START

9613422.2347

9309L111-UES-1351

0043677

WESTON

MANAGERS DESIGNERS CONSULTANTS

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD
RFW #: 9309L111

W.O. #: 06168-002-001-9999-00
Date Received: 09-29-93

GC/MS VOLATILE

The set of samples consisted of six (6) water samples collected on 09-27-93.

The samples were analyzed according to criteria set forth in SW 846 Method 8240 for TCL Volatile target compounds on 10-10,11-93.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. Non-target compounds were not detected in these samples.

2. All surrogate recoveries were within EPA QC limits.

3. All matrix spike recoveries were within EPA QC limits.

4. The laboratory blanks contained the common contaminants Methylene Chloride and Acetone at levels less than the CRQL.

5. All internal standard area and retention time criteria were met.

J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

10.26.93
Date

FEB 1996
RECEIVED
EDMC

sma/voa/09-111v.cn

WESTON Analytics Use Only
93091L 111

pm = J. Edwards
Beta
Kyle Tow
Everyone

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 10

Client: Westinghouse Hanford
Est. Final Proj. Sampling Date:
Work Order #: 06168-002-001-9999-00
Project Contact/Phone #:
AD Project Manager: Jerie Edwards
QC: SW846 Del: Special TAT: 35 Days
Date Rec'd: 9/29/93 Date Due: 11/03/93
Account #: WS-HANFORD

Refrigerator #		1	5	5				SUB	4								
#/Type Container	Liquid	4L	2AG	1AG				1PL	1PL								
	Solid																
Volume	Liquid	40ml	100ml	950ml				4PL	4PL								
	Solid																
Preservatives		none	none	none				HNO3	HNO3								

ANALYSES REQUESTED →

ORGANIC							INORG		
VOA	BNA	Pest/PCB	Herb			Radiochem	Metal	CN	

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

WESTON Analytics Use Only

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	624/1624	625/1625	8270/1625				1313/8	1311/8270-					
001	93258-02. I27			W	9/27/93		X	X	X				X	X					
002	93258-03. I27			W		0907	X	X	X				X	X					
003	93258-04. I27			W		1005	X	X	X				X	X					
004	93258-05. I27			W			X												
005	93258-06. I27			W			X												
006	93258-01. I27			W			X	X	X				X	X					
	Radiochem = Gross Alpha/Beta																		

mbh 10/1/93

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
SAF#93-258 RCRA Protocol

Target Date = 16
Temp = 28°C
Original Rewritten

DATE/REVISIONS:
10/1/93 1. 4-6 added to COC.
10/1/93 2. 003 should only be in for VOA.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ✓ or Hand Delivered
Airbill # 4473326074
2) Ambient or Chilled
3) Received in Good Condition (Y) or N
4) Labels Indicate Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

COC Tape was:
1) Present on Outer Package (Y) or N
2) Unbroken on Outer Package (Y) or N
3) Present on Sample (Y) or N
4) Unbroken on Sample (Y) or N
COC Record Present Upon Sample Rec't (Y) or N

Discrepancies Between Samples Labels and COC Record? Y or (N)
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
Burlington	M Kenyon	9/24/93	0330				
mbh	mbh	9/30/93			mbh	9/30/93	

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ 381-596a

9613422.2348

Westinghouse
Hanford Company

Chain of Custody / Sample Analysis Request

COC # 4862

page: 1 of 1

Collector: Steffler RZ | Project Designation: 1325N Waste Stream-1 | Sampling Location: 1325N DEMINERALIZED WATER

SAF #: 93-258 | Sample Date: 9/27/93 | Company Contact : MS HENDRIX | Phone #: 372-3916 | Bill of Lading #:

Laboratory: Weston | Protocol: RCRA | Log book #: WHC-N 2.5-29 | pages: | Offsite Prop #:

Sample Id #	Analysis (Parameters)	Matrix *	Preservative(s)	Container	Date / Time	Serial #	E#/R#	IC#
( )93258-02.127	GROSS ALPHA/BETA (Lab Specific)	WATER	HNO3	01000mL P	9/27/93 /1421		N/A	
( )93258-02.127	ICP METALS (6010)	WATER	HNO3	01000mL P	9/27/93 /1423		N/A	
( )93258-02.127	PCB/PEST (8080)	WATER	4 deg. C	01000mL aG	9/27/93 /1420		N/A	
( )93258-02.127	SEMI-VOA (8270)	WATER	4 deg. C	02500mL aG	9/27/93 /1419		N/A	
( )93258-02.127	VOA (8240)	WATER	4 deg. C	00040mL aGs	9/27/93 /1417		N/A	
( )93258-02.127	VOA (8240)	WATER	4 deg. C	00040mL aGs	9/27/93 /1418		N/A	
( )93258-06.127	VOA (8240)	WATER	4 deg. C	00040mL aGs	9/27/93 /1424		N/A	
( )93258-06.127	VOA (8240)	WATER	4 deg. C	00040mL aGs	9/27/93 /1424		N/A	

9613422.2349

Temp= 2.8

(sign and print names)

Special Instructions/Conditions

Relinquished By: RZ Steffler — Date/Time: 9-28-93 1100 | Received By: | Date/Time:

Relinquished By: BURLINGTON — Date/Time: 9-29-93 3110 | Received By: | Date/Time: 9/29/93 0310

Relinquished By: | Date/Time: | Received By: | Date/Time:

Laboratory Section | Received By: | Title: | Date/Time:

(Sample Disposition) | Disposal Method: | Disposed of By: | Date/Time:

Westinghouse
Hanford Company

Chain of Custody / Sample Analysis Request

COC # 4861

page: 1 of 12

Collector: Steffler RZ | Project Designation: 1325N Waste Stream-1 | Sampling Location: 1325N POTABLE WATER

SAF #: 93-258 | Sample Date: 9/27/93 | Company Contact : MS HENDRIX | Phone #: 372-3916 | Bill of Lading #:

Laboratory: Weston | Protocol: RCRA | Log book #: 474 4'. 195-28 pages: | Offsite Prop #:

Sample Id #	Analysis (Parameters)	Matrix *	Preservative(s)	Container	Date / Time	Serial #	E#/R#	IC#
( )93258-03.127	GROSS ALPHA/BETA (Lab Specific)	WATER	HNO3	01000mL P	9/27/93 / 0927		N/A	
( )93258-03.127	ICP METALS (6010)	WATER	HNO3	01000mL P	9/27/93 / 0927		N/A	
( )93258-03.127	PCB/PEST (8080)	WATER	4 deg. C	01000mL aG	9/27/93 / 0927		N/A	
( )93258-03.127	SEMI-VOA (8270)	WATER	4 deg. C	02500mL aG	9/27/93 / 0927		N/A	
( )93258-03.127	VOA (8240)	WATER	4 deg. C	00040mL aGs	9/27/93 / 0927		N/A	
( )93258-03.127	VOA (8240)	WATER	4 deg. C	00040mL aGs	9/27/93 / 0927		N/A	
( )93258-05.127	VOA (8240)	WATER	4 deg. C	00040mL aGs	9/27/93 / 0927		N/A	
( )93258-05.127	VOA (8240)	WATER	4 deg. C	00040mL aGs	9/27/93 / 0927		N/A	

9613422.2350

Temp: 2.8

(sign and print names)

Special Instructions/Conditions

Relinquished By: RZ Steffler R.Z. Steffler | Date/Time: 9-28-93 1100 | Received By: | Date/Time:

Relinquished By: BURLINGTON | Date/Time: 9-29-93 3:10 | Received By: | Date/Time: 9/29/93 0310

Relinquished By: | Date/Time: | Received By: | Date/Time:

Laboratory Section | Received By: | Title: | Date/Time:

(Sample Disposition) | Disposal Method: | Disposed of By: | Date/Time:

Westinghouse
Hanford Company

Chain of Custody / Sample Analysis Request

COC # 4859

page: 1 of 2

Collector: Steffler RZ | Project Designation: 1325N Waste Stream-1 | Sampling Location: 1325N EXPORT WATER

SAF #: 93-258 | Sample Date: 9/27/93 | Company Contact : MS HENDRIX | Phone #: 372-3916 | Bill of Lading #:

Laboratory: Weston | Protocol: RCRA | Log book #: WK N 245 28 pages: | Offsite Prop #:

Sample Id #	Analysis (Parameters)	Matrix *	Preservative(s)	Container	Date / Time	Serial #	E#/R#	IC#
( )92358-04.127	VOA (8240)	WATER	4 deg. C	00040mL aGs	9/27/93 / 1005		N/A	
( )92358-04.127	VOA (8240)	WATER	4 deg. C	00040mL aGs	9/27/93 / 1005		N/A	
( )93258-01.127	GROSS ALPHA/BETA (Lab Specific)	WATER	HNO3	01000mL P	9/27/93 / 1007		N/A	
( )93258-01.127	ICP METALS (6010)	WATER	HNO3	01000mL P	9/27/93 / 1006		N/A	
( )93258-01.127	PCB/PEST (8080)	WATER	4 deg. C	01000mL aG	9/27/93 / 1004		N/A	
( )93258-01.127	SEMI-VOA (8270)	WATER	4 deg. C	02500mL aG	9/27/93 / 1003		N/A	
( )93258-01.127	VOA (8240)	WATER	4 deg. C	00040mL aGs	9/27/93 / 0956		N/A	
( )93258-01.127	VOA (8240)	WATER	4 deg. C	00040mL aGs	9/27/93 / 0956		N/A	

9613422.2351

Temp: 2.8

(sign and print names)

Special Instructions/Conditions

Relinquished By: RZ Steffler R.Z. Steffler | Date/Time: 9-28-93 1100 | Received By: | Date/Time:

Relinquished By: BURLINGTON | Date/Time: 9-29-93 3110 | Received By: | Date/Time:

Relinquished By: | Date/Time: | Received By: | Date/Time:

Laboratory Section | Received By: | Title: | Date/Time:

(Sample Disposition) | Disposal Method: | Disposed of By: | Date/Time:

001 001

BURLINGTON AIR EXPRESS

CORPORATE SUPPORT GROUP
18200 VON KARMAN AVE
IRVINE, CA 92715

9309L109
9309L110
9309L111

997 332 674
AIRBILL NUMBER

DATE	ORIGIN	DEST SORT CODE
09-28-93	PSC	

1
SHIPPER'S REFERENCE NO.: X2911 E17205 W93-0764#30
SHIPPER'S ACCOUNT NO.: 7415 4197
COMPANY: U S DEPT OF ENERGY RZ STEFFLER C/O WESTINGHOUSE
DEPT./FLOOR:
FROM (YOUR NAME): HANFORD COMPANY
PHONE NO.: WESTINGHOUSE SHIPPING DEPT. (509) 376-6665
STREET ADDRESS: 2355 STEVENS DR
CITY: RICHLAND
STATE: WA
ZIP (REQUIRED): 99352

2
CONSIGNEE'S REFERENCE NO.:
CONSIGNEE'S ACCOUNT NO.:
COMPANY: RF WESTON INC
DEPT./FLOOR:
TO (CONSIGNEE NAME): RF WESTON INC JOSIE KING
PHONE NO.:
ACCURATE STREET ADDRESS (BURLINGTON CANNOT DELIVER TO A P.O. BOX): 256 WELSH POOL ROAD
CITY: LIONVILLE
STATE: PA
ZIP (REQUIRED): 19341

3 C.O.D.
$
CONSIGNEE'S CHECK O.K. MARK IF APPLICABLE ☐
DECLARED VALUE
$
LIMIT OF LIABILITY
LIABILITY IS AGREED AND UNDERSTOOD TO BE $50.00 OR $.50 PER POUND WHICHEVER IS GREATER, UNLESS A HIGHER VALUE IS DECLARED AND APPLICABLE CHARGES PAID. SEE REVERSE SIDE OF AIRBILL, PARAGRAPH 8, FOR DECLARED VALUE LIMITATIONS.

1-800-CALL-BAX
FOR INFORMATION OR THE BAX OFFICE NEAREST YOU

4 BILLING INFORMATION
- [XX] PREPAID (SHIPPER) $ _____ CASH RECEIVED (PAID IN ADVANCE)
- [ ] COLLECT (CONSIGNEE)
- [ ] 3RD PARTY (ACCT. NO. OR BILLING ADDRESS REQ'D.)

ACCOUNT NO.:
COMPANY/NAME:
STREET ADDRESS:
CITY: STATE: ZIP:

997 332 674
AIRBILL NUMBER

5 SERVICE REQUESTED
- [XX] OVERNIGHT (NEXT BUSINESS DAY)
- [ ] SECOND DAY
- [ ] NEXT FLIGHT OUT
- [ ] _____

CHECK BELOW IF PACKAGE IS:
- [ ] LETTER
- [ ] G.O.H. (GARMENT ON HANGER)

6 HANDLING INFORMATION (* SPECIAL RATE MAY APPLY)
- [ ] HOLD AT BAX
- [ ] *DANGEROUS GOODS
- [ ] *SATURDAY DELIVERY
- [ ] *SPECIAL DELIVERY
- [ ] *CONVENTION
- [ ] *GOVERNMENT SHIPMENT

SPECIAL INSTRUCTIONS / ADDITIONAL REFERENCE INFORMATION:
WATER SAMPLES

NO. OF PCS.	WEIGHT	LENGTH	WIDTH	HEIGHT	DESCRIPTION
5	384				COOLERS ID: SML413 97#; CT-5 63#;SML87 75#; SML389 84#;SML144 65#
TOTAL PCS 5	TOTAL WT. 384				

_____ SKID(S) SAID TO CONTAIN _____ NO. OF PIECES

RATE QUOTE NUMBER:

RECEIVED BY BAX AT: [✓] SHIPPER'S DOOR [ ] BAX TERMINAL

TIME/DATE OF PICK-UP: 1:00 9/28/93
DRIVER NO.:

OUTSIDE CARRIER:
CHARGES ADVANCED $
PRO NUMBER
CARRIER NAME

7
SIGNATURE OF SHIPPER: X [signature] 9/28/
RELEASE SIGNATURE (BY SIGNING AUTHORIZES BAX TO DELIVER SHIPMENT WITHOUT A DELIVERY SIGNATURE AS PER CONDITIONS ON REVERSE OF THIS PAGE.): X
SIGNED FOR BAX: X [signature]

NON-NEGOTIABLE AIRBILL SUBJECT TO TERMS AND CONDITIONS OF CONTRACT ON REVERSE SIDE

OP 100 (11-92)

CONSIGNEE COPY

0020

9613422.2352

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, HSL List

RFW Batch Number: 9309L111 Client: WESTINGHOUSE HANFORD Work Order: 06168002001 Page: 1a Report Date: 10/15/93 15:31

	Cust ID:	93258-02.I27		93258-03.I27		93258-04.I27		93258-04.I27		93258-04.I27		93258-05.I27	
Sample Information	RFW#:	001		002		003		003 MS		003 MSD		004	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Surrogate Recovery	Toluene-d8	102	%	103	%	100	%	92	%	97	%	103	%
	Bromofluorobenzene	98	%	103	%	96	%	89	%	95	%	98	%
	1,2-Dichloroethane-d4	106	%	109	%	108	%	104	%	109	%	110	%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U	10	U	10	U	10	U	10	U
Bromomethane		10	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride		10	U	10	U	10	U	10	U	10	U	10	U
Chloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride		59	B	3	JB	5	U	2	JB	3	JB	2	JB
Acetone		10	U	10	B	10	U	10	U	10	U	4	JB
Carbon Disulfide		5	U	5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethene		5	U	5	U	5	U	107	%	106	%	5	U
1,1-Dichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethene (total)		5	U	5	U	5	U	5	U	5	U	5	U
Chloroform		130		110		5	U	5	U	5	U	5	U
1,2-Dichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Carbon Tetrachloride		5	U	5	U	5	U	5	U	5	U	5	U
Vinyl Acetate		10	U	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane		3	J	10		5	U	5	U	5	U	5	U
1,2-Dichloropropane		5	U	5	U	5	U	5	U	5	U	5	U
cis-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	5	U
Trichloroethene		5	U	5	U	5	U	100	%	95	%	5	U
Dibromochloromethane		5	U	5	U	5	U	5	U	5	U	5	U
1,1,2-Trichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Benzene		5	U	5	U	5	U	105	%	100	%	5	U
Trans-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	5	U
Bromoform		5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		10	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene		5	U	5	U	5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		5	U	5	U	5	U	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

0022

9613422.2353

RFW Batch Number: 9309L111 Client: WESTINGHOUSE HANFORD Work Order: 06168002001 Page: 1b

Cust ID:	93258-02.I27	93258-03.I27	93258-04.I27	93258-04.I27	93258-04.I27	93258-05.I27
RFW#:	001	002	003	003 MS	003 MSD	004
Toluene	5 U	5 U	5 U	103 %	98 %	5 U
Chlorobenzene	5 U	5 U	5 U	102 %	96 %	5 U
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

0023

9613422.2354

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, HSL List

Report Date: 10/15/93 15:31

RFW Batch Number: 9309L111 Client: WESTINGHOUSE HANFORD Work Order: 06168002001 Page: 2a

0024

	Cust ID:	93258-06.I27	93258-01.I27	VBLK	VBLK
Sample Information	RFW#:	005	006	93LVB260-MB1	93LVB261-MB1
	Matrix:	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L
Surrogate Recovery	Toluene-d8	105 %	95 %	95 %	101 %
	Bromofluorobenzene	101 %	90 %	92 %	97 %
	1,2-Dichloroethane-d4	112 %	106 %	100 %	110 %
Chloromethane		10 U	10 U	10 U	10 U
Bromomethane		10 U	10 U	10 U	10 U
Vinyl Chloride		10 U	10 U	10 U	10 U
Chloroethane		10 U	10 U	10 U	10 U
Methylene Chloride		2 JB	5 U	3 J	1 J
Acetone		4 JB	10 U	2 J	2 J
Carbon Disulfide		5 U	5 U	5 U	5 U
1,1-Dichloroethene		5 U	5 U	5 U	5 U
1,1-Dichloroethane		5 U	5 U	5 U	5 U
1,2-Dichloroethene (total)		5 U	5 U	5 U	5 U
Chloroform		5 U	5 U	5 U	5 U
1,2-Dichloroethane		5 U	5 U	5 U	5 U
2-Butanone		10 U	10 U	10 U	10 U
1,1,1-Trichloroethane		5 U	5 U	5 U	5 U
Carbon Tetrachloride		5 U	5 U	5 U	5 U
Vinyl Acetate		10 U	10 U	10 U	10 U
Bromodichloromethane		5 U	5 U	5 U	5 U
1,2-Dichloropropane		5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene		5 U	5 U	5 U	5 U
Trichloroethene		5 U	5 U	5 U	5 U
Dibromochloromethane		5 U	5 U	5 U	5 U
1,1,2-Trichloroethane		5 U	5 U	5 U	5 U
Benzene		5 U	5 U	5 U	5 U
Trans-1,3-Dichloropropene		5 U	5 U	5 U	5 U
Bromoform		5 U	5 U	5 U	5 U
4-Methyl-2-pentanone		10 U	10 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U
Tetrachloroethene		5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane		5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

96|3422.2355

RFW Batch Number: 9309L111 Client: WESTINGHOUSE HANFORD Work Order: 06168002001 Page: 2b

Cust ID:	93258-06.I27	93258-01.I27	VBLK	VBLK
RFW#:	005	006	93LVB260-MB1	93LVB261-MB1
Toluene	5 U	5 U	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U
Ethylbenzene	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

0025

9612172356

9613422.2357

1A

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-02.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-001

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: B101006

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____

Date Analyzed: 10/10/93

Column: (pack/cap) CAP

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	59	B
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	130	
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	3	J
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

9613422.2358

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

93258-02.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-001

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: B101006

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____

Date Analyzed: 10/10/93

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 12/88 Rev.

9613422.2359

1A

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-03.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-002

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: B101105

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____

Date Analyzed: 10/11/93

Column: (pack/cap) CAP

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	JB
67-64-1	Acetone	10	B
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	110	
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	10	
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

FORM 1 V-1 12/88 Rev.

9613422.2360

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

93258-03.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-002

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: B101105

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____

Date Analyzed: 10/11/93

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 12/88 Rev.

9613422.2361

1A

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-04.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-003

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: B101008

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____

Date Analyzed: 10/10/93

Column: (pack/cap) CAP

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

9615422.2562

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

93258-04.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-003

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: B101008

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____

Date Analyzed: 10/10/93

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 12/88 Rev.

9613422.2363

1A

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-05.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-004

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: B101106

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____

Date Analyzed: 10/11/93

Column: (pack/cap) CAP

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	JB
67-64-1	Acetone	4	JB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

9613422.2364

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

93258-05.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-004

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: B101106

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____

Date Analyzed: 10/11/93

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 12/88 Rev.

9613422.2365

1A

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-06.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-005

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: B101107

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____

Date Analyzed: 10/11/93

Column: (pack/cap) CAP

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	JB
67-64-1	Acetone	4	JB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

9613422.2366

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

93258-06.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-005

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: B101107

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____

Date Analyzed: 10/11/93

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 12/88 Rev.

9613422.2367

1A

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-01.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-006

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: B101013

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____

Date Analyzed: 10/11/93

Column: (pack/cap) CAP

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

93258-01.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-006

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: B101013

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____

Date Analyzed: 10/11/93

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD
RFW #: 9309L111

W.O. #: 06168-002-001-9999-00
Date Received: 09-29-93

SEMIVOLATILE

The set of samples consisted of three (3) water samples collected on 09-27-93.

The samples were extracted on 10-04-93 and analyzed according to criteria set forth in SW 846 Method 8270 for TCL Semivolatile target compounds on 10-12,13,19-93.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

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

2. Two (2) of forty-two (42) surrogate recoveries were outside EPA QC limits. EPA surrogate recovery criteria were not met for the sample 93258-03.I27. Insufficient sample remained for re-extraction.

3. Eight (8) of twenty-two (22) matrix spike recoveries were outside EPA QC limits.

4. Two (2) of eleven (11) blank spike recoveries were outside EPA QC limits.

5. All internal standard area and retention time criteria were met.

Stanley Bromthaler

J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

11.02.93
Date

dlc/bna/09-111b.cn

Roy F. Weston, Inc. - Lionville Laboratory
Semivolatiles by GC/MS, HSL List

Report Date: 10/20/93 16:25

RFW Batch Number: 9309L111 Client: WESTINGHOUSE HANFORD Work Order: 06168002001 Page: 1a

0022

	Cust ID:	93258-02.I27	93258-02.I27	93258-02.I27	93258-03.I27	93258-01.I27	SBLK
Sample Information	RFW#:	001	001 MS	001 MSD	002	006	93LE1738-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate Recovery	Nitrobenzene-d5	75 %	93 %	98 %	78 %	86 %	80 %
	2-Fluorobiphenyl	72 %	83 %	86 %	69 %	66 %	63 %
	p-Terphenyl-d14	89 %	97 %	106 %	88 %	108 %	109 %
	Phenol-d5	28 %	31 %	86 %	0 * %	57 %	53 %
	2-Fluorophenol	57 %	67 %	80 %	13 * %	65 %	61 %
	2,4,6-Tribromophenol	73 %	87 %	88 %	41 %	92 %	80 %
Phenol		10 U	81 %	95 * %	10 U	10 U	10 U
bis(2-Chloroethyl)ether		10 U	19 U	19 U	10 U	10 U	10 U
2-Chlorophenol		10 U	111 %	129 * %	10 U	10 U	10 U
1,3-Dichlorobenzene		10 U	19 U	19 U	10 U	10 U	10 U
1,4-Dichlorobenzene		10 U	65 %	70 %	10 U	10 U	10 U
Benzyl alcohol		10 U	19 U	19 U	10 U	10 U	10 U
1,2-Dichlorobenzene		10 U	19 U	19 U	10 U	10 U	10 U
2-Methylphenol		10 U	19 U	19 U	10 U	10 U	10 U
bis(2-Chloroisopropyl)ether		10 U	19 U	19 U	10 U	10 U	10 U
4-Methylphenol		10 U	19 U	19 U	10 U	10 U	10 U
N-Nitroso-Di-n-propylamine		10 U	111 %	123 * %	10 U	10 U	10 U
Hexachloroethane		10 U	19 U	19 U	10 U	10 U	10 U
Nitrobenzene		10 U	19 U	19 U	10 U	10 U	10 U
Isophorone		10 U	19 U	19 U	10 U	10 U	10 U
2-Nitrophenol		10 U	19 U	19 U	10 U	10 U	10 U
2,4-Dimethylphenol		10 U	19 U	19 U	10 U	10 U	10 U
Benzoic acid		50 U	95 U	95 U	50 U	50 U	50 U
bis(2-Chloroethoxy)methane		10 U	19 U	19 U	10 U	10 U	10 U
2,4-Dichlorophenol		10 U	19 U	19 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene		10 U	94 %	97 %	10 U	10 U	10 U
Naphthalene		10 U	19 U	19 U	10 U	10 U	10 U
4-Chloroaniline		10 U	19 U	19 U	10 U	10 U	10 U
Hexachlorobutadiene		10 U	19 U	19 U	10 U	10 U	10 U
4-Chloro-3-methylphenol		10 U	80 %	84 %	10 U	10 U	10 U
2-Methylnaphthalene		10 U	19 U	19 U	10 U	10 U	10 U
Hexachlorocyclopentadiene		10 U	19 U	19 U	10 U	10 U	10 U

*= Outside of EPA CLP QC limits.

9613422.2370

RFW Batch Number: 9309L111 Client: WESTINGHOUSE HANFORD Work Order: 06168002001 Page: 1b

	Cust ID: 93258-02.I27	93258-02.I27	93258-02.I27	93258-03.I27	93258-01.I27	SBLK
RFW#:	001	001 MS	001 MSD	002	006	93LE1738-MB1
2,4,6-Trichlorophenol	10 U	19 U	19 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	50 U	95 U	95 U	50 U	50 U	50 U
2-Chloronaphthalene	10 U	19 U	19 U	10 U	10 U	10 U
2-Nitroaniline	50 U	95 U	95 U	50 U	50 U	50 U
Dimethylphthalate	10 U	19 U	19 U	10 U	10 U	10 U
Acenaphthylene	10 U	19 U	19 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	19 U	19 U	10 U	10 U	10 U
3-Nitroaniline	50 U	95 U	95 U	50 U	50 U	50 U
Acenaphthene	10 U	91 %	99 %	10 U	10 U	10 U
2,4-Dinitrophenol	50 U	95 U	95 U	50 U	50 U	50 U
4-Nitrophenol	50 U	90 * %	92 * %	50 U	50 U	50 U
Dibenzofuran	10 U	19 U	19 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	105 * %	108 * %	10 U	10 U	10 U
Diethylphthalate	10 U	19 U	19 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	19 U	19 U	10 U	10 U	10 U
Fluorene	10 U	19 U	19 U	10 U	10 U	10 U
4-Nitroaniline	50 U	95 U	95 U	50 U	50 U	50 U
4,6-Dinitro-2-methylphenol	50 U	95 U	95 U	50 U	50 U	50 U
N-Nitrosodiphenylamine (1)	10 U	19 U	19 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	19 U	19 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	19 U	19 U	10 U	10 U	10 U
Pentachlorophenol	50 U	108 * %	98 %	50 U	50 U	50 U
Phenanthrene	10 U	19 U	19 U	10 U	10 U	10 U
Anthracene	10 U	19 U	19 U	10 U	10 U	10 U
Di-n-Butylphthalate	10 U	19 U	19 U	10 U	10 U	10 U
Fluoranthene	10 U	19 U	19 U	10 U	10 U	10 U
Pyrene	10 U	64 %	111 %	10 U	10 U	10 U
Butylbenzylphthalate	10 U	19 U	19 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	20 U	38 U	38 U	20 U	20 U	20 U
Benzo(a)anthracene	10 U	19 U	19 U	10 U	10 U	10 U
Chrysene	10 U	19 U	19 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	10 U	19 U	19 U	10 U	10 U	10 U
Di-n-Octyl phthalate	10 U	19 U	19 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	19 U	19 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	19 U	19 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	19 U	19 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	19 U	19 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	10 U	19 U	19 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	19 U	19 U	10 U	10 U	10 U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

0023

9613422.2371

9613422.2372

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-02.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9309L111-001

Sample wt/vol: 990 (g/mL) ML Lab File ID: J101220

Level: (low/med) LOW Date Received: 09/29/93

% Moisture: not dec. _____ dec. Date Extracted: 10/04/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/13/93

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

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

CAS NO.	COMPOUND		
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

0038

9613422.2373

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-02.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9309L111-001

Sample wt/vol: 990 (g/mL) ML Lab File ID: J101220

Level: (low/med) LOW Date Received: 09/29/93

% Moisture: not dec. _____ dec. Date Extracted: 10/04/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/13/93

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

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-Octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

0039

(1) - Cannot be separated from Diphenylamine

9613922.2574

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

93258-02.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: J101220

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____ dec.

Date Extracted: 10/04/93

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 10/13/93

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	METHYLCYCLOPENTANOL	5.46	10	JB

FORM 1 SV-TIC

12/88 Rev.

0039A

9613422.2375

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-03.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9309L111-002

Sample wt/vol: 990 (g/mL) ML Lab File ID: J101223

Level: (low/med) LOW Date Received: 09/29/93

% Moisture: not dec. _____ dec. Date Extracted: 10/04/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/13/93

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

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

CAS NO.	COMPOUND		
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

9613422.2376

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-03.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9309L111-002

Sample wt/vol: 990 (g/mL) ML Lab File ID: J101223

Level: (low/med) LOW Date Received: 09/29/93

% Moisture: not dec. _____ dec. Date Extracted: 10/04/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/13/93

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-Octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 12/88 Rev.

9613422.2377

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

93258-03.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: J101223

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____ dec.

Date Extracted: 10/04/93

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 10/13/93

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

Number TICs found: 10

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	METHYLCYCLOPENTANOL	5.43	40	JB
2.	CHLOROCYCLOHEXENE	5.62	10	J
3.	CHLOROCYCLOHEXENE	5.89	10	J
4.	UNKNOWN	6.81	10	J
5.	UNKNOWN	7.30	10	J
6.	UNKNOWN	8.03	400	J
7.	UNKNOWN	8.35	30	J
8.	DICHLOROCYCLOHEXANE	8.74	200	J
9.	UNKNOWN	10.34	20	J
10.	UNKNOWN	15.55	20	J

9613422.2378

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-01.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9309L111-006

Sample wt/vol: 990 (g/mL) ML Lab File ID: J101224

Level: (low/med) LOW Date Received: 09/29/93

% Moisture: not dec. _____ dec. Date Extracted: 10/04/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/13/93

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

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

CAS NO.	COMPOUND		
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

9613422.2379

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-01.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9309L111-006

Sample wt/vol: 990 (g/mL) ML Lab File ID: J101224

Level: (low/med) LOW Date Received: 09/29/93

% Moisture: not dec. _____ dec. Date Extracted: 10/04/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/13/93

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

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-Octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 12/88 Rev.

9613422.2380

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

93258-01.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9309L111-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: J101224

Level: (low/med) LOW

Date Received: 09/29/93

% Moisture: not dec. _____ dec.

Date Extracted: 10/04/93

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 10/13/93

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	METHYLCYCLOPENTANOL	5.45	50	JB
2.	UNKNOWN	21.43	5	J
3.	UNKNOWN	23.02	4	J

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD
RFW #: 9309L111

W.O. #: 06168-002-001-9999-00
Date Received: 09-29-93

PESTICIDE/PCB

1. The set of samples consisted of three (3) water samples collected on 09-27-93.

2. The samples were analyzed based on SW-846, 3rd Edition, procedures. The extraction procedure used was based on Method 3520 and the extracts were analyzed based on Method 8080.

3. All required holding times for extraction and analysis were met.

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

5. All blank spike recoveries were within acceptance criteria with the exception of:

Compound ID	% Recovery	Control Limit
Gamma-BHC	50	56% - 127%
Dieldrin	56	57% - 131%

A Sample Discrepancy Report (SDR) has been enclosed.

6. All matrix spike recoveries were within acceptance criteria.

7. All surrogate recoveries were within acceptance criteria.

8. For continuing calibration standards analyzed prior to the sample extracts, the 15% criteria for calibration factors were exceeded for the following compound:

Compound	Column	Date/Time of Analysis
Methoxychlor	RTX5	10-06-93 at 1004
Methoxychlor	RTX35	10-06-93 at 1004
Methoxychlor	RTX5	10-07-93 at 1013
Methoxychlor	RTX35	10-07-93 at 1013

WESTON
MANAGERS DESIGNERS/CONSULTANTS

The data reflected an increase in instrument response for Methoxychlor so the ability to identify the target compound was not impaired. Since quantitation was not required, the data should not be impacted. A Sample Discrepancy Report (SDR) has been enclosed.

Stanwood Boonthonkul

J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

10. 28. 93
Date

sma/jkd/pcb/09-111pp.cn

Roy F. Weston, Inc. - Lionville Laboratory
Pesticide/PCBs by GC, CLP List

Report Date: 10/18/93 11:27

RFW Batch Number: 9309L111 Client: WESTINGHOUSE HANFORD Work Order: 06168002001 Page: 1

	Cust ID:	93258-02.I27	93258-03.I27	93258-03.I27	93258-03.I27	93258-01.I27	PBLK
Sample Information	RFW#:	001	002	002 MS	002 MSD	006	93LE1728-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate:	Decachlorobiphenyl	59 %	81 %	81 %	81 %	77 %	78 %
	Tetrachloro-m-xylene	30 %	52 %	48 %	50 %	50 %	48 %
		fl	fl	fl	fl	fl	fl
Alpha-BHC		0.050 U	0.050 U	0.10 U	0.10 U	0.050 U	0.050 U
Beta-BHC		0.050 U	0.050 U	0.10 U	0.10 U	0.050 U	0.050 U
Delta-BHC		0.050 U	0.050 U	0.10 U	0.10 U	0.050 U	0.050 U
gamma-BHC (Lindane)		0.050 U	0.050 U	65 %	75 %	0.050 U	0.050 U
Heptachlor		0.050 U	0.050 U	70 %	75 %	0.050 U	0.050 U
Aldrin		0.050 U	0.050 U	60 %	65 %	0.050 U	0.050 U
Heptachlor epoxide		0.050 U	0.050 U	0.10 U	0.10 U	0.050 U	0.050 U
Endosulfan I		0.050 U	0.050 U	0.10 U	0.10 U	0.050 U	0.050 U
Dieldrin		0.10 U	0.10 U	70 %	78 %	0.10 U	0.10 U
4,4'-DDE		0.10 U	0.10 U	0.20 U	0.20 U	0.10 U	0.10 U
Endrin		0.10 U	0.10 U	82 %	92 %	0.10 U	0.10 U
Endosulfan II		0.10 U	0.10 U	0.20 U	0.20 U	0.10 U	0.10 U
4,4'-DDD		0.10 U	0.10 U	0.20 U	0.20 U	0.10 U	0.10 U
Endosulfan sulfate		0.10 U	0.10 U	0.20 U	0.20 U	0.10 U	0.10 U
4,4'-DDT		0.10 U	0.10 U	98 %	106 %	0.10 U	0.10 U
Methoxychlor		0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U
Endrin ketone		0.10 U	0.10 U	0.20 U	0.20 U	0.10 U	0.10 U
alpha-Chlordane		0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U
gamma-Chlordane		0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U
Toxaphene		1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U
Aroclor-1016		0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U
Aroclor-1221		0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U
Aroclor-1232		0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U
Aroclor-1242		0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U
Aroclor-1248		0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U
Aroclor-1254		1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U
Aroclor-1260		1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

9ICK 10/21/93

0025

9613422.2383

9613422.2384

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-02.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9309L111-001

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 10049310.69

Level: (low/med) LOW Date Received: 09/29/93

% Moisture: not dec. _____ dec. Date Extracted: 10/01/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/07/93

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	0.050	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

JLCH 10/21/93

FORM 1 PEST 12/88 Rev.

9613422.2385

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-03.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9309L111-002

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 10049310.70

Level: (low/med) LOW Date Received: 09/29/93

% Moisture: not dec. _____ dec. Date Extracted: 10/01/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/07/93

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	0.050	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

9/Cod 10/21/93

FORM 1 PEST 12/88 Rev.

9613422.2386

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

93258-01.I27

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9309L111-006

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 10049310.73

Level: (low/med) LOW Date Received: 09/29/93

% Moisture: not dec. _____ dec. Date Extracted: 10/01/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/07/93

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	0.050	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

9407 10/21/93

FORM 1 PEST 12/88 Rev.

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD
RFW #: 9309L111

W.O. #: 06168-002-001-9999-00
Date Received: 09-29-93

CLP METALS

1. This narrative covers the analyses of three (3) water samples.

2. The samples were prepared and analyzed in accordance with the following protocols: SW-846.

3. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures Laboratory and High Purity.

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

5. All Initial and Continuing Calibration Verifications (ICV/CCV's) were within control limits.

6. All Initial and Continuing Calibration Blanks (ICB/CCB's) were within control limits.

7. All Preparation/Method Blanks were below Reporting Limits.

8. All ICP Interference Check Samples (ICSA and ICSAB) were within control limits.

9. All Laboratory Control Samples (LCS) were within the 80-120% control limits.

10. All Serial Dilution percent differences were within SW-846 control limits except for:

RFW #	Element	%Difference
001	Magnesium	11.5

11. All Matrix Spike recoveries were within the 75-125% control limits (exception allowed when sample concentration exceeds the spike added concentration by a factor of 4 or more).

    Matrix spike analyses are not required for Ca, Mg, Na, and K in waters.

WESTON

12. All Matrix Spike Duplicates were within the 20% Relative Percent Difference (RPD) control limits.

13. All Duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits for samples values greater than 5X Reporting Limit, or +/- the Reporting Limits for sample values less than 5X Reporting Limit except for:

RFW #	Element	%RPD
001	Zinc	23.3

14. Method of Standard Additions (MSA) analyses were not required.

15. The code CV is currently in use by the laboratory for both mercury instruments in operation (HG1 and HG2). HG1 is complete with autosampler and software, but still requires manual digestion; HG2 is operated by the analyst, produces a strip chart and also requires manual digestion.

16. HG1 requires less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionally scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 ml. For soils, 0.1 gram of sample is taken to a final volume of 50 ml (including all reagents).

17. The graphite furnace time that appears on form XIV is the time of the first injection. The time that appears on the data is the print time.

18. All sample ID's were changed to accommodate the EPA naming convention which allows a maximum of 6 characters on all CLP Forms. Refer to the Cover Page of the CLP Forms to correlate the modified sample ID's to the RFW#'s. Refer to the Chain of Custody to correlate RFW#'s to the original client ID.

Mary Beckner

for Raymond A. Siery
Inorganic Section Manager
Lionville Analytical Laboratory

11/17/93
Date

mlj/clp-met.nar

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD
RFW #: 9309L111

W.O. #: 06168-002-001-9999-00
Date Received: 09-29-93

CLP METALS ADDENDUM

1. A discrepancy exists between raw data and Form XIVs analytical spikes recovery calculations performed for graphite furnace AA analytes. Instrument software calculates spike recoveries based on absolute values below the IDL for sample results. This is hard-coded by the vendor and is currently not correctable. CLP convention (SOW ILM02.0, Exhibit E, Section V, Item 6, page E-20) requires that when values fall below the IDL, the sample result is equal to zero (0) for the purposes of calculating the percent recovery. The Form XIVs contain the correct calculation.

Raymond A. Siery
Inorganic Section Manager
Lionville Analytical Laboratory

11/17/93
Date

mlj\clp-met.nar

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 11/16/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9309L111

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	93258-02.I27	Silver, Total	10.0	u	UG/L	10.0	1.0
		Aluminum, Total	200	u	UG/L	200	1.0
		Arsenic, Total	10.0	u	UG/L	10.0	1.0
		Barium, Total	200	u	UG/L	200	1.0
		Beryllium, Total	5.0	u	UG/L	5.0	1.0
		Calcium, Total	17600		UG/L	5000	1.0
		Cadmium, Total	5.0	u	UG/L	5.0	1.0
		Cobalt, Total	50.0	u	UG/L	50.0	1.0
		Chromium, Total	10.0	u	UG/L	10.0	1.0
		Copper, Total	25.0	u	UG/L	25.0	1.0
		Iron, Total	100	u	UG/L	100	1.0
		Mercury, Total	0.20	u	UG/L	0.20	1.0
		Potassium, Total	5000	u	UG/L	5000	1.0
		Magnesium, Total	5000	u	UG/L	5000	1.0
		Manganese, Total	15.0	u	UG/L	15.0	1.0
		Sodium, Total	5000	u	UG/L	5000	1.0
		Nickel, Total	40.0	u	UG/L	40.0	1.0
		Lead, Total	3.0	u	UG/L	3.0	1.0
		Antimony, Total	60.0	u	UG/L	60.0	1.0
		Selenium, Total	5.0	u	UG/L	5.0	1.0
		Thallium, Total	10.0	u	UG/L	10.0	1.0
		Vanadium, Total	50.0	u	UG/L	50.0	1.0
		Zinc, Total	90.6		UG/L	20.0	1.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 11/16/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9309L111

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	93258-03.I27	Silver, Total	10.0	u	UG/L	10.0	1.0
		Aluminum, Total	200	u	UG/L	200	1.0
		Arsenic, Total	10.0	u	UG/L	10.0	1.0
		Barium, Total	200	u	UG/L	200	1.0
		Beryllium, Total	5.0	u	UG/L	5.0	1.0
		Calcium, Total	18300		UG/L	5000	1.0
		Cadmium, Total	5.0	u	UG/L	5.0	1.0
		Cobalt, Total	50.0	u	UG/L	50.0	1.0
		Chromium, Total	10.0	u	UG/L	10.0	1.0
		Copper, Total	25.0	u	UG/L	25.0	1.0
		Iron, Total	100	u	UG/L	100	1.0
		Mercury, Total	0.20	u	UG/L	0.20	1.0
		Potassium, Total	5000	u	UG/L	5000	1.0
		Magnesium, Total	5000	u	UG/L	5000	1.0
		Manganese, Total	15.0	u	UG/L	15.0	1.0
		Sodium, Total	5000	u	UG/L	5000	1.0
		Nickel, Total	40.0	u	UG/L	40.0	1.0
		Lead, Total	3.0	u	UG/L	3.0	1.0
		Antimony, Total	60.0	u	UG/L	60.0	1.0
		Selenium, Total	5.0	u	UG/L	5.0	1.0
		Thallium, Total	10.0	u	UG/L	10.0	1.0
		Vanadium, Total	50.0	u	UG/L	50.0	1.0
		Zinc, Total	24.6		UG/L	20.0	1.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 11/16/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9309L111

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	93258-01.I27	Silver, Total	10.0	u	UG/L	10.0	1.0
		Aluminum, Total	200	u	UG/L	200	1.0
		Arsenic, Total	10.0	u	UG/L	10.0	1.0
		Barium, Total	200	u	UG/L	200	1.0
		Beryllium, Total	5.0	u	UG/L	5.0	1.0
		Calcium, Total	18200		UG/L	5000	1.0
		Cadmium, Total	5.0	u	UG/L	5.0	1.0
		Cobalt, Total	50.0	u	UG/L	50.0	1.0
		Chromium, Total	10.0	u	UG/L	10.0	1.0
		Copper, Total	25.0	u	UG/L	25.0	1.0
		Iron, Total	100	u	UG/L	100	1.0
		Mercury, Total	0.20	u	UG/L	0.20	1.0
		Potassium, Total	5000	u	UG/L	5000	1.0
		Magnesium, Total	5000	u	UG/L	5000	1.0
		Manganese, Total	15.0	u	UG/L	15.0	1.0
		Sodium, Total	5000	u	UG/L	5000	1.0
		Nickel, Total	40.0	u	UG/L	40.0	1.0
		Lead, Total	5.4		UG/L	3.0	1.0
		Antimony, Total	60.0	u	UG/L	60.0	1.0
		Selenium, Total	5.0	u	UG/L	5.0	1.0
		Thallium, Total	10.0	u	UG/L	10.0	1.0
		Vanadium, Total	50.0	u	UG/L	50.0	1.0
		Zinc, Total	55.3		UG/L	20.0	1.0

9613422.2393

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

02.I27

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP111

Matrix (soil/water): WATER Lab Sample ID: 930911101

Level (low/med): LOW Date Received: 9/29/93

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	102.00	B		P
7440-36-0	Antimony	20.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	25.30	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	2.40	B		P
7440-70-2	Calcium	17600.00			P
7440-47-3	Chromium	6.70	B		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	14.60	B		P
7439-89-6	Iron	46.60	B		P
7439-92-1	Lead	2.00	U		F
7439-95-4	Magnesium	4620.00	B	E	P
7439-96-5	Manganese	7.50	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	8.00	U		P
7440-09-7	Potassium	864.00	B		P
7782-49-2	Selenium	2.00	U		F
7440-22-4	Silver	3.00	U		P
7440-23-5	Sodium	2980.00	B		P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	90.60		*	P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

9613422.2394

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

03.I27

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP111

Matrix (soil/water): WATER Lab Sample ID: 930911102

Level (low/med): LOW Date Received: 9/29/93

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	61.00	B		P
7440-36-0	Antimony	20.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	33.30	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	2.40	B		P
7440-70-2	Calcium	18300.00			P
7440-47-3	Chromium	3.00	U		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	4.20	B		P
7439-89-6	Iron	56.60	B		P
7439-92-1	Lead	2.00	U		F
7439-95-4	Magnesium	4230.00	B	E	P
7439-96-5	Manganese	2.30	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	8.00	U		P
7440-09-7	Potassium	693.00	U		P
7782-49-2	Selenium	2.00	U		F
7440-22-4	Silver	3.00	U		P
7440-23-5	Sodium	2580.00	B		P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	24.60		*	P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

01.I27

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP111

Matrix (soil/water): WATER Lab Sample ID: 930911106

Level (low/med): LOW Date Received: 9/29/93

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.20	B		P
7440-36-0	Antimony	20.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	32.00	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	2.00			P
7440-70-2	Calcium	18200.00			P
7440-47-3	Chromium	3.00	U		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	4.20	B		P
7439-89-6	Iron	32.60	B		P
7439-92-1	Lead	5.40			F
7439-95-4	Magnesium	4250.00	B	E	P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	8.00	U		P
7440-09-7	Potassium	693.00	U		P
7782-49-2	Selenium	2.00	U		F
7440-22-4	Silver	3.00	U		P
7440-23-5	Sodium	2500.00	B		P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	55.30		*	P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN