GENERAL CHEMISTRY DATA VALIDATION SUMMARY FOR DATA PACKAGE:
9309L997-WES-1309 (923-E418, Filename 9309L997.GCH)

9413225.1451

MEMORANDUM

FEB 1994 RECEIVED IQD

TO: 200-UP-2 Project QA Record

February 18, 1994

FR: Susan Winter, Golder Associates Inc.

RE: GENERAL CHEMISTRY DATA VALIDATION SUMMARY FOR DATA PACKAGE: 9309L997-WES-1309 (923-E418, Filename 9309L997.GCH)

INTRODUCTION

This memo presents the results of data validation on data package 9309L997-WES-1309 prepared by the Weston Analytics laboratory. A list of samples validated along with the analyses reported is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09342 B09343 B09348	09/15/93 09/15/93 09/16/93	SOIL SOIL SOIL	SEE NOTE 1
Note 1. Samples B09342 and B09343 were analyzed for percent solids, chloride, fluroide, cyanide, sulfate, nitrate+nitrite-N and sample B09348 was analyzed for percent solids only.			

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 provide the following information as indicated below:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data with the exception of the cyanide result for sample B09343 which has been corrected on the laboratory report form from 7.5 mg/kg to 2.9 mg/kg as according to the raw data. This correction is also reflected in the validated data summary .

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. A total of three samples were validated in this data package with a total of 13 determinations reported, all of

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which were deemed valid. This results in a completeness of 100 percent, which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

No minor deficiencies were identified during data validation which required qualification of data.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

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ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

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GLOSSARY OF INORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected. The concentration reported is less than the contract required detection limit (CRDL) but greater than the instrument detection limit (IDL). The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample detection limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration may not accurately reflect the sample detection limit. The associated data have been qualified as estimated but should be considered usable for decision making purposes.

BJ - Indicates the constituent was analyzed for and detected at a concentration less than the contract required detection limit (CRDL) but greater than the instrument detection limit (IDL). Due to a minor quality control deficiency identified during data validation the associated data have been qualified as estimated, but should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. Due to a minor quality control deficiency identified during data validation the associated data have been qualified as estimated, but should be considered usable for decision making purposes.

UR - Indicates the constituent was analyzed for and not detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

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ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

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DATA QUALIFICATION SUMMARY

SDG: 9309L997-WES-1309	VALIDATOR:	DATE: February 18, 1994	PAGE 1 OF 1
COMMENTS: GENERAL CHEMISTRY			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
NO QUALIFICATIONS ARE REQUIRED			

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ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

9413225.1461

Validated Data Summary, Data Package: 9309L997-WES-1309

	Samp#	B09342		B09343		B09348	
	Date	9-15-93		9-15-93		9-16-93	
	Location	299-W19-97		299-W19-95		299-W19-97	
	Depth	101.0 - 103.3		105.0 - 107.5		---	
	Type	---		---		---	
	Comments	SPLIT		SPLIT		TRIP	
Parameter	Units	Result	Q	Result	Q	Result	Q
PERCENT SOLIDS	%	95.100		96.800		100.000	
CHLORIDE	MG/KG	16.100		12.600		---	
FLUORIDE	MG/KG	2.600	U	2.600	U	---	
CYANIDE	MG/KG	1.100	U	2.900		---	
SULFATE	MG/KG	7.700		7.800		---	
NITRATE+NITRITE	MG-N/KG	0.780		0.440		---	

Verified
2/18/94

SDG 9309L997-WES-1309

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 10/26/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9309L997

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR	Q
-001	B09342	% Solids	95.1		%	0.10	1.0	
		Chloride by IC	16.1		MG/KG	1.3	1.0	
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0	
		Cyanide, Total	1.1	u	MG/KG	1.1	1.0	
		Sulfate by IC	7.7		MG/KG	1.3	1.0	
		Nitrate Nitrite	0.78	—	MG-N/KG	0.10	1.0	
-002	B09343	% Solids	96.8		%	0.10	1.0	
		Chloride by IC	12.6		MG/KG	1.3	1.0	
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0	
		Cyanide, Total	2.9	~~[illegible]~~	MG/KG	1.0	1.0	
		Sulfate by IC	7.8		MG/KG	1.3	1.0	
		Nitrate Nitrite	0.44	—	MG-N/KG	0.10	1.0	
-003	B09348	% Solids	100		%	0.10	1.0	

~~B~~ 299-W19-97 101-103.3' Field Split 2/16/94

299-W19-95 105-107.5' Field Split 2/16/94

299-W19-97 Solid Trip Blank

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verified.. 2/16/94

-009 ~~0334~~

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

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

Client : WESTINGHOUSE HANFORD
RFW# : 9309L997

W.O. #: 06168-002-001-9999-00
Date Received: 09-17-93

INORGANIC

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. All sample holding times as required by 40CFR136 were met.

2. All preparation blank results were below the required detection limits.

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 the analysis of solid samples are derived from Test Methods for Evaluating Solid Waste (USEPA SW846).

NOV 1993
RECEIVED
SDLA

Margaret M. Lisby
J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

10/26/93
Date

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pas/i09-997

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS

Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2

Collection Date: 9-15-93

Ice Chest No.: SML 364

Field Logbook No.: EFL-1091

Bill of Lading/Airbill No.: 2536956202

Offsite Property No.:

Method of Shipment: OVERNIGHT AIR SERVICE

Shipped to: WESTON

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) NONE NOTED 93092L997

Sample Identification

1) RAD B09342

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

2) B09343

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

3)

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

PER 9-16-93

Temp = 2.8

[] Field Transfer of Custody

Chain of Possession		(Sign and Print Names)
Relinquished by: 1050	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time: 9-17-93 1700
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

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

-012

~~0017~~

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ECKLIST

D	E
9309L997-WES-1309	
DATE: 02/16/94	
997-WES-1309	

Oil and Grease	Alkalinity
☐ pH	☒ NO_3/NO_2
☐	☐
☐	☐

. . . . . Yes No N/A

. . . . . Yes No N/A

. . . . . Yes No N/A

~~not performed~~

~~on the date of collection~~

of the data validation procedures, footnote 6

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ATTACHMENT 5

)ATION SUPPORTING DOCUMENTATION

GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

3. INSTRUMENT CALIBRATION

Was initial calibration performed for all applicable analyses? Yes No N/A

Are initial calibration results acceptable? . . . . . Yes No N/A

Was a calibration check performed for all applicable analyses? Yes No N/A

Are calibration check results acceptable? . . . . . Yes No N/A

Comments:

4. BLANKS

Were laboratory blanks analyzed? . . . . . Yes No N/A

Are laboratory blank results acceptable? . . . . . Yes No N/A

Were field/trip blanks analyzed? . . . . . Yes No N/A

Are field/trip blank results acceptable? . . . . . Yes No N/A

Comments: Sample BC9348 was identified as a trip blank and was analyzed for percent solids only

5. ACCURACY

Were spike samples analyzed at the required frequency? . . . . Yes No N/A

Are spike recoveries acceptable? . . . . . Yes No N/A

Were LCS analyses performed at the required frequency? . . . . Yes No N/A

Are LCS recoveries acceptable? . . . . . Yes No N/A

Comments:

6. PRECISION

Were laboratory duplicate samples analyzed at the required frequency? . . . . . Yes No N/A

Are laboratory duplicate sample RPD values acceptable? . . . . Yes No N/A

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

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

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-015

GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

Comments: Samples B09342 and B09343 are identified as field split samples and will be compared to the original sample results in the quarterly project report.

7. ANALYTE QUANTITATION

Was analyte quantitation performed properly? . . . . . Yes No N/A

Comments:

8. REPORTED RESULTS AND DETECTION LIMITS

Are results reported for all requested analyses? . . . . . Yes No N/A

Are results supported in the raw data? . . . . . Yes No N/A

Are results calculated properly? . . . . . Yes No N/A

Do results meet the CRDLs? . . . . . Yes No N/A

Comments:

The cyanide result for sample B09343 was corrected from 7.5 mg/kg to 2.9 mg/kg as according to the raw data

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GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

Comments (attach additional sheets as necessary):

Several pages were missing from the general chemistry data package. However, sufficient information was provided and therefore complete validation was performed.

Missing Pages from Gen Chem Pkg:

Pg. 29.	Pg 100	Pg 106
31	101	107
37	103	108
42	104	

This may be due to a pagination problem since sufficient information was provided for validation

2/16/94

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Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
WESTINGHOUSE HANFORD

DATE RECEIVED: 09/17/93 RFW LOT # :9309L997

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B09342						
% SOLIDS	001	S	93LRS048	09/15/93	09/23/93	09/24/93
% SOLIDS	001 REP	S	93LRS048	09/15/93	09/23/93	09/24/93
CHLORIDE BY IC	001	S	93LCS113	09/15/93	09/30/93	09/30/93
FLUORIDE BY IC	001	S	93LFS113	09/15/93	09/30/93	09/30/93
TOTAL CYANIDE	001	S	93LC239	09/15/93	09/29/93	09/29/93
TOTAL CYANIDE	001 REP	S	93LC239	09/15/93	09/29/93	09/29/93
SULFATE BY IC	001	S	93L4S113	09/15/93	09/30/93	09/30/93
NITRATE NITRITE	001	S	93LNT188	09/15/93	10/26/93	10/26/93
SUB-OUT TEST FOR SUB	001	S		09/15/93		
B09343						
% SOLIDS	002	S	93L%S171	09/15/93	09/22/93	09/23/93
% SOLIDS	002 REP	S	93L%S171	09/15/93	09/22/93	09/23/93
CHLORIDE BY IC	002	S	93LCS113	09/15/93	09/30/93	09/30/93
CHLORIDE BY IC	002 REP	S	93LCS113	09/15/93	09/30/93	09/30/93
CHLORIDE BY IC	002 MS	S	93LCS113	09/15/93	09/30/93	09/30/93
CHLORIDE BY IC	002 MSD	S	93LCS113	09/15/93	09/30/93	09/30/93
FLUORIDE BY IC	002	S	93LFS113	09/15/93	09/30/93	09/30/93
FLUORIDE BY IC	002 REP	S	93LFS113	09/15/93	09/30/93	09/30/93
FLUORIDE BY IC	002 MS	S	93LFS113	09/15/93	09/30/93	09/30/93
FLUORIDE BY IC	002 MSD	S	93LFS113	09/15/93	09/30/93	09/30/93
TOTAL CYANIDE	002	S	93LC232	09/15/93	09/27/93	09/28/93
TOTAL CYANIDE	002 REP	S	93LC232	09/15/93	09/27/93	09/28/93
TOTAL CYANIDE	002 MS	S	93LC232	09/15/93	09/27/93	09/28/93
TOTAL CYANIDE	002 MSD	S	93LC232	09/15/93	09/27/93	09/28/93
SULFATE BY IC	002	S	93L4S113	09/15/93	09/30/93	09/30/93
SULFATE BY IC	002 REP	S	93L4S113	09/15/93	09/30/93	09/30/93
SULFATE BY IC	002 MS	S	93L4S113	09/15/93	09/30/93	09/30/93
SULFATE BY IC	002 MSD	S	93L4S113	09/15/93	09/30/93	09/30/93
NITRATE NITRITE	002	S	93LNT188	09/15/93	10/26/93	10/26/93
NITRATE NITRITE	002 REP	S	93LNT188	09/15/93	10/26/93	10/26/93
NITRATE NITRITE	002 MS	S	93LNT188	09/15/93	10/26/93	10/26/93
NITRATE NITRITE	002 MSD	S	93LNT188	09/15/93	10/26/93	10/26/93
SUB-OUT TEST FOR SUB	002	S		09/15/93		

2/18/94

2/16/94

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
WESTINGHOUSE HANFORD

DATE RECEIVED: 09/17/93 RFW LOT # :9309L997

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B09348						
% SOLIDS	003	S	93L%S176	09/16/93	09/29/93	09/30/93
% SOLIDS	003 REP	S	93L%S176	09/16/93	09/29/93	09/30/93

LAB QC:

2/13/94

CHLORIDE BY IC	LC1	S	93LCS113	N/A	09/30/93	09/30/93
CHLORIDE BY IC	LC1 BS	S	93LCS113	N/A	09/30/93	09/30/93
CHLORIDE BY IC	MB1	S	93LCS113	N/A	09/30/93	09/30/93
CHLORIDE BY IC	MB1 BS	S	93LCS113	N/A	09/30/93	09/30/93
CHLORIDE BY IC	MB1 BSD	S	93LCS113	N/A	09/30/93	09/30/93
CHLORIDE BY IC	MB2	S	93LCS113	N/A	09/30/93	09/30/93
CHLORIDE BY IC	MB2 BS	S	93LCS113	N/A	09/30/93	09/30/93
FLUORIDE BY IC	LC1	S	93LFS113	N/A	09/30/93	09/30/93
FLUORIDE BY IC	LC1 BS	S	93LFS113	N/A	09/30/93	09/30/93
FLUORIDE BY IC	MB1	S	93LFS113	N/A	09/30/93	09/30/93
FLUORIDE BY IC	MB1 BS	S	93LFS113	N/A	09/30/93	09/30/93
FLUORIDE BY IC	MB1 BSD	S	93LFS113	N/A	09/30/93	09/30/93
FLUORIDE BY IC	MB2	S	93LFS113	N/A	09/30/93	09/30/93
FLUORIDE BY IC	MB2 BS	S	93LFS113	N/A	09/30/93	09/30/93
TOTAL CYANIDE	LC1 L	S	93LC239	N/A	09/29/93	09/29/93
TOTAL CYANIDE	LC2 L	S	93LC239	N/A	09/29/93	09/29/93
TOTAL CYANIDE	MB1	S	93LC239	N/A	09/29/93	09/29/93
SULFATE BY IC	LC1	S	93L4S113	N/A	09/30/93	09/30/93
SULFATE BY IC	LC1 BS	S	93L4S113	N/A	09/30/93	09/30/93
SULFATE BY IC	MB1	S	93L4S113	N/A	09/30/93	09/30/93
SULFATE BY IC	MB1 BS	S	93L4S113	N/A	09/30/93	09/30/93
SULFATE BY IC	MB1 BSD	S	93L4S113	N/A	09/30/93	09/30/93
SULFATE BY IC	MB2	S	93L4S113	N/A	09/30/93	09/30/93
SULFATE BY IC	MB2 BS	S	93L4S113	N/A	09/30/93	09/30/93
NITRATE NITRITE	MB1	S	93LNT188	N/A	10/26/93	10/26/93
NITRATE NITRITE	MB1 BS	S	93LNT188	N/A	10/26/93	10/26/93
NITRATE NITRITE	MB1 BSD	S	93LNT188	N/A	10/26/93	10/26/93
NITRATE NITRITE	MB2	S	93LNT188	N/A	10/26/93	10/26/93
NITRATE NITRITE	MB2 BS	S	93LNT188	N/A	10/26/93	10/26/93
TOTAL CYANIDE	LC1 L	S	93LC232	N/A	09/27/93	09/28/93

2/16/94

9413225.1472

WESTON®
ANALYTICS DIVISION

CYANIDE ANALYSIS LOG

WORKSHEET: CNC928
RUN BATCH: 93LC232, 93LC233
DISTILLATION DATE(S): 09.27.93

LOGBOOK # 3767

RFW #	RUN #	QC	ABSORBANCE @ 578 nm	FINAL RESULTS (µg/L) or (mg/kg)	TIME HH:MM	COMMENTS % solid
0 ppb		Cusue	0.000		14.15	
5			0.008		1416	
10			0.016		14.17	
20			0.031		1418	
50			0.083		14.19	
100			0.159		14.20	
150			0.232		1421	
200			0.320		14.22	
ICV			0.157		1423	
ICB			0.002		14.24	
93LC232-MB1			0.002	<1.0 mg/kg	1425	
-LC1			0.295	9.312 ~~9.372~~	1426	
-LC2			0.314	9.912	1427	
93C9L984-001			0.006	<2.090	1428	47.86
-002			0.015	<2.723	1429	36.73
-003			0.020	<1.844	14.30	54.24
-004			0.004	<1.350	1431	72.46
-005			0.005	<2.439	1432	34.03
-006			0.004	<1.069	14.33	93.58
-007			0.022	<2.674	1434	37.40
CCV			0.159	100 ug/L	1435	
CCB			0.002	<10.0	14.36	
93C9L987-002			0.002	<1.110	14.37	90.05
-003			Also high	not updated	14.38	79.56
-004			Also high	not updated	14.39	79.20
93C9L997-002			0.090	2.927	14.40	96.83
-002R			0.084	2.731	14.41	
-002S			0.210	6.843	14.42	
-002T			0.231	7.528	14.43	

ANALYST: ATJ
ANALYSIS DATE: 9.28.93

REVIEWED BY/DATE RO 10/5/93
PAGE # 5

9413225.1473

Cyanide Report

9413225.1474

Date of Prep: 09/27/93
Date of Analysis: 09/28/93
Worksheet: CN0928
Computer 0: DARWIN
Directory: INORGANICS

Run Batch: 93LC232
Method: CLP
Analyst: AJP
Instrument: CN1.1

CALIB DATA
SLOPE: 0.00
INTERCEPT: 0.00
CORRELATION COEF.: 0.9994

RFW SAMPLE ID	TEST	INST. ABS	INITIAL RESULT	DILUTION FACTOR	C/D	FINAL RESULT	CRQL EPA 20.00	UNITS	REPLICATE ORIG SAMPLE RESULT	REP % DIFF	SPIKE SPIKE LEVEL 200.00	SAMPLE SPIKE AMOUNT	% RECOV	LCS AMT LCS 100.00	% RECOV	SOILS PREP PREP BATCH	INITIAL SAMPLE WT./VOL.	FINAL VOL.	COLOR VOL.	% SOLIDS	ANAL TIME	DATE PREP
S0	ICNTO	0.000	-0.193	1	1.0000	-0.193 u	10.000	UG/L								93LC232	250	250	50		14:15	09/27/93
S5	ICNTO	0.008	4.062	1	1.0000	4.062 u	10.000	UG/L								93LC232	250	250	50		14:16	09/27/93
S10	ICNTO	0.016	9.918	1	1.0000	9.918 u	10.000	UG/L								93LC232	250	250	50		14:17	09/27/93
S20	ICNTO	0.031	19.390	1	1.0000	19.390	10.000	UG/L								93LC232	250	250	50		14:18	09/27/93
S50	ICNTO	0.083	52.261	1	1.0000	52.261	10.000	UG/L								93LC232	250	250	50		14:19	09/27/93
S100	ICNTO	0.159	100.291	1	1.0000	100.291	10.000	UG/L								93LC232	250	250	50		14:20	09/27/93
S150	ICNTO	0.232	146.425	1	1.0000	146.425	10.000	UG/L								93LC232	250	250	50		14:21	09/27/93
S200	ICNTO	0.320	202.039	1	1.0000	202.039	10.000	UG/L								93LC232	250	250	50		14:22	09/27/93
ICV	ICNTOL	0.157	99.027	1	1.0000	99.027	10.000	UG/L						100.0	99.0	93LC232	250	250	50		14:23	09/27/93
ICB	ICNTO	0.002	1.071	1	1.0000	1.071 u	10.000	UG/L								93LC232	250	250	50		14:24	09/27/93
93LC232-MB1	ICNTO	0.002	1.071	1	0.0500	0.054 u	1.000	MG/KG								93LC232	5	250	50	100.0	14:25	09/27/93
93LC232-LCS1	ICNTOL	0.295	186.239	1	0.0500	9.312	1.000	MG/KG						10.0	93.1	93LC232	5	250	50	100.0	14:26	09/27/93
93LC232-LCS2	ICNTOL	0.314	198.247	1	0.0500	9.912	1.000	MG/KG						10.0	99.1	93LC232	5	250	50	100.0	14:27	09/27/93
9309L984-001	ICNTO	0.006	3.599	1	0.1045	0.376 u	2.090	MG/KG								93LC232	5	250	50	47.9	14:28	09/27/93
9309L984-002	ICNTO	0.015	9.286	1	0.1361	1.264 u	2.723	MG/KG								93LC232	5	250	50	36.7	14:29	09/27/93
9309L984-003	ICNTO	0.020	12.446	1	0.0922	1.147 u	1.844	MG/KG								93LC232	5	250	50	54.2	14:30	09/27/93
9309L984-004	ICNTO	0.004	2.335	1	0.0690	0.161 u	1.380	MG/KG								93LC232	5	250	50	72.5	14:31	09/27/93
9309L984-005	ICNTO	0.005	2.967	1	0.1469	0.436 u	2.939	MG/KG								93LC232	5	250	50	34.0	14:32	09/27/93
9309L984-006	ICNTO	0.004	2.335	1	0.0534	0.125 u	1.069	MG/KG								93LC232	5	250	50	93.6	14:33	09/27/93
9309L984-007	ICNTO	0.022	13.710	1	0.1337	1.833 u	2.674	MG/KG								93LC232	5	250	50	37.4	14:34	09/27/93
CCV	ICNTOL	0.159	100.291	1	1.0000	100.291	10.000	UG/L						100.0	100.3	93LC232	250	250	50		14:35	09/27/93
CCB	ICNTO	0.002	1.071	1	1.0000	1.071 u	10.000	UG/L								93LC232	250	250	50		14:36	09/27/93
9309L987-002	ICNTO	0.002	1.071	1	0.0555	0.059 u	1.110	MG/KG								93LC232	5	250	50	90.1	14:37	09/27/93
9309L987-003	ICNTO	0.289	181.869	2500	0.0628	28721.690	3142.283	MG/KG								93LC232	5	250	0.02	79.6	15:45	09/27/93
9309L987-004	ICNTO	0.159	100.291	2500	0.0631	15828.744	3156.566	MG/KG								93LC232	5	250	0.02	79.2	15:46	09/27/93
9309L997-001	ICNTO	0.090	56.684	1	0.0516	2.927	1.033	MG/KG								93LC232	5	250	50	96.8	14:40	09/27/93
9309L997-002	ICNTO	0.084	52.893	1	0.0516	2.731	1.033	MG/KG								93LC232	5	250	50	96.8	14:41	09/27/93
	ICNTO	0.210	132.521	1	0.0516	6.843	1.033	MG/KG								93LC232	5	250	50	96.8	14:42	09/27/93
	ICNTO	0.231	145.793	1	0.0516	7.520	1.033	MG/KG								93LC232	5	250	50	96.8	14:43	09/27/93
9309L914-004	ICNTO	0.145	91.443	5	0.0563	25.724	5.626	MG/KG								93LC232	5	250	10	88.9	14:44	09/27/93
CCV	ICNTOL	0.155	97.763	1	1.0000	97.763	10.000	UG/L						100.0	97.8	93LC232	250	250	50		14:45	09/27/93
CCB	ICNTO	0.001	0.439	1	1.0000	0.439 u	10.000	UG/L								93LC232	250	250	50		14:46	09/27/93
93LC233-MB1	ICNTO	0.004	2.335	1	0.5000	1.167 u	10.000	UG/L								93LC233	500	250	50		14:47	09/27/93
93LC233-LCS1	ICNTOL	0.298	188.135	1	0.5000	94.068	10.000	UG/L						100.0	94.1	93LC233	500	250	50		14:48	09/27/93
93LC233-LCS2	ICNTOL	0.291	183.711	1	0.5000	91.856	10.000	UG/L						100.0	91.9	93LC233	500	250	50		14:49	09/27/93
9309L990-006	ICNTO	0.004	2.335	1	0.5000	1.167 u	10.000	UG/L								93LC233	500	250	50		14:50	09/27/93
9309L990-006	ICNTOR	0.005	2.967	1	0.5000	1.483 u	10.000	UG/L	1.167	23.8						93LC233	500	250	50		14:51	09/27/93
9309L990-006	ICNTOS	0.137	86.387	1	0.5000	43.194	10.000	UG/L	1.167		100	50.000	84.1			93LC233	500	250	50		14:52	09/27/93
9309L990-006	ICNTOT	0.141	88.915	1	0.5000	44.458	10.000	UG/L	1.167	3.0	100	50.000	86.6			93LC233	500	250	50		14:53	09/27/93
9309L990-001	ICNTO	0.002	1.071	1	0.5000	0.535 u	10.000	UG/L								93LC233	500	250	50		14:54	09/27/93
9309L990-004	ICNTO	0.002	1.071	1	0.5000	0.535 u	10.000	UG/L								93LC233	500	250	50		14:55	09/27/93
9309L991-001	ICNTO	0.003	1.703	1	0.5000	0.851 u	10.000	UG/L								93LC233	500	250	50		14:56	09/27/93
CCV	ICNTOL	0.150	99.659	1	1.0000	99.659	10.000	UG/L						100.0	99.7	93LC233	250	250	50		14:57	09/27/93
CCB	ICNTO	0.000	-0.193	1	1.0000	-0.193 u	10.000	UG/L								93LC233	250	250	50		14:58	09/27/93
9309L992-001	ICNTO	0.004	2.335	1	0.5000	1.167 u	10.000	UG/L								93LC233	500	250	50		14:59	09/27/93
																93LC233					14:02	09/27/93
																93LC233					14:02	09/27/93
9309L992-007	ICNTO	0.004	2.335	1	0.5000	1.167 u	10.000	UG/L								93LC233	500	250	50		14:02	09/27/93
9309L992-010	ICNTO	0.005	2.967	1	0.5000	1.483 u	10.000	UG/L								93LC233	500	250	50		14:03	09/27/93
9309L958-009	ICNTO	0.010	6.126	1	0.5000	3.063 u	10.000	UG/L								93LC233	500	250	50		14:04	09/27/93
9309L985-001	ICNTO	0.009	5.494	1	0.5000	2.747 u	10.000	UG/L								93LC233	500	250	50		14:05	09/27/93
9309L985-002	ICNTO	0.008	4.862	1	0.5000	2.431 u	10.000	UG/L								93LC233	500	250	50		14:06	09/27/93
9309L985-003	ICNTO	0.008	4.862	1	0.5000	2.431 u	10.000	UG/L								93LC233	500	250	50		14:07	09/27/93

2/16/94

0112

VOLATILE ORGANIC DATA VALIDATION SUMMARY FOR DATA PACKAGE:
9309L997-WES-1309 (923-E418, Filename 9309L997.VOA)

9413225.1475

MEMORANDUM

FEB 1994 RECEIVED TOB

TO: 200-UP-2 Project QA Record February 18, 1994

FR: Susan Winter, Golder Associates Inc.

RE: VOLATILE ORGANIC DATA VALIDATION SUMMARY FOR DATA PACKAGE: 9309L997-WES-1309 (923-E418, Filename 9309L997.VOA)

INTRODUCTION

This memo presents the results of data validation on data package 9309L997-WES-1309 prepared by the Weston Analytics laboratory. A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09342 B09343 B09348	09/15/93 09/15/93 09/16/93	SOIL SOIL SOIL	SEE NOTE 1
Note 1. All samples were analyzed for CLP TCL volatiles.			

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 provide the following information as indicated below:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. A total of three samples were validated in this data package with a total of 99 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent, which meets normal work plan objectives of 90%.

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001

Sample B09348 was identified as a solid trip blank in which all results were verified as nondetects with the exception of two tentatively identified compounds (TIC) labeled as unknowns, at retention times of 27.67 and 29.37 minutes. Sample B09343 also contained a TIC labeled as an unknown at the retention time of 27.67 minutes.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during data validation which required qualification of data.

Laboratory Blanks

- Methylene chloride and acetone were present in the associated laboratory blanks. Therefore, the associated sample results, all of which are less than ten times the respective blank concentration, have been qualified as undetected (U).

- The TIC siloxane was detected in the laboratory blank associated with sample B09342. Therefore, the TIC result for the indicated sample has been qualified as undetected (U).

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

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ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

9413225.1478

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.

NJ - Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

N - Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

JN - Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

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ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

9413225.1480

DATA QUALIFICATION SUMMARY

SDG: 9309L997-WES-1309	VALIDATOR:	DATE: February 18, 1994	PAGE 1 OF 1
COMMENTS: VOLATILES			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
METHYLENE CHLORIDE	U	B09342 B09343 B09348	PRESENT IN LABORATORY BLANKS
ACETONE	U	B09342 B09343 B09348	PRESENT IN LABORATORY BLANKS
TIC - SILOXANE	U	B09342	PRESENT IN LABORATORY BLANK
TIC - UNKNOWN @ 27.67 MIN.	JN	B09343	IDENTIFIED AS A VALID RESULT USING DATA VALIDATION PROCEDURES
TIC - UNKNOWN @ 27.67 MIN.	JN	B09348	IDENTIFIED AS A VALID RESULT USING DATA VALIDATION PROCEDURES
TIC - UNKNOWN @ 29.37 MIN.	JN	B09348	IDENTIFIED AS A VALID RESULT USING DATA VALIDATION PROCEDURES

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ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

9413225.1482

Validated Data Summary, Data Package: 9309L997-WES-1309

	Samp#	B09342		B09343		B09348	
	Date	9-15-93		9-15-93		9-16-93	
	Location	299-W19-97		299-W19-95		299-W19-97	
	Depth	101.0 - 103.3		105.0 - 107.5		---	
	Type	---		---		---	
	Comments	SPLIT		SPLIT		TRIP	
Parameter	Units	Result	Q	Result	Q	Result	Q
CHLOROMETHANE	UG/KG	11.000	U	11.000	U	10.000	U
BROMOMETHANE	UG/KG	11.000	U	11.000	U	10.000	U
VINYL CHLORIDE	UG/KG	11.000	U	11.000	U	10.000	U
CHLOROETHANE	UG/KG	11.000	U	11.000	U	10.000	U
METHYLENE CHLORIDE	UG/KG	11.000	U	22.000	U	10.000	U
ACETONE	UG/KG	11.000	U	11.000	U	10.000	U
CARBON DISULFIDE	UG/KG	11.000	U	11.000	U	10.000	U
1,1-DICHLOROETHENE	UG/KG	11.000	U	11.000	U	10.000	U
1,1-DICHLOROETHANE	UG/KG	11.000	U	11.000	U	10.000	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	11.000	U	11.000	U	10.000	U
CHLOROFORM	UG/KG	11.000	U	11.000	U	10.000	U
1,2-DICHLOROETHANE	UG/KG	11.000	U	11.000	U	10.000	U
2-BUTANONE	UG/KG	3.000	J	11.000	U	10.000	U
1,1,1-TRICHLOROETHANE	UG/KG	11.000	U	11.000	U	10.000	U
CARBON TETRACHLORIDE	UG/KG	11.000	U	11.000	U	10.000	U
BROMODICHLOROMETHANE	UG/KG	11.000	U	11.000	U	10.000	U
1,2-DICHLOROPROPANE	UG/KG	11.000	U	11.000	U	10.000	U
CIS-1,3-DICHLOROPROPENE	UG/KG	11.000	U	11.000	U	10.000	U
TRICHLOROETHENE	UG/KG	11.000	U	11.000	U	10.000	U
DIBROMOCHLOROMETHANE	UG/KG	11.000	U	11.000	U	10.000	U
1,1,2-TRICHLOROETHANE	UG/KG	11.000	U	11.000	U	10.000	U
BENZENE	UG/KG	11.000	U	11.000	U	10.000	U
TRANS-1,3-DICHLOROPROPENE	UG/KG	11.000	U	11.000	U	10.000	U
BROMOFORM	UG/KG	11.000	U	11.000	U	10.000	U
4-METHYL-2-PENTANONE	UG/KG	11.000	U	11.000	U	10.000	U
2-HEXANONE	UG/KG	11.000	U	11.000	U	10.000	U
TETRACHLOROETHENE	UG/KG	11.000	U	11.000	U	10.000	U
1,1,2,2-TETRACHLOROETHANE	UG/KG	11.000	U	11.000	U	10.000	U
TOLUENE	UG/KG	11.000	U	11.000	U	10.000	U
CHLOROBENZENE	UG/KG	11.000	U	11.000	U	10.000	U
ETHYLBENZENE	UG/KG	11.000	U	11.000	U	10.000	U
STYRENE	UG/KG	11.000	U	11.000	U	10.000	U
XYLENES (TOTAL)	UG/KG	11.000	U	11.000	U	10.000	U

verified
2/18/94

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SDG 9309L997-WES-1309

CLIENT SAMPLE NO.
299-W19-97

B09342
101'-103.3
Field Split

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL — Lab Sample ID: 9309L997-001

Sample wt/vol: 5.00 (g/mL) G — Lab File ID: R092120

Level: (low/med) LOW — Date Received: 09/17/93

% Moisture: not dec. 5 — Date Analyzed: 09/22/93

GC Column: DB624 ID: .53(mm) — Dilution Factor: 1.00

Soil Extract Volume: (uL) — Soil Aliquot Volume: (uL)

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

[signature] 2/15/94

FORM 1 VOA 3/90

9413225.1484

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.
299-W19-97
B09342
101'-103.3
Field Split

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL

Lab Sample ID: 9309L997-001

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

Lab File ID: R092120

Level: (low/med) LOW

Date Received: 09/17/93

% Moisture: not dec. 5

Date Analyzed: 09/22/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

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

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	SILOXANE	21.48	5	~~BJ~~	u

Verified 2/15/94

FORM 1 VOA-TIC 3/90

9413225.1485

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
299-W19-95
B09343
105'-107.5'
Field Split

Lab Name: Rov F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL — Lab Sample ID: 9309L997-002

Sample wt/vol: 4.90 (g/mL) G — Lab File ID: W092309

Level: (low/med) LOW — Date Received: 09/17/93

% Moisture: not dec. 3 — Date Analyzed: 09/23/93

GC Column: SP1000 ID: 2.00(mm) — Dilution Factor: 1.02

Soil Extract Volume: (uL) — Soil Aliquot Volume: (uL)

9413225.1486

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	Q
74-87-3	Chloromethane	11	U	
74-83-9	Bromomethane	11	U	
75-01-4	Vinyl Chloride	11	U	
75-00-3	Chloroethane	11	U	
75-09-2	Methylene Chloride	22	~~B~~	u
67-64-1	Acetone	11 ~~8~~	~~JB~~	u
75-15-0	Carbon Disulfide	11	U	
75-35-4	1,1-Dichloroethene	11	U	
75-34-3	1,1-Dichloroethane	11	U	
540-59-0	1,2-Dichloroethene (total)	11	U	
67-66-3	Chloroform	11	U	
107-06-2	1,2-Dichloroethane	11	U	
78-93-3	2-Butanone	11	U	
71-55-6	1,1,1-Trichloroethane	11	U	
56-23-5	Carbon Tetrachloride	11	U	
75-27-4	Bromodichloromethane	11	U	
78-87-5	1,2-Dichloropropane	11	U	
10061-01-5	cis-1,3-Dichloropropene	11	U	
79-01-6	Trichloroethene	11	U	
124-48-1	Dibromochloromethane	11	U	
79-00-5	1,1,2-Trichloroethane	11	U	
71-43-2	Benzene	11	U	
10061-02-6	Trans-1,3-Dichloropropene	11	U	
75-25-2	Bromoform	11	U	
108-10-1	4-Methyl-2-pentanone	11	U	
591-78-6	2-Hexanone	11	U	
127-18-4	Tetrachloroethene	11	U	
79-34-5	1,1,2,2-Tetrachloroethane	11	U	
108-88-3	Toluene	11	U	
108-90-7	Chlorobenzene	11	U	
100-41-4	Ethylbenzene	11	U	
100-42-5	Styrene	11	U	
1330-20-7	Xylene (total)	11	U	

verified
7/15/94

FORM 1 VOA 3/90

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.
299-W19-95
B09343
105'-107.5'
Field Split

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL

Lab Sample ID: 9309L997-002

Sample wt/vol: 4.90 (g/mL) G

Lab File ID: W092309

Level: (low/med) LOW

Date Received: 09/17/93

% Moisture: not dec. 3

Date Analyzed: 09/23/93

GC Column: SP1000 ID: 2.00(mm)

Dilution Factor: 1.02

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	27.67	10	~~J~~	JN

9413225.1487

FORM 1 VOA-TIC 3/90

verified 2/15/94

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET (Solid)

CLIENT SAMPLE NO. Trip Blank
B09348
299-W19-97

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL — Lab Sample ID: 9309L997-003

Sample wt/vol: 5.20 (g/mL) G — Lab File ID: W092228

Level: (low/med) LOW — Date Received: 09/17/93

% Moisture: not dec. 0 — Date Analyzed: 09/23/93

GC Column: SP1000 ID: 2.00(mm) — Dilution Factor: 0.962

Soil Extract Volume: (uL) — Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	Q
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	10 ~~6~~	~~JB~~	U
67-64-1	Acetone	10 ~~7~~	~~JB~~	U
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	Trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

Verified 2/15/94

FORM 1 VOA 3/90

9413225.1488

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

(Solid) CLIENT SAMPLE NO. Trip Blank

B09348 299-W19-97

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL

Lab Sample ID: 9309L997-003

Sample wt/vol: 5.20 (g/mL) G

Lab File ID: W092228

Level: (low/med) LOW

Date Received: 09/17/93

% Moisture: not dec. 0

Date Analyzed: 09/23/93

GC Column: SP1000 ID: 2.00 (mm)

Dilution Factor: 0.962

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	27.67	8	~~J~~	JN
2.	UNKNOWN	29.37	6	~~J~~	JN

Verified 2/15/94

FORM 1 VOA-TIC 3/90

9413225.1489

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

0041225 1490

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

Client: WESTINGHOUSE HANFORD
RFW #: 9309L997

W.O. #: 06168-002-001-9999-00
Date Received: 09-17-93

GC/MS VOLATILE

The set of samples consisted of three (3) soil samples collected on 09-15,16-93.

The samples were analyzed according to criteria set forth in CLP SOW 03/90 for TCL Volatile target compounds on 09-21,22,23-93.

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

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

2. All system monitoring compound (surrogate) recoveries were within EPA QC limits.

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

4. The laboratory blanks contained the common contaminants Methylene Chloride and Acetone at levels less than 4x the CRQL. The laboratory blank 93LVR137-MB1 also contained the target compound 1,1,1-Trichloroethane at a level less than the CRQL.

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

Margaret M. Beasley for
J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

10/13/93
Date

sma/voa/09-997v.cn

9413225.1491

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 9-15-93

Ice Chest No.: SML 364 — Field Logbook No.: EFL-1091

Bill of Lading/Airbill No.: 2536956202 — Offsite Property No.:

Method of Shipment: OVERNIGHT AIR SERVICE

Shipped to: WESTON

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) NONE NOTED 93096997

Sample Identification

1) RAD B09342

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

2) B09343

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

3)

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

LER 9-16-93

TEMP = 2-3

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
1050 Karen C. Bogard 9-16-93		
Relinquished by: LMOM	Received by:	Date/Time: 9-17-93 1200
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

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

9413225.1492 001 002

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS

Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2

Collection Date: 9-16-93

Ice Chest No.: SML 364

Field Logbook No.: EFL-1091

Bill of Lading/Airbill No.: 2536956202

Offsite Property No.:

Method of Shipment: OVERNIGHT AIR SERVICE

Shipped to: WESTON

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) 9309L997

Sample Identification

B09348

00⁵ 1)

1,250ml

~~1,500ml P:CLP;TAL Metals,Hg,Ti~~
~~1,125ml~~ Gs:VOA CLP
~~1,500ml aG:Semi-VOA CLP~~
~~1,250ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.1)~~
~~1,250ml G:Cyanide CLP~~
~~1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79~~

9-16-93

9413225.1492

2)

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

3)

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

Temp: 2.8

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
1050 9-16-93		
Relinquished by:	Received by:	Date/Time:
		9-17-93 13:00
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

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

-018

~~0015~~

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

9413225.1494

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 200-UP-2		DATA PACKAGE: 9309L997-WES-1309
VALIDATOR: [illegible]	LAB: Weston	DATE: 2/15/94
CASE:		SDG: 9309L997-WES-1309

ANALYSES PERFORMED

☒ CLP Volatiles	☐ SW-846 8240 (cap column)	☐ SW-846 8260 (packed column)	☐ CLP Semivolatiles	☐ SW-846 8270 (cap column)	☐ SW-846 (packed column)
☐	☐	☐	☐	☐	☐

SAMPLES/MATRIX Soils

B09342
B09343
B09348

9413225.1495

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? . . . . . (Yes) No N/A

Is a case narrative present? . . . . . (Yes) No N/A

Comments:

2. HOLDING TIMES

Are sample holding times acceptable? . . . . . (Yes) No N/A

Comments:

-020

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. INSTRUMENT TUNING AND CALIBRATION

Is the GC/MS tuning/performance check acceptable? . . . . . Yes No N/A

Are initial calibrations acceptable? . . . . . Yes No N/A

Are continuing calibrations acceptable? . . . . . Yes No N/A

Comments:

4. BLANKS

Were laboratory blanks analyzed? . . . . . Yes No N/A

Are laboratory blank results acceptable? . . . . . Yes No N/A

Were field/trip blanks analyzed? . . . . . Yes No N/A 2/15

Are field/trip blank results acceptable? . . . . . Yes No N/A 2/15/9-

Comments: Sample B09348 is identified as a solid (soil) trip blank. All assoc. results are ND after lab blank adjustment with the exception of two TICs both labeled as unknowns.

5. ACCURACY

Were surrogates/System Monitoring Compounds analyzed? . . . . . Yes No N/A

Are surrogate/System Monitoring Compound recoveries acceptable? Yes No N/A

Were MS/MSD samples analyzed? . . . . . Yes No N/A

Are MS/MSD results acceptable? . . . . . Yes No N/A

Comments:

9413225.1496

GC/MS ORGANIC DATA VALIDATION CHECKLIST

6. PRECISION

Are MS/MSD RPD values acceptable? . . . . . Yes No N/A

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

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

Comments: Samples B09342 and B09343 are field split samples and will be compared to the corresponding sample results in the quarterly project report.

7. SYSTEM PERFORMANCE

Were internal standards analyzed? . . . . . Yes No N/A

Are internal standard areas acceptable? . . . . . Yes No N/A

Are internal standard retention times acceptable? . . . . . Yes No N/A

Comments:

8. COMPOUND IDENTIFICATION AND QUANTITATION

Is compound identification acceptable? . . . . . Yes No N/A

Is compound quantitation acceptable? . . . . . Yes No N/A

Comments:

9. REPORTED RESULTS AND QUANTITATION LIMITS

Are results reported for all requested analyses? . . . . . Yes No N/A

Are all results supported in the raw data? . . . . . Yes No N/A

Do results meet the CRQLs? . . . . . Yes No N/A

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

Comments:

9413225.1497

Holding Times

2/15/94

Roy F. Weston, Inc. - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
WESTINGHOUSE HANFORD

DATE RECEIVED: 09/17/93 RFW LOT # :9309L997

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	
B09342	001	S	93LVR137	09/15/93	N/A	09/22/93	7
B09343	002	S	93LVW200	09/15/93	N/A	09/23/93	8
B09343	002 MS	S	93LVW200	09/15/93	N/A	09/23/93	8
B09343	002 MSD	S	93LVW200	09/15/93	N/A	09/23/93	8
B09348	003	S	93LVW199	09/16/93	N/A	09/23/93	7
LAB QC:							
VBLK	MB1	S	93LVR137	N/A	N/A	09/21/93	
VBLK	MB1	S	93LVW200	N/A	N/A	09/23/93	
VBLK	MB1	S	93LVW199	N/A	N/A	09/22/93	

9413225.1498

2/15/94

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLK

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Assoc. w/ B09342

Matrix: (soil/water) SOIL

Lab Sample ID: 93LVR137-MB1

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

Lab File ID: R092114

Level: (low/med) LOW

Date Received: 09/21/93

% Moisture: not dec.

Date Analyzed: 09/21/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
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	J
67-64-1	Acetone	13	
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	3	J
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

FORM 1 VOA 3/90

0137

024

9413225.1499

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

VBLK

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL

Lab Sample ID: 93LVR137-MB1

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

Lab File ID: R092114

Level: (low/med) LOW

Date Received: 09/21/93

% Moisture: not dec.

Date Analyzed: 09/21/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: Assoc. w/ B09342
(ug/L or ug/Kg) ug/Kg

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	21.42	2	J

9413225.1500

FORM 1 VOA-TIC 3/90

2/13/94

~~0138~~ 025

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLK

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Assoc. w/ 809343

Matrix: (soil/water) SOIL

Lab Sample ID: 93LVW200-MB1

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

Lab File ID: W092306

Level: (low/med) LOW

Date Received: 09/23/93

% Moisture: not dec.

Date Analyzed: 09/23/93

GC Column: SP1000 ID: 2.00(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
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	9	J
67-64-1	Acetone	30	
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

No TICs detected.

FORM 1 VOA 3/90

2/5/94

~~0145~~

026

9413225.1501

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLK

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Assoc. w/ B09348

Matrix: (soil/water) SOIL

Lab Sample ID: 93LVW199-MB1

Sample wt/vol: 5.10 (g/mL) G

Lab File ID: W092216

Level: (low/med) LOW

Date Received: 09/22/93

% Moisture: not dec.

Date Analyzed: 09/22/93

GC Column: SP1000 ID: 2.00(mm)

Dilution Factor: 0.980

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

9413225.1502

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

FORM 1 VOA 3/90

No TICs detected

2/15/94