot - Sample #....:	H0D150000 - 192B	**Work Order #....:**	LX1GL1AA	**Matrix....:**	SOLID
Dilution Factor:	1				
Prep Date....:	04/15/10	**Analysis Date....:**	05/05/10	**Percent Moisture:**	0.0
Prep Batch # ....:	0105192				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	M1D	**Method:**	EPA-22 1668A
Analyst ID....:	Jon M. Nordquist				

INTERNAL STANDARDS	PERCENT RECOVERY		RECOVERY LIMITS
13C12-PCB 1	67		30 - 140
13C12-PCB 3	61		30 - 140
13C12-PCB 4	76		30 - 140
13C12-PCB 15	76		30 - 140
13C12-PCB 19	76		30 - 140
13C12-PCB 37	80		30 - 140
13C12-PCB 54	75		30 - 140
13C12-PCB 77	81		30 - 140
13C12-PCB 81	79		30 - 140
13C12-PCB 104	81		30 - 140
13C12-PCB 105	83		30 - 140
13C12-PCB 114	84		30 - 140
13C12-PCB 118	81		30 - 140
13C12-PCB 123	82		30 - 140
13C12-PCB 126	86		30 - 140
13C12-PCB 155	92		30 - 140
13C12-PCB 156	84	C	30 - 140
13C12-PCB 157	84	C	30 - 140
13C12-PCB 167	82		30 - 140
13C12-PCB 169	83		30 - 140
13C12-PCB 170	89		30 - 140
13C12-PCB 188	96		30 - 140
13C12-PCB 189	85		30 - 140
13C12-PCB 202	110		30 - 140
13C12-PCB 205	93		30 - 140
13C12-PCB 206	99		30 - 140
13C12-PCB 208	92		30 - 140
13C12-PCB 209	97		30 - 140

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C12-PCB 28	82	40 - 125
13C12-PCB 111	90	40 - 125
13C12-PCB 178	88	40 - 125

Method Blank Report

Trace Level Organic Compounds

Lot - Sample #....:	H0D150000 - 192B	**Work Order #....:**	LX1GL1AA	**Matrix....:**	SOLID
Dilution Factor:	1				
Prep Date....:	04/15/10	**Analysis Date....:**	05/05/10	**Percent Moisture:**	0.0
Prep Batch # ....:	0105192				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	M1D	**Method:**	EPA-22 1668A
Analyst ID....:	Jon M. Nordquist				

QUALIFIERS

C Co-eluting isomer.

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...:	W08575	**Work Order # ...:**	LX1GL1AC-LCS	**Matrix .....:**	SOLID
LCS Lot-Sample# :	H0D150000 - 192				
Prep Date .....:	04/15/10	**Analysis Date ..:**	05/05/10		
Prep Batch # ...:	0105192				
Dilution Factor :	1				
Analyst ID.....:	Jon M. Nordquist	**Instrument ID..:**	M1D	**Method.....:**	EPA-22 1668A
Initial Wgt/Vol:	10 g				

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY		RECOVERY LIMITS
PCB 77 (BZ)	**0.500**	**0.491**	**ng/g**	**98**		**(50 - 150)**
PCB 1 (BZ)	**0.500**	**0.400**	**ng/g**	**80**		**(50 - 150)**
PCB 81 (BZ)	**0.500**	**0.490**	**ng/g**	**98**		**(50 - 150)**
PCB 126 (BZ)	**0.500**	**0.520**	**ng/g**	**104**		**(50 - 150)**
PCB 105 (BZ)	**0.500**	**0.540**	**ng/g**	**108**		**(50 - 150)**
PCB 3 (BZ)	**0.500**	**0.449**	**ng/g**	**90**		**(50 - 150)**
PCB 118 (BZ)	**0.500**	**0.538**	**ng/g**	**108**		**(50 - 150)**
PCB 4 (BZ)	**0.500**	**0.465**	**ng/g**	**93**		**(50 - 150)**
PCB 123 (BZ)	**0.500**	**0.596**	**ng/g**	**119**		**(50 - 150)**
PCB 114 (BZ)	**0.500**	**0.561**	**ng/g**	**112**		**(50 - 150)**
PCB 169 (BZ)	**0.500**	**0.490**	**ng/g**	**98**		**(50 - 150)**
PCB 156 (BZ)	**1.00**	**1.02**	**ng/g**	**102**	**C**	**(50 - 150)**
PCB 157 (BZ)	**1.00**	**1.02**	**ng/g**	**102**	**C C156**	**(50 - 150)**
PCB 167 (BZ)	**0.500**	**0.543**	**ng/g**	**109**		**(50 - 150)**
PCB 189 (BZ)	**0.500**	**0.540**	**ng/g**	**108**		**(50 - 150)**
PCB 15 (BZ)	**0.500**	**0.487**	**ng/g**	**97**	**B**	**(50 - 150)**
PCB 19 (BZ)	**0.500**	**0.508**	**ng/g**	**102**		**(50 - 150)**
PCB 37 (BZ)	**0.500**	**0.495**	**ng/g**	**99**		**(50 - 150)**
PCB 54 (BZ)	**0.500**	**0.505**	**ng/g**	**101**		**(50 - 150)**
PCB 104 (BZ)	**0.500**	**0.501**	**ng/g**	**100**		**(50 - 150)**
PCB 155 (BZ)	**0.500**	**0.515**	**ng/g**	**103**		**(50 - 150)**
PCB 188 (BZ)	**0.500**	**0.486**	**ng/g**	**97**		**(50 - 150)**
PCB 202 (BZ)	**0.500**	**0.475**	**ng/g**	**95**		**(50 - 150)**
PCB 205 (BZ)	**0.500**	**0.508**	**ng/g**	**102**		**(50 - 150)**
PCB 206 (BZ)	**0.500**	**0.463**	**ng/g**	**93**		**(50 - 150)**
PCB 208 (BZ)	**0.500**	**0.518**	**ng/g**	**104**		**(50 - 150)**
PCB 209 (BZ)	**0.500**	**0.547**	**ng/g**	**109**		**(50 - 150)**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C12-PCB 1	64	(30 - 140)
13C12-PCB 3	57	(30 - 140)
13C12-PCB 4	74	(30 - 140)
13C12-PCB 15	70	(30 - 140)
13C12-PCB 19	73	(30 - 140)
13C12-PCB 37	77	(30 - 140)
13C12-PCB 54	69	(30 - 140)
13C12-PCB 77	73	(30 - 140)
13C12-PCB 81	72	(30 - 140)
13C12-PCB 104	80	(30 - 140)
13C12-PCB 105	77	(30 - 140)

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...: W08575 **Work Order # ...:** LX1GL1AC-LCS **Matrix .....:** SOLID
LCS Lot-Sample# : H0D150000 - 192

INTERNAL STANDARD	PERCENT RECOVERY		RECOVERY LIMITS
13C12-PCB 114	77		(30 - 140)
13C12-PCB 118	75		(30 - 140)
13C12-PCB 123	76		(30 - 140)
13C12-PCB 126	78		(30 - 140)
13C12-PCB 155	86		(30 - 140)
13C12-PCB 156	78	C	(30 - 140)
13C12-PCB 157	78	C	(30 - 140)
13C12-PCB 167	75		(30 - 140)
13C12-PCB 169	76		(30 - 140)
13C12-PCB 170	83		(30 - 140)
13C12-PCB 188	91		(30 - 140)
13C12-PCB 189	79		(30 - 140)
13C12-PCB 202	101		(30 - 140)
13C12-PCB 205	86		(30 - 140)
13C12-PCB 206	92		(30 - 140)
13C12-PCB 208	85		(30 - 140)
13C12-PCB 209	89		(30 - 140)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C12-PCB 28	79	(40 - 125)
13C12-PCB 111	85	(40 - 125)
13C12-PCB 178	85	(40 - 125)

Notes:

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

Sample Receipt Documentation

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST HOD120413			F10-102-046	PAGE 1 OF 1
COLLECTOR Scales	COMPANY CONTACT BAMBERGER, MACHELLE	TELEPHONE NO. 373-0880	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION C6726 (Near Diversion Box) I-001	PROJECT DESIGNATION 200-E-127 Pipeline - Soil		SAF NO. F10-102	AIR QUALITY ☐	15 Days / 15 Days
ICE CHEST NO. GWS-2009	FIELD LOGBOOK NO. HNF-N-507-5	ACTUAL SAMPLE DEPTH B-11.84	COA 302427ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO TestAmerica Knoxville	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A 4/6/10 7934 2100 2616		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order S400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B247X7

PRESERVATION	None
TYPE OF CONTAINER	aG
NO. OF CONTAINER(S)	1
VOLUME	120mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

CUSTODY SEALS INTACT
RECEIVED AT AMBIENT 22°C/
NO ICE PRESENT
1 COOLER FEDEX #
7934 2100 2616

JS 3/26/10

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B247X6	SOIL	~~3-26-10~~ JS 3/26/10 26	~~0852~~ 1245	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J Scales	3/26/10 1510	SSU-1	3/26/10 1510
SSU#1	APR 06 2010 1220	L.D. Wall CHPRC	APR 06 2010 1220
L.D. Wall CHPRC	APR 06 2010 1430	FEDEX	
			4-7-10 10:00

SPECIAL INSTRUCTIONS
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)1668 PCB WHO CONGENER (TCL) {2,3,3',4,4',5-Hexachlorobiphenyl, 2,3,3',4,4',5,5'-Heptachlorobiphenyl, 2,3',4,4',5,5'-Hexachlorobiphenyl, 2,3,4,4',5-Pentachlorobiphenyl, 3,3',4,4',5,5'-Hexachlorobiphenyl, 2,3,3',4,4'-Pentachlorobiphenyl, 3,3',4,4',5-Pentachlorobiphenyl, 2',3,4,4',5-Pentachlorobiphenyl, 3,4,4',5-Tetrachlorobiphenyl, 2,3',4,4',5-Pentachlorobiphenyl, 3,3',4,4'-Tetrachlorobiphenyl, 2,3,3',4,4',5'-Hexachlorobiphenyl}

5/13/10

~~W08575~~ W05875

ORIGINAL

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

A-6003 618(01/06)

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Lot Number: HOD120413

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Do sample container labels match COC? (IDs, Dates, Times)	✓			☐ 1a Do not match COC ☐ 1b Incomplete information ☐ 1c Marking smeared ☐ 1d Label torn ☐ 1e No label ☐ 1f COC not received ☐ 1g Other:	2B
2. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C; NC, 1668, 1613B: 0-4°C; VOST: 10°C; MA: 2-6 °C)		✓		☐ 2a Temp Blank = _____ ☑ 2b Cooler Temp = 22°C	
3. Were samples received with correct chemical preservative (excluding Encore)?			✓	☐ 3a Sample preservative =	
4. Were custody seals present/intact on cooler and/or containers?	✓			☐ 4a Not present ☐ 4b Not intact ☐ 4c Other:	
5. Were all of the samples listed on the COC received?	✓			☐ 5a Samples received-not on COC ☐ 5b Samples not received-on COC	
6. Were all of the sample containers received intact?	✓			☐ 6a Leaking ☐ 6b Broken	
7. Were VOA samples received without headspace?		✓	✓	☐ 7a Headspace (VOA only)	
8. Were samples received in appropriate containers?	✓			☐ 8a Improper container	
9. Did you check for residual chlorine, if necessary?			✓	☐ 9a Could not be determined due to matrix interference	
10. Were samples received within holding time?	✓			☐ 10a Holding time expired	
11. For rad samples, was sample activity info. provided?	✓			☐ Incomplete information	
12. For 1613B water samples is pH<9?			✓	If no, was pH adjusted to pH 7 - 9 with sulfuric acid? _____	
13. Are the shipping containers intact?	✓			☐ 13a Leaking ☐ 13b Other:	
14. Was COC relinquished? (Signed/Dated/Timed)	✓			☐ 14a Not relinquished	
15. Are tests/parameters listed for each sample?	✓			☐ 15a Incomplete information	
16. Is the matrix of the samples noted?	✓			☐ 15a Incomplete information	
17. Is the date/time of sample collection noted?	✓			☐ 15a Incomplete information	
18. Is the client and project name/# identified?	✓			☐ 15a Incomplete information	
19. Was the sampler identified on the COC?	✓				

Quote #: 82502 PM Instructions: _____

Sample Receiving Associate: [signature] Date: 4-7-10

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