



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
OFFICE OF ENVIRONMENTAL MEASUREMENT & EVALUATION
60 WESTVIEW STREET
LEXINGTON, MASSACHUSETTS 02421-3185

DATE: July 19, 1999
SUBJ: Analysis of PCBs in Soils - OTTATI & GOSS, KINGSTON NH
FROM: Peter ^{PEP} Philbrook, Investigations and Analysis, Chemistry Section
THRU: Dr. William J. ^{WJA 7/22/99} Andrade, Advanced Analytical Chemistry Specialist
TO: R. Goehlert

PROJECT NUMBER: 99060074

ANALYTICAL PROCEDURE:

All samples were received and logged in by the laboratory according to the SOP for Sample Log-In (EIA-ADMLOGN5.SOP, 4/99).

EPA Region 1 Procedure: Polychlorinated Biphenyls in Soil Samples, Mid Level Method, PCBSOML6.SOP. Samples were extracted by Pressurized Fluid Extraction (PFE) EPA SW846 Method 3545A.

Results are reported out in dry weight.

Date Samples Received by the Laboratory: 06/24/99

Date Analysis Started: 06/28/99

cc:

File: J:\CHEMISTRY\REPORTS\PCB-PEST\99060074SP.WPD

3437

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QUALITY CONTROL:

1. One method blank was included in the analysis.
2. Each sample was spiked with the surrogate compounds, tetrachloroethylene and decachlorobiphenyl, at approximately 0.1 mg/Kg. The results for the surrogate recoveries are reported out with each sample.
3. One sample, D550(3-6), was spiked as a matrix spike (MS) and a matrix spike duplicate (MSD) with Aroclor-1260 at approximately 0.6 mg/Kg. The recoveries could not be determined due to the presence of Aroclor 1260 in the samples at a concentration greater than 10X the spiked level. The concentrations of Aroclors found in the MS/MSD are listed below.

Aroclor	D550(3-6) MS mg/Kg	D550(3-6)MSD mg/Kg	Precision RPD
1260	8.5	7.8	8%
1254	11	10	10%

SAMPLES ANALYZED: BLANK, D550(0-1), D550(2-3), D550(3-6),
D550(3-6)MS, D550(3-6)MSD, D500(1-2),
D500(3-6), Q500(1-3), Q500(3-6), D500(0-6),
D550(pudding)

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Chemist who reviewed data: Peter Philbrook

Holding time meet (Y/N): YES

Extraction (Water - 7 days, Soil - 14 days)

Analytical (40 days after extraction)

Method modifications:

Samples were air dried prior to extraction as requested by project manager. A percent solids determination was performed on the samples prior to air drying. All samples were between 8-11 % solids, with the exception of sample D500 (0-6) "hummock dust" which was 50% solids.

Limitations of data: None

Laboratory blank problems: None

Instrument performance problems: None

Surrogate and spike recovery problems: None

Additional comments: Sample dry weights listed on the reports are after air drying the sample in a fume hood for 48 hours.

FACILITY SAMPLED:

OTTATI & GOSS, KINGSTON NH

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

Polychlorinated Biphenyls

SAMPLE NO.: BLANK

DATE OF COLLECTION: NOT APPLICABLE

DATE OF EXTRACTION: 06/30/99

DATE OF ANALYSIS: 07/14/99

DRY WEIGHT EXTRACTED: 5.15

WET WEIGHT EXTRACTED: 5.15

Matrix: Soil

Final Volume: 5 mL

Percent Moisture 0

Extract Dilution 1

Report Factor: 1.0

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	0.10	
11104-28-2	Aroclor-1221	ND	0.10	
11141-16-5	Aroclor-1232	ND	0.10	
53469-21-9	Aroclor-1242	ND	0.10	
12672-29-6	Aroclor-1248	ND	0.10	
11097-69-1	Aroclor-1254	ND	0.10	
11096-82-5	Aroclor-1260	ND	0.10	
11100-14-4	Aroclor-1262	ND	0.10	
37324-23-5	Aroclor-1268	ND	0.10	

Sample Recovery for Surrogate Compound:	Observed Recoveries (%)	QC Range %
2,4,5,6-Tetrachloro-m-xylene	75	37-95
Decachlorobiphenyl	99	54-110

Notes:

RL = Reporting level

ND = None detected

~ = Approximate

< = Less than

> = Greater than

NA = Not applicable due to high sample dilutions or sample interferences

E = Estimated value exceeds the calibration range

L = Estimated value is below the calibration range

B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contaminant in the sample extract is less than ten times the concentration in the blank.

P = The confirmation value exceeded 35% difference and is less than 100%. The lower value is reported.

D = Detected but too low to quantitate.

C = The identification has been confirmed by GC/MS.

FACILITY SAMPLED: OTTATI & GOSS, KINGSTON NH

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: D550(0-1)

DATE OF COLLECTION:	06/23/99	Matrix:	Soil
DATE OF EXTRACTION:	06/30/99	Final Volume:	5 mL
DATE OF ANALYSIS:	07/14/99	Percent Moisture	23
DRY WEIGHT EXTRACTED:	3.92	Extract Dilution	2
WET WEIGHT EXTRACTED:	5.09	Report Factor:	2.6

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	0.26	
11104-28-2	Aroclor-1221	ND	0.26	
11141-16-5	Aroclor-1232	ND	0.26	
53469-21-9	Aroclor-1242	ND	0.26	
12672-29-6	Aroclor-1248	ND	0.26	
11097-69-1	Aroclor-1254	3.7	0.26	
11096-82-5	Aroclor-1260	2.8	0.26	
11100-14-4	Aroclor-1262	ND	0.26	
37324-23-5	Aroclor-1268	ND	0.26	

Sample Recovery for Surrogate Compound:	Observed Recoveries (%)	QC Range %
2,4,5,6-Tetrachloro-m-xylene	73	37-95
Decachlorobiphenyl	92	54-110

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Polychlorinated Biphenyls

SAMPLE NO.: D550(2-3)

DATE OF COLLECTION:	06/23/99	Matrix:	Soil
DATE OF EXTRACTION:	06/30/99	Final Volume:	5 mL
DATE OF ANALYSIS:	07/14/99	Percent Moisture	29
DRY WEIGHT EXTRACTED:	3.66	Extract Dilution	5
WET WEIGHT EXTRACTED:	5.15	Report Factor:	6.8

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	0.68	
11104-28-2	Aroclor-1221	ND	0.68	
11141-16-5	Aroclor-1232	ND	0.68	
53469-21-9	Aroclor-1242	ND	0.68	
12672-29-6	Aroclor-1248	ND	0.68	
11097-69-1	Aroclor-1254	9.5	0.68	
11096-82-5	Aroclor-1260	6.8	0.68	
11100-14-4	Aroclor-1262	ND	0.68	
37324-23-5	Aroclor-1268	ND	0.68	

Sample Recovery for Surrogate Compound:	Observed Recoveries (%)	QC Range %
2,4,5,6-Tetrachloro-m-xylene	72	37-95
Decachlorobiphenyl	102	54-110

FACILITY SAMPLED:

OTTATI & GOSS, KINGSTON NH

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Polychlorinated Biphenyls

SAMPLE NO.: D550(3-6)

DATE OF COLLECTION: 06/23/99
DATE OF EXTRACTION: 06/30/99
DATE OF ANALYSIS: 07/14/99
DRY WEIGHT EXTRACTED: 2.55
WET WEIGHT EXTRACTED: 5.05

Matrix: Soil
Final Volume: 5 mL
Percent Moisture: 49
Extract Dilution: 5
Report Factor: 9.8

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	0.98	
11104-28-2	Aroclor-1221	ND	0.98	
11141-16-5	Aroclor-1232	ND	0.98	
53469-21-9	Aroclor-1242	ND	0.98	
12672-29-6	Aroclor-1248	ND	0.98	
11097-69-1	Aroclor-1254	10	0.98	
11096-82-5	Aroclor-1260	7.1	0.98	
11100-14-4	Aroclor-1262	ND	0.98	
37324-23-5	Aroclor-1268	ND	0.98	

Sample Recovery for Surrogate Compound:	Observed Recoveries (%)	QC Range %
2,4,5,6-Tetrachloro-m-xylene	74	37-95
Decachlorobiphenyl	102	54-110

FACILITY SAMPLED: OTTATI & GOSS, KINGSTON NH

US ENVIRONMENTAL PROTECTION AGENCY
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Polychlorinated Biphenyls

SAMPLE NO.: D500(1-2)

DATE OF COLLECTION:	06/23/99	Matrix:	Soil
DATE OF EXTRACTION:	06/30/99	Final Volume:	5 mL
DATE OF ANALYSIS:	07/14/99	Percent Moisture	19
DRY WEIGHT EXTRACTED:	4.09	Extract Dilution	5
WET WEIGHT EXTRACTED:	5.04	Report Factor:	6.1

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	0.61	
11104-28-2	Aroclor-1221	ND	0.61	
11141-16-5	Aroclor-1232	ND	0.61	
53469-21-9	Aroclor-1242	ND	0.61	
12672-29-6	Aroclor-1248	ND	0.61	
11097-69-1	Aroclor-1254	9.0	0.61	
11096-82-5	Aroclor-1260	5.9	0.61	
11100-14-4	Aroclor-1262	ND	0.61	
37324-23-5	Aroclor-1268	ND	0.61	

Sample Recovery for Surrogate Compound:	Observed Recoveries (%)	QC Range %
2,4,5,6-Tetrachloro-m-xylene	62	37-95
Decachlorobiphenyl	93	54-110

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US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: D500(3-6)

DATE OF COLLECTION:	06/23/99	Matrix:	Soil
DATE OF EXTRACTION:	06/30/99	Final Volume:	5 mL
DATE OF ANALYSIS:	07/15/99	Percent Moisture	19
DRY WEIGHT EXTRACTED:	4.14	Extract Dilution	5
WET WEIGHT EXTRACTED:	5.09	Report Factor:	6.0

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	0.60	
11104-28-2	Aroclor-1221	ND	0.60	
11141-16-5	Aroclor-1232	ND	0.60	
53469-21-9	Aroclor-1242	ND	0.60	
12672-29-6	Aroclor-1248	ND	0.60	
11097-69-1	Aroclor-1254	13	0.60	
11096-82-5	Aroclor-1260	8.6	0.60	
11100-14-4	Aroclor-1262	ND	0.60	
37324-23-5	Aroclor-1268	ND	0.60	

Sample Recovery for Surrogate Compound:	Observed Recoveries (%)	QC Range %
2,4,5,6-Tetrachloro-m-xylene	74	37-95
Decachlorobiphenyl	109	54-110

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SAMPLE NO.: Q500(1-3)

DATE OF COLLECTION:	06/23/99	Matrix:	Soil
DATE OF EXTRACTION:	06/30/99	Final Volume:	5 mL
DATE OF ANALYSIS:	07/15/99	Percent Moisture	24
DRY WEIGHT EXTRACTED:	3.99	Extract Dilution	5
WET WEIGHT EXTRACTED:	5.26	Report Factor:	6.3

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	0.63	
11104-28-2	Aroclor-1221	ND	0.63	
11141-16-5	Aroclor-1232	ND	0.63	
53469-21-9	Aroclor-1242	ND	0.63	
12672-29-6	Aroclor-1248	ND	0.63	
11097-69-1	Aroclor-1254	11	0.63	
11096-82-5	Aroclor-1260	7.2	0.63	
11100-14-4	Aroclor-1262	ND	0.63	
37324-23-5	Aroclor-1268	ND	0.63	

Sample Recovery for Surrogate Compound:	Observed Recoveries (%)	QC Range %
2,4,5,6-Tetrachloro-m-xylene	68	37-95
Decachlorobiphenyl	90	54-110

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SAMPLE NO.: Q500(3-6)

DATE OF COLLECTION:	06/23/99	Matrix:	Soil
DATE OF EXTRACTION:	06/30/99	Final Volume:	5 mL
DATE OF ANALYSIS:	07/15/99	Percent Moisture	27
DRY WEIGHT EXTRACTED:	3.76	Extract Dilution	10
WET WEIGHT EXTRACTED:	5.13	Report Factor:	13.3

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	1.3	
11104-28-2	Aroclor-1221	ND	1.3	
11141-16-5	Aroclor-1232	ND	1.3	
53469-21-9	Aroclor-1242	ND	1.3	
12672-29-6	Aroclor-1248	ND	1.3	
11097-69-1	Aroclor-1254	20	1.3	
11096-82-5	Aroclor-1260	14	1.3	
11100-14-4	Aroclor-1262	ND	1.3	
37324-23-5	Aroclor-1268	ND	1.3	

Sample Recovery for Surrogate Compound:	Observed Recoveries (%)	QC Range %
2,4,5,6-Tetrachloro-m-xylene	74	37-95
Decachlorobiphenyl	107	54-110

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REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: D500(0-6)

DATE OF COLLECTION:	06/23/99	Matrix:	Soil
DATE OF EXTRACTION:	06/30/99	Final Volume:	5 mL
DATE OF ANALYSIS:	07/15/99	Percent Moisture	16
DRY WEIGHT EXTRACTED:	4.24	Extract Dilution	5
WET WEIGHT EXTRACTED:	5.06	Report Factor:	5.9

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	0.59	
11104-28-2	Aroclor-1221	ND	0.59	
11141-16-5	Aroclor-1232	ND	0.59	
53469-21-9	Aroclor-1242	ND	0.59	
12672-29-6	Aroclor-1248	ND	0.59	
11097-69-1	Aroclor-1254	6.5	0.59	
11096-82-5	Aroclor-1260	4.2	0.59	
11100-14-4	Aroclor-1262	ND	0.59	
37324-23-5	Aroclor-1268	ND	0.59	

Sample Recovery for Surrogate Compound:	Observed Recoveries (%)	QC Range %
2, 4, 5, 6-Tetrachloro-m-xylene	63	37-95
Decachlorobiphenyl	89	54-110

FACILITY SAMPLED:

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REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: D550 (pudding)

DATE OF COLLECTION: 06/23/99

DATE OF EXTRACTION: 06/30/99

DATE OF ANALYSIS: 07/14/99

DRY WEIGHT EXTRACTED: 2.48

WET WEIGHT EXTRACTED: 3.38

Matrix: Soil
Final Volume: 5 mL
Percent Moisture: 27
Extract Dilution: 1
Report Factor: 2.0

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	0.20	
11104-28-2	Aroclor-1221	ND	0.20	
11141-16-5	Aroclor-1232	ND	0.20	
53469-21-9	Aroclor-1242	ND	0.20	
12672-29-6	Aroclor-1248	ND	0.20	
11097-69-1	Aroclor-1254	1.1	0.20	
11096-82-5	Aroclor-1260	0.95	0.20	
11100-14-4	Aroclor-1262	ND	0.20	
37324-23-5	Aroclor-1268	ND	0.20	

Sample Recovery for Surrogate Compound:	Observed Recoveries (%)	QC Range %
2,4,5,6-Tetrachloro-m-xylene	73	37-95
Decachlorobiphenyl	89	54-110