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HEARTLAND ENVIRONMENTAL SERVICES, INC.
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September 3, 1991

To: John Williams
Roy F. Weston, Inc.
One Weston Way
Lionville, PA

From: Paul B Humburg
Project Manager
Heartland ESI

Subject: Submittal of Analytical Data Validation of the Pesticide/PCB analytical results of sampling conducted at the Naval Weapons Station/Earle, Colts Neck, NJ on March 13-15, 1991. There were eighteen (18) water samples with two (2) MS/MSDs which were analyzed by the Roy F. Weston, Gulf Coast Laboratory included in this analytical batch, RFW# 9103L947.

Samples Reviewed
Water Samples (All)

Water Samples

Field ID	Lab ID	Field ID	Lab ID
11-001-M001	9103L947-001	02-003-M001	9103L947-010
11-002-M001	9103L947-002	02-003-M101	9103L947-011
11-002-M001MS	9103L947-002MS	02-003-M201	9103L947-012
11-002-M001MSD	9103L947-002MSD	02-004-M001	9103L947-013
11-003-M001	9103L947-003	02-005-M001	9103L947-014
11-004-M001	9103L947-004	02-006-M001	9103L947-015
11-004-M101	9103L947-005	02-007-M001	9103L947-016
11-004-M201	9103L947-006	04-003-M001	9103L947-018
11-005-M001	9103L947-007	04-004-M001	9103L947-019
02-001-M001	9103L947-008	04-004-M001MS	9103L947-019MS
02-002-M001	9103L947-009	04-004-M001MSD	9103L947-019MSD

Heartland ESI has reviewed the data from the samples listed above for the Pesticide/PCB Target Compound List (TCL) based upon analytical and quality assurance requirements specified in the EPA CLP Statement of Work (SOW) 2/88 and 9/88 revisions, using the EPA Region II Standard Operating Procedure (SOP) HW 6, Revision 7, 3/90. Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to the requirements and deliverables of the U.S. EPA CLP and Region II. This screening assumes that the analytical results are correct as reported and merely provides and interpretation of the reported quality control results.

Individual analytical fractions were reviewed as follows:

* Pesticide/PCB by Christopher D. Scarpellino with secondary review by Paul B. Humburg

HEARTLAND ENVIRONMENTAL SERVICES, INC.

DATA ASSESSMENT NARRATIVE
PESTICIDE/PCB ANALYSIS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, GC instrument performance, initial and continuing calibrations, analytical sequence, blank analysis results, surrogate recoveries, and MS/MSD results. All comments made within this report should be considered when examining the analytical results (Form Is). Please refer the specific findings found in each category to the Summary of Data Qualification table.

In general, the laboratory performance was excellent. The chromatography was generally of high quality. All analyses were performed on packed columns utilizing peak heights for compound quantitation.

Holding Times

All samples were extracted and analyzed within holding times.

GC Instrument Performance

The peaks from standards analyses were within the laboratory provided retention time windows (RTWs) for all sequences.

All percent breakdowns were less than 20%. The DBC retention time differences (%Ds) were within QC limits for all standards, samples and blanks.

Initial Calibration

The %RSD for DDT in the initial calibration of the confirmation sequence on Instrument 05 on 4/4/91 slightly exceeded the QC limit. This calibration does not impact the reported sample results. All other %RSDs for initial calibrations were within QC limits.

Continuing Calibrations

The %D for DDT exceeded the quantitation QC limit of 15% on Instrument 07, 4/5/91, at 14:49 and 18:27. No samples from this case were associated with these continuing calibrations and thus there is no impact on the reported data. All other continuing calibrations were within QC limits.

Blanks

A minor positive hit for Aldrin was confirmed at approximately 1/5 the CRQL in Method Blank 91GP0186-MB1. Similar minor peaks were observed in the primary analysis of many of the samples. No impact.

PESTICIDE/PCB ANALYSIS NARRATIVE Continued - Page 2

Surrogate Recoveries

All DBC surrogate recoveries were within the required QC limits.

Matrix Spike/Matrix Spike Duplicate

No qualifications were required based on the Recoveries or RPDs reported for the two water MS/MSDs or the two BS/BSDs.

Analyte Identification/Quantitation

No deficiencies were identified

Overall Assessment

The overall quality of the data package was excellent. The reported non-detect results for the samples stand as reported by the laboratory.

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QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

R = Result is rejected and unusable

N = Result is negated, do not consider result in sample

NJ = Presumptive evidence for the presence of the material at an estimated value

Heartland ESI specific findings are footnoted numerically on the Form Is in this data validation report. These specific finding footnotes refer to findings listed in the Data Assessment Narrative which describe the reasons for qualifications applied to the data.

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SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	ANALYTE ID	DL	QL	SPECIFIC FINDINGS
No Specific Findings were identified which required qualification of the data				

* DL denotes the Form I laboratory qualifier/value
+ in the DL column denotes a positive result
- in the DL column denotes a negative result
QL denotes the qualifier used by Heartland ESI

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

11-001-M001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-001

Sample wt/vol: 940 (g/mL) ML Lab File ID: 03289107.62

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/29/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.053	U
319-85-7	Beta-BHC	0.053	U
319-86-8	Delta-BHC	0.053	U
58-89-9	gamma-BHC (Lindane)	0.053	U
76-44-8	Heptachlor	0.053	U
309-00-2	Aldrin	0.053	U
1024-57-3	Heptachlor epoxide	0.053	U
959-98-8	Endosulfan I	0.053	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.11	U
72-20-8	Endrin	0.11	U
33213-65-9	Endosulfan II	0.11	U
72-54-8	4,4'-DDD	0.11	U
1031-07-8	Endosulfan sulfate	0.11	U
50-29-3	4,4'-DDT	0.11	U
72-43-5	Methoxychlor	0.53	U
53494-70-5	Endrin ketone	0.11	U
5103-71-9	alpha-Chlordane	0.53	U
5103-74-2	gamma-Chlordane	0.53	U
8001-35-2	Toxaphene	1.1	U
12674-11-2	Aroclor-1016	0.53	U
11104-28-2	Aroclor-1221	0.53	U
11141-16-5	Aroclor-1232	0.53	U
53469-21-9	Aroclor-1242	0.53	U
12672-29-6	Aroclor-1248	0.53	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

11-002-M001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-002

Sample wt/vol: 920 (g/mL) ML Lab File ID: 03289107.63

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/30/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.054	U
319-85-7	Beta-BHC	0.054	U
319-86-8	Delta-BHC	0.054	U
58-89-9	gamma-BHC (Lindane)	0.054	U
76-44-8	Heptachlor	0.054	U
309-00-2	Aldrin	0.054	U
1024-57-3	Heptachlor epoxide	0.054	U
959-98-8	Endosulfan I	0.054	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.11	U
72-20-8	Endrin	0.11	U
33213-65-9	Endosulfan II	0.11	U
72-54-8	4,4'-DDD	0.11	U
1031-07-8	Endosulfan sulfate	0.11	U
50-29-3	4,4'-DDT	0.11	U
72-43-5	Methoxychlor	0.54	U
53494-70-5	Endrin ketone	0.11	U
5103-71-9	alpha-Chlordane	0.54	U
5103-74-2	gamma-Chlordane	0.54	U
8001-35-2	Toxaphene	1.1	U
12674-11-2	Aroclor-1016	0.54	U
11104-28-2	Aroclor-1221	0.54	U
11141-16-5	Aroclor-1232	0.54	U
53469-21-9	Aroclor-1242	0.54	U
12672-29-6	Aroclor-1248	0.54	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

11-003-M001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-003

Sample wt/vol: 960 (g/mL) ML Lab File ID: 03289107.66

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/30/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.052	U
319-85-7	Beta-BHC	0.052	U
319-86-8	Delta-BHC	0.052	U
58-89-9	gamma-BHC (Lindane)	0.052	U
76-44-8	Heptachlor	0.052	U
309-00-2	Aldrin	0.052	U
1024-57-3	Heptachlor epoxide	0.052	U
959-98-8	Endosulfan I	0.052	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.52	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.52	U
5103-74-2	gamma-Chlordane	0.52	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.52	U
11104-28-2	Aroclor-1221	0.52	U
11141-16-5	Aroclor-1232	0.52	U
53469-21-9	Aroclor-1242	0.52	U
12672-29-6	Aroclor-1248	0.52	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

11-004-M001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-004

Sample wt/vol: 970 (g/mL) ML Lab File ID: 03289107.68

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/30/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.052	U
319-85-7	Beta-BHC	0.052	U
319-86-8	Delta-BHC	0.052	U
58-89-9	gamma-BHC (Lindane)	0.052	U
76-44-8	Heptachlor	0.052	U
309-00-2	Aldrin	0.052	U
1024-57-3	Heptachlor epoxide	0.052	U
959-98-8	Endosulfan I	0.052	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.52	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.52	U
5103-74-2	gamma-Chlordane	0.52	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.52	U
11104-28-2	Aroclor-1221	0.52	U
11141-16-5	Aroclor-1232	0.52	U
53469-21-9	Aroclor-1242	0.52	U
12672-29-6	Aroclor-1248	0.52	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

11-004-M101

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-005

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 03289107.86

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/30/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.050	U
319-85-7	Beta-BHC	0.050	U
319-86-8	Delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

11-004-M201

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-006

Sample wt/vol: 940 (g/mL) ML Lab File ID: 03289107.70

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/30/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.053	U
319-85-7	Beta-BHC	0.053	U
319-86-8	Delta-BHC	0.053	U
58-89-9	gamma-BHC (Lindane)	0.053	U
76-44-8	Heptachlor	0.053	U
309-00-2	Aldrin	0.053	U
1024-57-3	Heptachlor epoxide	0.053	U
959-98-8	Endosulfan I	0.053	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.11	U
72-20-8	Endrin	0.11	U
33213-65-9	Endosulfan II	0.11	U
72-54-8	4,4'-DDD	0.11	U
1031-07-8	Endosulfan sulfate	0.11	U
50-29-3	4,4'-DDT	0.11	U
72-43-5	Methoxychlor	0.53	U
53494-70-5	Endrin ketone	0.11	U
5103-71-9	alpha-Chlordane	0.53	U
5103-74-2	gamma-Chlordane	0.53	U
8001-35-2	Toxaphene	1.1	U
12674-11-2	Aroclor-1016	0.53	U
11104-28-2	Aroclor-1221	0.53	U
11141-16-5	Aroclor-1232	0.53	U
53469-21-9	Aroclor-1242	0.53	U
12672-29-6	Aroclor-1248	0.53	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

11-005-M001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-007

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 03289107.71

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/30/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.050	U
319-85-7	Beta-BHC	0.050	U
319-86-8	Delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

02-001-M001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-008

Sample wt/vol: 960 (g/mL) ML Lab File ID: 03289107.87

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/30/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.052	U
319-85-7	Beta-BHC	0.052	U
319-86-8	Delta-BHC	0.052	U
58-89-9	gamma-BHC (Lindane)	0.052	U
76-44-8	Heptachlor	0.052	U
309-00-2	Aldrin	0.052	U
1024-57-3	Heptachlor epoxide	0.052	U
959-98-8	Endosulfan I	0.052	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.52	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.52	U
5103-74-2	gamma-Chlordane	0.52	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.52	U
11104-28-2	Aroclor-1221	0.52	U
11141-16-5	Aroclor-1232	0.52	U
53469-21-9	Aroclor-1242	0.52	U
12672-29-6	Aroclor-1248	0.52	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

02-002-M001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-009

Sample wt/vol: 840 (g/mL) ML Lab File ID: 03289107.88

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/30/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
319-84-6	Alpha-BHC	0.060	U
319-85-7	Beta-BHC	0.060	U
319-86-8	Delta-BHC	0.060	U
58-89-9	gamma-BHC (Lindane)	0.060	U
76-44-8	Heptachlor	0.060	U
309-00-2	Aldrin	0.060	U
1024-57-3	Heptachlor epoxide	0.060	U
959-98-8	Endosulfan I	0.060	U
60-57-1	Dieldrin	0.12	U
72-55-9	4,4'-DDE	0.12	U
72-20-8	Endrin	0.12	U
33213-65-9	Endosulfan II	0.12	U
72-54-8	4,4'-DDD	0.12	U
1031-07-8	Endosulfan sulfate	0.12	U
50-29-3	4,4'-DDT	0.12	U
72-43-5	Methoxychlor	0.60	U
53494-70-5	Endrin ketone	0.12	U
5103-71-9	alpha-Chlordane	0.60	U
5103-74-2	gamma-Chlordane	0.60	U
8001-35-2	Toxaphene	1.2	U
12674-11-2	Aroclor-1016	0.60	U
11104-28-2	Aroclor-1221	0.60	U
11141-16-5	Aroclor-1232	0.60	U
53469-21-9	Aroclor-1242	0.60	U
12672-29-6	Aroclor-1248	0.60	U
11097-69-1	Aroclor-1254	1.2	U
11096-82-5	Aroclor-1260	1.2	U

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

02-003-M001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-010

Sample wt/vol: 860 (g/mL) ML Lab File ID: 03289107.75

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/30/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.058	U
319-85-7	Beta-BHC	0.058	U
319-86-8	Delta-BHC	0.058	U
58-89-9	gamma-BHC (Lindane)	0.058	U
76-44-8	Heptachlor	0.058	U
309-00-2	Aldrin	0.058	U
1024-57-3	Heptachlor epoxide	0.058	U
959-98-8	Endosulfan I	0.058	U
60-57-1	Dieldrin	0.12	U
72-55-9	4,4'-DDE	0.12	U
72-20-8	Endrin	0.12	U
33213-65-9	Endosulfan II	0.12	U
72-54-8	4,4'-DDD	0.12	U
1031-07-8	Endosulfan sulfate	0.12	U
50-29-3	4,4'-DDT	0.12	U
72-43-5	Methoxychlor	0.58	U
53494-70-5	Endrin ketone	0.12	U
5103-71-9	alpha-Chlordane	0.58	U
5103-74-2	gamma-Chlordane	0.58	U
8001-35-2	Toxaphene	1.2	U
12674-11-2	Aroclor-1016	0.58	U
11104-28-2	Aroclor-1221	0.58	U
11141-16-5	Aroclor-1232	0.58	U
53469-21-9	Aroclor-1242	0.58	U
12672-29-6	Aroclor-1248	0.58	U
11097-69-1	Aroclor-1254	1.2	U
11096-82-5	Aroclor-1260	1.2	U

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

02-003-M101

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-011

Sample wt/vol: 890 (g/mL) ML Lab File ID: 03289107.76

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/30/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.056	U
319-85-7	Beta-BHC	0.056	U
319-86-8	Delta-BHC	0.056	U
58-89-9	gamma-BHC (Lindane)	0.056	U
76-44-8	Heptachlor	0.056	U
309-00-2	Aldrin	0.056	U
1024-57-3	Heptachlor epoxide	0.056	U
959-98-8	Endosulfan I	0.056	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.11	U
72-20-8	Endrin	0.11	U
33213-65-9	Endosulfan II	0.11	U
72-54-8	4,4'-DDD	0.11	U
1031-07-8	Endosulfan sulfate	0.11	U
50-29-3	4,4'-DDT	0.11	U
72-43-5	Methoxychlor	0.56	U
53494-70-5	Endrin ketone	0.11	U
5103-71-9	alpha-Chlordane	0.56	U
5103-74-2	gamma-Chlordane	0.56	U
8001-35-2	Toxaphene	1.1	U
12674-11-2	Aroclor-1016	0.56	U
11104-28-2	Aroclor-1221	0.56	U
11141-16-5	Aroclor-1232	0.56	U
53469-21-9	Aroclor-1242	0.56	U
12672-29-6	Aroclor-1248	0.56	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

02-003-M201

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-012

Sample wt/vol: 880 (g/mL) ML Lab File ID: 03289107.77

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/30/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.057	U
319-85-7	Beta-BHC	0.057	U
319-86-8	Delta-BHC	0.057	U
58-89-9	gamma-BHC (Lindane)	0.057	U
76-44-8	Heptachlor	0.057	U
309-00-2	Aldrin	0.057	U
1024-57-3	Heptachlor epoxide	0.057	U
959-98-8	Endosulfan I	0.057	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.11	U
72-20-8	Endrin	0.11	U
33213-65-9	Endosulfan II	0.11	U
72-54-8	4,4'-DDD	0.11	U
1031-07-8	Endosulfan sulfate	0.11	U
50-29-3	4,4'-DDT	0.11	U
72-43-5	Methoxychlor	0.57	U
53494-70-5	Endrin ketone	0.11	U
5103-71-9	alpha-Chlordane	0.57	U
5103-74-2	gamma-Chlordane	0.57	U
8001-35-2	Toxaphene	1.1	U
12674-11-2	Aroclor-1016	0.57	U
11104-28-2	Aroclor-1221	0.57	U
11141-16-5	Aroclor-1232	0.57	U
53469-21-9	Aroclor-1242	0.57	U
12672-29-6	Aroclor-1248	0.57	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

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1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

02-004-M001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-013

Sample wt/vol: 840 (g/mL) ML Lab File ID: 03289107.78

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/30/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.060	U
319-85-7	Beta-BHC	0.060	U
319-86-8	Delta-BHC	0.060	U
58-89-9	gamma-BHC (Lindane)	0.060	U
76-44-8	Heptachlor	0.060	U
309-00-2	Aldrin	0.060	U
1024-57-3	Heptachlor epoxide	0.060	U
959-98-8	Endosulfan I	0.060	U
60-57-1	Dieldrin	0.12	U
72-55-9	4,4'-DDE	0.12	U
72-20-8	Endrin	0.12	U
33213-65-9	Endosulfan II	0.12	U
72-54-8	4,4'-DDD	0.12	U
1031-07-8	Endosulfan sulfate	0.12	U
50-29-3	4,4'-DDT	0.12	U
72-43-5	Methoxychlor	0.60	U
53494-70-5	Endrin ketone	0.12	U
5103-71-9	alpha-Chlordane	0.60	U
5103-74-2	gamma-Chlordane	0.60	U
8001-35-2	Toxaphene	1.2	U
12674-11-2	Aroclor-1016	0.60	U
11104-28-2	Aroclor-1221	0.60	U
11141-16-5	Aroclor-1232	0.60	U
53469-21-9	Aroclor-1242	0.60	U
12672-29-6	Aroclor-1248	0.60	U
11097-69-1	Aroclor-1254	1.2	U
11096-82-5	Aroclor-1260	1.2	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

02-005-M001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-014

Sample wt/vol: 960 (g/mL) ML Lab File ID: 04039107.21

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.052	U
319-85-7	Beta-BHC	0.052	U
319-86-8	Delta-BHC	0.052	U
58-89-9	gamma-BHC (Lindane)	0.052	U
76-44-8	Heptachlor	0.052	U
309-00-2	Aldrin	0.052	U
1024-57-3	Heptachlor epoxide	0.052	U
959-98-8	Endosulfan I	0.052	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.52	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.52	U
5103-74-2	gamma-Chlordane	0.52	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.52	U
11104-28-2	Aroclor-1221	0.52	U
11141-16-5	Aroclor-1232	0.52	U
53469-21-9	Aroclor-1242	0.52	U
12672-29-6	Aroclor-1248	0.52	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

02-006-M001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-015

Sample wt/vol: 890 (g/mL) ML Lab File ID: 04039107.20

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.056	U
319-85-7	Beta-BHC	0.056	U
319-86-8	Delta-BHC	0.056	U
58-89-9	gamma-BHC (Lindane)	0.056	U
76-44-8	Heptachlor	0.056	U
309-00-2	Aldrin	0.056	U
1024-57-3	Heptachlor epoxide	0.056	U
959-98-8	Endosulfan I	0.056	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.11	U
72-20-8	Endrin	0.11	U
33213-65-9	Endosulfan II	0.11	U
72-54-8	4,4'-DDD	0.11	U
1031-07-8	Endosulfan sulfate	0.11	U
50-29-3	4,4'-DDT	0.11	U
72-43-5	Methoxychlor	0.56	U
53494-70-5	Endrin ketone	0.11	U
5103-71-9	alpha-Chlordane	0.56	U
5103-74-2	gamma-Chlordane	0.56	U
8001-35-2	Toxaphene	1.1	U
12674-11-2	Aroclor-1016	0.56	U
11104-28-2	Aroclor-1221	0.56	U
11141-16-5	Aroclor-1232	0.56	U
53469-21-9	Aroclor-1242	0.56	U
12672-29-6	Aroclor-1248	0.56	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

02-007-M001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-016

Sample wt/vol: 940 (g/mL) ML Lab File ID: 03289107.89

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/19/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/30/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.053	U
319-85-7	Beta-BHC	0.053	U
319-86-8	Delta-BHC	0.053	U
58-89-9	gamma-BHC (Lindane)	0.053	U
76-44-8	Heptachlor	0.053	U
309-00-2	Aldrin	0.053	U
1024-57-3	Heptachlor epoxide	0.053	U
959-98-8	Endosulfan I	0.053	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.11	U
72-20-8	Endrin	0.11	U
33213-65-9	Endosulfan II	0.11	U
72-54-8	4,4'-DDD	0.11	U
1031-07-8	Endosulfan sulfate	0.11	U
50-29-3	4,4'-DDT	0.11	U
72-43-5	Methoxychlor	0.53	U
53494-70-5	Endrin ketone	0.11	U
5103-71-9	alpha-Chlordane	0.53	U
5103-74-2	gamma-Chlordane	0.53	U
8001-35-2	Toxaphene	1.1	U
12674-11-2	Aroclor-1016	0.53	U
11104-28-2	Aroclor-1221	0.53	U
11141-16-5	Aroclor-1232	0.53	U
53469-21-9	Aroclor-1242	0.53	U
12672-29-6	Aroclor-1248	0.53	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

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1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-003-M001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-018

Sample wt/vol: 940 (g/mL) ML Lab File ID: 03259107.56

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/21/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/26/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.053	U
319-85-7	Beta-BHC	0.053	U
319-86-8	Delta-BHC	0.053	U
58-89-9	gamma-BHC (Lindane)	0.053	U
76-44-8	Heptachlor	0.053	U
309-00-2	Aldrin	0.053	U
1024-57-3	Heptachlor epoxide	0.053	U
959-98-8	Endosulfan I	0.053	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.11	U
72-20-8	Endrin	0.11	U
33213-65-9	Endosulfan II	0.11	U
72-54-8	4,4'-DDD	0.11	U
1031-07-8	Endosulfan sulfate	0.11	U
50-29-3	4,4'-DDT	0.11	U
72-43-5	Methoxychlor	0.53	U
53494-70-5	Endrin ketone	0.11	U
5103-71-9	alpha-Chlordane	0.53	U
5103-74-2	gamma-Chlordane	0.53	U
8001-35-2	Toxaphene	1.1	U
12674-11-2	Aroclor-1016	0.53	U
11104-28-2	Aroclor-1221	0.53	U
11141-16-5	Aroclor-1232	0.53	U
53469-21-9	Aroclor-1242	0.53	U
12672-29-6	Aroclor-1248	0.53	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-004-M001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L947-019

Sample wt/vol: 930 (g/mL) ML Lab File ID: 03259107.57

Level: (low/med) LOW Date Received: 03/16/91

% Moisture: not dec. _____ dec. Date Extracted: 03/21/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/27/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.054	U
319-85-7	Beta-BHC	0.054	U
319-86-8	Delta-BHC	0.054	U
58-89-9	gamma-BHC (Lindane)	0.054	U
76-44-8	Heptachlor	0.054	U
309-00-2	Aldrin	0.054	U
1024-57-3	Heptachlor epoxide	0.054	U
959-98-8	Endosulfan I	0.054	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.11	U
72-20-8	Endrin	0.11	U
33213-65-9	Endosulfan II	0.11	U
72-54-8	4,4'-DDD	0.11	U
1031-07-8	Endosulfan sulfate	0.11	U
50-29-3	4,4'-DDT	0.11	U
72-43-5	Methoxychlor	0.54	U
53494-70-5	Endrin ketone	0.11	U
5103-71-9	alpha-Chlordane	0.54	U
5103-74-2	gamma-Chlordane	0.54	U
8001-35-2	Toxaphene	1.1	U
12674-11-2	Aroclor-1016	0.54	U
11104-28-2	Aroclor-1221	0.54	U
11141-16-5	Aroclor-1232	0.54	U
53469-21-9	Aroclor-1242	0.54	U
12672-29-6	Aroclor-1248	0.54	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: RFW# 91032947

LAB: Roy F. Weston - Gulf Coast Lab

SITE: NWS-Earle / Colts Neck, N.J.

1.0 Data Completeness and Deliverables	YES	NO	N/A
1.1 Have any missing deliverables been received and added to the data package.	[ ]		✓
ACTION: Call lab for explanation / resubmittal of any missing deliverables. If lab cannot provide them, note the effect on review of the package under the "Contract Problems/Non-compliance" section of reviewer narrative.			
1.2 Was SMO CCS checklist included with package?	[ ]		✓
2.0 Cover Letter/Case Narrative			
2.1 Is the Narrative or Cover Letter present?	[✓]		
2.2 Are Case Number and/or SAS number contained in the Narrative or Cover Letter?	[✓]		
3.0 Data Validation Checklist			
The following checklist is divided into three parts. Part A is filled out if the data package contains any VOA analyses, Part B for any BNA analyses and Part C for Pesticide/PCBs.			
Does this package contain:			
VOA data?		✓	
BNA data?		✓	
Pesticide/PCB data?	✓		
ACTION: Complete corresponding parts of checklist.			

	YES	NO	N/A
PART C: PESTICIDE/PCB ANALYSES			
1.0 Traffic Reports and Laboratory Narrative			
1.1 Are the Traffic Report Forms present for all samples?	[✓]	___	___
ACTION: If no, contact lab for replacement of missing or illegible copies.			
1.2 Do the Traffic Reports or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special notations affecting the quality of the data?	___	[✓]	___
ACTION: Use professional judgement to evaluate the effect on the quality of the data.			
ACTION: If any sample analyzed as a soil contains more than 50% water, all data should be flagged as estimated (J). (all waters)			
2.0 Holding Times			
2.1 Have any PEST/PCB holding times, determined from date of collection to date of extraction, been exceeded?	___	[✓]	___
Samples for PEST/PCB analysis, both soils and waters, must be extracted within seven days of the date of collection. Extracts must be analyzed within 40 days of the date of extraction.			
3.0 Surrogate Recovery (Form II)			
3.1 Are the PEST/PCB Surrogate Recovery Summaries (Form II) present for each of the following matrices:			
a. Low Water	[✓]	___	___
b. Med Water	[ ]	✓	___
c. Low Soil	[ ]	✓	___
d. Med Soil	[ ]	✓	___
3.2 Are all the PEST/PCB samples listed on the appropriate Surrogate Recovery Summaries for each of the following matrices:			
a. Low Water	[✓]	___	___
b. Med Water	[ ]	✓	___
c. Low Soil	[ ]	✓	___
d. Med Soil	[ ]	✓	

	YES	NO	N/A
ACTION: Call lab for explanation / resubmittals. If missing deliverables are unavailable, document effect on data under "Conclusions" section of reviewer narrative.			
3.3 Were outliers marked correctly with an asterisk?	[ ]		✓
ACTION: Circle all outliers in red.			
3.4 Was surrogate (DBC) recovery outside of the contract specification for any sample or blank?		[✓]	
ACTION: No qualification is done if surrogates are diluted beyond detection. If recovery is below contract limit (but above zero), flag all results for that sample "J". If recovery is zero, flag positive results "J" and non-detects "R". If recovery for the blank is zero, flag non-detects for all associated samples "R". If recovery is above contract limit, flag all positive results for that sample "J", unless in the reviewers professional judgement the high recovery is due to co-eluting interference (check the associated blank - if recovery is high there also, flag the sample data).			
3.5 Are there any transcription/calculation errors between raw data and Form II?		[✓]	
ACTION: If large errors exist, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			

4.0 Matrix Spikes (Form III)

2 MS/MSDs

	YES	NO	N/A
4.1 Is the Matrix Spike Duplicate/Recovery Form (Form III) present?	[✓]		
4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices:			
a. Low Water	[✓]		
b. Med Water	[ ]		✓
c. Low Soil	[ ]		✓
d. Med Soil	[ ]		✓
ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.			

4.3 How many PEST/PCB spike recoveries are outside QC limits?

Water	Soils
0 out of ~~12~~ 24 CDS 9/5/91	NA out of 12

	YES	NO	N/A

4.4 How many RPD's for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soils
0 out of ~~6~~ 12, CDS 9/5/91	NA out of 6

ACTION: If MS and MSD both have less than zero recovery for an analyte, negative results for that analyte should be rejected, and positive results should be flagged "J". The above applies only to the sample used for MS/MSD analysis. Use professional judgement in applying this criterion to other samples.

5.0 Blanks (Form IV)

5.1 Is the Method Blank Summary (Form IV) present? [✓] ___ ___

5.2 Frequency of Analysis: for the analysis of Pesticide TCL compounds, has a reagent/method blank been analyzed for each set of samples or every 20 samples of similar matrix (low water, med water, low soil, medium soil), whichever is more frequent? [✓] ___ ___

5.3 Chromatography: review the blank raw data - chromatograms, quant reports or data system printouts.

Is the chromatographic performance (baseline stability) for each instrument acceptable for PEST/PCBs? [✓] ___ ___

ACTION: Use professional judgement to determine the effect on the data.

6.0 Contamination

NOTE: "Water blanks" and "distilled water blanks" are validated like any other sample and are not used to qualify data. Do not confuse them with the other QC blanks discussed below.

PBLK - 916P0186-MB1
very minor confirmed hit
for Aldrin - < 1/5 CRQL
no action

6.1 Do any method/instrument/reagent blanks have positive results for PEST/PCBs? When applied as described below, the contaminant concentration in these blanks are multiplied by the sample Dilution Factor. ✓ [___] ___

6.2 Do any field/rinse blanks have positive PEST/PCB results? ___ [___] ✓

ACTION: Prepare a list of the samples associated with each of the contaminated blanks. (Attach a separate sheet.)

YES NO N/A

NOTE: Only field/rinse blanks taken the same day as the samples are used to qualify data. Blanks may not be qualified because of contamination in another blank. Blanks may be qualified for surrogate, spectral, tuning or calibration QC problems.

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks.

Sample conc > CRQL but < 5x blank	Sample conc < CRQL & is < 5x blank value	Sample conc > CRQL & > 5x blank value
Flag sample result with a "U"; cross out "B" flag	Reject sample result and report CRQL; cross out "B" flag	No qualification is needed

6.3 Are there field/rinse/equipment blanks associated with every sample? [ ] [✓] [ ]

ACTION: For low level samples, note in data assessment that there is no associated field/rinse/equipment blank. Exception: samples taken from a drinking water tap do not have associated field blanks.

.0 Calibration and GC Performance

7.1 Are the following Gas Chromatograms and Data System Printouts for both Primary and Confirmation (confirmation standards not required if there are no positive results above CRQL) column present:

a. Evaluation Standard Mix A [✓] [ ] [ ]

b. Evaluation Standard Mix B [✓] [ ] [ ]

c. Evaluation Standard Mix C [✓] [ ] [ ]

d. Individual Standard Mix A [✓] [ ] [ ]

e. Individual Standard Mix B [✓] [ ] [ ]

f. Multi-component Pesticides Toxaphene & ~~Chlordane~~ [✓] [ ] [ ]

g. Aroclors 1016/1260 [✓] [ ] [ ]

h. Aroclors 1221, 1232, 1242, 1248, and 1254 [✓] [ ] [ ]

ACTION: If no, take action specified in 3.2 above

	YES	NO	N/A
7.2 Is Form VIII Pest-1 present and complete for each GC column (primary and confirmation) and each 72 hour sequence of analyses?	[✓]		
ACTION: If no, take action specified in 3.2 above.			
7.3 Are there any transcription/calculation errors between raw data and Form VIII?		[✓]	
ACTION: If large errors exist, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			
7.4 Has the total breakdown on quantitation or confirmation column exceeded 20% for DDT?		[✓]	
- for Endrin?		[✓]	
or if Endrin aldehyde and 4,4'-DDD co-elute and there is a peak at their retention time, has the combined DDT and Endrin breakdown exceeded 20%?		[✓]	

ACTION:

a. If DDT breakdown is greater than 20% on quantitation column beginning with the samples following the last in control standard:

1. Flag all positive DDT results "J".
2. If DDT was not detected but DDD and/or DDE are positive, flag the DDT non-detect "R".
3. Flag positive DDD and DDE results "JN".
4. If DDT breakdown is > 20% on confirmation column and DDT is identified on quantitation column but not on confirmation column, use professional judgement to determine whether DDT should be reported on Form I (if reported, flag result "N").

b. If Endrin breakdown is > 20% on quantitation column, beginning with the samples following the last in control standard:

1. Flag all positive Endrin results "J".
2. If Endrin was not detected, but Endrin Aldehyde and/or Endrin Ketone are positive, flag the Endrin non-detect "R".
3. Flag Endrin Ketone positive results "JN".
4. If Endrin breakdown is > 20% on confirmation column and Endrin is identified on quantitation column but not on confirmation column, use professional judgement to determine whether Endrin should be reported on Form I (if reported, flag result "N").

c. If the combined breakdown is used (it can only be used if the conditions in 7.4 above are met) and is > 20% on quantitation column beginning with the last in control standard, take the actions specified in 7.4 a and b above. If the combined breakdown is >20% on confirmation column and Endrin or DDT is identified on quantitation column but not on confirmation column, use professional judgement to determine whether Endrin or DDT should be reported on Form I (if reported, flag result "N").

	YES	NO	N/A
7.5 Is the linearity check RSD of all four calibration factors <10% for the quantitation column?s	[✓]		

ACTION: If no, flag positive hits for all pesticide and PCB analytes "J" for all associated samples. Do not flag toxaphene or DDT if they are quantified from a 3-point calibration curve.

DDT % RSD = 10.8 for Confirmation Column Instr. 05 4/4/91

	YES	NO	N/A
7.6 Is the % difference between the EVAL A and each analysis (quantitation and confirmation) DBC retention time within QC limits (2% for packed column, 0.3% for capillary [I.D. < 0.32 mm], 1% for megabore [0.32 < I.D. < 2 mm]) ?	[✓]		

ACTION: DBC retention time cannot be evaluated if DBC is not detected. If it is present and has a retention time out of QC limits, then use professional judgement to determine the reliability of the analysis and flag results "R", if appropriate.

Packed Columns

	YES	NO	N/A
7.7 Was the proper analytical sequence followed for each 72 hour period of analyses (page PEST D-36 in 8/87 SOW).	[✓]		

ACTION: If no, use professional judgement to determine the severity of the effect on the data and accept or reject it accordingly. Generally, the effect is negligible unless the sequence was grossly altered or the calibration was also out of limits.

.0 Pesticide/PCB Standards Summary

	YES	NO	N/A
8.1 Is Form IX present and complete for each GC column and 72 hr sequence of analyses?	[✓]		

ACTION: If no, take action specified in 3.2 above.

	YES	NO	N/A
8.2 Are there any transcription/calculation errors between raw data and Form IX?		[✓]	

ACTION: If large errors exist, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".

	YES	NO	N/A
8.3 Is DDT retention time for packed columns > 12 min (except OV-1 and OV-101 columns)?	[✓]		

ACTION: If no, check that there is adequate resolution between individual components. If not, flag results for compounds that interfere with each other (co-elute) "R".

	YES	NO	N/A
8.4 Do all standard retention times fall within the windows established for the first IND A and IND B analyses?	[✓]		

	YES	NO	N/A
ACTION: Beginning with the samples following the last in control standard, check to see if the chromatograms contain peaks within an expanded window surrounding the expected retention times. If no peaks are found and, DBC is visible non-detects are valid. If peaks are present and cannot be identified through "pattern recognition" or a consistent shift in standard retention times, flag all affected compound results "R".			

DDT %D=23.3
Instr. 07 04/05/91 14:49 = 16.3 @ 18:27 } no samples associated
no action

8.5 Are the continuing calibration standard calibration factors within 15% (for quantitation column) or 20% (for confirmation column) of the initial (at beginning of 72 hr sequence) calibration factors? [ ] ✓ ___

ACTION: If no, flag all associated positive results "J". Use professional judgement to determine whether or not to flag non-detects.

.0 Pesticide/PCB Identification

9.1 Is Form X complete for every sample in which a pesticide or PCB was detected? [ ] ___ ✓

ACTION: If no, take action specified in 3.2 above.

9.2 Are there any transcription errors between raw data and Form X? ___ [ ] ✓

ACTION: If large errors exist, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".

9.3 Are retention times of sample compounds within the calculated retention time windows for both quantitation and confirmation analyses? [ ] ___ ✓

Was GC/MS confirmation provided when required (when compound concentration is > 10 ug/ml in final extract)? [ ] ___ ✓

ACTION: Reject ("R") all positive results (meeting quantitation column criteria, but missing confirmation by a second column or GC/MS (if appropriate). Also, reject ("R") all positive results not meeting retention time window criteria unless associated standard compounds are similarly biased (i.e. base on RRT to DBC).

9.4 Check chromatograms for false negatives, especially for the multiple peak components toxaphene and PCB's. Were there any false negatives? ___ [✓] ___

ACTION: If appropriate PCB standards were not analyzed, or if the lab performed no confirmation analysis, flag the appropriate data with an "R".

	YES	NO	N/A
10.0 Compound Quantitation and Reported Detection Limits			
10.1 Are there any transcription / calculation errors in Form I results? Check at least two positive values. Were any errors found?	___	[✓]	___
NOTE: Simple peak pesticide results can be checked for rough agreement between quantitative results obtained on the two GC columns. The reviewer should use professional judgement to decide whether a much larger concentration obtained on one column versus the other indicates the presence of an interfering compound. If an interfering compound is indicated, the lower of the two values should be reported and qualified as presumptively present at an estimated quantity ("JN"). This necessitates a determination of an estimated concentration on the confirmation column. The narrative should indicate that the presence of interferences has obscured the attempt at a second column confirmation.			
10.2 Are the CRQLs adjusted to reflect sample dilutions and, for soils, sample moisture?	[✓]	[___]	___
ACTION: If errors are large, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			
ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample analysis). Replace concentrations that exceed the calibration range in the original analysis by crossing out the "E" value on the original Form I and substituting it with data from the analysis of diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form I's that should not be used, including any in the summary package.			
1.0 Chromatogram Quality			
11.1 Were baselines stable?	[✓]	___	___
11.2 Were any electropositive displacement (negative peaks) or unusual peaks seen?	___	[✓]	___
11.3 Were early eluting peaks (for early eluting analytes) resolved to baseline?	[✓]	___	___
ACTION: For 11.1 and 11.2, comment only. For 11.3, reject ("R") those analytes that are not sufficiently resolved.			

	YES	NO	N/A
12.0 Field Duplicates			
12.1 Were any field duplicates submitted for PEST/PCB analysis?	[ ]	✓	

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between field duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

ATTACHMENT 1
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TOTAL REVIEW

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organics Analysis

Case No. 91032947 SDG No. 02-001-M001 LABORATORY Roy F. Weston Gulf Coast SITE NWS-Earle Colts Neck, N.J

DATA ASSESSMENT:

The current functional guidelines for evaluating organic data have been applied.

All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detects), "R" (unusable), or "NJ" (presumptive evidence for the presence of the material at an estimated value). All action is detailed on the attached sheets.

Reviewer's Signature: [signature] Date: 9/5/1991

Verified By: Paul B. Hanly Date: 9/5/1991

DATA ASSESSMENT:

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples will be qualified as estimated, "J". The non-detects sample quantitation limits will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

All samples extracted & analyzed within hold times.

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DATA ASSESSMENT:

2. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip field, rinse and water blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field blanks measure cross- contamination of samples during field operations. Water blanks measure potential contamination of the distilled water used used during decontamination of field equipment. If the concentration of the analyte is less than 5 times (10 times for the common contaminants), the analytes are qualified as non- detects, "U". The following analytes in the samples shown were qualified with "U" for these reasons:

A) Method blank contamination

minor positive hit for Aldrin in PBLK - 91GP0186-MB1 - ~ 1/5 CRQL - apparent contamination - many of the samples also contain similarly minor hits for Aldrin on 1° columns - no action

B) Field or rinse blank contamination

None apparent

C) Water blank contamination

NA

D) Trip blank contamination

NA

DATA ASSESSMENT:

5. CALIBRATION:

A) PERCENT RELATIVE STANDARD DEVIATION (%RSD) AND PERCENT DIFFERENCE (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be <30% and %D must be <25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If there is a gross deviation of %RSD and %D, the non-detects may be qualified as rejected, "R".

For the PCB/PESTICIDE fraction, %RSD for aldrin, endrin, DDT, and dibutylchlorendate must not exceed 10%. Percent D must be within 15% on the quantitation column and 20% on the confirmation column.

+ %RSDs All 1° columns had % RSDs < 10 %

– one Conf. column had DDT slightly > 10% (10.8) — no action
(Instr. 05 4/4/91)

– %Ds — DDT %D > 15% on Instr. 07 4/5/91 @ 14:49 & 18:27

No samples in this case associated with these continuing calibration stds. — no impact

DATA ASSESSMENT:

6. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation in order to evaluate the laboratory performance and to estimate the efficiency of the analytical technique. If the measured surrogate concentration is outside of the contract specifications, qualifications were applied to the samples and analytes as shown below.

All surrogate recoveries within QC limits.

DATA ASSESSMENT:

8. COMPOUND IDENTIFICATION:

A) VOLATILE AND SEMI-VOLATILE FRACTIONS:

TCL compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary M/E lines within 20% of that in the standard compound. For the tentatively identified compounds, TIC, the ion spectra must match accurately. In the cases where there is not a perfect ion spectrum match, the laboratory may have provided false positive identifications.

B) PESTICIDE FRACTION:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10 ng/uL in the final sample extract.

All standards fell within reported RTWs

No positive results in samples - no confirmations by GC/MS required

DATA ASSESSMENT:

9. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for some additional qualification of the data.

All Recoveries & RPDs for both MS/MSDs and both BS/BSDs within QC limits.

ATTACHMENT 1
SOP NO. HW-6

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DATA ASSESSMENT:

10. OTHER QC DATA OUT OF SPECIFICATION:

None

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT:

Excellent

12. CONTRACT PROBLEMS____NON-COMPLIANCE:

None

13. This package contains re-extraction, re-analysis or dilution. Upon reviewing the QA results, the following form I(s) are identified to be used.

One per sample included

DATA ASSESSMENT:

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT:

Excellent

All non-detect data stands as reported by laboratory

DPO: [ ] ACTION [ ] FYI Region_____

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 91031947 LABORATORY Roy F. Weston - Gulf Coast

SDG NO. 02-001-M001 DATA USER _____

SOW 2/88 REVIEW COMPLETION DATE 9/5/91

NO. OF SAMPLES 18 WATER 0 SOIL _____ OTHER

REVIEWER [ ] ESD [ ] ESAT [X] OTHER, CONTRACT/CONTRACTOR Heartland ESI

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES			O	
2. GC-MS TUNE/ GC PERFORMANCE			O	
3. INITIAL CALIBRATIONS			O	
4. CONTINUING CALIBRATIONS			O	
5. FIELD BLANKS ("F" = not applicable)			O	
6. LABORATORY BLANKS			O	
7. SURROGATES			O	
8. MATRIX SPIKE/DUPLICATES			O	
9. REGIONAL QC ("F" = not applicable)			O	
10. INTERNAL STANDARDS				
11. COMPOUND IDENTIFICATION			O	
12. COMPOUND QUANTITATION			O	
13. SYSTEM PERFORMANCE			O	
14. OVERALL ASSESSMENT			O	

O = No problems or minor problems that do not affect data usability.
X = No more than *about* 5% of the data points are qualified as either estimated or unusable.
M = More than *about* 5% of the data points are qualified as estimated.
Z = More than *about* 5% of the data points are qualified as unusable.

DPO ACTION ITEMS: _____

AREAS OF CONCERN: _____

Attachment 3

REJECTION SUMMARY FORM
(No. of Compounds/No. of Fractions (Samples))

SOP NO: HW-6
Date: February 1989

Type of Review: Region II - CLP SOP HW-6 Date: 9/5/91

Project: NWS - Earle / Colts Neck, N.J. Case #: 91031947

Reviewer's Initials: [signature] CDS Lab Name: Roy F. Weston

Number of Samples: 18

Analytes Rejected Due to Exceeding Review Criteria:

	Surrogates	Holding Time	Calibration	Contamination	ID	Other	Total # Samples	Total # Rejected/ Total # in all Samples
Acids (15)								
B/N (50)								
VOA (35)								
PEST (20)	Ø	Ø	Ø	Ø	Ø	Ø		
PCB (7)	Ø	Ø	Ø	Ø	Ø	Ø	18	Ø/360
TCDD (1)							18	Ø/126

Analytes Estimated Due to Exceeding Review Criteria for:

Acids (15)								
B/N (50)								
VOA (35)								
PEST (20)	Ø	Ø	Ø	Ø	Ø	Ø		
PCB (7)	Ø	Ø	Ø	Ø	Ø	Ø	18	Ø/360
TCDD (1)							18	Ø/126