9613406.2539 0000014 9204L988-WES-406 0043339

START

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 04-14-92
RFW #: 9204L988, GC/MS VOLATILE
W.O. #: 6168-02-01

NARRATIVE

The set of samples consisted of four (4) water samples collected on 04-10-92.

The samples were analyzed according to criteria set forth in CLP SOW 02/88 (Rev. 05/89) for TCL Volatile target compounds on 04-15-92.

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 blank contained the common contaminant Methylene Chloride at a level less than the CRQL.

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

05.15.92
Date

Jack R. Tuschall, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

FEB 1996 RECEIVED EDMC

smma/voa/04-988v.cn

WESTON Analytics Use Only: 9204L990 4/14/92

9204L988

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 3

Client: WESTINGHOUSE HANFORD
Est. Final Proj. Sampling Date:
Work Order #: 6168-02-01
Project Contact/Phone #: P.H. BUTCHER (509) 92-5045
AD Project Manager: MS PEG BEATY
QC: CLP Del: CLP TAT: 35day
Date Rec'd: 4/14/92 Date Due: 5/14/92
Account #: WS-Hanford

Refrigerator #		1				3	3	SO	3	3	3	SO			
#/Type Container	Liquid	3AG				1AG	1P	3P	1P	1P	1P	1P	1G		
	Solid														
Volume	Liquid	40ml				1L	1L	4L	1L	1L	1L	1L	250ml		
	Solid														
Preservatives						HCl		HNO3	HNO3	NaOH	HNO3	HCl			
ANALYSES REQUESTED →		ORGANIC				SEE BELOW			INORG		METAL	SEE BELOW			
		VOA	BNA	Pest/PCB	Herb	1	2	3	Metal	CN		4	5		

WESTON Analytics Use Only

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	Lab ID	Client ID/Description (04-10-92)	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
								06244				ICCT ICSW2	Anions ICP-IC ICP	ISUB	See Below (UN)	ICUND	See Below (F)	ISUB		
	001	B01R06			W	4/10/92	1000					✓	✓	✓	✓	✓		✓	✓	
	2	B01R07			W	4/10/92	1000										✓			
	3	B01SN8			W	4/10/92	1000	✓	Only Rec'd (2)											
	4	B01R79			W	4/10/92	1000	✓												
		(1) TOC: NO2/NO3,																		
		(2) ANIONS (IC) (F, Cl, SO4, NO2, NO3, PO4) TDS, ALK, pH																		
		(3) GROSS ALPHA/BETA, Tc-99, Sr-90, Cs-137, Co-60, Pu-238, Pu-239/240																		
		(4) TOTAL URANIUM																		
		(5) TRITIUM																		

Metals = HSL + BI, SI

TRU NOT designated by WHC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

NOTE: (UN) = UNFiltered

(F) = Filtered

BOL # 2509867228

OPC # W92-0-0166-32

DATE/REVISIONS

1. Run ONS/MSD
2. 4-16-92 Change Client I.D on Sample #001 to B01R06
3. Per Deb Hyatt
4. 4-20-92 Radiochem subbed to Teledyne
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # ___
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: ID on WHC COC Reads B01R06 NOT B01R06 Label Read B01R06

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
Emery	P. Bergin	4/14/92	12:00		PG 4/14/92		
	PG 4/14/92						

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

001

9613406.2540

WESTON Analytics Use Only

9204L990 9204L988

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1 of 3

Client: WESTINGHOUSE
Est. Final Proj. Sampling Date:
Work Order #:
Project Contact/Phone #: P.H. BUTCHER (509) 376-9045
AD Project Manager: MS. BEG BARTY
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #: 3

#/Type Container																
Liquid	3AG				1AG	1P	3P	1P	1P	1P	1P	1G			
Solid															
Volume Liquid	40mL				1L	1L	4L	1L	1L	1L	1L	250mL			
Volume Solid															
Preservatives					HNO3		HNO3	HNO3	NaOH	HNO3	HCL				

ANALYSES REQUESTED →

ORGANIC				INORG						
VOA	BNA	Pest/PCB	Herb	Metal	CN	METAL				
SEE BELOW							SEE BELOW			
1	2	3					4	5		

WESTON Analytics Use Only: See page (1) (UN) (F)

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb	1	2	3	Metal	CN	METAL	4	5
005	B01Q49			W	4/10/92	0815					✓	✓	✓	✓	✓		✓	✓
6	B01Q20			W	4/10/92	0815										✓		
7	B01SN7			W	4/10/92	0815	✓											
	(1) TOC NO2/NO3																	
	(2) ANIONS (IC) CF, CL, SO4, NO2, NO3, PO4) TDS ALK PH																	
	(3) GROSS ALPHA/BETA TC-99, SR-90, CS-137, CO-60, PU-238, PU-239/240																	
	(4) TOTAL URANIUM																	
	(5) TRITIUM																	

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

NOTE: (UN) = UNFILTERED
(F) = FILTERED
BOL # 250986 7228
OPC # W92-0-0166-32

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received In Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Time 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

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
Emery	P. Leigh	4/14/92	1200 PM		9204/14/92		
	9204/14/92						

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

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

9613406.2541

WESTON Analytics Use Only

9204L9904

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 3

Client: WESTINGHOUSE HANFORD
Est. Final Proj. Sampling Date:
Work Order #:
Project Contact/Phone #: P.H. BOTHER (509) 376-5045
AD Project Manager: M.S. DEL BLOTY
QC: Del TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #		2															
#/Type Container	Liquid	3AG				1AG	1P	3P	1P	1P	1P	1P	1G				
	Solid																
Volume	Liquid	40mL				1L	1L	4L	1L	1L	1L	1L	250mL				
	Solid																
Preservatives						H2SO4		HNO3	HNO3	NaOH	HNO3	HCL					
ANALYSES REQUESTED →		ORGANIC				SEE BELOW			INORG		METAL	SEE BELOW					
		VOA	BNA	Pest/PCB	Herb	1	2	3	Metal	CN		4	5				

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb	1	2	3	Metal	CN	METAL	4	5			
							WESTON Analytics Use Only														
008	B01R08			W	4/10/92	11:40					✓	✓	✓	✓	✓	✓	✓	✓			
9	B01R09			W	4/10/92	11:40										✓					
10	B01SN9			W	4/10/92	11:40	✓														
	(1) TOC: NO2/NO3,																				
	(2) ANIONS (IC) CE, CL, SO4, NO2, NO3, PO4), TDS ALK pH																				
	(3) GROSS ALPHA/BETA, TC99, SR90, CS-137, CO-60, PU-238, PU-239/240,																				
	(4) TOTAL: URANIUM																				
	(5) TRITIUM																				

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

NOTE: (UN) = UNfiltered
(F) = Filtered

BOL # 2509867228
Opc. # W92-0-0166-33

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
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

Relinquished by	Received by	Date	Time
Emery	P Bryan	4/14/92	12:00
	P 4/14/92		

Relinquished by	Received by	Date	Time
	P 4/14/92		

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

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

9613406.2542 000003

9613406.2543 0000004

Westinghouse Hanford Company

CHAIN OF CUSTODY 92041988

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 4/10/92

Ice Chest No. Cyress

Field Logbook No. WHC-N-4461 p. 109

Bill of Lading/Airbill No. 2509867228

Offsite Property No. W92-0-0164-32

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

B01R06

1, 1L, P, WATER, CLP-CN, NaOH
1, 1L, aG, WATER, TOC, NO2/NO3,(H2SO4)
1, 1L, P, WATER, CLP-METAL, Bi/Si, HNO3 (UNFILTERED)
1, 1L, P, WATER, ANIONS(IC)(F,Cl,SO4,NO2,NO3,PO4), TDS, ALK, pH
3, 4L, P, WATER, GROSS ALPHA/BETA, Tc-99, Sr-90, Cs-137, Co-60, Pu-238, Pu-239/240, HNO3
1, 1L, P, WATER, TOTAL URANIUM, HCl
1, 250ml, G, WATER, TRITIUM

B01R07

1, 1L, P, WATER, CLP-METAL, Bi/Si, HNO3 (FILTERED)

B01SN8 3, 40ml, aG, water, CLP-VOA

B01R79 3, 40ml, aG, Water, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: [signature]	Received by: locked Refrig.	Date/Time: 4/10/92 1400
Relinquished by:	Received by: PH Butcher PH Butcher	Date/Time: 4/11/92 0800
Relinquished by: PH Butcher PH Butcher	Received by:	Date/Time:
Relinquished by: Emery	Received by: [signature]	Date/Time: 4/14/92 12:00 PM

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613406.2544 0000005

Westinghouse Hanford Company	CHAIN OF CUSTODY 9204L988

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 4/10/92

Ice Chest No. AA

Field Logbook No. WHC-N-4461 p. 109

Bill of Lading/Airbill No. 2509867228

Offsite Property No. W92-0-0166-33

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

B01R08

1, 1L, P, WATER, CLP-CN, NaOH
1, 1L, aG, WATER, TOC, NO2/NO3,(H2SO4)
1, 1L, P, WATER, CLP-METAL, Bi/Si, HNO3 (UNFILTERED)
1, 1L, P, WATER, ANIONS(IC)(F,Cl,SO4,NO2,NO3,PO4), TDS, ALK, pH
3, 4L, P, WATER, GROSS ALPHA/BETA, Tc-99, Sr-90, Cs-137, Co-60, Pu-238, Pu-239/240, HNO3
1, 1L, P, WATER, TOTAL URANIUM, HCl
1, 250ml, G, WATER, TRITIUM

B01R09

1, 1L, P, WATER, CLP-METAL, Bi/Si, HNO3 (FILTERED)

B01SN9, 3, 40ml, aG, water, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Kirby D. Lee K.D. Lee	Received by: [illegible]	Date/Time: 4/10/92 1405
Relinquished by: [illegible]	Received by: B. WHITTEN	Date/Time: 4/13/92 08:00
Relinquished by: B. WHITTEN	Received by:	Date/Time:
Relinquished by: Emery	Received by: P Geiger	Date/Time: 4/14/92 12:00 Pm

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613406.2545 0000006

Westinghouse Hanford Company	CHAIN OF CUSTODY 9204L988

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 4/10/92

Ice Chest No. Tucker

Field Logbook No. WHC-N-4961 p. 109

Bill of Lading/Airbill No. 250986 7225

Offsite Property No. W92-0-0166-32

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

B01QY9

1, 1L, P, WATER, CLP-CN, NaOH
1, 1L, aG, WATER, TOC, NO2/NO3,(H2SO4)
1, 1L, P, WATER, CLP-METAL, Bi/Si, HNO3 (UNFILTERED)
1, 1L, P, WATER, ANIONS(IC)(F,Cl,SO4,NO2,NO3,PO4), TDS, ALK, pH
3, 4L, P, WATER, GROSS ALPHA/BETA, Tc-99, Sr-90, Cs-137, Co-60, Pu-238, Pu-239/240, HNO3
1, 1L, P, WATER, TOTAL URANIUM, HCl
1, 250ml, G, WATER, TRITIUM

~~B01O~~ B01QZ0
PNO 10 Jan 92
1, 1L, P, WATER, CLP-METAL, Bi/Si, HNO3 (FILTERED)

~~B01SN7~~ 4/10/92

B01SN7 3, 40ml, aG, WATER, CLP-VOA

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)		
Relinquished by: K.D. Lee	Received by: refrigerator	Date/Time: 4/10/92 1405
Relinquished by: refrigerator	Received by: B.WHITTEN	Date/Time: 4/13/92 08:00
Relinquished by: B.WHITTEN	Received by:	Date/Time:
Relinquished by: Emery	Received by: P Berger	Date/Time: 4/14/92 12:00 PM

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061

EMERY WORLDWIDE — A CF Company

SIGNATURE AND TALLY RECORD

60029 46 (8/89) Litho USA

(8-)

DATE: 04-03-92 SHIPMENT NO.: 250986722 8
SHIPPER: WESTINGHOUSE SHIPPING DEPT (509) 376-6665
REFERENCE NO.: M92-0-0166 #32 & #33

SHIPPER NAME AND ADDRESS
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
US DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD COMPANY
2355 STEVENS DRIVE 1163 BUILDING
PO BOX 1970
RICHLAND WA 99352

CONSIGNEE NAME AND ADDRESS
JOSIE KING
WESTON
208 WELSH POOL ROAD
LIONVILLE PA 19341

92041988

Pieces	Weight	Description/Marks	Emery Authorization No.
33	202 LBS.	M92-0-0166 #32 & #33: COOLER ID: AA 70 LBS WATER SAMPLES. COOLER ID: TUCKER 620# CYPRESS 700#	

EACH PERSON HANDLING OR TAKING CUSTODY OF THIS SHIPMENT MUST SIGN AND COMPLETE THE INFORMATION BELOW

Name of Person/Company	Transship Point/Destination	Signature of Person Accepting Custody	Time/Date
1.			
2.			
3.			
4.			
5.			
6. ROGER WHITE	PHL/EWW	Roger White	0900 4/14
7. D SNYDER	PHL	D Snyder	1001 4/14
8. P GUGER	LNV	P Guger	1010 4/14
			1250 4/14/92

SPECIAL HANDLING INSTRUCTIONS

CONSIGNEE COPY

9613406.2596
000007

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

RFW Batch Number: 9204L988 | Client: WESTINGHOUSE HANFORD | Work Order: 6168-02-01-0000 | Report Date: 05/08/92 14:13 | Page: 1a

	Cust ID:	B01SN8		B01SN8		B01SN8		B01R79		B01SN7		B01SN9	
Sample Information	RFW#:	003		003 MS		003 MSD		004		007		010	
	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	95	%	96	%	93	%	93	%	95	%	93	%
	Bromofluorobenzene	95	%	94	%	94	%	94	%	95	%	96	%
	1,2-Dichloroethane-d4	106	%	109	%	109	%	109	%	110	%	111	%
			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		5	B	4	JB	4	JB	3	JB	12	B	13	B
Acetone		10	U	10	U	10	U	10	U	10	U	10	U
Carbon Disulfide		5	U	5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethene		5	U	98	%	95	%	5	U	5	U	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		5	U	5	U	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		5	U	5	U	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	114	%	111	%	5	U	5	U	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	108	%	103	%	5	U	5	U	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.

9613406.2547 0000009

Cust ID:	BO1SN8	BO1SN8	BO1SN8	BO1R79	BO1SN7	BO1SN9
RFW#:	003	003 MS	003 MSD	004	007	010
Toluene	5 U	101 %	98 %	5 U	5 U	5 U
Chlorobenzene	5 U	107 %	104 %	5 U	5 U	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.

9613406.2548 0000010

WESTON

ADDENDUM

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Soma N. Basuthakur Name: SOMA N. BASUTHAKUR

Date: 05.15.92 Title: UNIT - LEADER

pas\4-92\addendum

1A

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B01SN8

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9204L988-003

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: AK4F12

Level: (low/med) LOW Date Received: 04/14/92

% Moisture: not dec. _____ Date Analyzed: 04/15/92

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	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	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

9613406.2551 0000025

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B01SN8

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9204L988-003

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

Lab File ID: AK4F12

Level: (low/med) LOW

Date Received: 04/14/92

% Moisture: not dec. _____

Date Analyzed: 04/15/92

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.				

9613406.2552 0000030

1A

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B01R79

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9204L988-004

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

Lab File ID: AK4F15

Level: (low/med) LOW

Date Received: 04/14/92

% Moisture: not dec. _____

Date Analyzed: 04/15/92

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	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

9613406.2553

1E

0000031

CLIENT SAMPLE NO.

BO1R79

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9204L988-004

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

Lab File ID: AK4F15

Level: (low/med) LOW

Date Received: 04/14/92

% Moisture: not dec. _____

Date Analyzed: 04/15/92

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.				

1A

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B01SN7

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9204L988-007

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: AK4F16

Level: (low/med) LOW Date Received: 04/14/92

% Moisture: not dec. _____ Date Analyzed: 04/15/92

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	12	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	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

9613406.2555 0000037

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B01SN7

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9204L988-007

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

Lab File ID: AK4F16

Level: (low/med) LOW

Date Received: 04/14/92

% Moisture: not dec. _____

Date Analyzed: 04/15/92

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.

9613406.2556 0000042

1A

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B01SN9

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9204L988-010

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

Lab File ID: AK4F17

Level: (low/med) LOW

Date Received: 04/14/92

% Moisture: not dec. _____

Date Analyzed: 04/15/92

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	13	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	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

9613406.2557 0000043

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B01SN9

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9204L988-010

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

Lab File ID: AK4F17

Level: (low/med) LOW

Date Received: 04/14/92

% Moisture: not dec. _____

Date Analyzed: 04/15/92

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.				

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ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 04-14-92
RFW #: 9204L988
W.O. #: 6168-02-01

INORGANIC NARRATIVE

The following is a summary of the quality control results and a description of any problems encountered during the analysis of this batch of samples:

1. Sample holding times as required by 40CFR136 were met with the exception of nitrate by IC, nitrite by IC, phosphate by IC and pH all received past hold.

2. Preparation blank results were below the required detection limit with the exception of alkalinity.

3. All laboratory control standards (blank spikes) were within the control limits of 80-120%. All %RPD were within the 20% guidance limit.

4. All calibration verification checks were within the required control limits of 90-110%. Calibration verification is performed using independent standards.

5. Matrix spike recoveries are summarized on the Inorganic Accuracy Report contained within this document. All recoveries were within the 75-125% guidance limits. All %RPD were within the 20% guidance limit.

6. Replicate results are summarized on the Inorganic Precision Report contained within this document. All results were within the 20% RPD guidance limit.

7. The analytical methods applied by the laboratory, unless otherwise requested, for all inorganic analyses are derived from the USEPA Method for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020) and Standard Methods for the Examination of Water and Wastewater 16 ed. Methods for the analysis of solid samples are derived from Test Methods for Evaluating Solid Waste (USEPA SW846).

5.1.92

Jack R. Tuschall, Ph.D. Date
Laboratory Manager
Lionville Analytical Laboratory

MAY 1992
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3

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 04/29/92

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 6168-02-01-0000

WESTON BATCH #: 9204L988

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	BO1R06	Alkalinity	112	MG/L	2.0
		Chloride by IC	25.7	MG/L	2.5
		Fluoride by IC	0.66	MG/L	0.50
		Nitrite by IC	0.25 u	MG/L	0.25
		Nitrate by IC	7.2	MG/L	0.50
		Cyanide, Total	20.0 u	UG/L	20.0
		Phosphate by IC	0.25 u	MG/L	0.25
		Sulfate by IC	123	MG/L	5.0
		Nitrate Nitrite	1.7	MG-N/L	0.10
		Total Organic Carbon	0.78	MG/L	0.50
		pH	7.7	PH UNITS	0.010
		Total Dissolved Solids	347	MG/L	5.0
-005	BO1QY9	Alkalinity	138	MG/L	2.0
		Chloride by IC	13.0	MG/L	2.5
		Fluoride by IC	0.50 u	MG/L	0.50
		Nitrite by IC	0.25 u	MG/L	0.25
		Nitrate by IC	0.98	MG/L	0.25
		Cyanide, Total	10.0 u	UG/L	10.0
		Phosphate by IC	0.25 u	MG/L	0.25
		Sulfate by IC	16.6	MG/L	2.5
		Nitrate Nitrite	0.55	MG-N/L	0.10
		Total Organic Carbon	0.78	MG/L	0.50
		pH	8.5	PH UNITS	0.010
		Total Dissolved Solids	229	MG/L	5.0
-008	BO1R08	Alkalinity	108	MG/L	2.0
		Chloride by IC	20.6	MG/L	2.5
		Fluoride by IC	0.50 u	MG/L	0.50
		Nitrite by IC	0.25 u	MG/L	0.25
		Nitrate by IC	77.3	MG/L	2.5
		Cyanide, Total	99.7	UG/L	10.0
		Phosphate by IC	0.25 u	MG/L	0.25
		Sulfate by IC	146	MG/L	5.0
		Nitrate Nitrite	16.8	MG-N/L	2.5
		Total Organic Carbon	0.68	MG/L	0.50
		pH	8.2	PH UNITS	0.010
		Total Dissolved Solids	473	MG/L	5.0

Roy F. Weston, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD CO. **SAMPLES RECEIVED:** 04/14/92
RFW #: 9204L988
W.O. #: 6168-02-01

METALS NARRATIVE

The set of samples consisted of six (6) water samples collected on 04/10/92.

The samples were analyzed according to criteria set forth in CLP SOW 3/90.

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

1. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures Laboratory.

2. All ICV and CCV values were within control limits.

3. All ICB and CCB values were within control limits.

4. All preparation blank values were within control limits.

5. All LCS results were within the 80-120% control limits.

6. All matrix spike recoveries were within the 75-125% control limits with the exception of thallium. All corresponding samples were flagged with a "N" according to CLP protocol.

7. The matrix spike for bismuth on sample 001 was recovered at 156%. A post matrix spike analysis indicated a 98.5% recovery.

8. All duplicate analyses were within the 20% RPD control limit.

9. Selenium sample results were calculated by the method of standard addition (MSA). All corresponding samples were flagged with a "S" according to CLP protocol.

WESTON

10. For MSA, results reported on Form 8 are calculated from absorbance values. Results reported on other forms are based on concentration. As indicated in the SOW1LJM01.0, page B-32, differences due to rounding may be found between the MSA values on Form 8 and the results reported on the other forms.

11. 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.

12. 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).

13. Quarterly Detection Limits, ICP Interelement Correction Factors and ICP Linear Ranges for IC3 are included in this package.

14. 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.

Jack R. Tuschall, Ph.D.
Laboratory Manager
Lionville Analytical Laboratories

05.12.92
Date

mlj\ clp-met.nar

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 05/11/92

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 6168-02-01-0000

WESTON BATCH #: 9204L988

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-001	B01R06	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.0	u	UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	43900		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	168		UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	810		UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	9270		UG/L	5000
		Magnesium, Total	12200		UG/L	5000
		Manganese, Total	136		UG/L	15.0
		Sodium, Total	46700		UG/L	5000
		Nickel, Total	92.0		UG/L	40.0
		Lead, Total	3.0	u	UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Silicon, Total	10500		UG/L	100
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	23.7		UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 05/11/92

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 6168-02-01-0000

WESTON BATCH #: 9204L988

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-002	B01R07	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	46400		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	10.0	u	UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	9840		UG/L	5000
		Magnesium, Soluble	12900		UG/L	5000
		Manganese, Soluble	104		UG/L	15.0
		Sodium, Soluble	48900		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Silicon, Soluble	11600		UG/L	100
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 05/11/92

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 6168-02-01-0000

WESTON BATCH #: 9204L988

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-005	BO1QY9	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.0	u	UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	31100		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	37.1		UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	522		UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	7940		UG/L	5000
		Magnesium, Total	9960		UG/L	5000
		Manganese, Total	15.0	u	UG/L	15.0
		Sodium, Total	15000		UG/L	5000
		Nickel, Total	40.0	u	UG/L	40.0
		Lead, Total	3.0	u	UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Silicon, Total	30900		UG/L	100
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 05/11/92

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 6168-02-01-0000

WESTON BATCH #: 9204L988

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-006	B01QZ0	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	32200		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	10.0	u	UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	169		UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	8340		UG/L	5000
		Magnesium, Soluble	10400		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	15900		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Silicon, Soluble	33700		UG/L	100
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 05/11/92

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 6168-02-01-0000

WESTON BATCH #: 9204L988

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-008	B01R08	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.0	u	UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	72800		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	27.5		UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	687		UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	10400		UG/L	5000
		Magnesium, Total	21600		UG/L	5000
		Manganese, Total	15.0	u	UG/L	15.0
		Sodium, Total	39200		UG/L	5000
		Nickel, Total	40.0	u	UG/L	40.0
		Lead, Total	3.0	u	UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	10.9		UG/L	5.0
		Silicon, Total	18600		UG/L	100
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 05/11/92

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 6168-02-01-0000

WESTON BATCH #: 9204L988

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-009	B01R09	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	71700		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	10.0	u	UG/L	10.0
		Copper, Soluble	130		UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	9390		UG/L	5000
		Magnesium, Soluble	21400		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	38800		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	9.9		UG/L	5.0
		Silicon, Soluble	18700		UG/L	100
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01R06

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP988

Matrix (soil/water): WATER Lab Sample ID: 920498801

Level (low/med): LOW Date Received: 4/14/92

% 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	46.00	U		P
7440-36-0	Antimony	36.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	31.30	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	43900.00			P
7440-47-3	Chromium	168.00			P
7440-48-4	Cobalt	7.00	U		P
7440-50-8	Copper	13.70	B		P
7439-89-6	Iron	810.00			P
7439-92-1	Lead	2.00	U	W	F
7439-95-4	Magnesium	12200.00			P
7439-96-5	Manganese	136.00			P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	92.00			P
7440-09-7	Potassium	9270.00			P
7782-49-2	Selenium	2.40	B	S	F
7440-22-4	Silver	8.00	U		P
7440-23-5	Sodium	46700.00			P
7440-28-0	Thallium	2.00	U	N	F
7440-62-2	Vanadium	23.60	B		P
7440-66-6	Zinc	23.70			P
	Cyanide	20.00	U		C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01R07

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP988

Matrix (soil/water): WATER Lab Sample ID: 920498802

Level (low/med): LOW Date Received: 4/14/92

% 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	46.00	U		P
7440-36-0	Antimony	36.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	32.60	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	46400.00			P
7440-47-3	Chromium	7.00	U		P
7440-48-4	Cobalt	7.00	U		P
7440-50-8	Copper	7.00	U		P
7439-89-6	Iron	30.00	U		P
7439-92-1	Lead	2.00	U	W	F
7439-95-4	Magnesium	12900.00			P
7439-96-5	Manganese	104.00			P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	18.00	U		P
7440-09-7	Potassium	9840.00			P
7782-49-2	Selenium	2.60	B	W	F
7440-22-4	Silver	8.00	U		P
7440-23-5	Sodium	48900.00			P
7440-28-0	Thallium	2.00	U	N	F
7440-62-2	Vanadium	27.00	B		P
7440-66-6	Zinc	6.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01QY9

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP988

Matrix (soil/water): WATER Lab Sample ID: 920498805

Level (low/med): LOW Date Received: 4/14/92

% 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	46.00	U		P
7440-36-0	Antimony	36.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	103.00	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	31100.00			P
7440-47-3	Chromium	37.10			P
7440-48-4	Cobalt	7.00	U		P
7440-50-8	Copper	7.00	U		P
7439-89-6	Iron	522.00			P
7439-92-1	Lead	2.00	U	W	F
7439-95-4	Magnesium	9960.00			P
7439-96-5	Manganese	7.60	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	23.50	B		P
7440-09-7	Potassium	7940.00			P
7782-49-2	Selenium	2.00	U	W	F
7440-22-4	Silver	8.00	U		P
7440-23-5	Sodium	15000.00			P
7440-28-0	Thallium	2.00	U	N	F
7440-62-2	Vanadium	33.20	B		P
7440-66-6	Zinc	10.30	B		P
	Cyanide	10.00	U		C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01QZO

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP988

Matrix (soil/water): WATER Lab Sample ID: 920498806

Level (low/med): LOW Date Received: 4/14/92

% 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	46.00	U		P
7440-36-0	Antimony	36.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	107.00	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	32200.00			P
7440-47-3	Chromium	7.00	U		P
7440-48-4	Cobalt	7.00	U		P
7440-50-8	Copper	7.00	U		P
7439-89-6	Iron	169.00			P
7439-92-1	Lead	2.00	U		F
7439-95-4	Magnesium	10400.00			P
7439-96-5	Manganese	2.80	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	18.00	U		P
7440-09-7	Potassium	8340.00			P
7782-49-2	Selenium	2.00	U	W	F
7440-22-4	Silver	8.00	U		P
7440-23-5	Sodium	15900.00			P
7440-28-0	Thallium	2.00	U	NW	F
7440-62-2	Vanadium	32.60	B		P
7440-66-6	Zinc	6.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01R08

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP988

Matrix (soil/water): WATER Lab Sample ID: 920498808

Level (low/med): LOW Date Received: 4/14/92

% 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	80.50	B		P
7440-36-0	Antimony	36.00	U		P
7440-38-2	Arsenic	4.30	B		F
7440-39-3	Barium	48.10	B		P
7440-41-7	Beryllium	1.00			P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	72800.00			P
7440-47-3	Chromium	27.50			P
7440-48-4	Cobalt	7.00	U		P
7440-50-8	Copper	7.00	U		P
7439-89-6	Iron	687.00			P
7439-92-1	Lead	2.00	U	W	F
7439-95-4	Magnesium	21600.00			P
7439-96-5	Manganese	14.10	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	20.80	B		P
7440-09-7	Potassium	10400.00			P
7782-49-2	Selenium	10.90		S	F
7440-22-4	Silver	8.00	U		P
7440-23-5	Sodium	39200.00			P
7440-28-0	Thallium	2.00	U	N	F
7440-62-2	Vanadium	35.60	B		P
7440-66-6	Zinc	17.50	B		P
	Cyanide	99.70			C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01R09

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP988

Matrix (soil/water): WATER Lab Sample ID: 920498809

Level (low/med): LOW Date Received: 4/14/92

% 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	46.00	U		P
7440-36-0	Antimony	36.00	U		P
7440-38-2	Arsenic	3.80	B		F
7440-39-3	Barium	45.50	B		P
7440-41-7	Beryllium	1.00			P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	71700.00			P
7440-47-3	Chromium	7.00	U		P
7440-48-4	Cobalt	7.00	U		P
7440-50-8	Copper	130.00			P
7439-89-6	Iron	62.10	B		P
7439-92-1	Lead	2.00	U	W	F
7439-95-4	Magnesium	21400.00			P
7439-96-5	Manganese	3.10	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	18.00	U		P
7440-09-7	Potassium	9390.00			P
7782-49-2	Selenium	9.90		S	F
7440-22-4	Silver	8.00	U		P
7440-23-5	Sodium	38800.00			P
7440-28-0	Thallium	2.00	U	N	F
7440-62-2	Vanadium	35.90	B		P
7440-66-6	Zinc	18.70	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9613406.2574

0000032

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B05XS2

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-001

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: S031308

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 7 dec.

Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.4

Dilution Factor: 1.00

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.20	1000	~~JAB~~ U - BLK. cont.
2.	UNKNOWN	5.22	100	J
3.	ALDOL CONDENSATE	5.95	200	~~JA~~ U
4.	HYDROCARBON	22.72	200	J
5.	HYDROCARBON	23.70	300	J

11/17/92
MM

PBD
5/11/93

9613406.2575

0000047

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05XS3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-002

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S031311

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 15 dec. Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
100-51-6	Benzyl alcohol	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	bis(2-Chloroisopropyl)ether	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-Di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
65-85-0	Benzoic acid	1900	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U

11/17/92 MM

FORM 1 SV-1 12/88 Rev.

RBD 5/11/93

9613406.2576

1C 000048

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BO5XS3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-002

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S031311

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 15 dec. Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
84-74-2	Di-n-Butylphthalate	3800	
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	770	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	55	J
117-84-0	Di-n-Octyl phthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) - Cannot be separated from Diphenylamine

Cont. Col. 11/17/92 MM

5/11/93

9613406.2577

0000049

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B05XS3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-002

Sample wt/vol: 30.6 (g/mL) G

Lab File ID: S031311

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 15 dec.

Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.1

Dilution Factor: 1.00

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.20	1000	~~JAB~~
2.	UNKNOWN	5.22	400	J
3.	ALDOL CONDENSATE	5.95	200	~~JAU~~
4.	UNKNOWN	7.00	200	J
5.	HYDROCARBON	22.77	300	J

LR-BIK
Cont.
11/17/92
my

PBD
5/11/93

9613406.2578

0000064

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BO5XS4

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-003

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: S031312

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 6 dec.

Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.3

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
100-51-6	Benzyl alcohol	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	bis(2-Chloroisopropyl)ether	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-Di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
65-85-0	Benzoic acid	1800	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U

11/17/92

FORM 1 SV-1 12/88 Rev.

5/11/93

9613406.2579

1C 0000065 CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS SHEET

BO5XS4

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S031312

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 6 dec. Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	64	J
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
84-74-2	Di-n-Butylphthalate	3100	
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	710	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	62	J
117-84-0	Di-n-Octyl phthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

Cont. 62 J. 11/17/92 KMJ

PBD 5/11/93

9613406.2580

1F 0000066

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BO5XS4

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-003

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: S031312

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 6 dec.

Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.3

Dilution Factor: 1.00

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.20	1000	~~JAB~~
2.	UNKNOWN	5.22	100	J
3.	ALDOL CONDENSATE	5.95	200	~~JAU~~
4.	UNKNOWN	22.82	200	J
5.	UNKNOWN	23.95	500	J

U-BIK. Cont.
11/17/92
MM

PBD 5/11/93

9613406.2581 0000082

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05XS5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-004

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S031313

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 5 dec. Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
100-51-6	Benzyl alcohol	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	bis(2-Chloroisopropyl)ether	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
65-85-0	Benzoic acid	1700	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U

11/17/92 MY

FORM 1 SV-1 12/88 Rev.

PBJ 3/11/93

9613406.2582

1C

0000083 CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS SHEET

BO5XS5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-004

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S031313

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 5 dec. Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	340	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
84-74-2	Di-n-Butylphthalate	4300	
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	48	J
91-94-1	3,3'-Dichlorobenzidine	690	U
56-55-3	Benzo(a)anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	57	J
117-84-0	Di-n-Octyl phthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenzo(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

CONT. CA 1. 11/17/92 MY

PB 5/11/93

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 12/88 Rev.

9613406.2583 0000084

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B05XS5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-004

Sample wt/vol: 30.5 (g/mL) G

Lab File ID: S031313

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 5 dec.

Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.7

Dilution Factor: 1.00

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.20	900	~~JAB~~
2.	UNKNOWN	5.22	200	J
3.	ALDOL CONDENSATE	5.95	200	~~JAB~~
4.	PHOSPHATE	22.83	200	J
5.	UNKNOWN	23.92	200	J

U-BK: cont. 11/17/92 MY

FORM 1 SV-TIC 12/88 Rev.

PBD 5/11/93

9413406.2590

1D 0000016

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05XS2

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Working Copy

Matrix: SOIL

Lab Sample ID: 9202L488-001

Sample wt/vol: 29.9 (g/mL) G

Lab File ID: 03139213.48

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 3 dec.

Date Extracted: 02/27/92

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 03/14/92

GPC Cleanup: (Y/N) Y pH: 7.9

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.3	U
319-85-7	Beta-BHC	8.3	U
319-86-8	Delta-BHC	8.3	U
58-89-9	gamma-BHC (Lindane)	8.3	U
76-44-8	Heptachlor	8.3	U
309-00-2	Aldrin	8.3	U
1024-57-3	Heptachlor epoxide	8.3	U
959-98-8	Endosulfan I	8.3	U
60-57-1	Dieldrin	17	U
72-55-9	4,4'-DDE	17	U
72-20-8	Endrin	17	U
33213-65-9	Endosulfan II	17	U
72-54-8	4,4'-DDD	17	U
1031-07-8	Endosulfan sulfate	17	U
50-29-3	4,4'-DDT	17	U
72-43-5	Methoxychlor	83	U
53494-70-5	Endrin ketone	17	U
5103-71-9	alpha-Chlordane	83	U
5103-74-2	gamma-Chlordane	83	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	83	U
11104-28-2	Aroclor-1221	83	U
11141-16-5	Aroclor-1232	83	U
53469-21-9	Aroclor-1242	83	U
12672-29-6	Aroclor-1248	83	U
11097-69-1	Aroclor-1254	170	U
11096-82-5	Aroclor-1260	170	U

DOE 3/20/96

FORM 1 PEST 12/88 Rev.

RJ 5/11/93

9613406.2585

1D 0000019

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05XS3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-002

Sample wt/vol: 29.9 (g/mL) G Lab File ID: 03139213.51

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 11 dec Date Extracted: 02/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) Y pH: 7.4 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
319-84-6	Alpha-BHC	9.0	U
319-85-7	Beta-BHC	9.0	U
319-86-8	Delta-BHC	9.0	U
58-89-9	gamma-BHC (Lindane)	9.0	U
76-44-8	Heptachlor	9.0	U
309-00-2	Aldrin	9.0	U
1024-57-3	Heptachlor epoxide	9.0	U
959-98-8	Endosulfan I	9.0	U
60-57-1	Dieldrin	18	U
72-55-9	4,4'-DDE	18	U
72-20-8	Endrin	18	U
33213-65-9	Endosulfan II	18	U
72-54-8	4,4'-DDD	18	U
1031-07-8	Endosulfan sulfate	18	U
50-29-3	4,4'-DDT	18	U
72-43-5	Methoxychlor	90	U
53494-70-5	Endrin ketone	18	U
5103-71-9	alpha-Chlordane	90	U
5103-74-2	gamma-Chlordane	90	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	90	U
11104-28-2	Aroclor-1221	90	U
11141-16-5	Aroclor-1232	90	U
53469-21-9	Aroclor-1242	90	U
12672-29-6	Aroclor-1248	90	U
11097-69-1	Aroclor-1254	180	U
11096-82-5	Aroclor-1260	180	U

FORM 1 PEST 12/88 Rev.

PBD 5/11/93

9613406.2586

1D 0000022

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05X84

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-003

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 03139213.52

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 3 dec. Date Extracted: 02/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/14/92

GPC Cleanup: (Y/N) Y pH: 7.1 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	8.1	U
319-85-7	Beta-BHC	8.1	U
319-86-8	Delta-BHC	8.1	U
58-89-9	gamma-BHC (Lindane)	8.1	U
76-44-8	Heptachlor	8.1	U
309-00-2	Aldrin	8.1	U
1024-57-3	Heptachlor epoxide	8.1	U
959-98-8	Endosulfan I	8.1	U
60-57-1	Dieldrin	16	U
72-55-9	4,4'-DDE	16	U
72-20-8	Endrin	16	U
33213-65-9	Endosulfan II	16	U
72-54-8	4,4'-DDD	16	U
1031-07-8	Endosulfan sulfate	16	U
50-29-3	4,4'-DDT	16	U
72-43-5	Methoxychlor	81	U
53494-70-5	Endrin ketone	16	U
5103-71-9	alpha-Chlordane	81	U
5103-74-2	gamma-Chlordane	81	U
8001-35-2	Toxaphene	160	U
12674-11-2	Aroclor-1016	81	U
11104-28-2	Aroclor-1221	81	U
11141-16-5	Aroclor-1232	81	U
53469-21-9	Aroclor-1242	81	U
12672-29-6	Aroclor-1248	81	U
11097-69-1	Aroclor-1254	160	U
11096-82-5	Aroclor-1260	160	U

AB

FORM 1 PEST 12/88 Rev.

TBD 5/11/93

9613406.2587 1D 0000025

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05XS5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-004

Sample wt/vol: 30.6 (g/mL) G

Lab File ID: 03139213.55

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 5 dec.

Date Extracted: 02/27/92

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 03/14/92

GPC Cleanup: (Y/N) Y pH: 7.6

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
319-84-6	Alpha-BHC	8.3	U
319-85-7	Beta-BHC	8.3	U
319-86-8	Delta-BHC	8.3	U
58-89-9	gamma-BHC (Lindane)	8.3	U
76-44-8	Heptachlor	8.3	U
309-00-2	Aldrin	8.3	U
1024-57-3	Heptachlor epoxide	8.3	U
959-98-8	Endosulfan I	8.3	U
60-57-1	Dieldrin	17	U
72-55-9	4,4'-DDE	17	U
72-20-8	Endrin	17	UJ
33213-65-9	Endosulfan II	17	U
72-54-8	4,4'-DDD	17	U
1031-07-8	Endosulfan sulfate	17	U
50-29-3	4,4'-DDT	17	U
72-43-5	Methoxychlor	83	U
53494-70-5	Endrin ketone	17	U
5103-71-9	alpha-Chlordane	83	U
5103-74-2	gamma-Chlordane	83	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	83	U
11104-28-2	Aroclor-1221	83	U
11141-16-5	Aroclor-1232	83	U
53469-21-9	Aroclor-1242	83	U
12672-29-6	Aroclor-1248	83	U
11097-69-1	Aroclor-1254	170	U
11096-82-5	Aroclor-1260	170	U

RB
DER 3/20/92
11-10-92

FORM 1 PEST 12/88 Rev.

PBD 5/11/93

9613406.2588 0000021

1A
VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05XS2

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-001

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

Lab File ID: 0030208

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 3

Date Analyzed: 03/02/92

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

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	9	~~18~~ 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

11/17/92
MM

9613406.2589

0000022

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B05XS2

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-001

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

Lab File ID: 0030208

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 3

Date Analyzed: 03/02/92

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 0

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

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

11/17/92

MM

FORM 1 VOA-TIC

12/88 Rev.

9613406.2590

1A 0000028

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05XS3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-002

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

Lab File ID: 0030404

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 11

Date Analyzed: 03/04/92

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	UJ
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	3	~~JB~~U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	UJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-pentanone	11	UJ
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	4	J
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

11/17/92

9613406.2591

1E

0000029

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B05XS3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-002

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

Lab File ID: 0030404

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 11

Date Analyzed: 03/04/92

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 0

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

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

11/17/92
MM

FORM 1 VOA-TIC

12/88 Rev.

9613406.2592

1A 0000037

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05XS4

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-003

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

Lab File ID: 0030210

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 3

Date Analyzed: 03/02/92

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

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	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	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

11/17/92

FORM 1 V-1 12/88 Rev.

9613406.2593

1E 0000038

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B05XS4

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-003

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

Lab File ID: 0030210

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 3

Date Analyzed: 03/02/92

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 0

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

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

11/17/92

MM

FORM 1 VOA-TIC 12/88 Rev.

9613406.2594

1A
VOLATILE ORGANICS ANALYSIS SHEET

0000044

CLIENT SAMPLE NO.

B05XS5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-004

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

Lab File ID: 0030211

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 5

Date Analyzed: 03/02/92

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	UJ
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	12	~~B~~ U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	UJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-pentanone	11	UJ
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	2	J
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

11/17/92
MM

FORM 1 V-1

12/88 Rev.

9613406.2595

1E 0000045

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B05XS5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-004

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

Lab File ID: 0030211

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 5

Date Analyzed: 03/02/92

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 0

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

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

11/17/92

FORM 1 VOA-TIC 12/88 Rev.

9613406.2596

1B 000030 CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS SHEET

BO5XS2

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-001

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S031308

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 7 dec. Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
100-51-6	Benzyl alcohol	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	bis(2-Chloroisopropyl)ether	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-Di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
65-85-0	Benzoic acid	1800	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U

11/17/92 MM

9613406.2597

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1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BO5XS2

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-001

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S031308

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 7 dec. Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
84-74-2	Di-n-Butylphthalate	3000	
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	86	J
91-94-1	3,3'-Dichlorobenzidine	710	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-Octyl phthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

11/17/92 MY

(1) - Cannot be separated from Diphenylamine

9613406.2598

0000032

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B05XS2

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-001

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: S031308

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 7 dec.

Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.4

Dilution Factor: 1.00

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.20	1000	~~JMP~~
2.	UNKNOWN	5.22	100	J
3.	ALDOL CONDENSATE	5.95	200	JA
4.	HYDROCARBON	22.72	200	J
5.	HYDROCARBON	23.70	300	J

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11/17/92
MM

9613406.2599

000047

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BO5XS3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-002

Sample wt/vol: 30.6 (g/mL) G

Lab File ID: S031311

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 15 dec.

Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.1

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
100-51-6	Benzyl alcohol	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	bis(2-Chloroisopropyl)ether	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-Di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
65-85-0	Benzoic acid	1900	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U

11/17/92
MM

9613406.2600

1C 0000048

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05XS3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-002

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S031311

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 15 dec. Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
84-74-2	Di-n-Butylphthalate	3800	
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	770	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	55	J
117-84-0	Di-n-Octyl phthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

11/17/92 MM

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 12/88 Rev.

9613406.2601

0000049

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B05XS3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-002

Sample wt/vol: 30.6 (g/mL) G

Lab File ID: S031311

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 15 dec.

Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.1

Dilution Factor: 1.00

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.20	1000	~~JAB~~ U
2.	UNKNOWN	5.22	400	J
3.	ALDOL CONDENSATE	5.95	200	JA
4.	UNKNOWN	7.00	200	J
5.	HYDROCARBON	22.77	300	J

11/17/92 MY

9613406.2602

1B 0000064

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BO5XS4

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S031312

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 6 dec. Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
100-51-6	Benzyl alcohol	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	bis(2-Chloroisopropyl)ether	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-Di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
65-85-0	Benzoic acid	1800	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U

11/17/92 MM

9613406.2603

1C 0000065

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05XS4

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S031312

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 6 dec. Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	64	J
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
84-74-2	Di-n-Butylphthalate	3100	
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	710	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	62	J
117-84-0	Di-n-Octyl phthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

11/17/92 MM

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 12/88 Rev.

9613406.2604

1F 000066

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BO5XS4

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-003

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: S031312

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 6 dec.

Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.3

Dilution Factor: 1.00

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.20	1000	~~JAB~~
2.	UNKNOWN	5.22	100	J
3.	ALDOL CONDENSATE	5.95	200	JA
4.	UNKNOWN	22.82	200	J
5.	UNKNOWN	23.95	500	J

u 11/17/92 MM

9613406.2605

0000082

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05XS5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-004

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S031313

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 5 dec. Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
100-51-6	Benzyl alcohol	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	bis(2-Chloroisopropyl)ether	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
65-85-0	Benzoic acid	1700	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U

11/17/92

FORM 1 SV-1 12/88 Rev.

9613406.2606

0000083

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BO5XS5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-004

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S031313

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 5 dec. Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	340	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
84-74-2	Di-n-Butylphthalate	4300	
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	48	J
91-94-1	3,3'-Dichlorobenzidine	690	U
56-55-3	Benzo(a)anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	57	J
117-84-0	Di-n-Octyl phthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenzo(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

11/17/92 MM

(1) - Cannot be separated from Diphenylamine

9613406.2607 0000084

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B05XS5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-004

Sample wt/vol: 30.5 (g/mL) G

Lab File ID: S031313

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 5 dec.

Date Extracted: 03/02/92

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) N pH: 7.7

Dilution Factor: 1.00

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.20	900	JAB
2.	UNKNOWN	5.22	200	J
3.	ALDOL CONDENSATE	5.95	200	JA
4.	PHOSPHATE	22.83	200	J
5.	UNKNOWN	23.92	200	J

11/17/92

9613406.2608

1D 0000016

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05XS2

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-001

Sample wt/vol: 29.9 (g/mL) G

Lab File ID: 03139213.48

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 4 dec.

Date Extracted: 02/27/92

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 03/14/92

GPC Cleanup: (Y/N) Y pH: 7.9

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg	
319-84-6	Alpha-BHC	8.3	U
319-85-7	Beta-BHC	8.3	U
319-86-8	Delta-BHC	8.3	U
58-89-9	gamma-BHC (Lindane)	8.3	U
76-44-8	Heptachlor	8.3	U
309-00-2	Aldrin	8.3	U
1024-57-3	Heptachlor epoxide	8.3	U
959-98-8	Endosulfan I	8.3	U
60-57-1	Dieldrin	17	U
72-55-9	4,4'-DDE	17	U
72-20-8	Endrin	17	U
33213-65-9	Endosulfan II	17	U
72-54-8	4,4'-DDD	17	U
1031-07-8	Endosulfan sulfate	17	U
50-29-3	4,4'-DDT	17	U
72-43-5	Methoxychlor	83	U
53494-70-5	Endrin ketone	17	U
5103-71-9	alpha-Chlordane	83	U
5103-74-2	gamma-Chlordane	83	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	83	U
11104-28-2	Aroclor-1221	83	U
11141-16-5	Aroclor-1232	83	U
53469-21-9	Aroclor-1242	83	U
12672-29-6	Aroclor-1248	83	U
11097-69-1	Aroclor-1254	170	U
11096-82-5	Aroclor-1260	170	U

DEL 3/20/92

9613406.2409

1D 0000019

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05X83

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9202L488-002

Sample wt/vol: 29.9 (g/mL) G

Lab File ID: 03139213.51

Level: (low/med) LOW

Date Received: 02/26/92

% Moisture: not dec. 11 dec.

Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 03/31/92

GPC Cleanup: (Y/N) Y pH: 7.1

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
319-84-6	Alpha-BHC	9.0	U
319-85-7	Beta-BHC	9.0	U
319-86-8	Delta-BHC	9.0	U
58-89-9	gamma-BHC (Lindane)	9.0	U
76-44-8	Heptachlor	9.0	U
309-00-2	Aldrin	9.0	U
1024-57-3	Heptachlor epoxide	9.0	U
959-98-8	Endosulfan I	9.0	U
60-57-1	Dieldrin	18	U
72-55-9	4,4'-DDE	18	U
72-20-8	Endrin	18	U
33213-65-9	Endosulfan II	18	U
72-54-8	4,4'-DDD	18	U
1031-07-8	Endosulfan sulfate	18	U
50-29-3	4,4'-DDT	18	U
72-43-5	Methoxychlor	90	U
53494-70-5	Endrin ketone	18	U
5103-71-9	alpha-Chlordane	90	U
5103-74-2	gamma-Chlordane	90	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	90	U
11104-28-2	Aroclor-1221	90	U
11141-16-5	Aroclor-1232	90	U
53469-21-9	Aroclor-1242	90	U
12672-29-6	Aroclor-1248	90	U
11097-69-1	Aroclor-1254	180	U
11096-82-5	Aroclor-1260	180	U

9613406.2610

1D 0000022

CLIENT SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS SHEET

B05XS4

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-003

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 03139213.52

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 3 dec. Date Extracted: 02/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/13/92

GPC Cleanup: (Y/N) Y pH: 7.1 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
319-84-6	Alpha-BHC	8.1	U
319-85-7	Beta-BHC	8.1	U
319-86-8	Delta-BHC	8.1	U
58-89-9	gamma-BHC (Lindane)	8.1	U
76-44-8	Heptachlor	8.1	U
309-00-2	Aldrin	8.1	U
1024-57-3	Heptachlor epoxide	8.1	U
959-98-8	Endosulfan I	8.1	U
60-57-1	Dieldrin	16	U
72-55-9	4,4'-DDE	16	U
72-20-8	Endrin	16	U
33213-65-9	Endosulfan II	16	U
72-54-8	4,4'-DDD	16	U
1031-07-8	Endosulfan sulfate	16	U
50-29-3	4,4'-DDT	16	U
72-43-5	Methoxychlor	81	U
53494-70-5	Endrin ketone	16	U
5103-71-9	Alpha-chlordane	81	U
5103-74-2	gamma-chlordane	81	U
8001-35-2	Toxaphene	160	U
12674-11-2	Aroclor-1016	81	U
11104-28-2	Aroclor-1221	81	U
11141-16-5	Aroclor-1232	81	U
53469-21-9	Aroclor-1242	81	U
12672-29-6	Aroclor-1248	81	U
11097-69-1	Aroclor-1254	160	U
11096-82-5	Aroclor-1260	160	U

DER 3/20/92

9613406.2611 0000025

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B05XS5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9202L488-004

Sample wt/vol: 30.6 (g/mL) G Lab File ID: 03139213.55

Level: (low/med) LOW Date Received: 02/26/92

% Moisture: not dec. 5 dec. Date Extracted: 02/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/14/92

GPC Cleanup: (Y/N) Y pH: 7.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
319-84-6	Alpha-BHC	8.3	U
319-85-7	Beta-BHC	8.3	U
319-86-8	Delta-BHC	8.3	U
58-89-9	gamma-BHC (Lindane)	8.3	U
76-44-8	Heptachlor	8.3	U
309-00-2	Aldrin	8.3	U
1024-57-3	Heptachlor epoxide	8.3	U
959-98-8	Endosulfan I	8.3	U
60-57-1	Dieldrin	17	U
72-55-9	4,4'-DDE	17	U
72-20-8	Endrin	17	UJ DER 3/20/92
33213-65-9	Endosulfan II	17	U
72-54-8	4,4'-DDD	17	U
1031-07-8	Endosulfan sulfate	17	U
50-29-3	4,4'-DDT	17	U
72-43-5	Methoxychlor	83	U
53494-70-5	Endrin ketone	17	U
5103-71-9	alpha-Chlordane	83	U
5103-74-2	gamma-Chlordane	83	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	83	U
11104-28-2	Aroclor-1221	83	U
11141-16-5	Aroclor-1232	83	U
53469-21-9	Aroclor-1242	83	U
12672-29-6	Aroclor-1248	83	U
11097-69-1	Aroclor-1254	170	U
11096-82-5	Aroclor-1260	170	U

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U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B05XS2

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP488

Matrix (soil/water): SOIL Lab Sample ID: 920248801

Level (low/med): LOW Date Received: 2/26/92

% Solids: 96.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4050.00			P
7440-36-0	Antimony	4.75	U	~~N~~ J	P
7440-38-2	Arsenic	.85	~~B~~	N	F
7440-39-3	Barium	70.70			P
7440-41-7	Beryllium	.21	U		P
7440-43-9	Cadmium	.62	U		P
7440-70-2	Calcium	2390.00			P
7440-47-3	Chromium	13.50			P
7440-48-4	Cobalt	5.10	B		P
7440-50-8	Copper	11.40			P
7439-89-6	Iron	7670.00			P
7439-92-1	Lead	2.90	N		F
7439-95-4	Magnesium	2120.00			P
7439-96-5	Manganese	188.00			P
7439-97-6	Mercury	.06	~~B~~	N	CV
7440-02-0	Nickel	7.10	~~B~~	N	P
7440-09-7	Potassium	739.00	~~B~~	N	P
7782-49-2	Selenium	.41	U	~~W~~ J	F
7440-22-4	Silver	.83	U		P
7440-23-5	Sodium	164.00	~~B~~	N	P
7440-28-0	Thallium	.41	U	~~NW~~ J	F
7440-62-2	Vanadium	10.00	B		P
7440-66-6	Zinc	21.10			P
	Cyanide	1.03	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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18C

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B05XS3

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP488

Matrix (soil/water): SOIL Lab Sample ID: 920248802

Level (low/med): LOW Date Received: 2/26/92

% Solids: 89.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2010.00			P
7440-36-0	Antimony	5.01	U	~~N~~ J	P
7440-38-2	Arsenic	.45	U	~~W~~ J	F
7440-39-3	Barium	26.60	B		P
7440-41-7	Beryllium	.22	U		P
7440-43-9	Cadmium	.65	U		P
7440-70-2	Calcium	1030.00	B		P
7440-47-3	Chromium	8.90			P
7440-48-4	Cobalt	2.60	~~B~~	N	P
7440-50-8	Copper	6.30			P
7439-89-6	Iron	4100.00			P
7439-92-1	Lead	2.60			F
7439-95-4	Magnesium	1430.00			P
7439-96-5	Manganese	71.00			P
7439-97-6	Mercury	.06	U		CV
7440-02-0	Nickel	10.90	U		P
7440-09-7	Potassium	409.00	~~B~~	N	P
7782-49-2	Selenium	.45	U	~~W~~ J	F
7440-22-4	Silver	.87	U		P
7440-23-5	Sodium	139.00	U		P
7440-28-0	Thallium	.45	U	~~W~~ J	F
7440-62-2	Vanadium	5.50	B		P
7440-66-6	Zinc	20.00			P
	Cyanide	1.12	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

FORM I - IN 03/90

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B05XS4

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP488

Matrix (soil/water): SOIL Lab Sample ID: 920248803

Level (low/med): LOW Date Received: 2/26/92

% Solids: 97.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3600.00			P
7440-36-0	Antimony	4.52	U	~~N~~ J	P
7440-38-2	Arsenic	.71	~~B~~	U	F
7440-39-3	Barium	51.10			P
7440-41-7	Beryllium	.24	~~B~~	U	P
7440-43-9	Cadmium	.59	U		P
7440-70-2	Calcium	2190.00			P
7440-47-3	Chromium	12.50			P
7440-48-4	Cobalt	5.00	~~B~~	U	P
7440-50-8	Copper	19.70			P
7439-89-6	Iron	8670.00			P
7439-92-1	Lead	2.20			F
7439-95-4	Magnesium	2180.00			P
7439-96-5	Manganese	164.00			P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	6.60	~~B~~	U	P
7440-09-7	Potassium	704.00	~~B~~	U	P
7782-49-2	Selenium	.41	U	~~W~~ J	F
7440-22-4	Silver	.79	U		P
7440-23-5	Sodium	125.00	U		P
7440-28-0	Thallium	.41	U	~~N~~ J	F
7440-62-2	Vanadium	10.40			P
7440-66-6	Zinc	20.30			P
	Cyanide	1.03	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B05XS5

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP488

Matrix (soil/water): SOIL Lab Sample ID: 920248804

Level (low/med): LOW Date Received: 2/26/92

% Solids: 94.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4740.00			P
7440-36-0	Antimony	4.78	U	~~N~~ J	P
7440-38-2	Arsenic	.65	~~B~~	U	F
7440-39-3	Barium	71.10			P
7440-41-7	Beryllium	.39	~~B~~	U	P
7440-43-9	Cadmium	.62	U		P
7440-70-2	Calcium	3340.00			P
7440-47-3	Chromium	18.00			P
7440-48-4	Cobalt	6.90	B		P
7440-50-8	Copper	13.50			P
7439-89-6	Iron	9470.00			P
7439-92-1	Lead	2.20			F
7439-95-4	Magnesium	3720.00			P
7439-96-5	Manganese	197.00			P
7439-97-6	Mercury	.05	~~B~~	U	CV
7440-02-0	Nickel	16.70			P
7440-09-7	Potassium	1030.00	B		P
7782-49-2	Selenium	.40	U	~~N~~ J	F
7440-22-4	Silver	.83	U		P
7440-23-5	Sodium	167.00	~~B~~	U	P
7440-28-0	Thallium	.40	U	~~N~~ J	F
7440-62-2	Vanadium	16.10			P
7440-66-6	Zinc	26.50			P
	Cyanide	1.42	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

FORM I - IN 03/90

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ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/11/92

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 6168-02-01-0000

WESTON BATCH #: 9202L488

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	BO5XS2	% Solids	96.9	%	0.10
		Fluoride by IC	0.50 u	MG/KG	0.50
		Nitrate by IC	1.3 u	MG/KG	1.3
		Cyanide, Total	1.0 u	MG/KG	1.0
		Sulfate by IC	6.1	MG/KG	1.3
-002	BO5XS3	% Solids	89.4	%	0.10
		Fluoride by IC	0.50 u	MG/KG	0.50
		Nitrate by IC	3.1	MG/KG	1.4
		Cyanide, Total	1.1 u	MG/KG	1.1
		Sulfate by IC	11.1	MG/KG	1.4
-003	BO5XS4	% Solids	97.3	%	0.10
		Fluoride by IC	0.50 u	MG/KG	0.50
		Nitrate by IC	6.5	MG/KG	1.3
		Cyanide, Total	1.0 u	MG/KG	1.0
		Sulfate by IC	34.3	MG/KG	1.3
-004	BO5XS5	% Solids	94.8	%	0.10
		Fluoride by IC	0.50 u	MG/KG	0.50
		Nitrate by IC	2.1	MG/KG	1.3
		Cyanide, Total	1.4	MG/KG	1.1
		Sulfate by IC	12.6	MG/KG	1.3

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VOLATILE ORGANIC DATA VALIDATION CHECKLIST - FORM A-1

PROJECT: Westinghouse Data Validation	REVIEWER: MY	DATE: 11-17-92
LABORATORY: Roy Weston	CASE: WEST	SDG: B05XS2
SAMPLES/MATRIX: Soil; B05XS2, B05XS3; B05XS4		
B05XS5		

1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal.

Data Package Item	Present?: Yes	No	N/A
Case Narrative	✓	—	—
Data Summary	✓	—	—
Chain-of-Custody	✓	—	—
QC Summary			
Surrogate report	✓	—	—
MS/MSD report	✓	—	—
Blank summary report	✓	—	—
GC/MS tuning report	✓	—	—
Internal standard summary report	✓	—	—
Sample Data			
Sample reports	✓	—	—
TIC reports for each sample	✓	—	—
RIC reports for all samples	✓	—	—
Raw and corrected spectra for all detected results	✓	—	—
Raw and corrected library search data for all reported TIC	—	—	✓
Quantitation and calculation data for all TIC	—	—	✓
Standards Data			
Initial calibration report	✓	—	—
RIC and quantitation reports for initial calibration	✓	—	—
Continuing calibration reports	✓	—	—
RIC and quantitation reports for cont. calibrations	✓	—	—
Internal standard summary report	✓	—	—
Raw QC Data			
Tuning report, spectra and mass lists	✓	—	—
Blank analysis reports	✓	—	—
TIC reports for all blanks	✓	—	—
RIC and quantitation reports for blanks	✓	—	—
Raw and corrected spectra for all detected results in blanks	✓	—	—
Raw and corrected library search data for all reported TIC	—	—	✓

Data Package Item	Present?: Yes	No	N/A
Quantitation and calculation data for all TIC	—	—	✓
MS/MSD report forms	✓	—	—
RIC and quantitation reports for MS/MSD	✓	—	—
Additional Data			
Moisture/% solids data sheets	—	✓	—
Reduction formulae	—	✓	—
Instrument time logs	—	✓	—
Chemist notebook pages	—	✓	—
Sample preparation sheets	—	✓	—

2. HOLDING TIMES

Complete the holding time summary form listing all samples and dates of collection and analysis.

Were all samples analyzed within holding time? (Yes) No N/A

ACTION: If any holding times were exceeded, but not by greater than a factor of two, qualify associated samples as estimated (J for detects or UJ for nondetects), otherwise reject all nondetects (R) and qualify all associated detects as estimated (J).

3. INSTRUMENT CALIBRATION, TUNING AND PERFORMANCE CHECKS

3.1 GC/MS TUNING AND PERFORMANCE CHECKS

Is a bromofluorobenzene tune report present for each applicable 12-h period? (Yes) No N/A

Do all tunes on all instruments meet the tuning criteria? (Yes) No N/A

Do all tunes on all instruments meet the expanded criteria? (Yes) No N/A

Has the laboratory made any calculation or transciption errors? Yes (No) N/A

Have the proper significant figures been reported? (Yes) No N/A

ACTION: If the mass calibration is out of specification but within the expanded criteria, qualify associated data as estimated (J for detects or UJ for nondetects). If all tuning criteria are missed, qualify all associated data as unusable (R).

3.2 INITIAL CALIBRATION

Is an initial calibration report provided for all instruments? (Yes) No N/A

Are all RSD values ≤30% (2/88 SOW)? Yes (No) N/A

Are all RRF values ≥0.05 (2/88 SOW)? (Yes) No N/A

Are all applicable RSD values ≤20.5% (3/90 SOW)?	Yes	No	N/A
Are all applicable RSD values ≤40% (3/90 SOW)?	Yes	No	N/A
Are all applicable RRF values within SOW limits (3/90 SOW)?	Yes	No	N/A
Are all erratic performance compound RRF values ≥0.01 (3/90 SOW)?	Yes	No	N/A

ACTION: With the exception of compounds that exhibit erratic performance and making allowances for up to two TCL compounds, if any RRF value is out of specification qualify all detected results for the particular compound as estimated (J) and all nondetects as unusable (R). Making allowances for up to two TCL compounds, if any RSD value is out of specification qualify all associated data as estimated (J for detects or UJ for nondetects).

3.3. CONTINUING CALIBRATION

Is a continuing calibration report present for all 12-h periods in which associated samples were analyzed?	Yes	No	N/A
Are all RRF values ≥0.05 (2/88 SOW)?	Yes	No	N/A
Are all %D values ≤25% (2/88 or 3/90 SOW)?	Yes	No	N/A
Are all %D values ≤40% (3/90 SOW)?	Yes	No	N/A
Are all RRF values within SOW limits (3/90 SOW)?	Yes	No	N/A
Are all erratic performance compound RRF values ≥0.01 (3/90 SOW)?	Yes	No	N/A

ACTION: With the exception of compounds that exhibit erratic performance and making allowances for up to two TCL compounds, if any RRF value is out of specification qualify all associated detected results as estimated and all nondetects as unusable (R). Making allowances for up to two TCL compounds, if any %D is out of specification, qualify all associated results as estimated (J for detects or UJ for nondetects).

4. BLANKS

4.1 LABORATORY BLANKS

Has the laboratory conducted a method blank analysis per matrix for every 12-h period in which samples were analyzed?	Yes	No	N/A
Are TCL compounds present in the laboratory blanks?	Yes	No	N/A

ACTION: Qualify all sample results ≤10 time the highest blank concentration for the common laboratory contaminants, as nondetects (U) or at the SQL if the result is <CRQL. Qualify all remaining sample results ≤5 times the blank concentration in similar fashion.

4.2. FIELD BLANKS

Are TCL compounds present in the field blanks? Yes No N/A

ACTION: Qualify all detected sample results ≤5 times the amount in any valid field blank as nondetects (U) and note the field blank results in the validation narrative.

5. ACCURACY

5.1 SURROGATE/SYSTEM MONITORING COMPOUND RECOVERY

Are any surrogate recoveries out of specification? Yes No N/A

Are any surrogate recoveries < 10%? Yes No N/A

Are any method blank surrogate recoveries out of specification? Yes No N/A

ACTION: Qualify all associated sample results as estimated (J for detects or UJ for nondetects) for surrogates out of specification but > 10%. Qualify all associated positive sample results as estimated (J) and all nondetect results as unusable (R) for all surrogates below 10%. If method blank surrogates are out of specification and the associated sample surrogates are acceptable no qualification is necessary, however, the laboratory should be contacted for an explanation.

5.2 MATRIX SPIKE RECOVERY

Has an MS/MSD analysis been conducted per matrix in the sample group? Yes No N/A

Are MS/MSD recoveries within specification? Yes No N/A

Are there any calculation errors? Yes No N/A

ACTION: If an MS/MSD analysis has not been conducted contact the laboratory for an explanation. Review the MS/MSD recoveries in conjunction with other QC data such as surrogate recoveries and note the results in the validation narrative. If MS/MSD recoveries are out of specification and sample concentration is > 5 times the spike concentration, no qualification is required, otherwise qualify results as follows: Qualify positive results for the specific class of compound (aromatics and non-aromatics) as estimated (J) in all samples if associated surrogates are also out of specification. The qualification shall only be done on samples of similar matrix as the MS/MSD samples. If it is determined from the review that only the spiked samples are affected by low recoveries, qualify only the results for the spiked sample as described above. If it is determined from the review that out of specification MS/MSD recoveries are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

5.3 PERFORMANCE AUDIT SAMPLES

Are the performance audit sample results within the acceptance limits? Yes No N/A

ACTION: Note the results of the performance audit sample in the validation narrative.

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATES

Are RPD values within specification? Yes No N/A

Are there any calculation errors? Yes No N/A

ACTION: Review the MS/MSD results in conjunction with other QC data such as field duplicates and note the results in the validation narrative. If MS/MSD RPDs are out of specification and sample results are > 5xCRQL qualify positive results for the specific class of compound (aromatics and non-aromatics) as estimated (J). If it is determined from the review that out of specification MS/MSD results are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

6.3 FIELD SPLIT SAMPLES

Are field split RPD values acceptable? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

7. SYSTEM PERFORMANCE

7.1 INTERNAL STANDARDS PERFORMANCE

Are any internal standard area counts outside the acceptance limits? Yes No N/A

Are retention times for any internal standard outside the ±30 second windows established by the most recent calibration check? Yes No N/A

ACTION: If the area counts are outside the acceptance limits qualify all associated results as estimated (J for detects or UJ for nondetects). If it is determined from the review that out of specification area counts and relative retention times are indicative of systematic problems within the laboratory the reviewer may consider rejection of all affected sample data (R).

8. COMPOUND IDENTIFICATION AND QUANTITATION

8.1 COMPOUND IDENTIFICATION

Are detected compounds within ±0.06 relative retention time units of the associated calibration standard? Yes No N/A

Are all ions at a relative intensity of ≥10% in the standard spectra present in the sample spectra? Yes No N/A

Do the relative intensities between the standard and sample spectra agree within 20%? Yes No N/A

Have all ions > 10% in the sample spectra that are not present in the standard spectra been reviewed for possible background contamination? Yes No N/A

Are molecular ions present in the reference spectrum present in the sample spectrum? Yes No N/A

ACTION: If compound identification is in error and retention time and mass spectral criteria are exceeded qualify all affected positive results as unusable (R). If cross-contamination between analyses is suspected, qualify affected data as unusable (R). Note the results in the validation narrative.

8.2 REPORTED RESULTS AND QUANTITATION LIMITS

Has the laboratory used the correct RRF values and internal standard(s) for quantitation? Yes No N/A

Are results and quantitation limits calculated properly? Yes No N/A

Has the laboratory reported the sample quantitation limits within 5xCRQL values? Yes No N/A

ACTION: If the results and quantitation limits are in error contact the laboratory for clarification and note in the validation narrative.

8.3 TENTATIVELY IDENTIFIED COMPOUNDS (TIC) NO TICS

Has the laboratory conducted a spectral library search on all candidate TIC peaks in accordance with the analytical SOW? Yes No N/A

Has the laboratory properly identified and coded all TIC? Yes No N/A

ACTION: If the laboratory has failed to search the minimum number of TIC peaks in the chromatogram contact the laboratory for submittal of the required data. Qualify as nondetects (U) all TIC compounds present in samples and blanks using the review criteria specified in the validation requirements. If TIC identification is in error sample results should be qualified as nondetects (U) or unusable (R). If TIC identifications are judged valid, qualify the results as presumptive and estimated (JN).

9. OVERALL ASSESSMENT AND SUMMARY

Has the laboratory conducted the analysis in accordance with the analytical SOW? Yes No N/A

Were project specific data quality objectives met for this analysis? Yes No N/A

ACTION: Summarize all the data qualifications recommended in the foregoing sections, and complete the data validation narrative according to the requirements of Section 10.0 of the data validation requirements.

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COMMENTS (attach additional sheets as necessary):

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WHC-SD-EN-SPP-002.Rev. 1

SEMI-VOLATILE ORGANIC DATA VALIDATION CHECKLIST - FORM A-2

PROJECT: Westinghouse Data Validation	REVIEWER: MM	DATE: 11-17-92
LABORATORY: Roy Weston	CASE: WEST	SDG: B05XS2
SAMPLES/MATRIX: Soils; B05XS2; B05XS3; B05XS4, B05XS5		

1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal.

Data Package Item	Present?: Yes	No	N/A
Case Narrative	✓	—	—
Data Summary	✓	—	—
Chain-of-Custody	✓	—	—
QC Summary			
Surrogate report	✓	—	—
MS/MSD report	✓	—	—
Blank summary report	✓	—	—
GC/MS tuning report	✓	—	—
Internal standard summary report	✓	—	—
Sample Data			
Sample reports	✓	—	—
TIC reports for each sample	✓	—	—
RIC reports for all samples	✓	—	—
Raw and corrected spectra for all detected results	✓	—	—
Raw and corrected library search data for all reported TIC	✓	—	—
Quantitation and calculation data for all TIC	✓	—	—
Standards Data			
Initial calibration report	✓	—	—
RIC and quantitation reports for initial calibration	✓	—	—
Continuing calibration reports	✓	—	—
RIC and quantitation reports for cont. calibrations	✓	—	—
Internal standard summary report	✓	—	—
Raw QC Data			
Tuning report, spectra and mass lists	✓	—	—
Blank analysis reports	✓	—	—
TIC reports for all blanks	✓	—	—
RIC and quantitation reports for blanks	✓	—	—
Raw and corrected spectra for all detected results in blanks	✓	—	—
Raw and corrected library search data for all reported TIC	✓	—	—

Data Package Item	Present?:	Yes	No	N/A
RIC and quantitation reports for MS/MSD		✓	—	—
Additional Data				
Moisture/% solids data sheets		—	✓	—
Reduction formulae		—	✓	—
Instrument time logs		—	✓	—
Chemist notebook pages		—	✓	—
Sample preparation sheets		—	✓	—

2. HOLDING TIMES

Were all samples extracted within holding time?	Yes	No	N/A
Were all samples analyzed within holding time?	Yes	No	N/A

ACTION: If any holding times were exceeded, but not by greater than a factor of two, qualify associated samples as estimated (J for detects or UJ for nondetects), otherwise reject all nondetects (R) and qualify all associated detects as estimated (J).

3. INSTRUMENT CALIBRATION, TUNING AND PERFORMANCE CHECKS

3.1 GC/MS TUNING AND PERFORMANCE CHECKS

Is a DFTPP tune report present for each applicable 12h period?	Yes	No	N/A
Do all tunes on all instruments meet the tuning criteria?	Yes	No	N/A
Do all tunes on all instruments meet the expanded criteria?	Yes	No	N/A
Has the laboratory made any calculation or transciption errors?	Yes	No	N/A
Have the proper significant figures been reported?	Yes	No	N/A

ACTION: If the mass calibration is out of specification but within the expanded criteria, qualify associated data as estimated (J for detects and UJ for nondetects). If all tuning criteria are not met, qualify all associated data as unusable (R).

3.2 INITIAL CALIBRATION

Is an initial calibration report provided for all instruments?	Yes	No	N/A
Are all RSD values ≤30% (2/88 SOW)?	Yes	No	N/A
Are all RRF values ≥0.05 (2/88 SOW)?	Yes	No	N/A
Are all applicable RSD values ≤20.5% (3/90 SOW)?	Yes	No	N/A

Are all applicable RRF values within SOW limits (3/90 SOW)? Yes No N/A

Are all erratic performance compound RRF values ≥0.01 (3/90 SOW)? Yes No N/A

ACTION: With the exception of compounds that exhibit erratic performance and making allowances for up to four TCL compounds or surrogates, if any RRF value is out of specification qualify all detected results for the particular compound as estimated (J) and all nondetects as unusable (R). Making allowances for up to four TCL compounds or surrogates, if any RSD value is out of specification qualify all associated data as estimated (J for detects or UJ for nondetects).

3.3. CONTINUING CALIBRATION

Is a continuing calibration report present for all 12-h periods in which associated samples were analyzed? Yes No N/A

Are all RRF values ≥0.05 (2/88 SOW)? Yes No N/A

Are all %D values ≤25% (2/88 or 3/90 SOW)? Yes No N/A

Are all %D values ≤40% (3/90 SOW)? Yes No N/A

Are all RRF values within SOW limits (3/90 SOW)? Yes No N/A

Are all erratic performance compound RRF values ≥0.01 (3/90 SOW)? Yes No N/A

ACTION: With the exception of compounds that exhibit erratic performance and making allowances for up to four TCL compounds or surrogates, if any RRF value is out of specification qualify all associated detected results as estimated and all nondetects as unusable (R). Making allowances for up to four TCL compounds or surrogates, if any %D is out of specification, qualify all associated results as estimated (J for detects or UJ for nondetects).

4. BLANKS

4.1 LABORATORY BLANKS

Has the laboratory conducted a method blank analysis per matrix for every extraction batch? Yes No N/A

Are compounds reported in the laboratory blanks? Yes No N/A

ACTION: Qualify all sample results < 10 times the highest blank concentration for the common laboratory contaminants, as nondetects (U) or at the SQL if the result is < CRQL. Qualify all remaining sample results < 5 times the blank concentration in similar fashion.

4.2. FIELD BLANKS

Are compounds reported in the field blanks? Yes No N/A

ACTION: Qualify all detected sample results ≤5 times the amount in any valid field blank as nondetects (U) and note the results of the field blanks in the validation narrative.

5. ACCURACY

5.1 SURROGATE RECOVERY/SYSTEM MONITORING COMPOUND RECOVERY

Are any surrogate recoveries out of specification? Yes No N/A

Are any surrogate recoveries < 10%? Yes No N/A

Are any method blank surrogate recoveries out of specification? Yes No N/A

ACTION: Qualify all associated data as estimated (J for detects and UJ for nondetects) if at least two semivolatile surrogates are out of specification. If any surrogate is below 10% recovery qualify associated detected results as estimated (J) and associated nondetect results as unusable (R). If method blank surrogates are out of specification and associated sample surrogates are acceptable no qualification is required, however, the laboratory should be contacted for an explanation.

5.2 MATRIX SPIKE RECOVERY

Has an MS/MSD analysis been conducted per matrix in the sample group? Yes No N/A

Are MS/MSD recoveries within specification? Yes No N/A

Are there any calculation errors? Yes No N/A

ACTION: If an MS/MSD analysis has not been conducted contact the laboratory for an explanation. Review the MS/MSD recoveries in conjunction with other QC data such as surrogate recoveries and note the results in the validation narrative. If MS/MSD recoveries are out of specification and sample concentration is >5 times the spike concentration, no qualification is required, otherwise qualify results as follows: Qualify positive results for the specific class of compound (aromatics and non-aromatics) as estimated (J) in all samples if associated surrogates are also out of specification. The qualification shall only be done on samples of similar matrix as the MS/MSD samples. If it is determined from the review that only the spiked samples are affected by low recoveries, qualify only the results for the spiked sample as described above. If it is determined from the review that out of specification MS/MSD recoveries are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

5.3 PERFORMANCE AUDIT SAMPLES

Are the results for the performance audit samples within the acceptance limits? Yes No N/A

ACTION: Note the results of the performance audit samples in the validation narrative.

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATES

Are all RPD values within specification? Yes No N/A

Are there any calculation errors? Yes No N/A

ACTION: Review the MS/MSD results in conjunction with other QC data such as field duplicates and note the results in the validation narrative. If MS/MSD RPDs are out of specification and sample results are >5xCRQL qualify positive results for the specific class of compound (aromatics and non-aromatics) as estimated (J). If it is determined from the review that out of specification MS/MSD results are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

6.3 FIELD SPLIT SAMPLES

Are field split RPD values acceptable? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

7. SYSTEM PERFORMANCE

7.1 INTERNAL STANDARDS PERFORMANCE

Are any internal standard area counts outside the acceptance limits? Yes No N/A

Are retention times for any internal standard outside the ±30 second windows established by the most recent calibration check? Yes No N/A

ACTION: If the area counts are outside the acceptance limits qualify all associated results as estimated (J for detects and UJ for nondetects. If it is determined from the review that out of specification area counts and relative retention times are indicative of systematic problems within the laboratory the reviewer may consider rejection of all affected sample data (R).

8. COMPOUND IDENTIFICATION AND QUANTITATION

8.1 COMPOUND IDENTIFICATION

Are detected compounds within ±0.06 relative retention time units of the associated calibration standard? Yes No N/A

Are all ions at a relative intensity of ≥10% in the standard spectra present in the sample spectra? Yes No N/A

Do the relative intensities between the standard and sample spectra agree within 20%? Yes No N/A

Have all ions > 10% in the sample spectra that are not present in the standard spectra been reviewed for possible background contamination? Yes No N/A

Are molecular ions in the reference spectrum present in the sample spectrum? Yes No N/A

ACTION: If compound identification is in error and retention time and mass spectral criteria are exceeded qualify all affected positive results as unusable (R). If cross-contamination between analyses is suspected, qualify affected data as unusable (R).

8.2 REPORTED RESULTS AND QUANTITATION LIMITS

Has the laboratory used the correct RRF values and internal standards for quantitation? Yes No N/A

Are results and quantitation limits calculated properly? Yes No N/A

Has the laboratory reported the sample quantitation limits within 5xCRQL values? Yes No N/A

ACTION: If the quantitation limits are in error contact the laboratory for clarification and note in the validation narrative.

8.3 TENTATIVELY IDENTIFIED COMPOUNDS

Has the laboratory conducted a spectral library search on all candidate TIC peaks in accordance with the analytical SOW? Yes No N/A

Has the laboratory properly identified and coded all TIC? Yes No N/A

ACTION: If the laboratory has failed to search the minimum number of TIC peaks in the chromatogram contact the laboratory for submittal of the required data. Qualify as nondetects (U) all TIC compounds present in samples and blanks using the review criteria specified in the validation requirements. If TIC identification is in error sample results should be qualified as nondetects (U) or unusable (R). If TIC identifications are judged valid, qualify the results as presumptive and estimated

9. OVERALL ASSESSMENT AND SUMMARY

Has the laboratory conducted the analysis in accordance with the analytical SOW? Yes No N/A

Were project specific data quality objectives met for this analysis? Yes No N/A

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10.0 of the data validation requirements.

COMMENTS (attach additional sheets as necessary): for several samples, surrogate ES6 was outside of QC limits by Max 22%. Since the ES6 area counts were out on the high side, the ability of the instrument was not impaired, so no qualification was performed due to surrogates. 11/17/92 MM

9613406.2633

PESTICIDE/PCB DATA VALIDATION CHECKLIST - FORM A-3

PROJECT: Westinghouse Hanford	REVIEWER: RB	DATE: 11-10-92
LABORATORY: Weston	CASE: N/A	SDG: B05XS2
SAMPLES/MATRIX: - 4 soil samples -		
B05XS2		
B05XS3		
B05XS4		
B05XS5		

1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for resubmittal.

Data Package Item	Present?: Yes	No	N/A
Case Narrative	✓	—	—
Data Summary	✓	—	—
Chain-of-Custody	✓	—	—
QC Summary			
Surrogate report	✓	—	—
MS/MSD report	✓	—	—
Blank summary report	✓	—	—
Sample Data			
Sample reports	✓	—	—
Chromatograms	✓	—	—
GC integration reports	✓	—	—
Worksheets	✓	—	—
UV traces from GPC	—	✓	—
GC/MS confirmation spectra	—	—	✓
Standards Data			
Pesticides Evaluation Standards Summary	✓	—	—
Pesticides/PCB Standards Summary	✓	—	—
Pesticides/PCB identification	✓	—	—
Pesticides standard chromatograms	✓	—	—
Raw QC Data			
Blank analysis report forms and chromatograms	✓	—	—
MS/MSD report forms and chromatograms	✓	—	—

Data Package Item	Present?: Yes	No	N/A
Additional Data			
Moisture/% solids data sheets	✓		
Reduction formulae		✓	
Instrument time logs		✓	
Chemist notebook pages		✓	
Sample preparation sheets	✓		

2. HOLDING TIMES

Were all samples extracted within holding time? Yes No N/A

Were all samples analyzed within holding time? Yes No N/A

ACTION: If any holding times were exceeded, but not by greater than a factor of two, qualify associated samples as estimated (J for detects or UJ for nondetects), otherwise reject all nondetects (R) and qualify all associated detects as estimated (J).

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

3.1 INSTRUMENT PERFORMANCE (2/88 SOW)

Are DDT retention times greater than 12 minutes? Yes No N/A

ACTION: If DDT retention time is $\leq$12 minutes and resolution is <25% qualify associated data as unusable (R).

Is resolution between DDT peaks acceptable? Yes No N/A

ACTION: If resolution between DDT peaks is unacceptable qualify associated data as unusable (R).

Do all pesticide standards elute within the established retention time windows? Yes No N/A

ACTION: If the standards do not meet the retention time criteria and peaks are not present near or within the retention time windows no sample qualification is necessary. If peaks are near or within the retention time windows and the standards and matrix spikes do not fall within the expanded retention time windows calculated according to the validation requirements, qualify all associated sample results from the last in-control point as unusable (R).

Are DDT breakdowns $\leq$20%? Yes No N/A

ACTION: If the DDT percent breakdown exceeds 20%, qualify all detected results for DDT as estimated (J) and all nondetects as unusable (R) if DDD and DDE are detected. In addition qualify all results for DDD or DDE as presumptive and estimated (NJ).

Are endrin breakdowns $\leq$20%? Yes No N/A

ACTION: If the endrin breakdown exceeds 20%, qualify all detected results for endrin as estimated (J) and all nondetects as unusable (R) if endrin aldehyde or endrin ketone are detected. In addition, qualify all results for endrin ketone as presumptive and estimated (NJ).

Are DBC retention time differences within specification? Yes No N/A

ACTION: If DBC %D values are outside the limits and the shift is ocurring repeatedly in samples and standards, qualify affected sample results as unusable (R).

3.2 CALIBRATIONS (2/88 SOW)

Are RSD values for aldrin, endrin, DDT and DBC ≤10%? Yes No N/A

Have all standards been analyzed within 72 h of any sample? Yes No N/A

Has a 3-point calibration been conducted for DDT or toxaphene? Yes No N/A

Have all standards been analyzed at the start of each 72-h sequence? Yes No N/A

Have evaluation standards A, B, and C been analyzed within 72 h of any sample? Yes No N/A

Has the confirmation standard mix been analyzed after every five samples? Yes No N/A

Has evaluation standard B analyzed every 10 samples? Yes No N/A

Are %D values for initial and subsequent standards ≤15% for quantitation standards and ≤20% for confirmation standards? Yes No N/A

ACTION: If the RSD criteria were exceeded or three point calibrations not conducted qualify associated detects as estimated (J). If all standards were not analyzed at the beginning of each 72-h sequence qualify associated data as unusable (R). If the confirmation standards were not analyzed properly qualify associated detects as estimated (J). If the continuing calibration criteria were not met qualify associated quantitation data as estimated (J).

3.3 INSTRUMENT PERFORMANCE AND INITIAL CALIBRATION (3/90 SOW)

Is peak resolution acceptable? Yes No N/A

ACTION: If the resolution criteria are not met, reject positive sample results generated after initial calibration (R).

Are DDT and endrin breakdowns ≤20.0% Yes No N/A

ACTION: If the breakdown criteria are not met qualify sample results as described in Section 5.3.1 of the validation requirements.

Are single component target compounds in the PEMs, INDA, INDB and the calibration standards within the retention time windows? Yes No N/A

ACTION: If the retention time criteria are not met and no peaks are present in the samples within two times the retention time windows (±0.04, ±0.05 for methoxychlor), no qualification is necessary. If peaks are present in samples within the retention time window a review is made of the raw data to determine expanded retention time windows (see Section 5.3.1 of the validation requirements). If all standards and matrix spikes fall within the expanded windows then no qualification of sample results is necessary. If all standards and matrix spikes do not fall within the expanded windows then all affected sample results are qualified as unusable (R).

Are the RPDs acceptable for the PEMs? Yes No N/A

ACTION: If the RPD criteria are not met qualify associated positive sample results as estimated (J).

Are the RSDs for the calibration factors < 10.0% (< 15.0% for the BHC series, DDT, endrin, and methoxychlor)? Yes No N/A

ACTION: If the RSD criteria are not met qualify associated positive sample results as estimated (J).

3.4 CALIBRATION VERIFICATION (3/90 SOW)

Have the analytical sequence requirements been met for the analysis of instrument blanks, PEMs, INDA and INDB mixes? Yes No N/A

ACTION: If the analytical sequence requirements are not followed and any of the resolution or retention time criteria listed below are exceeded, reject associated positive results (R).

Is peak resolution acceptable for PEMs, INDA and INDB mixes? Yes No N/A

ACTION: If the resolution criteria are not met reject positive sample results generated after a noncompliant standard analysis (R).

Are single component target compounds in the PEMs, INDA and INDB mixes within the retention time windows? Yes No N/A

ACTION: If the retention time criteria are not met and no peaks are present in the samples analyzed after the noncompliant standard within two times the retention time windows (±0.04, ±0.05 for methoxychlor), no qualification is necessary. If peaks are present in samples within the expanded windows rejected associated positive and nondetect results (R).

Are RPDs between the calculated and true amounts in the PEMs, INDA and INDB mixes ≤25.0%? Yes No N/A

ACTION: If the RPD criteria are not met qualify associated positive sample results as estimated (J).

Are DDT and endrin breakdowns in the PEMs ≤20.0% (≤30.0% total combined)? Yes No N/A

ACTION: If the breakdown criteria are not met qualify associated positive sample results in accordance with the criteria specified in Section 5.3.1.

4. BLANKS

4.1 LABORATORY BLANKS

Has the laboratory analyzed the method blanks at the required frequency? Yes No N/A

Has the laboratory analyzed a sulfur clean-up blank if required? Yes No N/A

Has the laboratory analyzed instrument blanks at the required frequency? Yes No N/A

Are target compounds present in the blanks? Yes No N/A

ACTION: Qualify all associated positive results as nondetects (U) that are <5 times the highest concentration in any acceptable blank.

4.2 FIELD BLANKS

Are target compounds present in the field blanks? Yes No N/A

ACTION: If target compounds are present in the field blanks qualify all positive sample results <5 times the highest valid field blank concentrations as nondetects (U) and note the results in the validation narrative.

5. ACCURACY

5.1 SURROGATE RECOVERY

Are any surrogate recoveries out of specification?	Yes	No	N/A
Do any samples show nondetects for surrogates?	Yes	No	N/A
Are any method blank surrogates out of specification?	Yes	No	N/A

ACTION: Qualify all associated sample results as estimated (J for detects and UJ for nondetects) for surrogates out of specification. If the surrogate was not detected (0% recovery) in the sample qualify associated nondetects as unusable (R). If method blank surrogates are out of specification and sample surrogates are acceptable, no qualification is required however, the laboratory should be contacted for an explanation.

5.2 MATRIX SPIKE RECOVERY

Has the laboratory analyzed a MS/MSD per matrix for the the sample group?	Yes	No	N/A
Are MS/MSD recoveries within specification?	Yes	No	N/A
Are there any calculation or transcription errors?	Yes	No	N/A

ACTION: If MS/MSD analyses have not been conducted contact the laboratory for clarification. Review the MS/MSD recoveries in conjunction with other QC data such as surrogate recoveries and note the results in the validation narrative. If MS/MSD recoveries are out of specification and sample concentration is >5 times the spike concentration, no qualification is required, otherwise qualify results as follows: Qualify positive results as estimated (J) in all samples if associated surrogates are also out of specification. The qualification shall only be done on samples of similar matrix as the MS/MSD samples. If it is determined from the review that only the spiked samples are affected by the low recoveries, qualify only the results for the spiked sample as described above. If it is determined from the review that out of specification MS/MSD recoveries are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

5.3 PERFORMANCE AUDIT SAMPLES

Are performance audit sample results within the acceptance limits?	Yes	No	N/A

ACTION: Note the results of the performance audit samples in the validation narrative.

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES

Are the RPD values within specification? Yes No N/A

ACTION: Review the MS/MSD results in conjunction with other QC data such as field duplicates and note the results in the validation narrative. If MS/MSD RPD values are out of specification and sample results are >5xCRQL qualify positive results as estimated (J). If it is determined from the review that out of specification MS/MSD results are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

6.3 FIELD SPLIT SAMPLES

Are field split RPD values acceptable? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

7. COMPOUND IDENTIFICATION AND QUANTITATION

7.1 COMPOUND IDENTIFICATION

Do positive results meet the retention time window criteria? Yes No N/A

Were positive results analyzed on disimilar columns? Yes No N/A

If dieldrin and DDE were reported was a 3% OV-1 column used for confirmation (2/88 SOW data only)? Yes No N/A

Do retention times and relative peak height ratios match the expected patterns for multipeak compounds (PCB, toxaphene or chlordane)? Yes No N/A

Has GC/MS confirmation been conducted on sample extract concentrations > 10 ppm? Yes No N/A

ACTION: If positive results do not meet the retention time criteria qualify all detected results as nondetects as follows: If the misidentified peak is outside the retention time windows and no interferences are noted report the CRQL and if the misidentified peak interferes with a target peak then the report value is qualified as estimated and nondetected (UJ). If positive results were not confirmed on disimilar columns, reject affected results (R). If a 3% OV-1 was used to confirm dieldrin and DDE, reject the affected data (R). If PCB, chlordane or toxaphene identification is questionable qualify the results as presumptive and estimated (NJ). If GC/MS confirmation was not conducted contact the laboratory for explanation and note in the validation narrative.

7.2 REPORTED RESULTS AND QUANTITATION LIMITS

Are results and quantitation limits calculated properly?	Yes	No	N/A
Has the laboratory reported the sample quantitation limits within 5xCRQL values?	Yes	No	N/A

ACTION: If results and quantitation limits are in error contact the laboratory for clarification and note in the validation narrative.

8. OVERALL ASSESSMENT AND SUMMARY

Has the laboratory conducted the analysis in accordance with the analytical SOW?	Yes	No	N/A
Were project specific data quality objectives met for this analysis?	Yes	No	N/A

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10.0 of the data validation requirements.

COMMENTS (attach additional sheets as necessary): On all calibrations, Endrin exceeded %D values on the quantitation column. Calibration factors use peak heights instead of peak areas. In addition, ~~quantitation uses~~ the above factor is used for analyte quantitation and detection limits.

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST - FORM A-6

PROJECT: Westinghouse	REVIEWER: SC	DATE: 11/18/92
LABORATORY: Weston	CASE:	SDG: B05XS2
SAMPLES/MATRIX: Water		
B05XS2, B05XS3, B05XS4, B05XS5		

1. COMPLETENESS AND CONTRACT COMPLIANCE

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal of the omitted data.

Data Package Item	Present?: Yes	No	N/A
Case Narrative	✓		
Cover Page	✓		
Traffic Reports	✓		
Sample Data			
Inorganic Analysis Data Sheets	✓		
Standards Data			
Initial and Continuing Calibration Verification	✓		
CRDL Standard for AA and ICP	✓		
QC Summary			
Blanks	✓		
ICP Interference Check Summary	✓		
Spike Sample Recovery	✓		
Post-Digestion Spike Sample Recovery	✓		
Duplicate	✓		
Laboratory Control Sample	✓		
Standard Addition Results	✓		
ICP Serial Dilutions	✓		
Instrument Detection Limits	✓		
ICP Interelement Correction Factors	✓		
ICP Linear Ranges	✓		
Preparation Log	✓		
Analysis Run Log	✓		
Raw Data			
ICP Raw Data	✓		
Furnace AA Raw Data	✓		
Mercury Raw Data	✓		
Cyanide Raw Data	✓		
Additional Data			
Internal laboratory chain-of-custody	✓		
Laboratory Sample Preparation Records	✓		

Data Package Item	Present?: Yes	No	N/A
Percent Solids Analysis Records			✓
Reduction Formulae		✓	
Instrument Run Logs	✓		
Chemist Notebook Pages	✓		

2. HOLDING TIMES

Have all samples been analyzed within holding times? Yes No N/A

ACTION: If any holding times have been exceeded qualify all affected results as estimated (J for detects and UJ for non-detects).

3. INITIAL CALIBRATIONS

Were all instruments calibrated daily, each set-up time and were the proper number of standards used? Yes No N/A

Are the correlation coefficients ≥0.995? Yes No N/A

Was a midrange CN standard distilled? Yes No N/A

ACTION: Qualify all data as unusable if reported from an analysis in which an instrument was not calibrated or was calibrated with less than the minimum number of standards. Qualify associated sample results > IDL as estimated (J) and results < IDL as estimated (UJ), if the correlation coefficient is < 0.995 or the laboratory did not distill the midrange CN standard.

4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

Are ICV and CCV percent recoveries within control? Yes No N/A

Are there calculation errors? Yes No N/A

ACTION: Qualify all affected data in accordance with Section 8.3 of the validation requirements. If calculation errors are noted, contact the laboratory for clarification.

5. ICP INTERFERENCE CHECK SAMPLE

Has an ICS sample been analyzed at the proper frequency? Yes No N/A

Are the AB solution %R values within control? Yes No N/A

Are there calculation errors? Yes No N/A

ACTION: Qualify all affected data in accordance with Section 8.3 of the validation requirements. If calculation errors are noted, contact the laboratory for clarification.

6. LABORATORY BLANKS

Are target analytes present in the laboratory blanks? Yes No N/A

ACTION: Qualify all associated sample results for any analyte <5X the amount in any laboratory blank as non-detected (U). If analyte concentrations in the blank are greater than the CRDL or below the negative CRDL, verify the laboratory has redigested and reanalyzed associated samples with analyte concentrations less than 10x the blank concentration. If the laboratory has not redigested and reanalyzed the samples, note in the validation narrative.

7. FIELD BLANKS

Are target analytes present in the field blanks? Yes No N/A

ACTION: Qualify all sample results for any analyte <5X the amount in any valid field blank as non-detected (U).

8. MATRIX SPIKE SAMPLE ANALYSIS

Are spike recoveries within the control limits? Yes No N/A

ACTION: Qualify the affected sample data according to the following requirements:

If spike recovery is >125% and sample results are <IDL no qualification is required. If spike recovery is >125% or <75% qualify all positive results as estimated (J). If spike recovery is 30% to 74% qualify all non-detects as estimated (UJ). If spike recovery is <30%, reject all non-detects (R). If the field blank has been used for spike analysis, note in the validation narrative.

9. LABORATORY CONTROL SAMPLE

Are percent recoveries within the acceptance limits? Yes No N/A

Are there calculation errors? Yes No N/A

ACTION: Qualify the sample data according to the following requirements:

AQUEOUS LCS - Qualify as estimated (J), all sample results > IDL, for which the LCS %R falls within the range 50-79% or > 120%. Qualify as estimated (UJ), all sample results < IDL, for which the LCS falls within the range of 50-79%. Qualify as unusable (R) all sample results, for which the LCS %R <50%.

SOLID LCS - Qualify as estimated (J), all sample results > IDL for which the LCS result is outside the established control limits. Qualify as estimated (UJ), all sample results < IDL for which the LCS %R are lower than the established control limits.

10. PERFORMANCE AUDIT ANALYSES

Are the performance audit sample results within the acceptance limits? Yes No N/A

ACTION: Note the results of the performance audit sample analyses in the data validation narrative.

11. DUPLICATE SAMPLE ANALYSIS

Are RPD values acceptable? Yes No N/A

ACTION: Qualify the results for all associated samples of the same matrix as estimated (J) if the RPD results fall outside the appropriate control limits. If field blanks were used for laboratory duplicates, note in the validation narrative.

12. ICP SERIAL DILUTION

Are the serial dilution results acceptable? Yes No N/A

Is there evidence of negative interference? Yes No N/A

ACTION: Qualify the associated data as estimated (J) for those analytes in which the %D is outside the control limits. If evidence of negative interference is found, use professional judgment to qualify the data.

13. FIELD DUPLICATE SAMPLES

Do the RPD values exceed the control limits? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

14. FIELD SPLIT SAMPLES

Do the RPD values exceed the control limits? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

15. FURNACE ATOMIC ABSORPTION QUALITY CONTROL

Do all applicable analyses have duplicate injections? Yes No N/A

Are applicable duplicate injection RSD values within control? Yes No N/A

If no, were samples rerun once as required? Yes No N/A

Does the RSD for the rerun fall within the control limits? Yes No N/A

Were analytical spike recoveries within the control limits? Yes No N/A

If no, were MSA analyses performed when required?	Yes	No	N/A
Are MSA correlation coefficients $\geq$0.995?	Yes	No	N/A
If no, was a second MSA analysis performed?	Yes	No	N/A

ACTION: If duplicate injections are outside the acceptance limits and the sample has not been reanalyzed or the reanalysis is outside the acceptance limits, qualify the associated data as estimated (J for detects and UJ for non-detects). If the analytical spike recovery is less than 40 percent qualify detects as estimated (J). If the analytical spike recovery is greater than or equal to 10% but less than 40 percent, qualify all non-detects as estimated (UJ) and if the analytical spike recovery is less than 10 percent, reject all non-detects (R). If the sample absorbance is less than 50% of the analytical spike absorbance and the analytical spike recovery is less than 85% or greater than 115%, qualify all results as estimated (J for detects and UJ for non-detects). If method of standard additions (MSA) was required but was not performed, the MSA samples were spiked incorrectly, or the MSA correllation coefficient was less than 0.995, qualify the associated detected results as estimated (J).

16. ANALYTE QUANTITATION AND DETECTION LIMITS

Have results been reported and calculated correctly?	Yes	No	N/A
Are results within the calibrated range of the instruments and within the linear range of the ICP?	Yes	No	N/A
Are all detection limits below the CRQL?	Yes	No	N/A

Action: If analyte quantitation is in error, contact the laboratory for explanation. If errors or deficiencies can not be resolved with the laboratory, qualify associated data as unusable (R).

17. OVERALL ASSESSMENT AND SUMMARY

Has the laboratory conducted the analysis in accordance with the analytical SOW?	Yes	No	N/A
Were project specific data quality objectives met for this analysis?	Yes	No	N/A

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10 of the data validation requirements.

COMMENTS (attach additional sheets as necessary):