SEP 20 1993

Station #12

ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT 600828

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) 100 Area Remedial Investigation	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: 100-FR-1/100 Area RI/ERE/RR	6. Cog. Engr.: J. M. Ayres	7. Purchase Order No.: N/A
8. Originator Remarks: Transmitted for Release		9. Equip./Component No.: N/A
		10. System/Bldg./Facility: N/A
11. Receiver Remarks:		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: N/A

OCT 1993 RECEIVED EDMC

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Impact Level	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	WHC-SD-EN-TI-191		0	Data Validation Report for the 100-FR-1 Operable Unit Vadose Soil	3Q	1/2	1	

16. KEY

Impact Level (F)	Reason for Transmittal (G)	Disposition (H) & (I)
1, 2, 3, or 4 (see MRP 5.43)	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Impact Level for required signatures)

(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.
1	1	Cog.Eng.J. M. Ayres (3)	[signature]	9/14/93	H6-02	~~EPIC (1)~~	EDMC (1)		H6-08	3	
1	1	Cog. Mgr. R. P. Henckel	[signature]	9/14/93	H6-02	Central Files (2)			L8-04	3	
1	1	QA E. W. Miller	[signature]	9/14/93	H4-16	ERC			H6-07	3	
		Safety									
		Env.									
1	1	HASM K. N. Pool	[signature]	9/14/93	H4-23						

18.	19.	20.	21. DOE APPROVAL (if required) Ltr. No.
J. M. Ayres [signature] 9/14/93 Signature of EDT Originator Date	Authorized Representative for Receiving Organization Date	R. P. Henckel [signature] 9/14/93 Cognizant/Project Engineer's Manager Date	[] Approved [] Approved w/comments [] Disapproved w/comments

BD-7400-172-2 (07/91) GEF097

BD-7400-172-1 (07/91)

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	(D)* Rev. No.	• Enter the revision number of the information being transmitted. If no revision number, leave blank.
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ID Number (include revision, volume, etc.): WHC-SD-EN-TI-191, Rev. 0

List attachments.

Date Release Required: September 16, 1993

Title: Data Validation Report for the 100-FR-1 Operable Unit Vadose Soil

Unclassified Category: UC- N/A

Impact Level: 3Q

New or novel (patentable) subject matter? [X] No [] Yes
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Applied Technology/Export Controlled Information or International Program	[]	[X]			
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RL Program/Project	[X]	[]	E. Goller - No review req'd	J. Stone	9/16/93
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Author/Requestor (Printed/Signature): J. M. Ayres — Date: 9/16/93

Intended Audience: [] Internal [] Sponsor [X] External

Responsible Manager (Printed/Signature): R. P. Henckel — Date: 9-16-93

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APPROVED FOR RELEASE — OFFICIAL DOCUMENT — V.B. — Date 9/17/93

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SUPPORTING DOCUMENT

1. Total Pages 284

2. Title

Data Validation Report for the 100-FR-1 Operable Unit Vadose Soil

3. Number

WHC-SD-EN-TI-191

4. Rev No.

0

5. Key Words

Volatiles, Semivolatiles, Pesticides/PCB, Inorganics, Wet chemistry, Gross alpha/beta, Strontium, Technetium, Carbon-14, Tritium

APPROVED FOR PUBLIC RELEASE
V. Birkland 9/17/93

6. Author

Name: J. M. Ayres

Signature 9/16/93

Organization/Charge Code 81310/P711A

7. Abstract

Ayres, J. M., 1993, *Data Validation Report for the 100-FR-1 Operable Unit Vadose Soil*, WHC-SD-EN-TI-191, Rev. 0, prepared by A. T. Kearney, Inc., for Westinghouse Hanford Company, Richland, Washington.

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9. Impact Level 3Q

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ACRONYMS

%D	Percent difference
AA	Atomic absorption
BFB	Bromofluorobenzene
BNA	Base/neutral and acid (equivalent to semivolatiles)
CCB	Continuing calibration blank
CCV	Continuing calibration verification
CLP	Contract Laboratory Program
CRA	CRDL standard for AA
CRDL	Contract required detection limit
CRI	CRDL standard for ICP
CRII	CRDL standard for ICP initial
CRIF	CRDL standard for ICP final
CRQL	Contract required quantitation limit
DBC	Dibutylchlorendate
DFTPP	Decafluorotriphenylphosphine
DQO	Data quality objectives
EPA	U.S. Environmental Protection Agency
GC/MS	Gas chromatography/mass spectrometry
GC	Gas chromatography
GFAA	Graphite furnace atomic absorption
GPC	Gel permeation chromatography
ICB	Initial Calibration Blank
ICP	Inductively coupled plasma emission spectrometry
ICS	ICP interference check sample
ICV	Initial calibration verification
IDL	Instrument detection limit
LCS	Laboratory control sample
LCSS	Laboratory control sample soil
LCSW	Laboratory control sample water
MSA	Method of standard addition
MS/MSD	Matrix spike/matrix spike duplicate
NV	Not Validated
PCB	Polychlorinated biphenyl
PEM	Performance evaluation mixture
QA	Quality assurance
QC	Quality control
RF	Response factor
RIC	Reconstructed ion chromatogram
RPD	Relative percent difference
RRF	Relative response factor
RRT	Relative retention time
RSD	Relative standard deviation
RT	Retention time
SDG	Sample delivery group
SOW	Statement of work
TAL	Target analyte list
TCL	Target compound list
TIC	Tentatively identified compounds
TOC	Total organic carbon
TOX	Total organic halides
V	Validated
VOC	Volatile organic compounds

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1.0 INTRODUCTION

The following samples were obtained from the 100-FR-1 Operable Unit Vadose Soil Sampling event:

B080L9	B080N6	B080Q6	B08G72
B080M0	B080N7	B080Q7	B08G73
B080M1	B080N8	B080Q8	B08G74
B080M2	B080N9	B080Q9	B08G75
B080M3	B080P0	B080R0	B08G76
B080M4	B080P1	B080R1	B08G77
B080M5	B080P2	B080R2	B08G78
B080M6	B080P3	B080R3	B08G79
B080M7	B080P4	B080R4	B08G80
B080M8	B080P5	B080R5	B08G81
B080M9	B080P9	B08G65	B08G82
B080N0	B080Q0	B08G66	B08G83
B080N1	B080Q0A	B08G67	B08G84
B080N2	B080Q2	B08G68	B08G85
B080N3	B080Q3	B08G69	
B080N4	B080Q4	B08G70	
B080N5	B080Q5	B08G71	

The VOC analysis for sample number B080M2, and the BNA and Pest/PCB analyses for sample number B080N4 were canceled due to sample containers broken during transport to the laboratory.

Westinghouse-Hanford has requested that a minimum of 20% of the total number of Sample Delivery Groups be validated for the 100-FR-1 Operable Unit Vadose Soil Remedial Investigation. Therefore, the data from the chemical analysis of 20 samples from this sampling event and their related quality assurance samples were reviewed and validated to verify that reported sample results were of sufficient quality to support decisions regarding remedial actions performed at this site. The samples were analyzed by Thermo-Analytic Laboratories (TMA) and Roy F. Weston Laboratories (WESTON) using U.S. Environmental Protection Agency (EPA) CLP protocols.

Sample analyses included:

- Volatile organics
- Semivolatile organics
- Pesticide/PCB organics
- Inorganics
- General chemical parameters.

The table below lists the Sample Delivery Groups (SDGs) that were validated for this sampling event. The validated data and the non-validated results for the remaining samples are included in this report.

SDG No.	Matrix	No. of Samples Analyzed	Parameters
B080M4	S	6	VOC
B080M4	S	5	BNA, Pest/PCB, Inorganics, Wet Chem
B080N5	S	4	VOC, BNA, Pest/PCB, Inorganics, Wet Chem
B080N9	S	1	VOC, BNA, Pest/PCB, Inorganics, Wet Chem
B080P3	S	2	Inorganics
B080P4	S	1	VOC, BNA, Pest/PCB, Wet Chem
B080Q0	S	1	TOC
B080R1	S	5	VOC
B080R1	S	4	BNA, Pest/PCB, Inorganics, Wet Chem

Fifty-nine samples were analyzed and submitted for validation for radiochemical parameters by TMA and Teledyne. Analytical protocols specified in the *Westinghouse Hanford Company Statement of Work for Nonradioactive Inorganic/Organic and Radiochemical Analytical Services* were used. Sample analyses included the following:

- Gross alpha and gross beta determination
- Alpha spectroscopy
- Gamma spectroscopy
- Strontium-90
- Technetium-99
- Carbon-14
- Tritium.

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SDG No.	Matrix	No. of Samples Analyzed	Parameters
B080L9	S	19	Radiochemistry
B080N9	S	1	Radiochemistry
B080P0	S	5	Radiochemistry
B080P5	S	8	Radiochemistry
B080Q0	S	1	Radiochemistry
B080Q9	S	5	Radiochemistry
B08G65	S	17	Radiochemistry
B08G71	S	1	Radiochemistry
B08G84	S	2	Radiochemistry

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The radiochemical data summary tables can be found following Section 13.8.

Data quality was reviewed and analytical results validated using Westinghouse-Hanford procedures and related EPA CLP protocols and guidelines. Data were qualified based upon their quality and the guidance provided by these sources. In instances where the two protocols differed, the Westinghouse-Hanford guidance was followed.

Two sets of split samples were submitted for full analysis. Sample numbers B080N7 (TMA) and B080N9 (Weston) were obtained from sampling location 166-F-9C, and sample numbers B08G70 (TMA) and B08G71 (Weston) from 116-F-1C.

The split sample results from sampling location 116-F-9C were included in the validated data. The results were compared using the Westinghouse-Hanford guidelines for determining the RPD between a sample and it's duplicate. All results fell within the control limits. The analytical data reported for both split sampling locations appear in the summary tables within this report.

Two sets of field duplicate samples were submitted for analysis to TMA. Sample numbers B080N7 and B080N8 were obtained from sampling location 116-F-9C and sample numbers B08G70 and B08G72 from 116-F-1C.

The duplicate sample results from sampling location 116-F-9C were included in the validated data. The results were compared using the Westinghouse-Hanford guidelines for determining the RPD between a sample and it's duplicate. All results fell within the control limits. The analytical data reported for both split

sampling locations appear in the summary tables within this report.

The report is broken down into sections for each chemical analysis and radiochemical analysis type. Each section addresses the data package completeness, holding time adherence, instrument calibration and tuning acceptability, blank results, accuracy, precision, system performance, as well as the compound identification and quantitation. In addition, each section has an overall assessment and summary for the data packages reviewed for the particular chemical/radiochemical analyses. Detailed backup information is provided to the reader by SDG No. and sample number. For each data package, a matrix of chemical analysis per sample number is presented, as well as data qualification summaries.

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Laboratory and data validation personnel added qualifiers to the reported data based on specified data quality objectives. The data reporting qualifiers are summarized as follows:

U - Indicates the analyte was analyzed for and not detected. The value reported is the sample quantitation limit corrected for dilutions and moisture content. It should be noted that the sample quantitation limit may be higher or lower than the contract or method required detection limit, depending on instrumentation, matrix and concentration factors.

J - Indicates the analyte was analyzed for and detected. However, the associated value is considered to be an estimate due to identified QC deficiencies. Data flagged with a "J" may be usable for decision making purposes, depending upon the DQOs of the project. Laboratories qualify all reported organic detects below CRQL with a "J" per the CLP procedures.

UJ - Indicates the analyte was analyzed for and not detected. However, the associated detection limit is considered to be an estimate due to identified QC deficiencies. Detection limits flagged with a "UJ" may be usable for decision making purposes, depending upon the DQOs of the project.

JN - Indicates the analyte was analyzed for and that there is presumptive evidence of the presence of the compound. The concentration reported is considered an estimate which should be used for informational purposes only.

E - Indicates the analyte was analyzed for and detected at a concentration outside of the calibration range of the instrument. All reported concentrations flagged with an "E" are estimates which may contain significant error.

R - Indicates the analyte was analyzed for and due to a significant QC deficiency, the data are deemed unusable. Analytic results flagged "R" are invalid and provide no information as to whether or not the analyte is present.

The results of data validation performed for the 100-FR-1 Operable Unit Vadose Soil Remedial Investigation are contained in the tables following each of the chapters in this report.

Several general quality trends which resulted in data qualification were observed. These included:

- Minor lab blank contamination was noted in the volatile and semivolatile results for a few samples. The contaminants were compounds commonly found in analytical laboratories and the corresponding sample results were flagged accordingly.

- The surrogate recovery results for one VOC and three Pest/PCB samples did not meet the QC limits. All associated sample results were flagged "J".

- The holding time from extraction to analysis was exceeded, though not grossly, for several BNA and Pest/PCB samples. The associated results were flagged accordingly.

- The %D between the two GC columns exceeded the 25% QC limits for several compounds in the Pest/PCB samples. The associated results were qualified accordingly.

- The metal analysis showed minor matrix spike accuracy problems, laboratory duplicate RPD results outside of QC, analytical spike recoveries below the QC limit and ICP serial dilution RPD results outside of QC. Approximately 10 percent of the metals results were flagged "J" due to these factors.

- Some laboratory blank contamination was noted in the inorganics analysis. Associated results were flagged accordingly. Contamination, however, was not sufficiently high to affect the usability of the data.

- Due to low LCS recoveries, gross alpha and uranium-235 results in several samples were flagged "J".

- Due to high LCS recoveries, uranium-235 and cesium-137 results in several samples were rejected and flagged "R".

- Due to low chemical yields, the isotopic plutonium and americium-241 results in several samples were rejected and flagged "R".

- Isotopic plutonium and gamma scan results were qualified as estimates in several samples due to high RPDs.

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- Some laboratory blank contamination was noted in the radiochemical analyses. Associated results were flagged accordingly. Contamination, however, was not sufficiently high to affect the usability of the data.

In general, the protocol-specific QA/QC requirements were met for the samples analyzed in this investigation with the exceptions noted above and discussed in detail in the chapters to follow. All requested analyses were performed.

With the exceptions noted above, the protocol-specific data quality objectives in terms of precision, accuracy, completeness, representativeness, and comparability have been met.

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WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	V/NV	VOLATILES
116-F-6	B080L9	S	01/27/93	NV	2-6
	B080M0	S	01/28/93	NV	2-7
	B080M1	S	01/28/93	NV	2-7
	B080M3	S	01/29/93	NV	2-8
	B080Q0A	W	02/23/93	NV	2-22
	B080Q2	W	02/23/93	NV	2-22
116-F-2	B080M4	S	02/02/93	V	2-9
	B080M5	S	02/02/93	V	2-9
	B080M6	S	02/02/93	V	2-9
	B080M7	S	02/03/93	V	2-9
	B080M8	S	02/03/93	V	2-9
	B080M9	S	02/03/93	V	2-9
116-F-1A	B080N0	S	02/04/93	NV	2-12
	B080N1	S	02/04/93	NV	2-12
	B080N2	S	02/08/93	NV	2-12
	B080N3	S	02/09/93	NV	2-12
	B080N4	S	02/09/93	NV	2-12
116-F-9C	B080N5	S	02/11/93	V	2-14
	B080N6	S	02/11/93	V	2-14
	B080N7	S	02/12/93	V	2-14
	B080N8	S	02/12/93	V	2-14
	B080N9	S	02/12/93	V	2-15
	B080P0	S	02/17/93	NV	2-16
	B080P1	S	02/17/93	NV	2-16
116-F-4	B080P2	S	02/17/93	NV	2-16
	B080P4	S	02/18/93	V	2-17
	B080P5	S	02/22/93	NV	2-20
	B080P9	S	02/24/93	NV	2-21
116-F-14	B080Q3	S	02/26/93	NV	2-23
	B080Q4	S	02/25/93	NV	2-21
	B080Q5	S	02/25/93	NV	2-24
	B080Q6	S	02/26/93	NV	2-24
	B080Q7	S	03/01/93	NV	2-23
	B080Q8	S	03/01/93	NV	2-23
	B080Q9	S	03/02/93	NV	2-25
	B080R0	S	03/02/93	NV	2-25
	B080R1	S	03/09/93	V	2-26
	B080R2	S	03/09/93	V	2-26
	B080R3	S	03/09/93	V	2-26

WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	V/NV	VOLATILES
FRENCH DRAIN	B080R4	S	03/09/93	V	2-26
	B080R5	S	03/09/93	V	2-26
116-F-1B	B08G65	S	04/20/93	NV	2-30
	B08G66	S	04/20/93	NV	2-30
	B08G67	S	04/20/93	NV	2-30
	B08G68	S	04/20/93	NV	2-30
116-F-1C	B08G69	S	04/21/93	NV	2-30
	B08G70	S	04/21/93	NV	2-30
	B08G71	S	04/21/93	NV	2-32
	B08G72	S	04/21/93	NV	2-30
	B08G73	S	04/21/93	NV	2-30
	B08G74	S	04/21/93	NV	2-30
	B08G75	S	04/21/93	NV	2-30
	B08G76	S	04/21/93	NV	2-31
	B08G77	S	04/21/93	NV	2-31
116-F-9D	B08G78	S	04/21/93	NV	2-31
	B08G79	S	04/21/93	NV	2-31
	B08G80	S	04/21/93	NV	2-31
	B08G81	S	04/21/93	NV	2-31
116-F-3	B08G82	S	04/22/93	NV	2-31
	B08G83	S	04/22/93	NV	2-31
	B08G84	S	04/27/93	NV	2-33
	B08G85	S	04/27/93	NV	2-33

9313042.0493

2.0 VOLATILE ORGANIC DATA VALIDATION

2.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B080M4	B080N9	B080R1
B080N5	B080P4	

Sample number B080R4 in SDG No. B080R1 was diluted and reanalyzed due to low internal standard area counts. The reanalysis results (B080R4DL) are included in this report.

Sample number B080R5 in SDG No. B080R1 was diluted and reanalyzed since the reported toluene concentration exceeded the instrument calibration range. The original analysis results are reported for all analytes except toluene, for which the confirmatory result from the diluted sample result is listed.

2.2 HOLDING TIMES

Analytical holding times were assessed to ascertain whether the Westinghouse-Hanford holding time requirements for volatile organic analyses were met by the laboratory. The Westinghouse-Hanford holding time requirements for volatile organic analyses are as follows: soil samples must be analyzed within 14 days of the date of sample collection; aqueous samples must be analyzed within seven days of the date of sample collection (if unpreserved); and all samples must be shipped on ice to the laboratory and stored at 4°C until analysis.

Holding times were met for all samples.

2.3 INSTRUMENT CALIBRATION AND TUNING

Instrument calibration is performed to establish that the GC/MS instrument is capable of producing acceptable and reliable analytical data over a range of concentrations. The initial and continuing calibrations are to be performed according to CLP protocols. An initial multipoint calibration is performed prior to sample analysis to establish the linear range of the GC/MS instrument. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible on a day-to-day basis.

All initial and continuing calibration results were acceptable.

2.3.1 GC/MS Tuning/Instrument Performance Check

Tuning is performed to ensure that mass resolution, identification, and, to some degree, sensitivity of the GC/MS instrument have been established. When analyzing for volatile organics, instrument tuning is performed with BFB. Instrument tuning must be performed prior to the analysis of either standards or samples and must meet the criteria for acceptable GC/MS instrument tuning using BFB as outlined in Westinghouse-Hanford (WHC 1991) and in EPA (EPA 1988a and 1988b) criteria.

The original data were checked for transcription and calculation errors to verify that tuning criteria were met. Prior to calibration and sample analysis, all tuning criteria were met.

All GC/MS tuning data were acceptable.

9313042.0495

2.4 BLANKS

Method blank and field blank analyses are performed to determine the extent of laboratory or field contamination of samples. No contaminants should be present in the blanks. Analytical results for analytes present in any sample at less than 5 times the concentration of that analyte found in associated blanks should be qualified as non-detects; common laboratory contaminants present at less than 10 times the concentration of that analyte are qualified as non-detects.

Due to the presence of laboratory blank contamination, the following samples were flagged "U" for methylene chloride:

- Sample numbers B080M4, B080M6, B080M7 and B080M8 in SDG No. B080M4.
- Sample numbers B080R1, B080R2, B080R4DL and B080R5 in SDG No. B080R1.

Due to the presence of laboratory blank contamination, the following samples were flagged "U" for acetone:

- Sample numbers B080M6, B080M8 and B080M9 in SDG No. B080M4.
- Sample number B080P4 in SDG No. B080P4.
- Sample numbers B080R1, B080R2 and B080R5 in SDG No. B080R1.

Due to the presence of laboratory blank contamination, the following samples were flagged "U" for toluene:

- Sample numbers B080M4, B080M6, B080M7, B080M8 and B080M9 in SDG No. B080M4.

All other laboratory and field blank results were acceptable.

2.5 ACCURACY

Accuracy was assessed by evaluating the recoveries of stable isotopically labeled surrogate compounds added to all samples and blanks, and by the analysis of a representative sample which was spiked with a variety of volatile organic compounds.

2.5.1 Matrix Spike Recovery

Matrix spike compounds are added to a sample which is representative of the sample delivery group. Matrix spike analyses are performed in duplicate using five compounds and should be within the established quality control limits (EPA 1988b). The matrix spike analyses estimate how much the target compounds are interfered with, either positively or negatively, by the sample matrix.

All MS/MSD results were acceptable.

2.5.2 Surrogate Recovery

Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. When a surrogate compound recovery is out of the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates (J). Undetected compounds are qualified as having an estimated detection limit (UJ).

The surrogate recovery results for bromofluorobenzene in sample number B080R2 in SDG No. B080R4 was above the QC limit. All associated sample results were qualified as estimates and flagged "J".

All other surrogate recovery results were acceptable.

2.6 PRECISION

Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. When the laboratory has not performed duplicate spike analyses, precision may also be assessed using

unspiked duplicate sample analyses. Field precision is measured by analyzing duplicate samples taken in the field.

All matrix spike/matrix spike duplicate RPD results were acceptable.

2.7 INTERNAL STANDARDS PERFORMANCE

Internal standard performance was assessed to determine whether abrupt changes in instrument response and sensitivity occurred that may have affected the reliability of the analytical data. The response (area or height) of the internal standards must not vary by more than 100 percent or -50 percent from the response of the internal standard that was used to calculate the upper and lower bounds. The upper and lower bounds define the range for acceptable internal standard response (area/height) for the sample analyses.

The internal standard recovery results for chlorobenzene-d5 did not meet QC limits for sample number B080R3 in SDG No. B080R1. All associated sample results were qualified as estimates and flagged "J".

All other internal standard recovery results were acceptable.

2.8 COMPOUND IDENTIFICATION AND QUANTITATION

The identity of detected compounds are confirmed to investigate the possibility of false positives. The confirmation of compound identification during the quality assurance review focuses on false positives because only mass spectra for positive identifications are submitted. However, target compounds that are reported as undetected are also evaluated to investigate the possibility of false negatives. Confirmation of possible false negatives is addressed by reviewing other factors relating to analytical sensitivity (e.g., relative response factors, detection limits, linearity, analytical recovery).

Compound quantitations and reported detection limits were recalculated for a minimum of 20 percent of the samples in each case to verify that they are accurate and are consistent with CLP requirements.

Below the CRQL, instrument precision becomes more variable as the instrument detection limit is approached. Therefore, the concentration of any compound that was detected below the CRQL was qualified as an estimate (J).

The reported results and quantitation limits were verified as correct in all cases.

2.9 OVERALL ASSESSMENT AND SUMMARY

A thorough review of ongoing data acquisition and instrument performance criteria was made to assess overall GC/MS instrument performance. No changes in instrument performance were noted that would result in the degradation of data quality. No indications of unacceptable instrument performance (i.e., shifts in baseline stability, retention time shifts, extraneous peaks, or sensitivity) were found during the quality assurance review.

In general, the volatile data presented in this report met the protocol-specified QA/QC requirements. Minor blank contamination was detected in several samples. A surrogate recovery result exceeded the QC limit for one sample. All associated data were qualified as estimates. The internal standard area result did not meet QC limits for one internal standard in a sample. All associated results were flagged "J". Data qualified as estimates are usable for limited purposes only. All other data are considered valid and usable within the standard error associated with the method.

9313042.0458

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080L9																				
Sample Number		B080L9																			
Location		116-F-6																			
Remarks		NV																			
Sample Date		1/27/93																			
Analysis Date		2/05/93																			
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	11	U																		
Bromomethane	10	11	U																		
Vinyl Chloride	10	11	U																		
Chloroethane	10	11	U																		
Methylene Chloride	10	2	J																		
Acetone	10	14																			
Carbon Disulfide	10	11	U																		
1,1-Dichloroethene	10	11	U																		
1,1-Dichloroethane	10	11	U																		
1,2-Dichloroethene (total)	10	11	U																		
Chloroform	10	11	U																		
1,2-Dichloroethane	10	11	U																		
2-Butanone	10	11	U																		
1,1,1-Trichloroethane	10	11	U																		
Carbon Tetrachloride	10	11	U																		
Vinyl Acetate	10	11	U																		
Bromodichloromethane	10	11	U																		
1,2-Dichloropropane	10	11	U																		
cis-1,3-Dichloropropene	10	11	U																		
Trichloroethene	10	11	U																		
Dibromochloromethane	10	11	U																		
1,1,2-Trichloroethane	10	11	U																		
Benzene	10	11	U																		
trans-1,3-Dichloropropene	10	11	U																		
Bromoform	10	11	U																		
4-Methyl-2-pentanone	10	11	U																		
2-Hexanone	10	11	U																		
Tetrachloroethene	10	11	U																		
1,1,2,2-Tetrachloroethane	10	11	U																		
Toluene	10	6	J																		
Chlorobenzene	10	11	U																		
Ethylbenzene	10	11	U																		
Styrene	10	11	U																		
Xylene (total)	10	11	U																		

NV - Validated

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M0																				
Sample Number		B080M0		B080M1																	
Location		116-F-6		116-F-6																	
Remarks		NV		NV																	
Sample Date		1/28/93		1/28/93																	
Analysis Date		2/05/93		2/05/93																	
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	11	U	10	U																
Bromomethane	10	11	U	10	U																
Vinyl Chloride	10	11	U	10	U																
Chloroethane	10	11	U	10	U																
Methylene Chloride	10	2	J	10	U																
Acetone	10	11	U	11																	
Carbon Disulfide	10	11	U	10	U																
1,1-Dichloroethene	10	11	U	10	U																
1,1-Dichloroethane	10	11	U	10	U																
1,2-Dichloroethene (total)	10	11	U	10	U																
Chloroform	10	11	U	10	U																
1,2-Dichloroethane	10	11	U	10	U																
2-Butanone	10	11	U	10	U																
1,1,1-Trichloroethane	10	11	U	10	U																
Carbon Tetrachloride	10	11	U	10	U																
Vinyl Acetate	10	11	U	10	U																
Bromodichloromethane	10	11	U	10	U																
1,2-Dichloropropane	10	11	U	10	U																
cis-1,3-Dichloropropene	10	11	U	10	U																
Trichloroethene	10	11	U	10	U																
Dibromochloromethane	10	11	U	10	U																
1,1,2-Trichloroethane	10	11	U	10	U																
Benzene	10	11	U	3	J																
trans-1,3-Dichloropropene	10	11	U	10	U																
Bromoform	10	11	U	10	U																
4-Methyl-2-pentanone	10	11	U	10	U																
2-Hexanone	10	11	U	10	U																
Tetrachloroethene	10	11	U	10	U																
1,1,2,2-Tetrachloroethane	10	11	U	10	U																
Toluene	10	1	J	12																	
Chlorobenzene	10	11	U	10	U																
Ethylbenzene	10	11	U	10	U																
Styrene	10	11	U	10	U																
Xylene (total)	10	11	U	10	U																

NV = Not Validated

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																							
Laboratory: TMA																							
Case	SDG: B080M3																						
Sample Number		B080M3																					
Location		116-F-6																					
Remarks		NV																					
Sample Date		1/29/93																					
Analysis Date		2/05/93																					
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	10	U																				
Bromomethane	10	10	U																				
Vinyl Chloride	10	10	U																				
Chloroethane	10	10	U																				
Methylene Chloride	10	10	U																				
Acetone	10	15																					
Carbon Disulfide	10	10	U																				
1,1-Dichloroethene	10	10	U																				
1,1-Dichloroethane	10	10	U																				
1,2-Dichloroethene (total)	10	10	U																				
Chloroform	10	10	U																				
1,2-Dichloroethane	10	10	U																				
2-Butanone	10	10	U																				
1,1,1-Trichloroethane	10	10	U																				
Carbon Tetrachloride	10	10	U																				
Vinyl Acetate	10	10	U																				
Bromodichloromethane	10	10	U																				
1,2-Dichloropropane	10	10	U																				
cis-1,3-Dichloropropene	10	10	U																				
Trichloroethene	10	10	U																				
Dibromochloromethane	10	10	U																				
1,1,2-Trichloroethane	10	10	U																				
Benzene	10	2	J																				
trans-1,3-Dichloropropene	10	10	U																				
Bromoform	10	10	U																				
4-Methyl-2-pentanone	10	10	U																				
2-Hexanone	10	10	U																				
Tetrachloroethene	10	10	U																				
1,1,2,2-Tetrachloroethane	10	10	U																				
Toluene	10	1	J																				
Chlorobenzene	10	10	U																				
Ethylbenzene	10	10	U																				
Styrene	10	10	U																				
Xylene (total)	10	10	U																				

NV = Not Validated

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M4																				
Sample Number		B080M4		B080M5		B080M6		B080M7		B080M8		B080M9									
Location		116-F-2		116-F-2		116-F-2		116-F-2		116-F-2		116-F-2									
Remarks				TB																	
Sample Date		02/02/93		02/02/93		02/02/93		02/03/93		02/03/93		02/03/93									
Analysis Date		02/10/93		02/10/93		02/10/93		02/11/93		02/10/93		02/10/93									
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	11	U	10	U	11	U	10	U	10	U	10	U								
Bromomethane	10	11	U	10	U	11	U	10	U	10	U	10	U								
Vinyl Chloride	10	11	U	10	U	11	U	10	U	10	U	10	U								
Chloroethane	10	11	U	10	U	11	U	10	U	10	U	10	U								
Methylene Chloride	10	11	U	10	U	11	U	10	U	10	U	10	U								
Acetone	10	11	U	10	U	14	U	10	U	10	U	10	U								
Carbon Disulfide	10	11	U	10	U	11	U	10	U	10	U	10	U								
1,1-Dichloroethene	10	11	U	10	U	11	U	10	U	10	U	10	U								
1,1-Dichloroethane	10	11	U	10	U	11	U	10	U	10	U	10	U								
1,2-Dichloroethene (total)	10	11	U	10	U	11	U	10	U	10	U	10	U								
Chloroform	10	11	U	10	U	11	U	10	U	10	U	10	U								
1,2-Dichloroethane	10	11	U	10	U	11	U	10	U	10	U	10	U								
2-Butanone	10	11	U	10	U	11	U	10	U	10	U	10	U								
1,1,1-Trichloroethane	10	11	U	10	U	11	U	10	U	10	U	10	U								
Carbon Tetrachloride	10	11	U	10	U	11	U	10	U	10	U	10	U								
Vinyl Acetate	10	11	U	10	U	11	U	10	U	10	U	10	U								
Bromodichloromethane	10	11	U	10	U	11	U	10	U	10	U	10	U								
1,2-Dichloropropane	10	11	U	10	U	11	U	10	U	10	U	10	U								
cis-1,3-Dichloropropene	10	11	U	10	U	11	U	10	U	10	U	10	U								
Trichloroethene	10	11	U	10	U	11	U	10	U	10	U	10	U								
Dibromochloromethane	10	11	U	10	U	11	U	10	U	10	U	10	U								
1,1,2-Trichloroethane	10	11	U	10	U	11	U	10	U	10	U	10	U								
Benzene	10	11	U	10	U	11	U	10	U	10	U	10	U								
trans-1,3-Dichloropropene	10	11	U	10	U	11	U	10	U	10	U	10	U								
Bromoform	10	11	U	10	U	11	U	10	U	10	U	10	U								
4-Methyl-2-pentanone	10	11	U	10	U	11	U	10	U	10	U	10	U								
2-Hexanone	10	11	U	10	U	11	U	10	U	10	U	10	U								
Tetrachloroethene	10	11	U	10	U	11	U	10	U	10	U	10	U								
1,1,2,2-Tetrachloroethane	10	11	U	10	U	11	U	10	U	10	U	10	U								
Toluene	10	11	U	10	U	18	U	10	U	10	U	10	U								
Chlorobenzene	10	11	U	10	U	11	U	10	U	10	U	10	U								
Ethylbenzene	10	11	U	10	U	11	U	10	U	10	U	10	U								
Styrene	10	11	U	10	U	11	U	10	U	10	U	10	U								
Xylene (total)	10	11	U	10	U	11	U	10	U	10	U	10	U								

TB = Trip Blank

BLANK AND SAMPLE DATA SUMMARY

SDG: B080M4	REVIEWER: SC			DATE: 8/5/93				PAGE_1_OF_1_	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
VBLK0210R	Methylene chloride	4	J		ug/kg	20	40	B080M4, B080M6, B080M8	U
VBLK0210R	Acetone	8	J		ug/kg	40	80	B080M6, B080M8, B080M9	U
VBLK0210R	Toluene	2	J		ug/kg	10	20	B080M4, B080M6, B080M8, B080M9	U
VBLK0211R	Methylene chloride	5	J		ug/kg	10	50	B080M7	U
VBLK0211R	Toluene	2	J		ug/kg	10	20	B080M7	U

DATA QUALIFICATION SUMMARY

SDG: B080M4	REVIEWER: SC	DATE: 8/5/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Methylene chloride	U	B080M4, B080M6, B080M7, B080M8	Lab blank contamination
Acetone	U	B080M6, B080M8, B080M9	Lab blank contamination
Toluene	U	B080M4, B080M6, B080M8, B080M9	Lab blank contamination

9313042.0504

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N0																				
Sample Number		B080N0		B080N1																	
Location		116-F-1A		116-F-1A																	
Remarks		NV		NV																	
Sample Date		2/04/93		2/04/93																	
Analysis Date		2/11/93		2/11/93																	
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	10	U	11	U																
Bromomethane	10	10	U	11	U																
Vinyl Chloride	10	10	U	11	U																
Chloroethane	10	10	U	11	U																
Methylene Chloride	10	2	J	3	J																
Acetone	10	10	U	11	U																
Carbon Disulfide	10	10	U	11	U																
1,1-Dichloroethene	10	10	U	11	U																
1,1-Dichloroethane	10	10	U	11	U																
1,2-Dichloroethene (total)	10	10	U	11	U																
Chloroform	10	10	U	11	U																
1,2-Dichloroethane	10	10	U	11	U																
2-Butanone	10	10	U	11	U																
1,1,1-Trichloroethane	10	10	U	11	U																
Carbon Tetrachloride	10	10	U	11	U																
Vinyl Acetate	10	10	U	11	U																
Bromodichloromethane	10	10	U	11	U																
1,2-Dichloropropane	10	10	U	11	U																
cis-1,3-Dichloropropene	10	10	U	11	U																
Trichloroethene	10	10	U	11	U																
Dibromochloromethane	10	10	U	11	U																
1,1,2-Trichloroethane	10	10	U	11	U																
Benzene	10	10	U	11	U																
trans-1,3-Dichloropropene	10	10	U	11	U																
Bromoform	10	10	U	11	U																
4-Methyl-2-pentanone	10	10	U	11	U																
2-Hexanone	10	10	U	11	U																
Tetrachloroethene	10	10	U	11	U																
1,1,2,2-Tetrachloroethane	10	10	U	11	U																
Toluene	10	4	J	6	J																
Chlorobenzene	10	10	U	11	U																
Ethylbenzene	10	10	U	11	U																
Styrene	10	10	U	11	U																
Xylene (total)	10	10	U	11	U																

NV Validated

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD
Laboratory: TMA
Case | SDG: B080N2

Sample Number		B080N2		B080N3		B080N4															
Location		116-F-1A		116-F-1A		116-F-1A															
Remarks		NV		NV		NV															
Sample Date		2/08/93		2/09/93		2/09/93															
Analysis Date		2/18/93		2/18/93		2/18/93															
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	10	U	10	U	11	U														
Bromomethane	10	10	U	10	U	11	U														
Vinyl Chloride	10	10	U	10	U	11	U														
Chloroethane	10	10	U	10	U	11	U														
Methylene Chloride	10	10	U	3	J	11	U														
Acetone	10	10	U	10	U	10	J														
Carbon Disulfide	10	10	U	10	U	11	U														
1,1-Dichloroethene	10	10	U	10	U	11	U														
1,1-Dichloroethane	10	10	U	10	U	11	U														
1,2-Dichloroethene (total)	10	10	U	10	U	11	U														
Chloroform	10	10	U	10	U	11	U														
1,2-Dichloroethane	10	10	U	10	U	11	U														
2-Butanone	10	10	U	10	U	11	U														
1,1,1-Trichloroethane	10	10	U	10	U	11	U														
Carbon Tetrachloride	10	10	U	10	U	11	U														
Vinyl Acetate	10	10	U	10	U	11	U														
Bromodichloromethane	10	10	U	10	U	11	U														
1,2-Dichloropropane	10	10	U	10	U	11	U														
cis-1,3-Dichloropropene	10	10	U	10	U	11	U														
Trichloroethene	10	10	U	10	U	11	U														
Dibromochloromethane	10	10	U	10	U	11	U														
1,1,2-Trichloroethane	10	10	U	10	U	11	U														
Benzene	10	10	U	10	U	11	U														
trans-1,3-Dichloropropene	10	10	U	10	U	11	U														
Bromoform	10	10	U	10	U	11	U														
4-Methyl-2-pentanone	10	10	U	10	U	11	U														
2-Hexanone	10	10	U	10	U	11	U														
Tetrachloroethene	10	10	U	10	U	11	U														
1,1,2,2-Tetrachloroethane	10	10	U	10	U	11	U														
Toluene	10	3	J	11		36															
Chlorobenzene	10	10	U	10	U	11	U														
Ethylbenzene	10	10	U	10	U	11	U														
Styrene	10	10	U	10	U	11	U														
Xylene (total)	10	10	U	10	U	11	U														

NV = Not Validated

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N5																				
Sample Number		B080N5		B080N6		B080N7		B080N8													
Location		116-F-9C		116-F-9C		116-F-9C		116-F-9C													
Remarks								DUP													
Sample Date		02/11/93		02/11/93		02/12/93		02/12/93													
Analysis Date		02/19/93		02/19/93		02/19/93		02/19/93													
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	11	U	11	U	10	U	10	U												
Bromomethane	10	11	U	11	U	10	U	10	U												
Vinyl Chloride	10	11	U	11	U	10	U	10	U												
Chloroethane	10	11	U	11	U	10	U	10	U												
Methylene Chloride	10	11	U	4	J	3	J	3	J												
Acetone	10	11	U	11		9	J	11													
Carbon Disulfide	10	11	U	11	U	10	U	10	U												
1,1-Dichloroethene	10	11	U	11	U	10	U	10	U												
1,1-Dichloroethane	10	11	U	11	U	10	U	10	U												
1,2-Dichloroethene (total)	10	11	U	11	U	10	U	10	U												
Chloroform	10	11	U	11	U	10	U	10	U												
1,2-Dichloroethane	10	11	U	11	U	10	U	10	U												
2-Butanone	10	11	U	11	U	10	U	10	U												
1,1,1-Trichloroethane	10	11	U	11	U	10	U	10	U												
Carbon Tetrachloride	10	11	U	11	U	10	U	10	U												
Vinyl Acetate	10	11	U	11	U	10	U	10	U												
Bromodichloromethane	10	11	U	11	U	10	U	10	U												
1,2-Dichloropropane	10	11	U	11	U	10	U	10	U												
cis-1,3-Dichloropropene	10	11	U	11	U	10	U	10	U												
Trichloroethene	10	11	U	11	U	10	U	10	U												
Dibromochloromethane	10	11	U	11	U	10	U	10	U												
1,1,2-Trichloroethane	10	11	U	11	U	10	U	10	U												
Benzene	10	11	U	11	U	10	U	10	U												
trans-1,3-Dichloropropene	10	11	U	11	U	10	U	10	U												
Bromoform	10	11	U	11	U	10	U	10	U												
4-Methyl-2-pentanone	10	11	U	11	U	10	U	10	U												
2-Hexanone	10	11	U	11	U	10	U	10	U												
Tetrachloroethene	10	11	U	11	U	10	U	10	U												
1,1,2,2-Tetrachloroethane	10	11	U	11	U	10	U	10	U												
Toluene	10	10	J	10	J	2	J	2	J												
Chlorobenzene	10	11	U	11	U	10	U	10	U												
Ethylbenzene	10	11	U	11	U	10	U	10	U												
Styrene	10	11	U	11	U	10	U	10	U												
Xylene (total)	10	11	U	11	U	10	U	10	U												

DUP = Duplicate

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Roy F. Weston																					
Case	SDG: B080N9																				
Sample Number		B080N9																			
Location		116-F-9C																			
Remarks		Split																			
Sample Date		02/12/93																			
Analysis Date		02/20/93																			
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	10	U																		
Bromomethane	10	10	U																		
Vinyl Chloride	10	10	U																		
Chloroethane	10	10	U																		
Methylene Chloride	10	1	J																		
Acetone	10	10	U																		
Carbon Disulfide	10	10	U																		
1,1-Dichloroethene	10	10	U																		
1,1-Dichloroethane	10	10	U																		
1,2-Dichloroethene (total)	10	10	U																		
Chloroform	10	10	U																		
1,2-Dichloroethane	10	10	U																		
2-Butanone	10	10	U																		
1,1,1-Trichloroethane	10	10	U																		
Carbon Tetrachloride	10	10	U																		
Vinyl Acetate	10	10	U																		
Bromodichloromethane	10	10	U																		
1,2-Dichloropropane	10	10	U																		
cis-1,3-Dichloropropene	10	10	U																		
Trichloroethene	10	10	U																		
Dibromochloromethane	10	10	U																		
1,1,2-Trichloroethane	10	10	U																		
Benzene	10	10	U																		
trans-1,3-Dichloropropene	10	10	U																		
Bromoform	10	10	U																		
4-Methyl-2-pentanone	10	10	U																		
2-Hexanone	10	10	U																		
Tetrachloroethene	10	10	U																		
1,1,2,2-Tetrachloroethane	10	10	U																		
Toluene	10	10	U																		
Chlorobenzene	10	10	U																		
Ethylbenzene	10	10	U																		
Styrene	10	10	U																		
Xylene (total)	10	10	U																		

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD
Laboratory: TMA
Case | SDG: B080P0

Sample Number		B080P0		B080P1		B080P2															
Location		116-F-9C		116-F-9C		116-F-4															
Remarks		NV		NV		NV															
Sample Date		2/17/93		2/17/93		2/17/93															
Analysis Date		2/25/93		2/25/93		2/25/93															
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	10	U	10	U	10	U														
Bromomethane	10	10	U	10	U	10	U														
Vinyl Chloride	10	10	U	10	U	10	U														
Chloroethane	10	10	U	10	U	10	U														
Methylene Chloride	10	3	J	3	J	5	J														
Acetone	10	12		18		14															
Carbon Disulfide	10	10	U	10	U	10	U														
1,1-Dichloroethene	10	10	U	10	U	10	U														
1,1-Dichloroethane	10	10	U	10	U	10	U														
1,2-Dichloroethene (total)	10	10	U	10	U	10	U														
Chloroform	10	10	U	10	U	10	U														
1,2-Dichloroethane	10	10	U	10	U	10	U														
2-Butanone	10	23		31		22															
1,1,1-Trichloroethane	10	10	U	10	U	10	U														
Carbon Tetrachloride	10	10	U	10	U	10	U														
Vinyl Acetate	10	10	U	10	U	10	U														
Bromodichloromethane	10	10	U	10	U	10	U														
1,2-Dichloropropane	10	10	U	10	U	10	U														
cis-1,3-Dichloropropene	10	10	U	10	U	10	U														
Trichloroethene	10	10	U	10	U	10	U														
Dibromochloromethane	10	10	U	10	U	10	U														
1,1,2-Trichloroethane	10	10	U	10	U	10	U														
Benzene	10	10	U	10	U	10	U														
trans-1,3-Dichloropropene	10	10	U	10	U	10	U														
Bromoform	10	10	U	10	U	10	U														
4-Methyl-2-pentanone	10	10	U	2	J	10	U														
2-Hexanone	10	10	U	1	J	10	U														
Tetrachloroethene	10	10	U	10	U	10	U														
1,1,2,2-Tetrachloroethane	10	10	U	10	U	10	U														
Toluene	10	10	U	10	U	8	J														
Chlorobenzene	10	10	U	10	U	10	U														
Ethylbenzene	10	10	U	10	U	10	U														
Styrene	10	10	U	10	U	10	U														
Xylene (total)	10	10	U	10	U	10	U														

NV = Not Validated

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																							
Laboratory: TMA																							
Case	SDG: B080P4																						
Sample Number		B080P4																					
Location		116-F-4																					
Remarks																							
Sample Date		02/18/93																					
Analysis Date		03/02/93																					
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q		
Chloromethane	10	10	U																				
Bromomethane	10	10	U																				
Vinyl Chloride	10	10	U																				
Chloroethane	10	10	U																				
Methylene Chloride	10	10	U																				
Acetone	10	10	U																				
Carbon Disulfide	10	10	U																				
1,1-Dichloroethene	10	10	U																				
1,1-Dichloroethane	10	10	U																				
1,2-Dichloroethene (total)	10	10	U																				
Chloroform	10	10	U																				
1,2-Dichloroethane	10	10	U																				
2-Butanone	10	10	U																				
1,1,1-Trichloroethane	10	10	U																				
Carbon Tetrachloride	10	10	U																				
Vinyl Acetate	10	10	U																				
Bromodichloromethane	10	10	U																				
1,2-Dichloropropane	10	10	U																				
cis-1,3-Dichloropropene	10	10	U																				
Trichloroethene	10	10	U																				
Dibromochloromethane	10	10	U																				
1,1,2-Trichloroethane	10	10	U																				
Benzene	10	10	U																				
trans-1,3-Dichloropropene	10	10	U																				
Bromoform	10	10	U																				
4-Methyl-2-pentanone	10	10	U																				
2-Hexanone	10	10	U																				
Tetrachloroethene	10	10	U																				
1,1,2,2-Tetrachloroethane	10	10	U																				
Toluene	10	13																					
Chlorobenzene	10	10	U																				
Ethylbenzene	10	10	U																				
Styrene	10	10	U																				
Xylene (total)	10	10	U																				

BLANK AND SAMPLE DATA SUMMARY

SDG: B080P4	REVIEWER: SC			DATE: 8/3/93				PAGE 1 OF 1	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
VBLK0302RI	Acetone	11			ug/kg	55	110	B080P4	U

DATA QUALIFICATION SUMMARY

SDG: B080P4	REVIEWER: SC	DATE: 8/3/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Acetone	U	B080P4	Lab blank contamination

9313042.0512

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																						
Laboratory: TMA																						
Case	SDG: B080P5																					
Sample Number		B080P5																				
Location		116-F-4																				
Remarks		NV																				
Sample Date		2/22/93																				
Analysis Date		3/03/93																				
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	
Chloromethane	10	10	U																			
Bromomethane	10	10	U																			
Vinyl Chloride	10	10	U																			
Chloroethane	10	10	U																			
Methylene Chloride	10	3	J																			
Acetone	10	10	U																			
Carbon Disulfide	10	10	U																			
1,1-Dichloroethene	10	10	U																			
1,1-Dichloroethane	10	10	U																			
1,2-Dichloroethene (total)	10	10	U																			
Chloroform	10	10	U																			
1,2-Dichloroethane	10	10	U																			
2-Butanone	10	10	U																			
1,1,1-Trichloroethane	10	10	U																			
Carbon Tetrachloride	10	10	U																			
Vinyl Acetate	10	10	U																			
Bromodichloromethane	10	10	U																			
1,2-Dichloropropane	10	10	U																			
cis-1,3-Dichloropropene	10	10	U																			
Trichloroethene	10	10	U																			
Dibromochloromethane	10	10	U																			
1,1,2-Trichloroethane	10	10	U																			
Benzene	10	10	U																			
trans-1,3-Dichloropropene	10	10	U																			
Bromoform	10	10	U																			
4-Methyl-2-pentanone	10	10	U																			
2-Hexanone	10	10	U																			
Tetrachloroethene	10	10	U																			
1,1,2,2-Tetrachloroethane	10	10	U																			
Toluene	10	4	J																			
Chlorobenzene	10	10	U																			
Ethylbenzene	10	10	U																			
Styrene	10	10	U																			
Xylene (total)	10	10	U																			

NV t Validated

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																							
Laboratory: TMA																							
Case	SDG: B080P9																						
Sample Number		B080P9		B080Q4																			
Location		116-F-4		116-F-14																			
Remarks		NV		NV																			
Sample Date		2/24/93		2/25/93																			
Analysis Date		3/03/93		3/03/93																			
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q		
Chloromethane	10	10	U	10	U																		
Bromomethane	10	10	U	10	U																		
Vinyl Chloride	10	10	U	10	U																		
Chloroethane	10	10	U	10	U																		
Methylene Chloride	10	3	J	3	J																		
Acetone	10	11		23																			
Carbon Disulfide	10	10	U	10	U																		
1,1-Dichloroethene	10	10	U	10	U																		
1,1-Dichloroethane	10	10	U	10	U																		
1,2-Dichloroethene (total)	10	10	U	10	U																		
Chloroform	10	10	U	10	U																		
1,2-Dichloroethane	10	10	U	10	U																		
2-Butanone	10	10	U	10	U																		
1,1,1-Trichloroethane	10	10	U	10	U																		
Carbon Tetrachloride	10	10	U	10	U																		
Vinyl Acetate	10	10	U	10	U																		
Bromodichloromethane	10	10	U	10	U																		
1,2-Dichloropropane	10	10	U	10	U																		
cis-1,3-Dichloropropene	10	10	U	10	U																		
Trichloroethene	10	10	U	10	U																		
Dibromochloromethane	10	10	U	10	U																		
1,1,2-Trichloroethane	10	10	U	10	U																		
Benzene	10	10	U	10	U																		
trans-1,3-Dichloropropene	10	10	U	10	U																		
Bromoform	10	10	U	10	U																		
4-Methyl-2-pentanone	10	10	U	10	U																		
2-Hexanone	10	10	U	10	U																		
Tetrachloroethene	10	10	U	10	U																		
1,1,2,2-Tetrachloroethane	10	10	U	10	U																		
Toluene	10	3	J	1	J																		
Chlorobenzene	10	10	U	10	U																		
Ethylbenzene	10	10	U	10	U																		
Styrene	10	10	U	10	U																		
Xylene (total)	10	10	U	10	U																		

NV = Not Validated

VOLATILE ORGANIC ANALYSIS, WATER MATRIX, (ug/L)

Project: WESTINGHOUSE-HANFORD
Laboratory: TMA
Case | SDG: B080Q0A

Sample Number		B080Q0A		B080Q2																	
Location		116-F-6		116-F-6																	
Remarks		NV,FB		TB, NV																	
Sample Date		2/23/93		2/23/93																	
Analysis Date		3/04/93		3/03/93																	
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	10	U	10	U																
Bromomethane	10	10	U	10	U																
Vinyl Chloride	10	10	U	10	U																
Chloroethane	10	10	U	10	U																
Methylene Chloride	10	2	J	10	U																
Acetone	10	10	U	10	U																
Carbon Disulfide	10	10	U	10	U																
1,1-Dichloroethene	10	10	U	10	U																
1,1-Dichloroethane	10	10	U	10	U																
1,2-Dichloroethene (total)	10	10	U	10	U																
Chloroform	10	1	J	10	U																
1,2-Dichloroethane	10	10	U	10	U																
2-Butanone	10	10	U	10	U																
1,1,1-Trichloroethane	10	10	U	10	U																
Carbon Tetrachloride	10	10	U	10	U																
Bromodichloromethane	10	10	U	10	U																
1,2-Dichloropropane	10	10	U	10	U																
cis-1,3-Dichloropropene	10	10	U	10	U																
Trichloroethene	10	10	U	10	U																
Dibromochloromethane	10	10	U	10	U																
1,1,2-Trichloroethane	10	10	U	10	U																
Benzene	10	10	U	10	U																
trans-1,3-Dichloropropene	10	10	U	10	U																
Bromoform	10	10	U	10	U																
4-Methyl-2-pentanone	10	10	U	10	U																
2-Hexanone	10	10	U	10	U																
Tetrachloroethene	10	10	U	10	U																
1,1,2,2-Tetrachloroethane	10	10	U	10	U																
Toluene	10	10	U	10	U																
Chlorobenzene	10	10	U	10	U																
Ethylbenzene	10	10	U	10	U																
Styrene	10	10	U	10	U																
Xylene (total)	10	10	U	10	U																

N ot Validated, FB = Field Blank, TB = Trip Blank

VOL...LE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q3																				
Sample Number		B080Q3		B080Q7		B080Q8															
Location		116-F-14		116-F-14		116-F-14															
Remarks		NV		NV		NV															
Sample Date		2/26/93		3/01/93		3/01/93															
Analysis Date		3/09/93		3/09/93		3/09/93															
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	10	U	11	U	11	U														
Bromomethane	10	10	U	11	U	11	U														
Vinyl Chloride	10	10	U	11	U	11	U														
Chloroethane	10	10	U	11	U	11	U														
Methylene Chloride	10	4	J	4	J	4	J														
Acetone	10	8	J	11		46															
Carbon Disulfide	10	10	U	11	U	11	U														
1,1-Dichloroethene	10	10	U	11	U	11	U														
1,1-Dichloroethane	10	10	U	11	U	11	U														
1,2-Dichloroethene (total)	10	10	U	11	U	11	U														
Chloroform	10	10	U	11	U	11	U														
1,2-Dichloroethane	10	10	U	11	U	11	U														
2-Butanone	10	10	U	11	U	11	U														
1,1,1-Trichloroethane	10	10	U	11	U	11	U														
Carbon Tetrachloride	10	10	U	11	U	11	U														
Vinyl Acetate	10	10	U	11	U	11	U														
Bromodichloromethane	10	10	U	11	U	11	U														
1,2-Dichloropropane	10	10	U	11	U	11	U														
cis-1,3-Dichloropropene	10	10	U	11	U	11	U														
Trichloroethene	10	10	U	11	U	11	U														
Dibromochloromethane	10	10	U	11	U	11	U														
1,1,2-Trichloroethane	10	10	U	11	U	11	U														
Benzene	10	10	U	11	U	11	U														
trans-1,3-Dichloropropene	10	10	U	11	U	11	U														
Bromoform	10	10	U	11	U	11	U														
4-Methyl-2-pentanone	10	10	U	11	U	11	U														
2-Hexanone	10	10	U	11	U	11	U														
Tetrachloroethene	10	10	U	11	U	11	U														
1,1,2,2-Tetrachloroethane	10	10	U	11	U	11	U														
Toluene	10	1	J	2	J	2	J														
Chlorobenzene	10	10	U	11	U	11	U														
Ethylbenzene	10	10	U	11	U	11	U														
Styrene	10	10	U	11	U	11	U														
Xylene (total)	10	10	U	11	U	11	U														

NV = Not Validated

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q5																				
Sample Number		B080Q5		B080Q6																	
Location		116-F-14		116-F-14																	
Remarks		NV		NV																	
Sample Date		2/25/93		2/26/93																	
Analysis Date		3/03/93		3/04/93																	
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	10	U	10	U																
Bromomethane	10	10	U	10	U																
Vinyl Chloride	10	10	U	10	U																
Chloroethane	10	10	U	10	U																
Methylene Chloride	10	3	J	4	J																
Acetone	10	18		17																	
Carbon Disulfide	10	10	U	10	U																
1,1-Dichloroethene	10	10	U	10	U																
1,1-Dichloroethane	10	10	U	10	U																
1,2-Dichloroethene (total)	10	10	U	10	U																
Chloroform	10	10	U	10	U																
1,2-Dichloroethane	10	10	U	10	U																
2-Butanone	10	10	U	10	U																
1,1,1-Trichloroethane	10	10	U	10	U																
Carbon Tetrachloride	10	10	U	10	U																
Vinyl Acetate	10	10	U	10	U																
Bromodichloromethane	10	10	U	10	U																
1,2-Dichloropropane	10	10	U	10	U																
cis-1,3-Dichloropropene	10	10	U	10	U																
Trichloroethene	10	10	U	10	U																
Dibromochloromethane	10	10	U	10	U																
1,1,2-Trichloroethane	10	10	U	10	U																
Benzene	10	10	U	10	U																
trans-1,3-Dichloropropene	10	10	U	10	U																
Bromoform	10	10	U	10	U																
4-Methyl-2-pentanone	10	10	U	10	U																
2-Hexanone	10	10	U	10	U																
Tetrachloroethene	10	10	U	10	U																
1,1,2,2-Tetrachloroethane	10	10	U	10	U																
Toluene	10	82		3	J																
Chlorobenzene	10	10	U	10	U																
Ethylbenzene	10	10	U	10	U																
Styrene	10	10	U	10	U																
Xylene (total)	10	10	U	10	U																

NV [illegible]t Validated

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q9																				
Sample Number		B080Q9		B080R0																	
Location		116-F-14		116-F-14																	
Remarks		NV		NV																	
Sample Date		3/02/93		3/02/93																	
Analysis Date		3/12/93		3/12/93																	
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	10	U	11	U																
Bromomethane	10	10	U	11	U																
Vinyl Chloride	10	10	U	11	U																
Chloroethane	10	10	U	11	U																
Methylene Chloride	10	10	U	11	U																
Acetone	10	11		18																	
Carbon Disulfide	10	10	U	11	U																
1,1-Dichloroethene	10	10	U	11	U																
1,1-Dichloroethane	10	10	U	11	U																
1,2-Dichloroethene (total)	10	10	U	11	U																
Chloroform	10	9	J	10	J																
1,2-Dichloroethane	10	10	U	11	U																
2-Butanone	10	2	J	11	U																
1,1,1-Trichloroethane	10	10	U	11	U																
Carbon Tetrachloride	10	10	U	11	U																
Vinyl Acetate	10	10	U	11	U																
Bromodichloromethane	10	10	U	11	U																
1,2-Dichloropropane	10	10	U	11	U																
cis-1,3-Dichloropropene	10	10	U	11	U																
Trichloroethene	10	10	U	11	U																
Dibromochloromethane	10	10	U	11	U																
1,1,2-Trichloroethane	10	10	U	11	U																
Benzene	10	10	U	11	U																
trans-1,3-Dichloropropene	10	10	U	11	U																
Bromoform	10	10	U	11	U																
4-Methyl-2-pentanone	10	3	J	11	U																
2-Hexanone	10	10	U	11	U																
Tetrachloroethene	10	10	U	11	U																
1,1,2,2-Tetrachloroethane	10	10	U	11	U																
Toluene	10	16		2	J																
Chlorobenzene	10	10	U	11	U																
Ethylbenzene	10	10	U	11	U																
Styrene	10	10	U	11	U																
Xylene (total)	10	10	U	11	U																

NV = Not Validated, TB = Trip Blank

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080R1																				
Sample Number		B080R1		B080R2		B080R3		B080R4DL		B080R5											
Location								FR. DRAIN		FR. DRAIN											
Remarks						TB		Dilution													
Sample Date		3/09/93		3/09/93		3/09/93		3/09/93		3/09/93											
Analysis Date		3/17/93		3/17/93		3/17/93		3/18/93		3/17/93											
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	11	U	11	UJ	10	U	66	U	11	U										
Bromomethane	10	11	U	11	UJ	10	U	66	U	11	U										
Vinyl Chloride	10	11	U	11	UJ	10	U	66	U	11	U										
Chloroethane	10	11	U	11	UJ	10	U	66	U	11	U										
Methylene Chloride	10	11	U	11	UJ	2	J	66	U	11	U										
Acetone	10	11	U	13	UJ	14		66	U	13	U										
Carbon Disulfide	10	11	U	11	UJ	10	U	66	U	11	U										
1,1-Dichloroethene	10	11	U	11	UJ	10	U	66	U	11	U										
1,1-Dichloroethane	10	11	U	11	UJ	10	U	66	U	11	U										
1,2-Dichloroethene (total)	10	11	U	11	UJ	10	U	66	U	11	U										
Chloroform	10	11	U	11	UJ	10	U	66	U	11	U										
1,2-Dichloroethane	10	11	U	11	UJ	10	U	66	U	11	U										
2-Butanone	10	11	U	11	UJ	10	U	66	U	11	U										
1,1,1-Trichloroethane	10	11	U	11	UJ	10	U	66	U	11	U										
Carbon Tetrachloride	10	11	U	11	UJ	10	U	66	U	11	U										
Vinyl Acetate	10	11	U	11	UJ	10	U	66	U	11	U										
Bromodichloromethane	10	11	U	11	UJ	10	U	66	U	11	U										
1,2-Dichloropropane	10	11	U	11	UJ	10	U	66	U	11	U										
cis-1,3-Dichloropropene	10	11	U	11	UJ	10	U	66	U	11	U										
Trichloroethene	10	11	U	11	UJ	10	U	66	U	11	U										
Dibromochloromethane	10	11	U	11	UJ	10	U	66	U	11	U										
1,1,2-Trichloroethane	10	11	U	11	UJ	10	U	66	U	11	U										
Benzene	10	11	U	11	UJ	10	U	66	U	11	U										
trans-1,3-Dichloropropene	10	11	U	11	UJ	10	U	66	U	11	U										
Bromoform	10	11	U	11	UJ	10	U	66	U	11	U										
4-Methyl-2-pentanone	10	11	U	11	UJ	10	UJ	66	U	11	U										
2-Hexanone	10	11	U	11	UJ	10	UJ	66	U	11	U										
Tetrachloroethene	10	11	U	11	UJ	10	UJ	66	U	11	U										
1,1,2,2-Tetrachloroethane	10	11	U	11	UJ	10	UJ	66	U	11	U										
Toluene	10	11	U	11	UJ	1	J	86		480											
Chlorobenzene	10	11	U	11	UJ	10	UJ	66	U	11	U										
Ethylbenzene	10	11	U	11	UJ	10	UJ	66	U	11	U										
Styrene	10	11	U	11	UJ	10	UJ	66	U	11	U										
Xylene (total)	10	11	U	11	UJ	10	UJ	66	U	11	U										

TB = Trip Blank, FR. DRAIN = French Drain

BLANK AND SAMPLE DATA SUMMARY

SDG: B080R1	REVIEWER: SC	DATE: 8/5/93	PAGE 1 OF 1

COMMENTS:

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
VBLK0317R1	Methylene chloride	5	J		ug/kg	25	50	B080R1, B080R2, B080R5	U
VBLK0317R1	Acetone	19			ug/kg	95	190	B080R1, B080R2, B080R5	U
VBLK0318R	Methylene chloride	3	J		ug/kg	15	30	B080R4DL	U

ACCURACY DATA SUMMARY

SDG: B080R1	REVIEWER: SC	DATE: 8/5/93	PAGE_1_OF_1_	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B080R2	Bromofluorobenzene	115	B080R2	J

DATA QUALIFICATION SUMMARY

SDG: B080R1	REVIEWER: SC	DATE: 8/5/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Methylene chloride	U	B080R1, B080R2, B080R5	Lab blank contamination
Acetone	U	B080R1, B080R2, B080R4DL, B080R5	Lab blank contamination
All VOC compounds	J	B080R2	Surrogate recovery
All compounds associated with internal standard chlorobenzene-d5	J	B080R3	Internal standard area

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD
Laboratory: TMA
Case SDG: B08G65

Sample Number		B08G65		B08G66		B08G67		B08G68		B08G69		B08G70		B08G72		B08G73		B08G74		B08G75	
Location		116-F-1B		116-F-1B		116-F-1B		116-F-1B		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C	
Remarks		NV		NV		NV		NV		FB, NV		NV		DUP, NV		NV		NV		NV	
Sample Date		4/20/93		4/20/93		4/20/93		4/20/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93	
Analysis Date		4/29/93		4/30/93		4/29/93		4/29/93		4/29/93		4/30/93		4/29/93		5/4/93		4/29/93		4/29/93	
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Bromomethane	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Vinyl Chloride	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Chloroethane	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Methylene Chloride	10	10	U	2	J	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Acetone	10	11		6	J	11	U	13		8	J	10	U	9	J	7	J	9	J	7	J
Carbon Disulfide	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
1,1-Dichloroethene	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
1,1-Dichloroethane	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
1,2-Dichloroethene (total)	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Chloroform	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
1,2-Dichloroethane	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
2-Butanone	10	10	U	10	U	11	U	10	U	10	U	10	U	6	J	10	U	10	U	11	U
1,1,1-Trichloroethane	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Carbon Tetrachloride	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Vinyl Acetate	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Bromodichloromethane	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
1,2-Dichloropropane	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
cis-1,3-Dichloropropene	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Trichloroethene	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Dibromochloromethane	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
1,1,2-Trichloroethane	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Benzene	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
trans-1,3-Dichloropropene	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Bromoform	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
4-Methyl-2-pentanone	10	10	U	10	U	11	U	1	J	10	U	10	U	2	J	10	U	10	U	11	U
2-Hexanone	10	10	U	10	U	11	U	2	J	10	U	10	U	3	J	10	U	10	U	11	U
Tetrachloroethene	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
1,1,2,2-Tetrachloroethane	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Toluene	10	42		5	J	33		13		3	J	8	J	57		10	U	2	J	2	J
Chlorobenzene	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Ethylbenzene	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Styrene	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U
Xylene (total)	10	10	U	10	U	11	U	10	U	10	U	10	U	10	U	10	U	10	U	11	U

NV Validated, FB = Field Blank, DUP = Duplicate, TB = Trip Blank

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G65																				
Sample Number		B08G76		B08G77		B08G78		B08G79		B08G80		B08G81		B08G82		B08G83					
Location		116-F-1C		116-F-1C		116-F-9D		116-F-9D		116-F-9D		116-F-9D		116-F-3		116-F-3					
Remarks		NV		TB, NV		NV		NV		NV		NV		NV		NV					
Sample Date		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/22/93		4/22/93					
Analysis Date		4/29/93		4/29/93		4/29/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93					
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Bromomethane	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Vinyl Chloride	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Chloroethane	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Methylene Chloride	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Acetone	10	9	J	7	J	6	J	66		6	J	7	J	10	U	6	J				
Carbon Disulfide	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
1,1-Dichloroethene	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
1,1-Dichloroethane	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
1,2-Dichloroethene (total)	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Chloroform	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
1,2-Dichloroethane	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
2-Butanone	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
1,1,1-Trichloroethane	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Carbon Tetrachloride	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Vinyl Acetate	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Bromodichloromethane	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
1,2-Dichloropropane	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
cis-1,3-Dichloropropene	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Trichloroethene	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Dibromochloromethane	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
1,1,2-Trichloroethane	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Benzene	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
trans-1,3-Dichloropropene	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Bromoform	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
4-Methyl-2-pentanone	10	10	U	1	J	10	U	13	J	11	U	11	J	10	U	11	J				
2-Hexanone	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Tetrachloroethene	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
1,1,2,2-Tetrachloroethane	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Toluene	10	4	J	10	U	2	J	87		18		19		21		11	U				
Chlorobenzene	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Ethylbenzene	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Styrene	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				
Xylene (total)	10	10	U	10	U	10	U	13	U	11	U	11	U	10	U	11	U				

NV = Not Validated, FB = Field Blank, DUP = Duplicate, TB = Trip Blank

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																						
Laboratory: Roy F. Weston																						
Case	SDG: B08G71																					
Sample Number		B08G71																				
Location		116-F-1C																				
Remarks		Split, NV																				
Sample Date		4/21/93																				
Analysis Date		4/30/93																				
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	
Chloromethane	10	10	U																			
Bromomethane	10	10	U																			
Vinyl Chloride	10	10	U																			
Chloroethane	10	10	U																			
Methylene Chloride	10	12																				
Acetone	10	15																				
Carbon Disulfide	10	10	U																			
1,1-Dichloroethene	10	10	U																			
1,1-Dichloroethane	10	10	U																			
1,2-Dichloroethene (total)	10	10	U																			
Chloroform	10	10	U																			
1,2-Dichloroethane	10	10	U																			
2-Butanone	10	10	U																			
1,1,1-Trichloroethane	10	10	U																			
Carbon Tetrachloride	10	10	U																			
Vinyl Acetate	10	10	U																			
Bromodichloromethane	10	10	U																			
1,2-Dichloropropane	10	10	U																			
cis-1,3-Dichloropropene	10	10	U																			
Trichloroethene	10	2	J																			
Dibromochloromethane	10	10	U																			
1,1,2-Trichloroethane	10	10	U																			
Benzene	10	10	U																			
trans-1,3-Dichloropropene	10	10	U																			
Bromoform	10	10	U																			
4-Methyl-2-pentanone	10	10	U																			
2-Hexanone	10	10	U																			
Tetrachloroethene	10	1	J																			
1,1,2,2-Tetrachloroethane	10	10	U																			
Toluene	10	23																				
Chlorobenzene	10	10	U																			
Ethylbenzene	10	10	U																			
Styrene	10	10	U																			
Xylene (total)	10	10	U																			

NV . Validated

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G84																				
Sample Number		B08G84		B08G85																	
Location		116-F-3		116-F-3																	
Remarks		NV		NV																	
Sample Date		4/27/93		4/27/93																	
Analysis Date		5/04/93		5/04/93																	
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	10	U	10	U																
Bromomethane	10	10	U	10	U																
Vinyl Chloride	10	10	U	10	U																
Chloroethane	10	10	U	10	U																
Methylene Chloride	10	10	U	10	U																
Acetone	10	10	J	9	J																
Carbon Disulfide	10	10	U	10	U																
1,1-Dichloroethene	10	10	U	10	U																
1,1-Dichloroethane	10	10	U	10	U																
1,2-Dichloroethene (total)	10	10	U	10	U																
Chloroform	10	10	U	10	U																
1,2-Dichloroethane	10	10	U	10	U																
2-Butanone	10	10	U	10	U																
1,1,1-Trichloroethane	10	10	U	10	U																
Carbon Tetrachloride	10	10	U	10	U																
Vinyl Acetate	10	10	U	10	U																
Bromodichloromethane	10	10	U	10	U																
1,2-Dichloropropane	10	10	U	10	U																
cis-1,3-Dichloropropene	10	10	U	10	U																
Trichloroethene	10	10	U	10	U																
Dibromochloromethane	10	10	U	10	U																
1,1,2-Trichloroethane	10	10	U	10	U																
Benzene	10	10	U	10	U																
trans-1,3-Dichloropropene	10	10	U	10	U																
Bromoform	10	10	U	10	U																
4-Methyl-2-pentanone	10	10	U	10	U																
2-Hexanone	10	10	U	10	U																
Tetrachloroethene	10	10	U	10	U																
1,1,2,2-Tetrachloroethane	10	10	U	10	U																
Toluene	10	10	U	7	J																
Chlorobenzene	10	10	U	10	U																
Ethylbenzene	10	10	U	10	U																
Styrene	10	10	U	10	U																
Xylene (total)	10	10	U	10	U																

NV = Not Validated

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WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	V/NV	SEMIVOLATILES
116-F-6	B080L9	S	01/27/93	NV	3-7, 3-8
	B080M0	S	01/28/93	NV	3-9, 3-10
	B080M1	S	01/28/93	NV	3-9, 3-10
	B080M2	S	01/28/93	NV	3-9, 3-10
	B080M3	S	01/29/93	NV	3-11, 3-12
	B080Q0A	W	02/23/93	NV	3-41, 3-42
116-F-2	B080M4	S	02/02/93	V	3-13, 3-14
	B080M6	S	02/02/93	V	3-13, 3-14
	B080M7	S	02/03/93	V	3-13, 3-14
	B080M8	S	02/03/93	V	3-13, 3-14
	B080M9	S	02/03/93	V	3-13, 3-14
16-F-1A	B080N0	S	02/04/93	NV	3-18, 3-19
	B080N1	S	02/04/93	NV	3-18, 3-19
	B080N2	S	02/08/93	NV	3-20, 3-21
	B080N3	S	02/09/93	NV	3-20, 3-21
116-F-9C	B080N5	S	02/11/93	V	3-22, 3-23
	B080N6	S	02/11/93	V	3-22, 3-23
	B080N7	S	02/12/93	V	3-22, 3-23
	B080N8	S	02/12/93	V	3-22, 3-23
	B080N9	S	02/12/93	V	3-27, 3-28
	B080P0	S	02/17/93	NV	3-31, 3-32
	B080P1	S	02/17/93	NV	3-31, 3-32
116-F-4	B080P2	S	02/17/93	NV	3-31, 3-32
	B080P4	S	02/18/93	V	3-33, 3-34
	B080P5	S	02/22/93	NV	3-37, 3-38
	B080P9	S	02/24/93	NV	3-39, 3-40
116-F-14	B080Q3	S	02/26/93	NV	3-43, 3-44
	B080Q4	S	02/25/93	NV	3-39, 3-40
	B080Q5	S	02/25/93	NV	3-45, 3-46
	B080Q6	S	02/26/93	NV	3-45, 3-46
	B080Q7	S	03/01/93	NV	3-43, 3-44
	B080Q8	S	03/01/93	NV	3-43, 3-44
	B080Q9	S	03/02/93	NV	3-47, 3-48
	B080R1	S	03/09/93	V	3-49, 3-50
	B080R2	S	03/09/93	V	3-49, 3-50
FRENCH DRAIN	B080R4	S	03/09/93	V	3-49, 3-50
	B080R5	S	03/09/93	V	3-49, 3-50

WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	V/NV	SEMIVOLATILES
116-F-1B	B08G65	S	04/20/93	NV	3-54, 3-55
	B08G66	S	04/20/93	NV	3-54, 3-55
	B08G67	S	04/20/93	NV	3-54, 3-55
	B08G68	S	04/20/93	NV	3-54, 3-55
116-F-1C	B08G69	S	04/21/93	NV	3-54, 3-55
	B08G70	S	04/21/93	NV	3-54, 3-55
	B08G71	S	04/21/93	NV	3-58, 3-59
	B08G72	S	04/21/93	NV	3-54, 3-55
	B08G73	S	04/21/93	NV	3-54, 3-55
	B08G74	S	04/21/93	NV	3-54, 3-55
	B08G75	S	04/21/93	NV	3-54, 3-55
	B08G76	S	04/21/93	NV	3-56, 3-57
116-F-9D	B08G78	S	04/21/93	NV	3-56, 3-57
	B08G79	S	04/21/93	NV	3-56, 3-57
	B08G80	S	04/21/93	NV	3-56, 3-57
	B08G81	S	04/21/93	NV	3-56, 3-57
116-F-3	B08G82	S	04/22/93	NV	3-56, 3-57
	B08G83	S	04/22/93	NV	3-56, 3-57
	B08G84	S	04/27/93	NV	3-60, 3-61
	B08G85	S	04/27/93	NV	3-60, 3-61

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3.0 SEMIVOLATILE ORGANIC DATA VALIDATION

3.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B080M4	B080N9	B080R1
B080N5	B080P4	

3.2 HOLDING TIMES

Analytical holding times were assessed to ascertain whether the holding time requirements for semivolatile analyses were met by the laboratory. Westinghouse-Hanford protocols require that samples be extracted within seven days of collection and be analyzed within 40 days of extraction (WHC 1992a).

Based upon Westinghouse-Hanford data validation procedures, the seven-day extraction holding time was exceeded for:

- All samples in SDG No. B080M4.
- Sample numbers B080N5 and B080N6 in SDG No. B080N5.
- Sample number B080N9 in SDG No. B080N9.
- All samples in SDG No. B080R1.

The results were flagged "J" and are considered to be estimates.

Holding time requirements were met for all other samples.

3.3 INSTRUMENT CALIBRATION AND TUNING

3.3.1 GC/MS Tuning/Instrument Performance Check

Tuning is performed to ensure that mass resolution, and to some degree, sensitivity, of the GC/MS instrument has been established. When analyzing for semi volatile organic compounds, the GC/MS is tuned using DFTPP. The GC/MS must be tuned prior to the analysis of either standards or samples, and tuning must meet the criteria established by the analytical protocol. The specific criteria for acceptable GC/MS tuning using DFTPP are

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outlined in Westinghouse-Hanford procedures (WHC 1991) and in CLP protocols (EPA 1988a and 1988b).

As part of data validation, the original tuning data were checked for transcription and calculation errors to verify that tuning and performance criteria were met.

All tuning and performance criteria were met.

3.3.2 Initial Calibration

The GC/MS instrument is calibrated to ensure that it is capable of producing acceptable and reliable analytical data over a range of concentrations. The initial and continuing calibrations are to be performed according to CLP protocols. An initial multipoint calibration is performed prior to sample analysis to establish the linearity range of the GC/MS instrument. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible on a day-to-day basis.

Instrument response is established by the initial calibration when the RRFs for all target compounds are greater than or equal to 0.05 units. Linearity is established when the RSDs of the RRFs are less than or equal to 30 percent.

All initial calibration results were acceptable.

3.3.3 Continuing Calibration

The criteria for accepting the continuing calibration require that a standard be analyzed at least once per 12 hour period and that the RRFs of all target compounds be greater than or equal to 0.05 units. In addition, the percent difference of these RRFs must be less than or equal to 25 percent of the average RRFs calculated for the associated initial calibration.

All continuing calibration results were acceptable.

3.4 BLANKS

Method blank and field blank analyses are performed to determine the extent of laboratory or field contamination of samples. No contaminants should be present in the blanks. Analytical results for analytes present in any sample at less than 5 times the concentration of that analyte found in associated blanks should be qualified as non-detects; in the case of certain common laboratory contaminants, results less than 10 times blank concentrations should be qualified as non-detects.

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Due to the presence of laboratory blank contamination, the following samples were flagged "U" for di-n-butylphthalate:

- All samples in SDG No. B080M4.
- All samples in SDG No. B080N5.
- Sample number B080P4 in SDG No. B080P4.
- All samples in SDG No. B080R1.

Due to the presence of laboratory blank contamination, the following sample was flagged "U" for bis(2-ethylhexyl)phthalate:

- Sample number B080P4 in SDG No. B080P4.

All other laboratory blank results were acceptable.

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3.5 ACCURACY

Accuracy was assessed by evaluating the recoveries of stable isotopically labeled surrogate compounds added to all samples and blanks, and by the analysis of a representative sample which was spiked with a variety of organic compounds.

3.5.1 Matrix Spike Recovery

Matrix spike compounds are added to a sample which is representative of the sample delivery group. Matrix spike analyses are performed in duplicate using the 11 compounds specified by CLP protocols. All recoveries for the 11 compounds should be within the established QC limits (EPA 1988b). The matrix spike analyses estimate how much the analyses for the target compounds are interfered with, either positively or negatively, by the sample matrix. Because the matrix spike is performed using only one of the samples extracted within the SDG, these data alone cannot be used to evaluate the precision and accuracy of individual samples.

All matrix spike/matrix spike duplicate recovery results were acceptable.

3.5.2 Surrogate Recovery

Surrogate compound recoveries are calculated using analytical results from six stable, isotopically labeled surrogate compounds added to the sample prior to sample preparation and analysis. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. When recoveries for any two surrogate compounds are out of the control window, all positively identified target compound concentrations in samples associated with the unacceptable

surrogate recoveries are qualified as estimates (J) and undetected compounds are qualified estimated below the detection limit (UJ).

Surrogate recovery results were acceptable for all samples.

3.6 PRECISION

The precision is expressed by the RPD between the recoveries of the matrix spike and the matrix spike duplicate analyses performed on a sample, and through a comparison of the results for field duplicate samples. Acceptable RPD control windows for matrix spike/matrix spike duplicate analyses have been established by the EPA CLP program.

Field precision is measured by analyzing duplicate samples taken in the field. No standards have been established for qualifying data based on RPD for duplicate field samples by CLP protocols. Westinghouse-Hanford procedures establish the following criteria for duplicate field sample analyses for organic compounds, based on criteria established for inorganic analyses for laboratory duplicates:

1. For compounds whose concentrations are greater than 5 times CRQL, RPDs, must be ±20 percent for aqueous samples and ±35 percent for soil samples.

2. When one or more compounds are present at concentrations less than 5 times CRQL, the concentration difference must be ± CRQL for aqueous samples and ± CRQL for soil samples.

All matrix spike/matrix spike duplicate RPD results were acceptable for all samples.

3.7 SYSTEM PERFORMANCE

Internal standard performance was assessed to determine whether abrupt changes in instrument response and sensitivity occurred that may have affected the reliability of the analytical data. The response (area or height) of the internal standards must not vary by more than -50 percent or +100 percent from the response of the calibration standard that was used to calculate the upper and lower bounds. The upper and lower bounds define the range for acceptable internal standard response (area/height) for the sample analyses. In addition, retention times for the internal standard must not vary more than ±30 seconds from that of the associated calibration standard.

All internal standard results were acceptable.

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3.8 COMPOUND IDENTIFICATION AND QUANTITATION

The identities of detected compounds were confirmed to investigate the possibility of false positives. The confirmation of compound identification during the QA review focuses on false positives because only mass spectra for positive identifications are submitted. However, target compounds that are reported as undetected are also evaluated to investigate the possibility of false negatives. Confirmation of possible false negatives is addressed by reviewing other factors relating to analytical sensitivity (e.g., detection limits, linearity, analytical recovery). Compound retention times and mass spectra must match those for the standard within set to tolerance limits (EPA 1988b).

3.8.1 Reported Results and Quantitation Limits

Compound quantitations and reported detection limits were recalculated and verified to ensure that they are accurate and are consistent with the internal standards and relative retention times specified by the CLP scope of work.

At concentrations below the CRQL, instrument precision becomes more variable as the IDL is approached. Therefore, the concentrations of any compound detected below the CRQL are qualified as estimates.

All compound identifications and quantitations have been verified as correct.

3.8.2 Tentatively Identified Compounds

Several TICs were identified in the blanks and samples which were flagged "U" according to Westinghouse-Hanford protocols; if the sample result was ±0.06 RRT from that of the blank and if the sample result was less than 5 times the highest blank concentration.

This action is contrary to EPA policy, which indicates that TIC results shown to be due to the presence of blank contamination should be flagged "R".

3.9 OVERALL ASSESSMENT AND SUMMARY

A thorough review of ongoing data acquisition and instrument performance criteria was made to assess overall GC/MS instrument performance. No changes in instrument performance were noted that would result in the degradation of data quality. No indications of unacceptable instrument performance (i.e., shifts in baseline stability, retention time shifts, extraneous peaks, sensitivity) were found during the quality assurance review.

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In general, the semivolatile data presented in this report met the protocol-specified QA/QC requirements. Minor laboratory blank contamination was detected in several samples. The sample to extraction holding time was exceeded, though not grossly exceeded, for several samples. As required by Westinghouse-Hanford protocols, all results for these samples were flagged "J" and are considered to be estimates usable for limited purposes only. All other data are considered valid and usable within the standard error associated with the method.

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SEMI-VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080L9																				
Sample Number		B080L9																			
Location		116-F-6																			
Remarks		NV																			
Sample Date		1/27/93																			
Extraction Date		2/05/93																			
Analysis Date		2/10/93																			
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	350	U																		
bis(2-Chloroethyl)ether	330	350	U																		
2-Chlorophenol	330	350	U																		
1,3-Dichlorobenzene	330	350	U																		
1,4-Dichlorobenzene	330	350	U																		
1,2-Dichlorobenzene	330	350	U																		
2-Methylphenol	330	350	U																		
2,2'-oxybis(1-Chloropropane)	330	350	U																		
4-Methylphenol	330	350	U																		
N-Nitroso-di-n-propylamine	330	350	U																		
Hexachloroethane	330	350	U																		
Nitrobenzene	330	350	U																		
Isophorone	330	350	U																		
2-Nitrophenol	330	350	U																		
2,4-Dimethylphenol	330	350	U																		
bis(2-Chloroethoxy)methane	330	350	U																		
2,4-Dichlorophenol	330	350	U																		
1,2,4-Trichlorobenzene	330	350	U																		
Naphthalene	330	350	U																		
4-Chloroaniline	330	350	U																		
Hexachlorobutadiene	330	350	U																		
4-Chloro-3-methylphenol	330	350	U																		
2-Methylnaphthalene	330	350	U																		
Hexachlorocyclopentadiene	330	350	U																		
2,4,6-Trichlorophenol	330	350	U																		
2,4,5-Trichlorophenol	1700	850	U																		
2-Chloronaphthalene	330	350	U																		
2-Nitroaniline	1700	850	U																		
Dimethylphthalate	330	350	U																		
Acenaphthylene	330	350	U																		
3-Nitroaniline	330	850	U																		

NV = Not Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080L9																				
Sample Number		B080L9																			
Location		116-F-6																			
Remarks		NV																			
Sample Date		1/27/93																			
Extraction Date		2/05/93																			
Analysis Date		2/10/93																			
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	350	U																		
2,4-Dinitrophenol	1700	850	U																		
4-Nitrophenol	1700	850	U																		
Dibenzofuran	330	350	U																		
2,4-Dinitrotoluene	330	350	U																		
2,6-Dinitrotoluene	330	350	U																		
Diethylphthalate	330	350	U																		
4-Chlorophenyl-phenylether	330	350	U																		
Fluorene	330	350	U																		
4-Nitroaniline	1700	850	U																		
4,6-Dinitro-2-methylphenol	1700	850	U																		
N-Nitrosodiphenylamine	330	350	U																		
4-Bromophenyl-phenylether	330	350	U																		
Hexachlorobenzene	330	350	U																		
Pentachlorophenol	1700	850	U																		
Phenanthrene	330	350	U																		
Anthracene	330	350	U																		
Carbazole	330	350	U																		
Di-n-butylphthalate	330	110	J																		
Fluoranthene	330	350	U																		
Pyrene	330	350	U																		
Butylbenzylphthalate	330	350	U																		
3,3'-Dichlorobenzidine	330	350	U																		
Benzo(a)anthracene	330	350	U																		
bis(2-Ethylhexyl)phthalate	330	350	U																		
Chrysene	330	350	U																		
Di-n-octylphthalate	330	350	U																		
Benzo(b)fluoranthene	330	350	U																		
Benzo(k)fluoranthene	330	350	U																		
Benzo(a)pyrene	330	350	U																		
Indeno(1,2,3-cd)pyrene	330	350	U																		
Dibenzo(a,h)anthracene	330	350	U																		
Benzo(g,h,i)perylene	330	350	U																		

NV = [illegible] Validated

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M0																				
Sample Number		B080M0		B080M1		B080M2															
Location		116-F-6		116-F-6		116-F-6															
Remarks		NV		NV		NV															
Sample Date		1/28/93		1/28/93		1/28/93															
Extraction Date		2/05/93		2/05/93		2/05/93															
Analysis Date		2/10/93		2/10/93		2/10/93															
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	340	U	340	U	340	U														
bis(2-Chloroethyl)ether	330	340	U	340	U	340	U														
2-Chlorophenol	330	340	U	340	U	340	U														
1,3-Dichlorobenzene	330	340	U	340	U	340	U														
1,4-Dichlorobenzene	330	340	U	340	U	340	U														
1,2-Dichlorobenzene	330	340	U	340	U	340	U														
2-Methylphenol	330	340	U	340	U	340	U														
2,2'-oxybis(1-Chloropropane)	330	340	U	340	U	340	U														
4-Methylphenol	330	340	U	340	U	340	U														
N-Nitroso-di-n-propylamine	330	340	U	340	U	340	U														
Hexachloroethane	330	340	U	340	U	340	U														
Nitrobenzene	330	340	U	340	U	340	U														
Isophorone	330	340	U	340	U	340	U														
2-Nitrophenol	330	340	U	340	U	340	U														
2,4-Dimethylphenol	330	340	U	340	U	340	U														
bis(2-Chloroethoxy)methane	330	340	U	340	U	340	U														
2,4-Dichlorophenol	330	340	U	340	U	340	U														
1,2,4-Trichlorobenzene	330	340	U	340	U	340	U														
Naphthalene	330	340	U	340	U	340	U														
4-Chloroaniline	330	340	U	340	U	340	U														
Hexachlorobutadiene	330	340	U	340	U	340	U														
4-Chloro-3-methylphenol	330	340	U	340	U	340	U														
2-Methylnaphthalene	330	340	U	340	U	340	U														
Hexachlorocyclopentadiene	330	340	U	340	U	340	U														
2,4,6-Trichlorophenol	330	340	U	340	U	340	U														
2,4,5-Trichlorophenol	1700	820	U	820	U	810	U														
2-Chloronaphthalene	330	340	U	340	U	340	U														
2-Nitroaniline	1700	820	U	820	U	810	U														
Dimethylphthalate	330	340	U	340	U	340	U														
Acenaphthylene	330	340	U	340	U	340	U														
3-Nitroaniline	330	820	U	820	U	810	U														

NV = Not Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M0																				
Sample Number		B080M0		B080M1		B080M2															
Location		116-F-6		116-F-6		116-F-6															
Remarks		NV		NV		NV															
Sample Date		1/28/93		1/28/93		1/28/93															
Extraction Date		2/05/93		2/05/93		2/05/93															
Analysis Date		2/10/93		2/10/93		2/10/93															
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	340	U	340	U	340	U														
2,4-Dinitrophenol	1700	820	U	820	U	810	U														
4-Nitrophenol	1700	820	U	820	U	810	U														
Dibenzofuran	330	340	U	340	U	340	U														
2,4-Dinitrotoluene	330	340	U	340	U	340	U														
2,6-Dinitrotoluene	330	340	U	340	U	340	U														
Diethylphthalate	330	340	U	340	U	340	U														
4-Chlorophenyl-phenylether	330	340	U	340	U	340	U														
Fluorene	330	340	U	340	U	340	U														
4-Nitroaniline	1700	820	U	820	U	810	U														
4,6-Dinitro-2-methylphenol	1700	820	U	820	U	810	U														
N-Nitrosodiphenylamine	330	340	U	340	U	340	U														
4-Bromophenyl-phenylether	330	340	U	340	U	340	U														
Hexachlorobenzene	330	340	U	340	U	340	U														
Pentachlorophenol	1700	820	U	820	U	810	U														
Phenanthrene	330	340	U	340	U	340	U														
Anthracene	330	340	U	340	U	340	U														
Carbazole	330	340	U	340	U	340	U														
Di-n-butylphthalate	330	340	U	140	J	340	U														
Fluoranthene	330	340	U	340	U	340	U														
Pyrene	330	340	U	340	U	340	U														
Butylbenzylphthalate	330	340	U	340	U	340	U														
3,3'-Dichlorobenzidine	330	340	U	340	U	340	U														
Benzo(a)anthracene	330	340	U	340	U	340	U														
bis(2-Ethylhexyl)phthalate	330	340	U	340	U	72	J														
Chrysene	330	340	U	340	U	340	U														
Di-n-octylphthalate	330	340	U	340	U	340	U														
Benzo(b)fluoranthene	330	340	U	340	U	340	U														
Benzo(k)fluoranthene	330	340	U	340	U	340	U														
Benzo(a)pyrene	330	340	U	340	U	340	U														
Indeno(1,2,3-cd)pyrene	330	340	U	340	U	340	U														
Dibenzo(a,h)anthracene	330	340	U	340	U	340	U														
Benzo(g,h,i)perylene	330	340	U	340	U	340	U														

NV t Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M3																				
Sample Number		B080M3																			
Location		116-F-6																			
Remarks		NV																			
Sample Date		1/29/93																			
Extraction Date		2/08/93																			
Analysis Date		2/10/93																			
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	340	U																		
bis(2-Chloroethyl)ether	330	340	U																		
2-Chlorophenol	330	340	U																		
1,3-Dichlorobenzene	330	340	U																		
1,4-Dichlorobenzene	330	340	U																		
1,2-Dichlorobenzene	330	340	U																		
2-Methylphenol	330	340	U																		
2,2'-oxybis(1-Chloropropane)	330	340	U																		
4-Methylphenol	330	340	U																		
N-Nitroso-di-n-propylamine	330	340	U																		
Hexachloroethane	330	340	U																		
Nitrobenzene	330	340	U																		
Isophorone	330	340	U																		
2-Nitrophenol	330	340	U																		
2,4-Dimethylphenol	330	340	U																		
bis(2-Chloroethoxy)methane	330	340	U																		
2,4-Dichlorophenol	330	340	U																		
1,2,4-Trichlorobenzene	330	340	U																		
Naphthalene	330	340	U																		
4-Chloroaniline	330	340	U																		
Hexachlorobutadiene	330	340	U																		
4-Chloro-3-methylphenol	330	340	U																		
2-Methylnaphthalene	330	340	U																		
Hexachlorocyclopentadiene	330	340	U																		
2,4,6-Trichlorophenol	330	340	U																		
2,4,5-Trichlorophenol	1700	820	U																		
2-Chloronaphthalene	330	340	U																		
2-Nitroaniline	1700	820	U																		
Dimethylphthalate	330	340	U																		
Acenaphthylene	330	340	U																		
3-Nitroaniline	330	820	U																		

NV = Not Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M3																				
Sample Number		B080M3																			
Location		116-F-6																			
Remarks		NV																			
Sample Date		1/29/93																			
Extraction Date		2/08/93																			
Analysis Date		2/10/93																			
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	340	U																		
2,4-Dinitrophenol	1700	820	U																		
4-Nitrophenol	1700	820	U																		
Dibenzofuran	330	340	U																		
2,4-Dinitrotoluene	330	340	U																		
2,6-Dinitrotoluene	330	340	U																		
Diethylphthalate	330	340	U																		
4-Chlorophenyl-phenylether	330	340	U																		
Fluorene	330	340	U																		
4-Nitroaniline	1700	820	U																		
4,6-Dinitro-2-methylphenol	1700	820	U																		
N-Nitrosodiphenylamine	330	340	U																		
4-Bromophenyl-phenylether	330	340	U																		
Hexachlorobenzene	330	340	U																		
Pentachlorophenol	1700	820	U																		
Phenanthrene	330	340	U																		
Anthracene	330	340	U																		
Carbazole	330	340	U																		
Di-n-butylphthalate	330	340	U																		
Fluoranthene	330	340	U																		
Pyrene	330	340	U																		
Butylbenzylphthalate	330	340	U																		
3,3'-Dichlorobenzidine	330	340	U																		
Benzo(a)anthracene	330	340	U																		
bis(2-Ethylhexyl)phthalate	330	340	U																		
Chrysene	330	340	U																		
Di-n-octylphthalate	330	340	U																		
Benzo(b)fluoranthene	330	340	U																		
Benzo(k)fluoranthene	330	340	U																		
Benzo(a)pyrene	330	340	U																		
Indeno(1,2,3-cd)pyrene	330	340	U																		
Dibenzo(a,h)anthracene	330	340	U																		
Benzo(g,h,i)perylene	330	340	U																		

NV = Validated

SEMI_ _ATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M4																				
Sample Number		B080M4		B080M6		B080M7		B080M8		B080M9											
Location		116-F-2		116-F-2		116-F-2		116-F-2		116-F-2											
Remarks																					
Sample Date		02/02/93		02/02/93		02/03/93		02/03/93		02/03/93											
Extraction Date		02/11/93		02/11/93		02/11/93		02/11/93		02/11/93											
Analysis Date		02/22/93		02/22/93		02/22/93		02/22/93		02/22/93											
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
bis(2-Chloroethyl)ether	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
2-Chlorophenol	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
1,3-Dichlorobenzene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
1,4-Dichlorobenzene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
1,2-Dichlorobenzene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
2-Methylphenol	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
2,2'-oxybis(1-Chloropropane)	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
4-Methylphenol	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
N-Nitroso-di-n-propylamine	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Hexachloroethane	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Nitrobenzene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Isophorone	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
2-Nitrophenol	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
2,4-Dimethylphenol	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
bis(2-Chloroethoxy)methane	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
2,4-Dichlorophenol	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
1,2,4-Trichlorobenzene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Naphthalene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
4-Chloroaniline	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Hexachlorobutadiene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
4-Chloro-3-methylphenol	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
2-Methylnaphthalene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Hexachlorocyclopentadiene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
2,4,6-Trichlorophenol	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
2,4,5-Trichlorophenol	1700	850	UJ	850	UJ	820	UJ	810	UJ	820	UJ										
2-Chloronaphthalene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
2-Nitroaniline	1700	850	UJ	850	UJ	820	UJ	810	UJ	820	UJ										
Dimethylphthalate	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Acenaphthylene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
3-Nitroaniline	1700	850	UJ	850	UJ	820	UJ	810	UJ	820	UJ										
Acenaphthene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
2,4-Dinitrophenol	1700	850	UJ	850	UJ	820	UJ	810	UJ	820	UJ										

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M4																				
Sample Number		B080M4		B080M6		B080M7		B080M8		B080M9											
Location		116-F-2		116-F-2		116-F-2		116-F-2		116-F-2											
Remarks																					
Sample Date		02/02/93		02/02/93		02/03/93		02/03/93		02/03/93											
Extraction Date		02/11/93		02/11/93		02/11/93		02/11/93		02/11/93											
Analysis Date		02/22/93		02/22/93		02/22/93		02/22/93		02/22/93											
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
4-Nitrophenol	1700	850	UJ	850	UJ	820	UJ	810	UJ	820	UJ										
Dibenzofuran	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
2,4-Dinitrotoluene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
2,6-Dinitrotoluene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Diethylphthalate	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
4-Chlorophenyl-phenylether	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Fluorene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
4-Nitroaniline	1700	850	UJ	850	UJ	820	UJ	810	UJ	820	UJ										
4,6-Dinitro-2-methylphenol	1700	850	UJ	850	UJ	820	UJ	810	UJ	820	UJ										
N-Nitrosodiphenylamine	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
4-Bromophenyl-phenylether	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Hexachlorobenzene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Pentachlorophenol	1700	850	UJ	850	UJ	820	UJ	810	UJ	820	UJ										
Phenanthrene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Anthracene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Carbazole	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Di-n-butylphthalate	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Fluoranthene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Pyrene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Butylbenzylphthalate	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
3,3'-Dichlorobenzidine	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Benzo(a)anthracene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
bis(2-Ethylhexyl)phthalate	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Chrysene	330	350	UJ	48	J	340	UJ	330	UJ	340	UJ										
Di-n-octylphthalate	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Benzo(b)fluoranthene	330	350	UJ	83	J	340	UJ	330	UJ	340	UJ										
Benzo(k)fluoranthene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Benzo(a)pyrene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Indeno(1,2,3-cd)pyrene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Dibenzo(a,h)anthracene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										
Benzo(g,h,i)perylene	330	350	UJ	350	UJ	340	UJ	330	UJ	340	UJ										

HOLDING TIME SUMMARY

SDG: B080M4	REVIEWER: SC			DATE: 8/5/93		PAGE 1 OF 1	
COMMENTS:							
FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B080M4	BNA	2/2/93	2/11/93	2/22/93	7	40	J
B080M6	BNA	2/2/93	2/11/93	2/22/93	7	40	J
B080M7	BNA	2/3/93	2/11/93	2/22/93	7	40	J
B080M8	BNA	2/3/93	2/11/93	2/22/93	7	40	J
B080M9	BNA	2/3/93	2/11/93	2/22/93	7	40	J

BLANK AND SAMPLE DATA SUMMARY

SDG: B080M4	REVIEWER: SC			DATE: 8/5/93				PAGE 1 OF 1	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
SBLK0211S1	Di-n-butylphthalate	54	J		ug/kg	270	540	All	U

DATA QUALIFICATION SUMMARY

SDG: B080M4	REVIEWER: SC	DATE: 8/5/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Di-n-butylphthalate	U	All	Lab blank contamination
All BNA compounds	J	All	Holding times exceeded

9313042.1515

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N0																				
Sample Number		B080N0		B080N1																	
Location		116-F-1A		116-F-1A																	
Remarks		NV		NV																	
Sample Date		2/04/93		2/04/93																	
Extraction Date		2/11/93		2/11/93																	
Analysis Date		2/22/93		2/22/93																	
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	340	U	360	U																
bis(2-Chloroethyl)ether	330	340	U	360	U																
2-Chlorophenol	330	340	U	360	U																
1,3-Dichlorobenzene	330	340	U	360	U																
1,4-Dichlorobenzene	330	340	U	360	U																
1,2-Dichlorobenzene	330	340	U	360	U																
2-Methylphenol	330	340	U	360	U																
2,2'-oxybis(1-Chloropropane)	330	340	U	360	U																
4-Methylphenol	330	340	U	360	U																
N-Nitroso-di-n-propylamine	330	340	U	360	U																
Hexachloroethane	330	340	U	360	U																
Nitrobenzene	330	340	U	360	U																
Isophorone	330	340	U	360	U																
2-Nitrophenol	330	340	U	360	U																
2,4-Dimethylphenol	330	340	U	360	U																
bis(2-Chloroethoxy)methane	330	340	U	360	U																
2,4-Dichlorophenol	330	340	U	360	U																
1,2,4-Trichlorobenzene	330	340	U	360	U																
Naphthalene	330	340	U	360	U																
4-Chloroaniline	330	340	U	360	U																
Hexachlorobutadiene	330	340	U	360	U																
4-Chloro-3-methylphenol	330	340	U	360	U																
2-Methylnaphthalene	330	340	U	360	U																
Hexachlorocyclopentadiene	330	340	U	360	U																
2,4,6-Trichlorophenol	330	340	U	360	U																
2,4,5-Trichlorophenol	1700	830	U	880	U																
2-Chloronaphthalene	330	340	U	360	U																
2-Nitroaniline	1700	830	U	880	U																
Dimethylphthalate	330	340	U	360	U																
Acenaphthylene	330	340	U	360	U																
3-Nitroaniline	330	830	U	880	U																

NV = Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N0																				
Sample Number		B080N0		B080N1																	
Location		116-F-1A		116-F-1A																	
Remarks		NV		NV																	
Sample Date		2/04/93		2/04/93																	
Extraction Date		2/11/93		2/11/93																	
Analysis Date		2/22/93		2/22/93																	
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	340	U	360	U																
2,4-Dinitrophenol	1700	830	U	880	U																
4-Nitrophenol	1700	830	U	880	U																
Dibenzofuran	330	340	U	360	U																
2,4-Dinitrotoluene	330	340	U	360	U																
2,6-Dinitrotoluene	330	340	U	360	U																
Diethylphthalate	330	340	U	360	U																
4-Chlorophenyl-phenylether	330	340	U	360	U																
Fluorene	330	340	U	360	U																
4-Nitroaniline	1700	830	U	880	U																
4,6-Dinitro-2-methylphenol	1700	830	U	880	U																
N-Nitrosodiphenylamine	330	340	U	360	U																
4-Bromophenyl-phenylether	330	340	U	360	U																
Hexachlorobenzene	330	340	U	360	U																
Pentachlorophenol	1700	830	U	880	U																
Phenanthrene	330	340	U	360	U																
Anthracene	330	340	U	360	U																
Carbazole	330	340	U	360	U																
Di-n-butylphthalate	330	71	J	120	J																
Fluoranthene	330	340	U	360	U																
Pyrene	330	340	U	360	U																
Butylbenzylphthalate	330	340	U	360	U																
3,3'-Dichlorobenzidine	330	340	U	360	U																
Benzo(a)anthracene	330	340	U	360	U																
bis(2-Ethylhexyl)phthalate	330	340	U	360	J																
Chrysene	330	340	U	360	U																
Di-n-octylphthalate	330	340	U	360	U																
Benzo(b)fluoranthene	330	340	U	360	U																
Benzo(k)fluoranthene	330	340	U	360	U																
Benzo(a)pyrene	330	340	U	360	U																
Indeno(1,2,3-cd)pyrene	330	340	U	360	U																
Dibenzo(a,h)anthracene	330	340	U	360	U																
Benzo(g,h,i)perylene	330	340	U	360	U																

NV = Not Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N2																				
Sample Number		B080N2		B080N3																	
Location		116-F-1A		116-F-1A																	
Remarks		NV		NV																	
Sample Date		2/08/93		2/09/93																	
Extraction Date		2/18/93		2/18/93																	
Analysis Date		2/24/93		2/24/93																	
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	330	U	330	U																
bis(2-Chloroethyl)ether	330	330	U	330	U																
2-Chlorophenol	330	330	U	330	U																
1,3-Dichlorobenzene	330	330	U	330	U																
1,4-Dichlorobenzene	330	330	U	330	U																
1,2-Dichlorobenzene	330	330	U	330	U																
2-Methylphenol	330	330	U	330	U																
2,2'-oxybis(1-Chloropropane)	330	330	U	330	U																
4-Methylphenol	330	330	U	330	U																
N-Nitroso-di-n-propylamine	330	330	U	330	U																
Hexachloroethane	330	330	U	330	U																
Nitrobenzene	330	330	U	330	U																
Isophorone	330	330	U	330	U																
2-Nitrophenol	330	330	U	330	U																
2,4-Dimethylphenol	330	330	U	330	U																
bis(2-Chloroethoxy)methane	330	330	U	330	U																
2,4-Dichlorophenol	330	330	U	330	U																
1,2,4-Trichlorobenzene	330	330	U	330	U																
Naphthalene	330	330	U	330	U																
4-Chloroaniline	330	330	U	330	U																
Hexachlorobutadiene	330	330	U	330	U																
4-Chloro-3-methylphenol	330	330	U	330	U																
2-Methylnaphthalene	330	330	U	330	U																
Hexachlorocyclopentadiene	330	330	U	330	U																
2,4,6-Trichlorophenol	330	330	U	330	U																
2,4,5-Trichlorophenol	1700	800	U	800	U																
2-Chloronaphthalene	330	330	U	330	U																
2-Nitroaniline	1700	800	U	800	U																
Dimethylphthalate	330	330	U	330	U																
Acenaphthylene	330	330	U	330	U																
3-Nitroaniline	330	800	U	800	U																

NV Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N2																				
Sample Number		B080N2		B080N3																	
Location		116-F-1A		116-F-1A																	
Remarks		NV		NV																	
Sample Date		2/08/93		2/09/93																	
Extraction Date		2/18/93		2/18/93																	
Analysis Date		2/24/93		2/24/93																	
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	330	U	330	U																
2,4-Dinitrophenol	1700	800	U	800	U																
4-Nitrophenol	1700	800	U	800	U																
Dibenzofuran	330	330	U	330	U																
2,4-Dinitrotoluene	330	330	U	330	U																
2,6-Dinitrotoluene	330	330	U	330	U																
Diethylphthalate	330	330	U	330	U																
4-Chlorophenyl-phenylether	330	330	U	330	U																
Fluorene	330	330	U	330	U																
4-Nitroaniline	1700	800	U	800	U																
4,6-Dinitro-2-methylphenol	1700	800	U	800	U																
N-Nitrosodiphenylamine	330	330	U	330	U																
4-Bromophenyl-phenylether	330	330	U	330	U																
Hexachlorobenzene	330	330	U	330	U																
Pentachlorophenol	1700	800	U	800	U																
Phenanthrene	330	330	U	330	U																
Anthracene	330	330	U	330	U																
Carbazole	330	330	U	330	U																
Di-n-butylphthalate	330	130	J	150	J																
Fluoranthene	330	330	U	330	U																
Pyrene	330	330	U	330	U																
Butylbenzylphthalate	330	330	U	330	U																
3,3'-Dichlorobenzidine	330	330	U	330	U																
Benzo(a)anthracene	330	330	U	330	U																
bis(2-Ethylhexyl)phthalate	330	330	U	330	U																
Chrysene	330	330	U	330	U																
Di-n-octylphthalate	330	330	U	330	U																
Benzo(b)fluoranthene	330	330	U	330	U																
Benzo(k)fluoranthene	330	330	U	330	U																
Benzo(a)pyrene	330	330	U	330	U																
Indeno(1,2,3-cd)pyrene	330	330	U	330	U																
Dibenzo(a,h)anthracene	330	330	U	330	U																
Benzo(g,h,i)perylene	330	330	U	330	U																

NV = Not Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N5																				
Sample Number		B080N5		B080N6		B080N7		B080N8													
Location		116-F-9C		116-F-9C		116-F-9C		116-F-9C													
Remarks								DUP													
Sample Date		02/11/93		02/11/93		02/12/93		02/12/93													
Extraction Date		02/19/93		02/19/93		02/19/93		02/19/93													
Analysis Date		02/24/93		02/24/93		02/24/93		02/24/93													
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	340	UJ	350	UJ	330	U	340	U												
bis(2-Chloroethyl)ether	330	340	UJ	350	UJ	330	U	340	U												
2-Chlorophenol	330	340	UJ	350	UJ	330	U	340	U												
1,3-Dichlorobenzene	330	340	UJ	350	UJ	330	U	340	U												
1,4-Dichlorobenzene	330	340	UJ	350	UJ	330	U	340	U												
1,2-Dichlorobenzene	330	340	UJ	350	UJ	330	U	340	U												
2-Methylphenol	330	340	UJ	350	UJ	330	U	340	U												
2,2'-oxybis(1-Chloropropane)	330	340	UJ	350	UJ	330	U	340	U												
4-Methylphenol	330	340	UJ	350	UJ	330	U	340	U												
N-Nitroso-di-n-propylamine	330	340	UJ	350	UJ	330	U	340	U												
Hexachloroethane	330	340	UJ	350	UJ	330	U	340	U												
Nitrobenzene	330	340	UJ	350	UJ	330	U	340	U												
Isophorone	330	340	UJ	350	UJ	330	U	340	U												
2-Nitrophenol	330	340	UJ	350	UJ	330	U	340	U												
2,4-Dimethylphenol	330	340	UJ	350	UJ	330	U	340	U												
bis(2-Chloroethoxy)methane	330	340	UJ	350	UJ	330	U	340	U												
2,4-Dichlorophenol	330	340	UJ	350	UJ	330	U	340	U												
1,2,4-Trichlorobenzene	330	340	UJ	350	UJ	330	U	340	U												
Naphthalene	330	340	UJ	350	UJ	330	U	340	U												
4-Chloroaniline	330	340	UJ	350	UJ	330	U	340	U												
Hexachlorobutadiene	330	340	UJ	350	UJ	330	U	340	U												
4-Chloro-3-methylphenol	330	340	UJ	350	UJ	330	U	340	U												
2-Methylnaphthalene	330	340	UJ	350	UJ	330	U	340	U												
Hexachlorocyclopentadiene	330	340	UJ	350	UJ	330	U	340	U												
2,4,6-Trichlorophenol	330	340	UJ	350	UJ	330	U	340	U												
2,4,5-Trichlorophenol	1700	830	UJ	850	UJ	800	U	820	U												
2-Chloronaphthalene	330	340	UJ	350	UJ	330	U	340	U												
2-Nitroaniline	1700	830	UJ	850	UJ	800	U	820	U												
Dimethylphthalate	330	340	UJ	350	UJ	330	U	340	U												
Acenaphthylene	330	340	UJ	350	UJ	330	U	340	U												
3-Nitroaniline	1700	830	UJ	850	UJ	800	U	820	U												
Acenaphthene	330	340	UJ	350	UJ	330	U	340	U												
2,4-Dinitrophenol	1700	830	UJ	850	UJ	800	U	820	U												

DU Duplicate

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N5																				
Sample Number		B080N5		B080N6		B080N7		B080N8													
Location		116-F-9C		116-F-9C		116-F-9C		116-F-9C													
Remarks								DUP													
Sample Date		02/11/93		02/11/93		02/12/93		02/12/93													
Extraction Date		02/19/93		02/19/93		02/19/93		02/19/93													
Analysis Date		02/24/93		02/24/93		02/24/93		02/24/93													
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
4-Nitrophenol	1700	830	UJ	850	UJ	800	U	820	U												
Dibenzofuran	330	340	UJ	350	UJ	330	U	340	U												
2,4-Dinitrotoluene	330	340	UJ	350	UJ	330	U	340	U												
2,6-Dinitrotoluene	330	340	UJ	350	UJ	330	U	340	U												
Diethylphthalate	330	340	UJ	350	UJ	330	U	340	U												
4-Chlorophenyl-phenylether	330	340	UJ	350	UJ	330	U	340	U												
Fluorene	330	340	UJ	350	UJ	330	U	340	U												
4-Nitroaniline	1700	830	UJ	850	UJ	800	U	820	U												
4,6-Dinitro-2-methylphenol	1700	830	UJ	850	UJ	800	U	820	U												
N-Nitrosodiphenylamine	330	340	UJ	350	UJ	330	U	340	U												
4-Bromophenyl-phenylether	330	340	UJ	350	UJ	330	U	340	U												
Hexachlorobenzene	330	340	UJ	350	UJ	330	U	340	U												
Pentachlorophenol	1700	830	UJ	850	UJ	800	U	820	U												
Phenanthrene	330	340	UJ	350	UJ	330	U	340	U												
Anthracene	330	340	UJ	350	UJ	330	U	340	U												
Carbazole	330	340	UJ	350	UJ	330	U	340	U												
Di-n-butylphthalate	330	340	UJ	350	UJ	330	U	340	U												
Fluoranthene	330	340	UJ	350	UJ	330	U	340	U												
Pyrene	330	340	UJ	350	UJ	330	U	340	U												
Butylbenzylphthalate	330	340	UJ	350	UJ	330	U	340	U												
3,3'-Dichlorobenzidine	330	340	UJ	350	UJ	330	U	340	U												
Benzo(a)anthracene	330	340	UJ	350	UJ	330	U	340	U												
bis(2-Ethylhexyl)phthalate	330	340	UJ	350	UJ	330	U	340	U												
Chrysene	330	340	UJ	350	UJ	330	U	340	U												
Di-n-octylphthalate	330	340	UJ	350	UJ	330	U	340	U												
Benzo(b)fluoranthene	330	340	UJ	350	UJ	330	U	340	U												
Benzo(k)fluoranthene	330	340	UJ	350	UJ	330	U	340	U												
Benzo(a)pyrene	330	340	UJ	350	UJ	330	U	340	U												
Indeno(1,2,3-cd)pyrene	330	340	UJ	350	UJ	330	U	340	U												
Dibenzo(a,h)anthracene	330	340	UJ	350	UJ	330	U	340	U												
Benzo(g,h,i)perylene	330	340	UJ	350	UJ	330	U	340	U												

DUP = Duplicate

HOLDING TIME SUMMARY

SDG: B080N5	REVIEWER: SC			DATE: 8/3/93		PAGE 1 OF 1	
COMMENTS:							
FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B080N5	BNA	2/11/93	2/19/93	2/24/93	7	40	J
B080N6	BNA	2/11/93	2/19/93	2/24/93	7	40	J

BLANK AND SAMPLE DATA SUMMARY

SDG: B080N5	REVIEWER: SC			DATE: 8/3/93				PAGE 1 OF 1	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
SBLK0219S	Di-n-butylphthalate	120	U		ug/kg	600	1200	All	U

DATA QUALIFICATION SUMMARY

SDG: B080N5	REVIEWER: SC	DATE: 8/3/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All BNA compounds	J	B080N5, B080N6	Holding times exceeded
Di-n-butylphthalate	U	All	Lab blank contamination

9313042.0554

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																							
Laboratory: Roy F. Weston																							
Case	SDG: B080N9																						
Sample Number		B080N9																					
Location		116-F-9C																					
Remarks		Split																					
Sample Date		02/12/93																					
Extraction Date		02/23/93																					
Analysis Date		03/16/93																					
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q		
Phenol	330	330	UJ																				
bis(2-Chloroethyl)ether	330	330	UJ																				
2-Chlorophenol	330	330	UJ																				
1,3-Dichlorobenzene	330	330	UJ																				
1,4-Dichlorobenzene	330	330	UJ																				
1,2-Dichlorobenzene	330	330	UJ																				
2-Methylphenol	330	330	UJ																				
2,2'-oxybis(1-Chloropropane)	330	330	UJ																				
4-Methylphenol	330	330	UJ																				
N-Nitroso-di-n-propylamine	330	330	UJ																				
Hexachloroethane	330	330	UJ																				
Nitrobenzene	330	330	UJ																				
Isophorone	330	330	UJ																				
2-Nitrophenol	330	330	UJ																				
2,4-Dimethylphenol	330	330	UJ																				
bis(2-Chloroethoxy)methane	330	330	UJ																				
2,4-Dichlorophenol	330	330	UJ																				
1,2,4-Trichlorobenzene	330	330	UJ																				
Naphthalene	330	330	UJ																				
4-Chloroaniline	330	330	UJ																				
Hexachlorobutadiene	330	330	UJ																				
4-Chloro-3-methylphenol	330	330	UJ																				
2-Methylnaphthalene	330	330	UJ																				
Hexachlorocyclopentadiene	330	330	UJ																				
2,4,6-Trichlorophenol	330	330	UJ																				
2,4,5-Trichlorophenol	1700	820	UJ																				
2-Chloronaphthalene	330	330	UJ																				
2-Nitroaniline	1700	820	UJ																				
Dimethylphthalate	330	330	UJ																				
Acenaphthylene	330	330	UJ																				
2,4-Dinitrotoluene	330	330	UJ																				
3-Nitroaniline	1700	820	UJ																				
Acenaphthene	330	330	UJ																				

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Roy F. Weston																					
Case	SDG: B080N9																				
Sample Number		B080N9																			
Location		116-F-9C																			
Remarks		Split																			
Sample Date		02/12/93																			
Extraction Date		02/23/93																			
Analysis Date		03/16/93																			
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2,4-Dinitrophenol	1700	820	UJ																		
4-Nitrophenol	1700	820	UJ																		
Dibenzofuran	330	330	UJ																		
2,4-Dinitrotoluene	330	330	UJ																		
Diethylphthalate	330	330	UJ																		
4-Chlorophenyl-phenylether	330	330	UJ																		
Fluorene	330	330	UJ																		
4-Nitroaniline	1700	820	UJ																		
4,6-Dinitro-2-methylphenol	1700	820	UJ																		
N-Nitrosodiphenylamine	330	330	UJ																		
4-Bromophenyl-phenylether	330	330	UJ																		
Hexachlorobenzene	330	330	UJ																		
Pentachlorophenol	1700	820	UJ																		
Phenanthrene	330	330	UJ																		
Anthracene	330	330	UJ																		
Carbazole	330	330	UJ																		
Di-n-butylphthalate	330	330	UJ																		
Fluoranthene	330	330	UJ																		
Pyrene	330	330	UJ																		
Butylbenzylphthalate	330	330	UJ																		
3,3'-Dichlorobenzidine	330	330	UJ																		
Benzo(a)anthracene	330	330	UJ																		
Chrysene	330	330	UJ																		
bis(2-Ethylhexyl)phthalate	330	18	J																		
Di-n-octylphthalate	330	330	UJ																		
Benzo(b)fluoranthene	330	330	UJ																		
Benzo(k)fluoranthene	330	330	UJ																		
Benzo(a)pyrene	330	330	UJ																		
Indeno(1,2,3-cd)pyrene	330	330	UJ																		
Dibenzo(a,h)anthracene	330	330	UJ																		
Benzo(g,h,i)perylene	330	330	UJ																		

HOLDING TIME SUMMARY

SDG: B080N9	REVIEWER: SC			DATE: 7/30/93		PAGE 1 OF 1	
COMMENTS:							
FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B080N9	BNA	2/12/93	2/23/93	3/16/93	7	40	J

DATA QUALIFICATION SUMMARY

SDG: B080N9	REVIEWER: SC	DATE: 7/30/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All BNA compounds	J	B080N9	Holding times exceeded

9313042.0558

SE. OLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P0																				
Sample Number		B080P0		B080P1		B080P2															
Location		116-F-9C		116-F-9C		116-F-4															
Remarks		NV		NV		NV															
Sample Date		2/17/93		2/17/93		2/17/93															
Extraction Date		2/24/93		2/24/93		2/24/93															
Analysis Date		3/05/93		3/05/93		3/05/93															
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	340	U	320	U	340	U														
bis(2-Chloroethyl)ether	330	340	U	320	U	340	U														
2-Chlorophenol	330	340	U	320	U	340	U														
1,3-Dichlorobenzene	330	340	U	320	U	340	U														
1,4-Dichlorobenzene	330	340	U	320	U	340	U														
1,2-Dichlorobenzene	330	340	U	320	U	340	U														
2-Methylphenol	330	340	U	320	U	340	U														
2,2'-oxybis(1-Chloropropane)	330	340	U	320	U	340	U														
4-Methylphenol	330	340	U	320	U	340	U														
N-Nitroso-di-n-propylamine	330	340	U	320	U	340	U														
Hexachloroethane	330	340	U	320	U	340	U														
Nitrobenzene	330	340	U	320	U	340	U														
Isophorone	330	340	U	320	U	340	U														
2-Nitrophenol	330	340	U	320	U	340	U														
2,4-Dimethylphenol	330	340	U	320	U	340	U														
bis(2-Chloroethoxy)methane	330	340	U	320	U	340	U														
2,4-Dichlorophenol	330	340	U	320	U	340	U														
1,2,4-Trichlorobenzene	330	340	U	320	U	340	U														
Naphthalene	330	340	U	320	U	340	U														
4-Chloroaniline	330	340	U	320	U	340	U														
Hexachlorobutadiene	330	340	U	320	U	340	U														
4-Chloro-3-methylphenol	330	340	U	320	U	340	U														
2-Methylnaphthalene	330	340	U	320	U	340	U														
Hexachlorocyclopentadiene	330	340	U	320	U	340	U														
2,4,6-Trichlorophenol	330	340	U	320	U	340	U														
2,4,5-Trichlorophenol	1700	820	U	780	U	820	U														
2-Chloronaphthalene	330	340	U	320	U	340	U														
2-Nitroaniline	1700	820	U	780	U	820	U														
Dimethylphthalate	330	340	U	320	U	340	U														
Acenaphthylene	330	340	U	320	U	340	U														
3-Nitroaniline	330	820	U	780	U	820	U														

NV = Not Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory:																					
Case	SDG: B080P0																				
Sample Number		B080P0		B080P1		B080P2															
Location		116-F-9C		116-F-9C		116-F-4															
Remarks		NV		NV		NV															
Sample Date		02/17/93		02/17/93		02/17/93															
Extraction Date		02/24/93		02/24/93		02/24/93															
Analysis Date		03/05/93		03/05/93		03/05/93															
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	340	U	320	U	340	U														
2,4-Dinitrophenol	1700	820	U	780	U	820	U														
4-Nitrophenol	1700	830	U	780	U	830	U														
Dibenzofuran	330	340	U	320	U	340	U														
2,4-Dinitrotoluene	330	340	U	320	U	340	U														
2,6-Dinitrotoluene	330	340	U	320	U	340	U														
Diethylphthalate	330	340	U	320	U	340	U														
4-Chlorophenyl-phenylether	330	340	U	320	U	340	U														
Fluorene	330	340	U	320	U	340	U														
4-Nitroaniline	1700	820	U	780	U	820	U														
4,6-Dinitro-2-methylphenol	1700	820	U	780	U	820	U														
N-Nitrosodiphenylamine	330	340	U	320	U	340	U														
4-Bromophenyl-phenylether	330	340	U	320	U	340	U														
Hexachlorobenzene	330	340	U	320	U	340	U														
Pentachlorophenol	1700	820	U	780	U	820	U														
Phenanthrene	330	340	U	320	U	340	U														
Anthracene	330	340	U	320	U	340	U														
Carbazole	330	340	U	320	U	340	U														
Di-n-butylphthalate	330	74	J	320	J	340	U														
Fluoranthene	330	340	U	320	U	340	U														
Pyrene	330	340	U	320	U	340	U														
Butylbenzylphthalate	330	340	U	320	U	340	U														
3,3'-Dichlorobenzidine	330	340	U	320	U	340	U														
Benzo(a)anthracene	330	340	U	320	U	340	U														
bis(2-Ethylhexyl)phthalate	330	340	U	75	J	800															
Chrysene	330	340	U	320	U	340	U														
Di-n-octylphthalate	330	340	U	320	U	340	U														
Benzo(b)fluoranthene	330	340	U	320	U	340	U														
Benzo(k)fluoranthene	330	340	U	320	U	340	U														
Benzo(a)pyrene	330	340	U	320	U	340	U														
Indeno(1,2,3-cd)pyrene	330	340	U	320	U	340	U														
Dibenzo(a,h)anthracene	330	340	U	320	U	340	U														
Benzo(g,h,i)perylene	330	340	U	320	U	340	U														

NV Validated

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P4																				
Sample Number		B080P4																			
Location		116-F-4																			
Remarks																					
Sample Date		02/18/93																			
Extraction Date		02/26/93																			
Analysis Date		03/05/93																			
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	330	U																		
bis(2-Chloroethyl)ether	330	330	U																		
2-Chlorophenol	330	330	U																		
1,3-Dichlorobenzene	330	330	U																		
1,4-Dichlorobenzene	330	330	U																		
1,2-Dichlorobenzene	330	330	U																		
2-Methylphenol	330	330	U																		
2,2'-oxybis(1-Chloropropane)	330	330	U																		
4-Methylphenol	330	330	U																		
N-Nitroso-di-n-propylamine	330	330	U																		
Hexachloroethane	330	330	U																		
Nitrobenzene	330	330	U																		
Isophorone	330	330	U																		
2-Nitrophenol	330	330	U																		
2,4-Dimethylphenol	330	330	U																		
bis(2-Chloroethoxy)methane	330	330	U																		
2,4-Dichlorophenol	330	330	U																		
1,2,4-Trichlorobenzene	330	330	U																		
Naphthalene	330	330	U																		
4-Chloroaniline	330	330	U																		
Hexachlorobutadiene	330	330	U																		
4-Chloro-3-methylphenol	330	330	U																		
2-Methylnaphthalene	330	330	U																		
Hexachlorocyclopentadiene	330	330	U																		
2,4,6-Trichlorophenol	330	330	U																		
2,4,5-Trichlorophenol	1700	800	U																		
2-Chloronaphthalene	330	330	U																		
2-Nitroaniline	1700	800	U																		
Dimethylphthalate	330	330	U																		
Acenaphthylene	330	330	U																		
3-Nitroaniline	1700	800	U																		
Acenaphthene	330	330	U																		
2,4-Dinitrophenol	1700	800	U																		

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P4																				
Sample Number		B080P4																			
Location		116-F-4																			
Remarks																					
Sample Date		02/18/93																			
Extraction Date		02/26/93																			
Analysis Date		03/05/93																			
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
4-Nitrophenol	1700	800	U																		
Dibenzofuran	330	330	U																		
2,4-Dinitrotoluene	330	330	U																		
2,6-Dinitrotoluene	330	330	U																		
Diethylphthalate	330	330	U																		
4-Chlorophenyl-phenylether	330	330	U																		
Fluorene	330	330	U																		
4-Nitroaniline	1700	800	U																		
4,6-Dinitro-2-methylphenol	1700	800	U																		
N-Nitrosodiphenylamine	330	330	U																		
4-Bromophenyl-phenylether	330	330	U																		
Hexachlorobenzene	330	330	U																		
Pentachlorophenol	1700	800	U																		
Phenanthrene	330	330	U																		
Anthracene	330	330	U																		
Carbazole	330	330	U																		
Di-n-butylphthalate	330	330	U																		
Fluoranthene	330	330	U																		
Pyrene	330	330	U																		
Butylbenzylphthalate	330	330	U																		
3,3'-Dichlorobenzidine	330	330	U																		
Benzo(a)anthracene	330	330	U																		
bis(2-Ethylhexyl)phthalate	330	330	U																		
Chrysene	330	330	U																		
Di-n-octylphthalate	330	330	U																		
Benzo(b)fluoranthene	330	330	U																		
Benzo(k)fluoranthene	330	330	U																		
Benzo(a)pyrene	330	330	U																		
Indeno(1,2,3-cd)pyrene	330	330	U																		
Dibenzo(a,h)anthracene	330	330	U																		
Benzo(g,h,i)perylene	330	330	U																		

BLANK AND SAMPLE DATA SUMMARY

SDG: B080P4	REVIEWER: SC			DATE: 8/3/93				PAGE 1 OF 1	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
SBLK02265	Di-n-butylphthalate	72	J		ug/kg	360	720	B080P4	U
SBLK02265	bis(2-Ethylhexyl)phthalate	37	J		ug/kg	185	370	B080P4	U

DATA QUALIFICATION SUMMARY

SDG: B080P4	REVIEWER: SC	DATE: 8/3/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Di-n-butylphthalate	U	B080P4	Lab blank contamination
bis(2-Ethylhexyl)phthalate	U	B080P4	Lab blank contamination

9312042.0564

Project: WESTINGHOUSE-HANFORD																							
Laboratory: TMA																							
Case	SDG: B080P5																						
Sample Number		B080P5																					
Location		116-F-4																					
Remarks		NV																					
Sample Date		2/22/93																					
Extraction Date		3/02/93																					
Analysis Date		3/05/93																					
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	340	U																				
bis(2-Chloroethyl)ether	330	340	U																				
2-Chlorophenol	330	340	U																				
1,3-Dichlorobenzene	330	340	U																				
1,4-Dichlorobenzene	330	340	U																				
1,2-Dichlorobenzene	330	340	U																				
2-Methylphenol	330	340	U																				
2,2'-oxybis(1-Chloropropane)	330	340	U																				
4-Methylphenol	330	340	U																				
N-Nitroso-di-n-propylamine	330	340	U																				
Hexachloroethane	330	340	U																				
Nitrobenzene	330	340	U																				
Isophorone	330	340	U																				
2-Nitrophenol	330	340	U																				
2,4-Dimethylphenol	330	340	U																				
bis(2-Chloroethoxy)methane	330	340	U																				
2,4-Dichlorophenol	330	340	U																				
1,2,4-Trichlorobenzene	330	340	U																				
Naphthalene	330	340	U																				
4-Chloroaniline	330	340	U																				
Hexachlorobutadiene	330	340	U																				
4-Chloro-3-methylphenol	330	340	U																				
2-Methylnaphthalene	330	340	U																				
Hexachlorocyclopentadiene	330	340	U																				
2,4,6-Trichlorophenol	330	340	U																				
2,4,5-Trichlorophenol	1700	810	U																				
2-Chloronaphthalene	330	340	U																				
2-Nitroaniline	1700	810	U																				
Dimethylphthalate	330	340	U																				
Acenaphthylene	330	340	U																				
3-Nitroaniline	330	810	U																				

NV = Not Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P5																				
Sample Number		B080P5																			
Location		116-F-4																			
Remarks		NV																			
Sample Date		2/22/93																			
Extraction Date		3/04/93																			
Analysis Date		3/17/93																			
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	340	U																		
2,4-Dinitrophenol	1700	810	U																		
4-Nitrophenol	1700	810	U																		
Dibenzofuran	330	340	U																		
2,4-Dinitrotoluene	330	340	U																		
2,6-Dinitrotoluene	330	340	U																		
Diethylphthalate	330	340	U																		
4-Chlorophenyl-phenylether	330	340	U																		
Fluorene	330	340	U																		
4-Nitroaniline	1700	810	U																		
4,6-Dinitro-2-methylphenol	1700	810	U																		
N-Nitrosodiphenylamine	330	340	U																		
4-Bromophenyl-phenylether	330	340	U																		
Hexachlorobenzene	330	340	U																		
Pentachlorophenol	1700	340	U																		
Phenanthrene	330	340	U																		
Anthracene	330	340	U																		
Carbazole	330	340	U																		
Di-n-butylphthalate	330	130	J																		
Fluoranthene	330	340	U																		
Pyrene	330	340	U																		
Butylbenzylphthalate	330	340	U																		
3,3'-Dichlorobenzidine	330	340	U																		
Benzo(a)anthracene	330	340	U																		
bis(2-Ethylhexyl)phthalate	330	140	J																		
Chrysene	330	340	U																		
Di-n-octylphthalate	330	170	J																		
Benzo(b)fluoranthene	330	340	U																		
Benzo(k)fluoranthene	330	340	U																		
Benzo(a)pyrene	330	340	U																		
Indeno(1,2,3-cd)pyrene	330	340	U																		
Dibenzo(a,h)anthracene	330	340	U																		
Benzo(g,h,i)perylene	330	340	U																		

NV = Validated

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P9																				
Sample Number		B080P9		B080Q4																	
Location		116-F-4		116-F-14																	
Remarks		NV		NV																	
Sample Date		2/24/93		2/25/93																	
Extraction Date		3/03/93		3/03/93																	
Analysis Date		3/17/93		3/17/93																	
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	330	U	360	U																
bis(2-Chloroethyl)ether	330	330	U	360	U																
2-Chlorophenol	330	330	U	360	U																
1,3-Dichlorobenzene	330	330	U	360	U																
1,4-Dichlorobenzene	330	330	U	360	U																
1,2-Dichlorobenzene	330	330	U	360	U																
2-Methylphenol	330	330	U	360	U																
2,2'-oxybis(1-Chloropropane)	330	330	U	360	U																
4-Methylphenol	330	330	U	360	U																
N-Nitroso-di-n-propylamine	330	330	U	360	U																
Hexachloroethane	330	330	U	360	U																
Nitrobenzene	330	330	U	360	U																
Isophorone	330	330	U	360	U																
2-Nitrophenol	330	330	U	360	U																
2,4-Dimethylphenol	330	330	U	360	U																
bis(2-Chloroethoxy)methane	330	330	U	360	U																
2,4-Dichlorophenol	330	330	U	360	U																
1,2,4-Trichlorobenzene	330	330	U	360	U																
Naphthalene	330	330	U	360	U																
4-Chloroaniline	330	330	U	360	U																
Hexachlorobutadiene	330	330	U	360	U																
4-Chloro-3-methylphenol	330	330	U	360	U																
2-Methylnaphthalene	330	330	U	360	U																
Hexachlorocyclopentadiene	330	330	U	360	U																
2,4,6-Trichlorophenol	330	330	U	360	U																
2,4,5-Trichlorophenol	1700	790	U	860	U																
2-Chloronaphthalene	330	330	U	360	U																
2-Nitroaniline	1700	790	U	860	U																
Dimethylphthalate	330	330	U	360	U																
Acenaphthylene	330	330	U	360	U																
3-Nitroaniline	330	790	U	860	U																

NV = Not Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P9																				
Sample Number		B080P9		B080Q4																	
Location		116-F-4		116-F-14																	
Remarks		NV		NV																	
Sample Date		2/24/93		2/25/93																	
Extraction Date		3/03/93		3/03/93																	
Analysis Date		3/17/93		3/17/93																	
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	330	U	360	U																
2,4-Dinitrophenol	1700	790	U	860	U																
4-Nitrophenol	1700	790	U	860	U																
Dibenzofuran	330	330	U	360	U																
2,4-Dinitrotoluene	330	330	U	360	U																
2,6-Dinitrotoluene	330	330	U	360	U																
Diethylphthalate	330	330	U	360	U																
4-Chlorophenyl-phenylether	330	330	U	360	U																
Fluorene	330	330	U	360	U																
4-Nitroaniline	1700	790	U	860	U																
4,6-Dinitro-2-methylphenol	1700	790	U	860	U																
N-Nitrosodiphenylamine	330	330	U	360	U																
4-Bromophenyl-phenylether	330	330	U	360	U																
Hexachlorobenzene	330	330	U	360	U																
Pentachlorophenol	1700	790	U	860	U																
Phenanthrene	330	330	U	360	U																
Anthracene	330	330	U	360	U																
Carbazole	330	330	U	360	U																
Di-n-butylphthalate	330	280	J	340	J																
Fluoranthene	330	330	U	360	U																
Pyrene	330	330	U	360	U																
Butylbenzylphthalate	330	330	U	360	U																
3,3'-Dichlorobenzidine	330	330	U	360	U																
Benzo(a)anthracene	330	330	U	360	U																
bis(2-Ethylhexyl)phthalate	330	96	J	87	J																
Chrysene	330	330	U	360	U																
Di-n-octylphthalate	330	330	U	360	U																
Benzo(b)fluoranthene	330	330	U	360	U																
Benzo(k)fluoranthene	330	330	U	360	U																
Benzo(a)pyrene	330	330	U	360	U																
Indeno(1,2,3-cd)pyrene	330	330	U	360	U																
Dibenzo(a,h)anthracene	330	330	U	360	U																
Benzo(g,h,i)perylene	330	330	U	360	U																

NV = Validated

Project: WESTINGHOUSE-HANFORD																						
Laboratory: TMA																						
Case	SDG: B080Q0A																					
Sample Number		B080Q0A																				
Location		116-F-6																				
Remarks		NV,FB																				
Sample Date		2/23/93																				
Extraction Date		3/01/93																				
Analysis Date		3/08/93																				
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	
Phenol	10	10	U																			
bis(2-Chloroethyl)ether	10	10	U																			
2-Chlorophenol	10	10	U																			
1,3-Dichlorobenzene	10	10	U																			
1,4-Dichlorobenzene	10	10	U																			
1,2-Dichlorobenzene	10	10	U																			
2-Methylphenol	10	10	U																			
2,2'-oxybis(1-Chloropropane)	10	10	U																			
4-Methylphenol	10	10	U																			
N-Nitroso-di-n-propylamine	10	10	U																			
Hexachloroethane	10	10	U																			
Nitrobenzene	10	10	U																			
Isophorone	10	10	U																			
2-Nitrophenol	10	10	U																			
2,4-Dimethylphenol	10	10	U																			
bis(2-Chloroethoxy)methane	10	10	U																			
2,4-Dichlorophenol	10	10	U																			
1,2,4-Trichlorobenzene	10	10	U																			
Naphthalene	10	10	U																			
4-Chloroaniline	10	10	U																			
Hexachlorobutadiene	10	10	U																			
4-Chloro-3-methylphenol	10	10	U																			
2-Methylnaphthalene	10	10	U																			
Hexachlorocyclopentadiene	10	10	U																			
2,4,6-Trichlorophenol	10	10	U																			
2,4,5-Trichlorophenol	50	25	U																			
2-Chloronaphthalene	10	10	U																			
2-Nitroaniline	50	25	U																			
Dimethylphthalate	10	10	U																			
Acenaphthylene	10	10	U																			
3-Nitroaniline	50	25	U																			
Acenaphthene	10	10	U																			
2,4-Dinitrophenol	50	25	U																			

NV = Not Validated, FB = Field Blank

SEMIVOLATILE ORGANIC ANALYSIS, WATER MATRIX, (ug/L)

Project: WESTINGHOUSE HANFORD																							
Laboratory: TMA																							
Case	SDG: B080Q0A																						
Sample Number		B080Q0A																					
Location		116-F-6																					
Remarks		NV,FB																					
Sample Date		2/23/93																					
Extraction Date		3/01/93																					
Analysis Date		3/08/93																					
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q		
4-Nitrophenol	50	25	U																				
Dibenzofuran	10	10	U																				
2,4-Dinitrotoluene	10	10	U																				
2,6-Dinitrotoluene	10	10	U																				
Diethylphthalate	10	10	U																				
4-Chlorophenyl-phenylether	10	10	U																				
Fluorene	10	10	U																				
4-Nitroaniline	50	25	U																				
4,6-Dinitro-2-methylphenol	50	25	U																				
N-Nitrosodiphenylamine	10	10	U																				
4-Bromophenyl-phenylether	10	10	U																				
Hexachlorobenzene	10	10	U																				
Pentachlorophenol	50	25	U																				
Phenanthrene	10	10	U																				
Anthracene	10	10	U																				
Carbazole	10	10	U																				
Di-n-butylphthalate	10	8	J																				
Fluoranthene	10	10	U																				
Pyrene	10	10	U																				
Butylbenzylphthalate	10	10	U																				
3,3'-Dichlorobenzidine	10	10	U																				
Benzo(a)anthracene	10	10	U																				
bis(2-Ethylhexyl)phthalate	10	90																					
Chrysene	10	10	U																				
Di-n-octylphthalate	10	10	U																				
Benzo(b)fluoranthene	10	10	U																				
Benzo(k)fluoranthene	10	10	U																				
Benzo(a)pyrene	10	10	U																				
Indeno(1,2,3-cd)pyrene	10	10	U																				
Dibenzo(a,h)anthracene	10	10	U																				
Benzo(g,h,i)perylene	10	10	U																				

NV = Not Validated, FB = Field Blank

SEMI-VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q3																				
Sample Number		B080Q3		B080Q7		B080Q8															
Location		116-F-14		116-F-14		116-F-14															
Remarks		NV		NV		NV															
Sample Date		2/26/93		3/01/93		3/01/93															
Extraction Date		3/09/93		3/09/93		3/09/93															
Analysis Date		3/19/93		3/19/93		3/19/93															
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	330	U	340	U	340	U														
bis(2-Chloroethyl)ether	330	330	U	340	U	340	U														
2-Chlorophenol	330	330	U	340	U	340	U														
1,3-Dichlorobenzene	330	330	U	340	U	340	U														
1,4-Dichlorobenzene	330	330	U	340	U	340	U														
1,2-Dichlorobenzene	330	330	U	340	U	340	U														
2-Methylphenol	330	330	U	340	U	340	U														
2,2'-oxybis(1-Chloropropane)	330	330	U	340	U	340	U														
4-Methylphenol	330	330	U	340	U	340	U														
N-Nitroso-di-n-propylamine	330	330	U	340	U	340	U														
Hexachloroethane	330	330	U	340	U	340	U														
Nitrobenzene	330	330	U	340	U	340	U														
Isophorone	330	330	U	340	U	340	U														
2-Nitrophenol	330	330	U	340	U	340	U														
2,4-Dimethylphenol	330	330	U	340	U	340	U														
bis(2-Chloroethoxy)methane	330	330	U	340	U	340	U														
2,4-Dichlorophenol	330	330	U	340	U	340	U														
1,2,4-Trichlorobenzene	330	330	U	340	U	340	U														
Naphthalene	330	330	U	340	U	340	U														
4-Chloroaniline	330	330	U	340	U	340	U														
Hexachlorobutadiene	330	330	U	340	U	340	U														
4-Chloro-3-methylphenol	330	330	U	340	U	340	U														
2-Methylnaphthalene	330	330	U	340	U	340	U														
Hexachlorocyclopentadiene	330	330	U	340	U	340	U														
2,4,6-Trichlorophenol	330	330	U	340	U	340	U														
2,4,5-Trichlorophenol	1700	810	U	830	U	830	U														
2-Chloronaphthalene	330	330	U	340	U	340	U														
2-Nitroaniline	1700	810	U	830	U	830	U														
Dimethylphthalate	330	330	U	340	U	340	U														
Acenaphthylene	330	330	U	340	U	340	U														
3-Nitroaniline	330	810	U	830	U	830	U														

NV = Not Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q3																				
Sample Number		B080Q3		B080Q7		B080Q8															
Location		116-F-14		116-F-14		116-F-14															
Remarks		NV		NV		NV															
Sample Date		2/26/93		3/01/93		3/01/93															
Extraction Date		3/09/93		3/09/93		3/09/93															
Analysis Date		3/19/93		3/19/93		3/19/93															
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	330	U	340	U	340	U														
2,4-Dinitrophenol	1700	810	U	830	U	830	U														
4-Nitrophenol	1700	810	U	830	U	830	U														
Dibenzofuran	330	330	U	340	U	340	U														
2,4-Dinitrotoluene	330	330	U	340	U	340	U														
2,6-Dinitrotoluene	330	330	U	340	U	340	U														
Diethylphthalate	330	330	U	340	U	340	U														
4-Chlorophenyl-phenylether	330	330	U	340	U	340	U														
Fluorene	330	330	U	340	U	340	U														
4-Nitroaniline	1700	810	U	830	U	830	U														
4,6-Dinitro-2-methylphenol	1700	810	U	830	U	830	U														
N-Nitrosodiphenylamine	330	330	U	340	U	340	U														
4-Bromophenyl-phenylether	330	330	U	340	U	340	U														
Hexachlorobenzene	330	330	U	340	U	340	U														
Pentachlorophenol	1700	810	U	830	U	830	U														
Phenanthrene	330	330	U	340	U	340	U														
Anthracene	330	330	U	340	U	340	U														
Carbazole	330	330	U	340	U	340	U														
Di-n-butylphthalate	330	130	J	150	J	160	J														
Fluoranthene	330	330	U	340	U	340	U														
Pyrene	330	330	U	340	U	340	U														
Butylbenzylphthalate	330	330	U	340	U	340	U														
3,3'-Dichlorobenzidine	330	330	U	340	U	340	U														
Benzo(a)anthracene	330	330	U	340	U	340	U														
bis(2-Ethylhexyl)phthalate	330	330	U	200	J	100	J														
Chrysene	330	330	U	340	U	340	U														
Di-n-octylphthalate	330	330	U	340	U	340	U														
Benzo(b)fluoranthene	330	330	U	340	U	340	U														
Benzo(k)fluoranthene	330	330	U	340	U	340	U														
Benzo(a)pyrene	330	330	U	340	U	340	U														
Indeno(1,2,3-cd)pyrene	330	330	U	340	U	340	U														
Dibenzo(a,h)anthracene	330	330	U	340	U	340	U														
Benzo(g,h,i)perylene	330	330	U	340	U	340	U														

NV Validated

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q5																				
Sample Number		B080Q5		B080Q6																	
Location		116-F-14		116-F-14																	
Remarks		NV		NV																	
Sample Date		2/25/93		2/26/93																	
Extraction Date		3/04/93		3/04/93																	
Analysis Date		3/17/93		3/17/93																	
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	360	U	340	U																
bis(2-Chloroethyl)ether	330	360	U	340	U																
2-Chlorophenol	330	360	U	340	U																
1,3-Dichlorobenzene	330	360	U	340	U																
1,4-Dichlorobenzene	330	360	U	340	U																
1,2-Dichlorobenzene	330	360	U	340	U																
2-Methylphenol	330	360	U	340	U																
2,2'-oxybis(1-Chloropropane)	330	360	U	340	U																
4-Methylphenol	330	360	U	340	U																
N-Nitroso-di-n-propylamine	330	360	U	340	U																
Hexachloroethane	330	360	U	340	U																
Nitrobenzene	330	360	U	340	U																
Isophorone	330	360	U	340	U																
2-Nitrophenol	330	360	U	340	U																
2,4-Dimethylphenol	330	360	U	340	U																
bis(2-Chloroethoxy)methane	330	360	U	340	U																
2,4-Dichlorophenol	330	360	U	340	U																
1,2,4-Trichlorobenzene	330	360	U	340	U																
Naphthalene	330	360	U	340	U																
4-Chloroaniline	330	360	U	340	U																
Hexachlorobutadiene	330	360	U	340	U																
4-Chloro-3-methylphenol	330	360	U	340	U																
2-Methylnaphthalene	330	360	U	340	U																
Hexachlorocyclopentadiene	330	360	U	340	U																
2,4,6-Trichlorophenol	330	360	U	340	U																
2,4,5-Trichlorophenol	1700	870	U	820	U																
2-Chloronaphthalene	330	360	U	340	U																
2-Nitroaniline	1700	870	U	820	U																
Dimethylphthalate	330	360	U	340	U																
Acenaphthylene	330	360	U	340	U																
3-Nitroaniline	330	870	U	820	U																

NV = Not Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q5																				
Sample Number		B080Q5		B080Q6																	
Location		116-F-14		116-F-14																	
Remarks		NV		NV																	
Sample Date		2/25/93		2/26/93																	
Extraction Date		3/04/93		3/04/93																	
Analysis Date		3/17/93		3/17/93																	
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	360	U	340	U																
2,4-Dinitrophenol	1700	870	U	820	U																
4-Nitrophenol	1700	870	U	820	U																
Dibenzofuran	330	360	U	340	U																
2,4-Dinitrotoluene	330	360	U	340	U																
2,6-Dinitrotoluene	330	360	U	340	U																
Diethylphthalate	330	360	U	340	U																
4-Chlorophenyl-phenylether	330	360	U	340	U																
Fluorene	330	360	U	340	U																
4-Nitroaniline	1700	870	U	820	U																
4,6-Dinitro-2-methylphenol	1700	870	U	820	U																
N-Nitrosodiphenylamine	330	360	U	340	U																
4-Bromophenyl-phenylether	330	360	U	340	U																
Hexachlorobenzene	330	360	U	340	U																
Pentachlorophenol	1700	870	U	820	U																
Phenanthrene	330	360	U	340	U																
Anthracene	330	360	U	340	U																
Carbazole	330	360	U	340	U																
Di-n-butylphthalate	330	300	J	300	J																
Fluoranthene	330	360	U	340	U																
Pyrene	330	360	U	340	U																
Butylbenzylphthalate	330	360	U	340	U																
3,3'-Dichlorobenzidine	330	360	U	340	U																
Benzo(a)anthracene	330	360	U	340	U																
bis(2-Ethylhexyl)phthalate	330	50	J	78	J																
Chrysene	330	360	U	340	U																
Di-n-octylphthalate	330	360	U	340	U																
Benzo(b)fluoranthene	330	360	U	340	U																
Benzo(k)fluoranthene	330	360	U	340	U																
Benzo(a)pyrene	330	360	U	340	U																
Indeno(1,2,3-cd)pyrene	330	360	U	340	U																
Dibenzo(a,h)anthracene	330	360	U	340	U																
Benzo(g,h,i)perylene	330	360	U	340	U																

NV[illegible]t Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q9																				
Sample Number		B080Q9																			
Location		116-F-14																			
Remarks		NV																			
Sample Date		3/02/93																			
Extraction Date		3/10/93																			
Analysis Date		3/17/93																			
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	340	U																		
bis(2-Chloroethyl)ether	330	340	U																		
2-Chlorophenol	330	340	U																		
1,3-Dichlorobenzene	330	340	U																		
1,4-Dichlorobenzene	330	340	U																		
1,2-Dichlorobenzene	330	340	U																		
2-Methylphenol	330	340	U																		
2,2'-oxybis(1-Chloropropane)	330	340	U																		
4-Methylphenol	330	340	U																		
N-Nitroso-di-n-propylamine	330	340	U																		
Hexachloroethane	330	340	U																		
Nitrobenzene	330	340	U																		
Isophorone	330	340	U																		
2-Nitrophenol	330	340	U																		
2,4-Dimethylphenol	330	340	U																		
bis(2-Chloroethoxy)methane	330	340	U																		
2,4-Dichlorophenol	330	340	U																		
1,2,4-Trichlorobenzene	330	340	U																		
Naphthalene	330	340	U																		
4-Chloroaniline	330	340	U																		
Hexachlorobutadiene	330	340	U																		
4-Chloro-3-methylphenol	330	340	U																		
2-Methylnaphthalene	330	340	U																		
Hexachlorocyclopentadiene	330	340	U																		
2,4,6-Trichlorophenol	330	340	U																		
2,4,5-Trichlorophenol	1700	830	U																		
2-Chloronaphthalene	330	340	U																		
2-Nitroaniline	1700	830	U																		
Dimethylphthalate	330	340	U																		
Acenaphthylene	330	340	U																		
3-Nitroaniline	330	830	U																		

NV = Not Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q9																				
Sample Number		B080Q9																			
Location		116-F-14																			
Remarks		NV																			
Sample Date		3/02/93																			
Extraction Date		3/10/93																			
Analysis Date		3/17/93																			
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	340	U																		
2,4-Dinitrophenol	1700	830	U																		
4-Nitrophenol	1700	830	U																		
Dibenzofuran	330	340	U																		
2,4-Dinitrotoluene	330	340	U																		
2,6-Dinitrotoluene	330	340	U																		
Diethylphthalate	330	2600																			
4-Chlorophenyl-phenylether	330	340	U																		
Fluorene	330	340	U																		
4-Nitroaniline	1700	830	U																		
4,6-Dinitro-2-methylphenol	1700	830	U																		
N-Nitrosodiphenylamine	330	340	U																		
4-Bromophenyl-phenylether	330	340	U																		
Hexachlorobenzene	330	340	U																		
Pentachlorophenol	1700	830	U																		
Phenanthrene	330	340	U																		
Anthracene	330	340	U																		
Carbazole	330	340	U																		
Di-n-butylphthalate	330	130	J																		
Fluoranthene	330	340	U																		
Pyrene	330	340	U																		
Butylbenzylphthalate	330	340	U																		
3,3'-Dichlorobenzidine	330	340	U																		
Benzo(a)anthracene	330	340	U																		
bis(2-Ethylhexyl)phthalate	330	37	J																		
Chrysene	330	340	U																		
Di-n-octylphthalate	330	340	U																		
Benzo(b)fluoranthene	330	340	U																		
Benzo(k)fluoranthene	330	340	U																		
Benzo(a)pyrene	330	340	U																		
Indeno(1,2,3-cd)pyrene	330	340	U																		
Dibenzo(a,h)anthracene	330	340	U																		
Benzo(g,h,i)perylene	330	340	U																		

NV - Validated

S. OLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080R1																				
Sample Number		B080R1		B080R2		B080R4		B080R5													
Location						FR. DRAIN		FR. DRAIN													
Remarks																					
Sample Date		3/09/93		3/09/93		3/09/93		3/09/93													
Extraction Date		3/18/93		3/18/93		3/18/93		3/18/93													
Analysis Date		3/29/93		3/29/93		4/1/93		3/29/93													
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	360	UJ	370	UJ	2100	UJ	370	UJ												
bis(2-Chloroethyl)ether	330	360	UJ	370	UJ	2100	UJ	370	UJ												
2-Chlorophenol	330	360	UJ	370	UJ	2100	UJ	370	UJ												
1,3-Dichlorobenzene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
1,4-Dichlorobenzene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
1,2-Dichlorobenzene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
2-Methylphenol	330	360	UJ	370	UJ	2100	UJ	370	UJ												
2,2'-oxybis(1-Chloropropane)	330	360	UJ	370	UJ	2100	UJ	370	UJ												
4-Methylphenol	330	360	UJ	370	UJ	2100	UJ	370	UJ												
N-Nitroso-di-n-propylamine	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Hexachloroethane	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Nitrobenzene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Isophorone	330	360	UJ	370	UJ	2100	UJ	370	UJ												
2-Nitrophenol	330	360	UJ	370	UJ	2100	UJ	370	UJ												
2,4-Dimethylphenol	330	360	UJ	370	UJ	2100	UJ	370	UJ												
bis(2-Chloroethoxy)methane	330	360	UJ	370	UJ	2100	UJ	370	UJ												
2,4-Dichlorophenol	330	360	UJ	370	UJ	2100	UJ	370	UJ												
1,2,4-Trichlorobenzene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Naphthalene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
4-Chloroaniline	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Hexachlorobutadiene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
4-Chloro-3-methylphenol	330	360	UJ	370	UJ	2100	UJ	370	UJ												
2-Methylnaphthalene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Hexachlorocyclopentadiene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
2,4,6-Trichlorophenol	330	360	UJ	370	UJ	2100	UJ	370	UJ												
2,4,5-Trichlorophenol	1700	870	UJ	890	UJ	5200	UJ	910	UJ												
2-Chloronaphthalene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
2-Nitroaniline	1700	870	UJ	890	UJ	5200	UJ	910	UJ												
Dimethylphthalate	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Acenaphthylene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
3-Nitroaniline	330	870	UJ	890	UJ	5200	UJ	910	UJ												

FR. DRAIN = French Drain

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080R1																				
Sample Number		B080R1		B080R2		B080R4		B080R5													
Location						FR. DRAIN		FR. DRAIN													
Remarks																					
Sample Date		3/09/93		3/09/93		3/09/93		3/09/93													
Extraction Date		3/18/93		3/18/93		3/18/93		3/18/93													
Analysis Date		3/29/93		3/29/93		4/1/93		3/29/93													
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
2,4-Dinitrophenol	1700	870	UJ	890	UJ	5200	UJ	910	UJ												
4-Nitrophenol	1700	870	UJ	890	UJ	5200	UJ	910	UJ												
Dibenzofuran	330	360	UJ	370	UJ	2100	UJ	370	UJ												
2,4-Dinitrotoluene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
2,6-Dinitrotoluene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Diethylphthalate	330	360	UJ	370	UJ	2100	UJ	370	UJ												
4-Chlorophenyl-phenylether	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Fluorene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
4-Nitroaniline	1700	870	UJ	890	UJ	5200	UJ	910	UJ												
4,6-Dinitro-2-methylphenol	1700	870	UJ	890	UJ	5200	UJ	910	UJ												
N-Nitrosodiphenylamine	330	360	UJ	370	UJ	2100	UJ	370	UJ												
4-Bromophenyl-phenylether	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Hexachlorobenzene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Pentachlorophenol	1700	870	UJ	890	UJ	5200	UJ	910	UJ												
Phenanthrene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Anthracene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Carbazole	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Di-n-butylphthalate	330	360	UJ	370	UJ	2100	UJ	400	UJ												
Fluoranthene	330	360	UJ	370	UJ	2100	UJ	45	J												
Pyrene	330	360	UJ	370	UJ	2100	UJ	43	J												
Butylbenzylphthalate	330	360	UJ	370	UJ	2100	UJ	370	UJ												
3,3'-Dichlorobenzidine	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Benzo(a)anthracene	330	360	UJ	370	UJ	2100	UJ	62	J												
bis(2-Ethylhexyl)phthalate	330	360	UJ	370	UJ	4100	J	580	J												
Chrysene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Di-n-octylphthalate	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Benzo(b)fluoranthene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Benzo(k)fluoranthene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Benzo(a)pyrene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Indeno(1,2,3-cd)pyrene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Dibenzo(a,h)anthracene	330	360	UJ	370	UJ	2100	UJ	370	UJ												
Benzo(g,h,i)perylene	330	360	UJ	370	UJ	2100	UJ	370	UJ												

FR[illegible]AIN = French Drain

HOLDING TIME SUMMARY

SDG: B080R1	REVIEWER: SC			DATE: 8/5/93		PAGE 1 OF 1	
COMMENTS:							
FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B080R1	BNA	3/9/93	3/18/93	3/29/93	7	40	J
B080R2	BNA	3/9/93	3/18/93	3/29/93	7	40	J
B080R4	BNA	3/9/93	3/18/93	3/29/93	7	40	J
B080R5	BNA	3/9/93	3/18/93	3/29/93	7	40	J

BLANK AND SAMPLE DATA SUMMARY

SDG: B080R1	REVIEWER: SC			DATE: 8/5/93				PAGE 1 OF 1	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
SBLK0318S	Di-n-butylphthalate	280	J		ug/kg	1400	2800	All	U

DATA QUALIFICATION SUMMARY

SDG: B080R1	REVIEWER: SC	DATE: 8/5/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All BNA compounds	J	All	Holding times exceeded
Di-n-butylphthalate	U	All	Lab blank contamination

9313042.0581

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G65																				
Sample Number		B08G65		B08G66		B08G67		B08G68		B08G69		B08G70		B08G72		B08G73		B08G74		B08G75	
Location		116-F-1B		116-F-1B		116-F-1B		116-F-1B		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C	
Remarks		NV		NV		NV		NV		FB, NV		NV		DUP, NV		NV		NV		NV	
Sample Date		4/20/93		4/20/93		4/20/93		4/20/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93	
Extraction Date		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93	
Analysis Date		5/17/93		5/14/93		5/14/93		5/14/93		5/14/93		5/14/93		5/14/93		5/14/93		5/14/93		5/14/93	
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
bis(2-Chloroethyl)ether	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
2-Chlorophenol	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
1,3-Dichlorobenzene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
1,4-Dichlorobenzene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
1,2-Dichlorobenzene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
2-Methylphenol	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
2,2'-oxybis(1-Chloropropane)	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
4-Methylphenol	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
N-Nitroso-di-n-propylamine	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Hexachloroethane	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Nitrobenzene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Isophorone	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
2-Nitrophenol	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
2,4-Dimethylphenol	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
bis(2-Chloroethoxy)methane	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
2,4-Dichlorophenol	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
1,2,4-Trichlorobenzene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Naphthalene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
4-Chloroaniline	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Hexachlorobutadiene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
4-Chloro-3-methylphenol	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
2-Methylnaphthalene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Hexachlorocyclopentadiene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
2,4,6-Trichlorophenol	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
2,4,5-Trichlorophenol	1700	830	U	810	U	850	U	800	U	790	U	800	U	810	U	800	U	810	U	840	U
2-Chloronaphthalene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
2-Nitroaniline	1700	830	U	810	U	850	U	800	U	790	U	800	U	810	U	800	U	810	U	840	U
Dimethylphthalate	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Acenaphthylene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
3-Nitroaniline	330	830	U	810	U	850	U	800	U	790	U	800	U	810	U	800	U	810	U	840	U

NV = Validated, FB = Field Blank, DUP = Duplicate

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G65																				
Sample Number		B08G65		B08G66		B08G67		B08G68		B08G69		B08G70		B08G72		B08G73		B08G74		B08G75	
Location		116-F-1B		116-F-1B		116-F-1B		116-F-1B		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C	
Remarks		NV		NV		NV		NV		FB, NV		NV		DUP, NV		NV		NV		NV	
Sample Date		4/20/93		4/20/93		4/20/93		4/20/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93	
Extraction Date		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93	
Analysis Date		5/17/93		5/14/93		5/14/93		5/14/93		5/14/93		5/14/93		5/14/93		5/14/93		5/14/93		5/14/93	
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
2,4-Dinitrophenol	1700	830	U	810	U	850	U	800	U	790	U	800	U	810	U	800	U	810	U	840	U
4-Nitrophenol	1700	830	U	810	U	850	U	800	U	790	U	800	U	810	U	800	U	810	U	840	U
Dibenzofuran	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
2,4-Dinitrotoluene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
2,6-Dinitrotoluene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Diethylphthalate	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
4-Chlorophenyl-phenylether	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Fluorene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
4-Nitroaniline	1700	830	U	810	U	850	U	800	U	790	U	800	U	810	U	800	U	810	U	840	U
4,6-Dinitro-2-methylphenol	1700	830	U	810	U	850	U	800	U	790	U	800	U	810	U	800	U	810	U	840	U
N-Nitrosodiphenylamine	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
4-Bromophenyl-phenylether	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Hexachlorobenzene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Pentachlorophenol	1700	830	U	810	U	850	U	800	U	790	U	800	U	810	U	800	U	810	U	840	U
Phenanthrene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Anthracene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Carbazole	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Di-n-butylphthalate	330	55	J	52	J	52	J	41	J	42	J	52	J	58	J	69	J	58	J	57	J
Fluoranthene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Pyrene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Butylbenzylphthalate	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
3,3'-Dichlorobenzidine	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Benzo(a)anthracene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
bis(2-Ethylhexyl)phthalate	330	48	J	40	J	54	J	330	U	330	U	36	J	44	J	190	J	53	J	73	J
Chrysene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Di-n-octylphthalate	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Benzo(b)fluoranthene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Benzo(k)fluoranthene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Benzo(a)pyrene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Indeno(1,2,3-cd)pyrene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Dibenzo(a,h)anthracene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U
Benzo(g,h,i)perylene	330	340	U	330	U	350	U	330	U	330	U	330	U	330	U	330	U	330	U	340	U

NV = Not Validated, FB = Field Blank, DUP = Duplicate

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G65																				
Sample Number		B08G76		B08G78		B08G79		B08G80		B08G81		B08G82		B08G83							
Location		116-F-1C		116-F-9D		116-F-9D		116-F-9D		116-F-9D		116-F-3		116-F-3							
Remarks		NV		NV		NV		NV		NV		NV		NV							
Sample Date		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/22/93		4/22/93							
Extraction Date		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93							
Analysis Date		5/14/93		5/14/93		5/20/93		5/17/93		5/17/93		5/17/93		5/17/93							
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
bis(2-Chloroethyl)ether	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
2-Chlorophenol	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
1,3-Dichlorobenzene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
1,4-Dichlorobenzene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
1,2-Dichlorobenzene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
2-Methylphenol	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
2,2'-oxybis(1-Chloropropane)	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
4-Methylphenol	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
N-Nitroso-di-n-propylamine	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Hexachloroethane	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Nitrobenzene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Isophorone	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
2-Nitrophenol	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
2,4-Dimethylphenol	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
bis(2-Chloroethoxy)methane	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
2,4-Dichlorophenol	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
1,2,4-Trichlorobenzene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Naphthalene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
4-Chloroaniline	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Hexachlorobutadiene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
4-Chloro-3-methylphenol	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
2-Methylnaphthalene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Hexachlorocyclopentadiene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
2,4,6-Trichlorophenol	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
2,4,5-Trichlorophenol	1700	830	U	820	U	5000	U	880	U	850	U	4100	U	860	U						
2-Chloronaphthalene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
2-Nitroaniline	1700	830	U	820	U	5000	U	880	U	850	U	4100	U	860	U						
Dimethylphthalate	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Acenaphthylene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
3-Nitroaniline	330	830	U	820	U	5000	U	880	U	850	U	4100	U	860	U						

NV = Validated, FB = Field Blank, DUP = Duplicate

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G65																				
Sample Number		B08G76		B08G78		B08G79		B08G80		B08G81		B08G82		B08G83							
Location		116-F-1C		116-F-9D		116-F-9D		116-F-9D		116-F-9D		116-F-3		116-F-3							
Remarks		NV		NV		NV		NV		NV		NV		NV							
Sample Date		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/22/93		4/22/93							
Extraction Date		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93		4/30/93							
Analysis Date		5/14/93		5/14/93		5/20/93		5/17/93		5/17/93		5/17/93		5/17/93							
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
2,4-Dinitrophenol	1700	830	U	820	U	5000	U	880	U	850	U	4100	U	860	U						
4-Nitrophenol	1700	830	U	820	U	5000	U	880	U	850	U	4100	U	860	U						
Dibenzofuran	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
2,4-Dinitrotoluene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
2,6-Dinitrotoluene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Diethylphthalate	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
4-Chlorophenyl-phenylether	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Fluorene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
4-Nitroaniline	1700	830	U	820	U	5000	U	880	U	850	U	4100	U	860	U						
4,6-Dinitro-2-methylphenol	1700	830	U	820	U	5000	U	880	U	850	U	4100	U	860	U						
N-Nitrosodiphenylamine	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
4-Bromophenyl-phenylether	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Hexachlorobenzene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Pentachlorophenol	1700	830	U	820	U	5000	U	880	U	850	U	4100	U	860	U						
Phenanthrene	330	340	U	340	U	2100	U	360	U	350	U	270	J	360	U						
Anthracene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Carbazole	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Di-n-butylphthalate	330	47	J	76	J	2100	U	63	J	57	J	1700	U	77	J						
Fluoranthene	330	340	U	340	U	2100	U	360	U	350	U	440	J	360	U						
Pyrene	330	340	U	340	U	2100	U	360	U	350	U	440	J	360	U						
Butylbenzylphthalate	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
3,3'-Dichlorobenzidine	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Benzo(a)anthracene	330	340	U	340	U	2100	U	360	U	350	U	240	J	360	U						
bis(2-Ethylhexyl)phthalate	330	340	U	340	J	2100	U	59	J	84	J	1700	U	43	J						
Chrysene	330	340	U	340	U	2100	U	360	U	350	U	280	J	360	U						
Di-n-octylphthalate	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Benzo(b)fluoranthene	330	340	U	340	U	2100	U	360	U	350	U	220	J	360	U						
Benzo(k)fluoranthene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Benzo(a)pyrene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Indeno(1,2,3-cd)pyrene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Dibenzo(a,h)anthracene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						
Benzo(g,h,i)perylene	330	340	U	340	U	2100	U	360	U	350	U	1700	U	360	U						

NV = Not Validated, FB = Field Blank, DUP = Duplicate

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Roy F. Weston																					
Case	SDG: B08G71																				
Sample Number		B08G71																			
Location		116-F-1C																			
Remarks		Split, NV																			
Sample Date		4/21/93																			
Extraction Date		4/29/93																			
Analysis Date		5/11/93																			
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	340	U																		
bis(2-Chloroethyl)ether	330	340	U																		
2-Chlorophenol	330	340	U																		
1,3-Dichlorobenzene	330	340	U																		
1,4-Dichlorobenzene	330	340	U																		
1,2-Dichlorobenzene	330	340	U																		
2-Methylphenol	330	340	U																		
2,2'-oxybis(1-Chloropropane)	330	340	U																		
4-Methylphenol	330	340	U																		
N-Nitroso-di-n-propylamine	330	340	U																		
Hexachloroethane	330	340	U																		
Nitrobenzene	330	340	U																		
Isophorone	330	340	U																		
2-Nitrophenol	330	340	U																		
2,4-Dimethylphenol	330	340	U																		
bis(2-Chloroethoxy)methane	330	340	U																		
2,4-Dichlorophenol	330	340	U																		
1,2,4-Trichlorobenzene	330	340	U																		
Naphthalene	330	340	U																		
4-Chloroaniline	330	340	U																		
Hexachlorobutadiene	330	340	U																		
4-Chloro-3-methylphenol	330	340	U																		
2-Methylnaphthalene	330	340	U																		
Hexachlorocyclopentadiene	330	340	U																		
2,4,6-Trichlorophenol	330	340	U																		
2,4,5-Trichlorophenol	1700	840	U																		
2-Chloronaphthalene	330	340	U																		
2-Nitroaniline	1700	840	U																		
Dimethylphthalate	330	340	U																		
Acenaphthylene	330	340	U																		
3-Nitroaniline	330	840	U																		

NV = Not Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Roy F. Weston																					
Case	SDG: B08G71																				
Sample Number		B08G71																			
Location		116-F-1C																			
Remarks		Split, NV																			
Sample Date		4/21/93																			
Extraction Date		4/29/93																			
Analysis Date		5/11/93																			
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	340	U																		
2,4-Dinitrophenol	1700	840	U																		
4-Nitrophenol	1700	840	U																		
Dibenzofuran	330	340	U																		
2,4-Dinitrotoluene	330	340	U																		
2,6-Dinitrotoluene	330	340	U																		
Diethylphthalate	330	340	U																		
4-Chlorophenyl-phenylether	330	340	U																		
Fluorene	330	340	U																		
4-Nitroaniline	1700	840	U																		
4,6-Dinitro-2-methylphenol	1700	840	U																		
N-Nitrosodiphenylamine	330	340	U																		
4-Bromophenyl-phenylether	330	340	U																		
Hexachlorobenzene	330	340	U																		
Pentachlorophenol	1700	840	U																		
Phenanthrene	330	340	U																		
Anthracene	330	340	U																		
Carbazole	330	340	U																		
Di-n-butylphthalate	330	30	J																		
Fluoranthene	330	340	U																		
Pyrene	330	340	U																		
Butylbenzylphthalate	330	340	U																		
3,3'-Dichlorobenzidine	330	340	U																		
Benzo(a)anthracene	330	340	U																		
bis(2-Ethylhexyl)phthalate	330	470																			
Chrysene	330	340	U																		
Di-n-octylphthalate	330	340	U																		
Benzo(b)fluoranthene	330	340	U																		
Benzo(k)fluoranthene	330	340	U																		
Benzo(a)pyrene	330	340	U																		
Indeno(1,2,3-cd)pyrene	330	340	U																		
Dibenzo(a,h)anthracene	330	340	U																		
Benzo(g,h,i)perylene	330	340	U																		

NV = Not Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																						
Laboratory: TMA																						
Case	SDG: B08G84																					
Sample Number		B08G84		B08G85																		
Location		116-F-3		116-F-3																		
Remarks		NV		NV																		
Sample Date		4/27/93		4/27/93																		
Extraction Date		5/04/93		5/04/93																		
Analysis Date		5/17/93		5/17/93																		
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol	330	330	U	340	U																
bis(2-Chloroethyl)ether	330	330	U	340	U																
2-Chlorophenol	330	330	U	340	U																
1,3-Dichlorobenzene	330	330	U	340	U																
1,4-Dichlorobenzene	330	330	U	340	U																
1,2-Dichlorobenzene	330	330	U	340	U																
2-Methylphenol	330	330	U	340	U																
2,2'-oxybis(1-Chloropropane)	330	330	U	340	U																
4-Methylphenol	330	330	U	340	U																
N-Nitroso-di-n-propylamine	330	330	U	340	U																
Hexachloroethane	330	330	U	340	U																
Nitrobenzene	330	330	U	340	U																
Isophorone	330	330	U	340	U																
2-Nitrophenol	330	330	U	340	U																
2,4-Dimethylphenol	330	330	U	340	U																
bis(2-Chloroethoxy)methane	330	330	U	340	U																
2,4-Dichlorophenol	330	330	U	340	U																
1,2,4-Trichlorobenzene	330	330	U	340	U																
Naphthalene	330	330	U	340	U																
4-Chloroaniline	330	330	U	340	U																
Hexachlorobutadiene	330	330	U	340	U																
4-Chloro-3-methylphenol	330	330	U	340	U																
2-Methylnaphthalene	330	330	U	340	U																
Hexachlorocyclopentadiene	330	330	U	340	U																
2,4,6-Trichlorophenol	330	330	U	340	U																
2,4,5-Trichlorophenol	1700	810	U	830	U																
2-Chloronaphthalene	330	330	U	340	U																
2-Nitroaniline	1700	810	U	830	U																
Dimethylphthalate	330	330	U	340	U																
Acenaphthylene	330	330	U	340	U																
3-Nitroaniline	330	810	U	830	U																

NV ot Validated

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G84																				
Sample Number		B08G84		B08G85																	
Location		116-F-3		116-F-3																	
Remarks		NV		NV																	
Sample Date		4/27/93		4/27/93																	
Extraction Date		5/04/93		5/04/93																	
Analysis Date		5/17/93		5/17/93																	
Semivolatile Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Acenaphthene	330	330	U	340	U																
2,4-Dinitrophenol	1700	810	U	830	U																
4-Nitrophenol	1700	810	U	830	U																
Dibenzofuran	330	330	U	340	U																
2,4-Dinitrotoluene	330	330	U	340	U																
2,6-Dinitrotoluene	330	330	U	340	U																
Diethylphthalate	330	330	U	340	U																
4-Chlorophenyl-phenylether	330	330	U	340	U																
Fluorene	330	330	U	340	U																
4-Nitroaniline	1700	810	U	830	U																
4,6-Dinitro-2-methylphenol	1700	810	U	830	U																
N-Nitrosodiphenylamine	330	330	U	340	U																
4-Bromophenyl-phenylether	330	330	U	340	U																
Hexachlorobenzene	330	330	U	340	U																
Pentachlorophenol	1700	810	U	830	U																
Phenanthrene	330	330	U	340	U																
Anthracene	330	330	U	340	U																
Carbazole	330	330	U	340	U																
Di-n-butylphthalate	330	56	J	77	J																
Fluoranthene	330	330	U	340	U																
Pyrene	330	330	U	340	U																
Butylbenzylphthalate	330	330	U	340	U																
3,3'-Dichlorobenzidine	330	330	U	340	U																
Benzo(a)anthracene	330	330	U	340	U																
bis(2-Ethylhexyl)phthalate	330	330	U	45	J																
Chrysene	330	330	U	340	U																
Di-n-octylphthalate	330	330	U	340	U																
Benzo(b)fluoranthene	330	330	U	340	U																
Benzo(k)fluoranthene	330	330	U	340	U																
Benzo(a)pyrene	330	330	U	340	U																
Indeno(1,2,3-cd)pyrene	330	330	U	340	U																
Dibenzo(a,h)anthracene	330	330	U	340	U																
Benzo(g,h,i)perylene	330	330	U	340	U																

NV = Not Validated

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WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	V/NV	PESTICIDES/PCBs
116-F-6	B080L9	S	01/27/93	NV	4-6
	B080M0	S	01/28/93	NV	4-7
	B080M1	S	01/28/93	NV	4-7
	B080M2	S	01/28/93	NV	4-7
	B080M3	S	01/29/93	NV	4-8
	B080Q0A	W	02/23/93	NV	4-28
116-F-2	B080M4	S	02/02/93	V	4-9
	B080M6	S	02/02/93	V	4-9
	B080M7	S	02/03/93	V	4-9
	B080M8	S	02/03/93	V	4-9
	B080M9	S	02/03/93	V	4-9
116-F-1A	B080N0	S	02/04/93	NV	4-13
	B080N1	S	02/04/93	NV	4-13
	B080N2	S	02/08/93	NV	4-14
	B080N3	S	02/09/93	NV	4-14
116-F-9C	B080N5	S	02/11/93	V	4-15
	B080N6	S	02/11/93	V	4-15
	B080N7	S	02/12/93	V	4-15
	B080N8	S	02/12/93	V	4-15
	B080N9	S	02/12/93	V	4-20
	B080P0	S	02/17/93	NV	4-24
	B080P1	S	02/17/93	NV	4-24
116-F-4	B080P2	S	02/17/93	NV	4-24
	B080P4	S	02/18/93	V	4-25
	B080P5	S	02/22/93	NV	4-26
	B080P9	S	02/24/93	NV	4-27
116-F-14	B080Q3	S	02/26/93	NV	4-29
	B080Q4	S	02/25/93	NV	4-27
	B080Q5	S	02/25/93	NV	4-30
	B080Q6	S	02/26/93	NV	4-30
	B080Q7	S	03/01/93	NV	4-27
	B080Q8	S	03/01/93	NV	4-27
	B080Q9	S	03/02/93	NV	4-31
	B080R1	S	03/09/93	V	4-32
	B080R2	S	03/09/93	V	4-32
FRENCH DRAIN	B080R4	S	03/09/93	V	4-32
	B080R5	S	03/09/93	V	4-32
116-F-1B	B08G65	S	04/20/93	NV	4-37
	B08G66	S	04/20/93	NV	4-37
	B08G67	S	04/20/93	NV	4-37
	B08G68	S	04/20/93	NV	4-37

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WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	V/NV	PESTICIDES/PCBs
116-F-1C	B08G69	S	04/21/93	NV	4-37
	B08G70	S	04/21/93	NV	4-37
	B08G71	S	04/21/93	NV	4-39
	B08G72	S	04/21/93	NV	4-37
	B08G73	S	04/21/93	NV	4-37
	B08G74	S	04/21/93	NV	4-37
	B08G75	S	04/21/93	NV	4-37
	B08G76	S	04/21/93	NV	4-38
116-F-9D	B08G78	S	04/21/93	NV	4-38
	B08G79	S	04/21/93	NV	4-38
	B08G80	S	04/21/93	NV	4-38
	B08G81	S	04/21/93	NV	4-38
116-F-3	B08G82	S	04/22/93	NV	4-38
	B08G83	S	04/22/93	NV	4-38
	B08G84	S	04/27/93	NV	4-40
	B08G85	S	04/27/93	NV	4-40

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4.0 PESTICIDE AND PCB DATA VALIDATION

4.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B080M4	B080N9	B080R1
B080N5	B080P4	

4.2 HOLDING TIMES

Analytical holding times were assessed to ascertain whether the holding time requirements for pesticide/PCB analyses were met by the laboratory. Westinghouse-Hanford procedures require that samples be extracted within seven days of collection and analyzed within 40 days of extraction (WHC 1992a).

Based upon Westinghouse-Hanford data validation procedures, the seven-day extraction holding time was exceeded for:

- All samples in SDG No. B080M4.
- Sample numbers B080N5 and B080N6 in SDG No. B080N5.
- Sample number B080N9 in SDG No. B080N9.
- All samples in SDG No. B080R1.

The results were flagged "J" and are considered to be estimates.

Holding time requirements were met for all other samples.

4.3 INSTRUMENT PERFORMANCE AND CALIBRATIONS

Instrument performance was assessed to ensure that adequate chromatographic resolution and instrument sensitivity were achieved by the gas chromatographic system.

The specific criteria for acceptable instrument performance are outlined in EPA guidelines (EPA 1988a and 1988b), including the evaluation and qualification procedures that may be performed on the analytical results.

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During the quality assurance review, all indicators for acceptable instrument performance were verified. The criteria established by CLP protocols were met and the results are acceptable, except as noted.

Instrument calibration is performed to ensure that the chromatographic system is capable of producing acceptable and reliable analytical data. The initial and continuing calibrations are to be performed according to procedures established by CLP protocols. An initial calibration is performed prior to sample analysis to establish the linear range of the system, including a demonstration that all target compounds can be detected. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible on a day-to-day basis.

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4.3.1 Initial Calibrations

The laboratory performed an initial multipoint calibration for all target compounds at the concentrations required by CLP protocols. The linearity of the initial calibration is established when the percent RSD or the calibration factors are less than or equal to 10 percent (or 15% for certain analytes).

All initial calibration results were acceptable.

4.3.2 Calibration Verification

The criteria for acceptable continuing calibrations requires that the calibration factors for all target compounds have a percent difference of less than or equal to 15 percent of the average calibration factor calculated for the associated initial calibration standard. The 15 percent difference value is required for results calculated using the chromatographic column which is used for quantitative purposes. In addition, the percent difference of the calibration factors calculated for the chromatographic column that is used for confirmation must be less than or equal to 20 percent.

All calibration verification results were acceptable.

4.4 BLANKS

Method blank and field blank analyses are performed to determine the extent of laboratory or field contamination of samples. No contaminants should be present in the blanks. Analytical results for analytes present in any sample at less than 5 times the concentration of that analyte found in associated blanks should be qualified as non-detects.

There were no compounds of concern detected in the method or field blanks.

4.5 ACCURACY

Accuracy was assessed by evaluating the recoveries of the surrogate compounds and the matrix spike recoveries calculated for the sample analyses.

4.5.1 Matrix Spike Recovery

Matrix spike analyses are performed in duplicate using six compounds specified by CLP protocols. The recoveries for the six compounds must be within the acceptable quality control limits established by CLP protocols.

All matrix spike/matrix spike duplicate results were acceptable.

4.5.2 Surrogate Recovery

Surrogate compound recoveries are calculated using analytical results from two stable surrogate compounds added to the sample prior to sample preparation and analysis. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. When recoveries for either surrogate compound are out of the control window, all positively identified target compound concentrations in samples associated with the unacceptable surrogate recoveries are qualified as estimates (J) and undetected compounds are qualified estimated below the detection limit (UJ).

Sample number B080M7 in SDG No. B080M4 exhibited a low surrogate recovery on one column for surrogate compound tetrachloro-m-xylene. All associated compounds were qualified as estimates and flagged "J".

Sample number B080N6 in SDG No. B080N5 exhibited low recoveries on both columns for both surrogate compounds tetrachloro-m-xylene and decachlorobiphenyl. All results for sample number B080N6 were qualified as estimates and flagged "J".

Sample number B080R4 in SDG No. B080R1 exhibited a high surrogate recovery on one column for surrogate compound decachlorobiphenyl. All associated PCB compounds were qualified as estimates and flagged "J".

Surrogate recovery results were acceptable for all other samples.

4.6 PRECISION

Precision is expressed by the RPD between the recoveries of the matrix spike and the matrix spike duplicate analyses performed on a sample. When the laboratory has not performed duplicate spike analyses, precision may also be assessed by using unspiked duplicate analyses.

All matrix spike/matrix spike duplicate RPDs were acceptable.

4.7 COMPOUND IDENTIFICATION AND QUANTITATION

The data were evaluated to confirm the positive concentrations and to investigate the possibility of false negatives in all other data. Confirmation of possible false negatives is addressed by reviewing other factors relating to analytical sensitivity (e.g., detection limits, instrument linearity, analytical recovery). These factors were found to be in control, and the data are acceptable.

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Compound quantitations and reported detection limits were recalculated and verified for a minimum of 20 percent of the samples in each case to ensure that they were accurate and are consistent with CLP requirements (EPA 1988a). The reported detection limits must be in accordance with the CRQLs specified in the applicable CLP statement of work.

The %D between the two GC columns was greater than 75% and the associated data rejected and flagged "R" for the following results:

- Alpha-chlordane in sample numbers B080N6 and B080N7 in SDG No. B080N5.
- Alpha-chlordane in sample numbers B080N9 in SDG No. B080N9.
- Aroclor-1254 and Aroclor-1260 in sample number B080R4 in SDG No. B080R1.

The %D between the two GC columns was equal to 75% and the associated data rejected and flagged "J" for the following results:

- Gamma-chlordane in sample number B080N9 in SDG No. B080N9.
- Aroclor-1254 and Aroclor-1260 in sample number B080R5 in SDG No. B080R1.

The compound quantitations and the CRQLs reported were calculated correctly and were acceptable for all other results.

4.8 OVERALL ASSESSMENT AND SUMMARY

A thorough review of ongoing data acquisition and instrument performance criteria was made to assess overall GC/MS instrument performance. No changes in instrument performance were noted that would result in the degradation of data quality. No indications of unacceptable instrument performance (i.e., shifts in baseline stability, retention time shifts, extraneous peaks, or sensitivity) were found during the quality assurance review.

In general, the pesticide/PCB data presented in this report met the protocol-specified QA/QC requirements. The sampling to extraction holding times was exceeded, though not grossly, for several samples. As required by Westinghouse-Hanford protocols, all results for these samples were flagged "J" and are considered to be estimates. Surrogate recoveries for three samples in three different data packages were outside QC limits. All associated results were qualified as estimates and flagged "J". The %D between the two columns exceeded 25% for three compounds in several samples. The analytes for which the %D=25-75% were qualified as estimates and flagged "J". In those cases where the %D was greater than 75%, the associated results were rejected and flagged "R". Rejected data is not usable for any purpose and should not be reported. All other data are considered valid and usable within the standard error associated with the method.

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PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080L9																				
Sample Number		B080L9																			
Location		116-F-6																			
Remarks		NV																			
Sample Date		1/27/93																			
Extraction Date		2/05/93																			
Analysis Date		2/12/93																			
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.8	U																		
beta-BHC	1.7	1.8	U																		
delta-BHC	1.7	1.8	U																		
gamma-BHC (Lindane)	1.7	1.8	U																		
Heptachlor	1.7	1.8	U																		
Aldrin	1.7	1.8	U																		
Heptachlor epoxide	1.7	1.8	U																		
Endosulfan I	1.7	1.8	U																		
Dieldrin	3.3	3.5	U																		
4,4'-DDE	3.3	3.5	U																		
Endrin	3.3	3.5	U																		
Endosulfan II	3.3	3.5	U																		
4,4'-DDD	3.3	3.5	U																		
Endosulfan sulfate	3.3	3.5	U																		
4,4'-DDT	3.3	3.5	U																		
Methoxychlor	17.0	18	U																		
Endrin Ketone	3.3	3.5	U																		
Endrin Aldehyde	3.3	3.5	U																		
alpha-Chlordane	1.7	1.8	U																		
gamma-Chlordane	1.7	1.8	U																		
Toxaphene	170.0	180	U																		
Aroclor-1016	33.0	35	U																		
Aroclor-1221	33.0	72	U																		
Aroclor-1232	67.0	35	U																		
Aroclor-1242	33.0	35	U																		
Aroclor-1248	33.0	35	U																		
Aroclor-1254	33.0	35	U																		
Aroclor-1260	33.0	35	U																		

N : Not Validated

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M0																				
Sample Number		B080M0		B080M1		B080M2															
Location		116-F-6		116-F-6		116-F-6															
Remarks		NV		NV		NV															
Sample Date		1/28/93		1/28/93		1/28/93															
Extraction Date		2/05/93		2/05/93		2/05/93															
Analysis Date		2/13/93		2/13/93		2/13/93															
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.8	U	1.7	U	1.7	U														
beta-BHC	1.7	1.8	U	1.7	U	1.7	U														
delta-BHC	1.7	1.8	U	1.7	U	1.7	U														
gamma-BHC (Lindane)	1.7	1.8	U	1.7	U	1.7	U														
Heptachlor	1.7	1.8	U	1.7	U	1.7	U														
Aldrin	1.7	1.8	U	1.7	U	1.7	U														
Heptachlor epoxide	1.7	1.8	U	1.7	U	1.7	U														
Endosulfan I	1.7	1.8	U	1.7	U	1.7	U														
Dieldrin	3.3	3.4	U	3.4	U	3.3	U														
4,4'-DDE	3.3	3.4	U	3.4	U	3.3	U														
Endrin	3.3	3.4	U	3.4	U	3.3	U														
Endosulfan II	3.3	3.4	U	3.4	U	3.3	U														
4,4'-DDD	3.3	3.4	U	3.4	U	3.3	U														
Endosulfan sulfate	3.3	3.4	U	3.4	U	3.3	U														
4,4'-DDT	3.3	3.4	U	3.4	U	3.3	U														
Methoxychlor	17.0	18	U	17	U	17	U														
Endrin Ketone	3.3	3.4	U	3.4	U	3.3	U														
Endrin Aldehyde	3.3	3.4	U	3.4	U	3.3	U														
alpha-Chlordane	1.7	1.8	U	1.7	U	1.7	U														
gamma-Chlordane	1.7	1.8	U	1.7	U	1.7	U														
Toxaphene	170.0	180	U	170	U	170	U														
Aroclor-1016	33.0	34	U	34	U	33	U														
Aroclor-1221	33.0	70	U	69	U	68	U														
Aroclor-1232	67.0	34	U	34	U	33	U														
Aroclor-1242	33.0	34	U	34	U	33	U														
Aroclor-1248	33.0	34	U	34	U	33	U														
Aroclor-1254	33.0	34	U	34	U	33	U														
Aroclor-1260	33.0	34	U	34	U	33	U														

NV = Not Validated

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M3																				
Sample Number		B080M3																			
Location		116-F-6																			
Remarks		NV																			
Sample Date		1/29/93																			
Extraction Date		2/05/93																			
Analysis Date		2/18/93																			
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.7	U																		
beta-BHC	1.7	1.7	U																		
delta-BHC	1.7	1.7	U																		
gamma-BHC (Lindane)	1.7	1.7	U																		
Heptachlor	1.7	1.7	U																		
Aldrin	1.7	1.7	U																		
Heptachlor epoxide	1.7	1.7	U																		
Endosulfan I	1.7	1.7	U																		
Dieldrin	3.3	3.4	U																		
4,4'-DDE	3.3	3.4	U																		
Endrin	3.3	3.4	U																		
Endosulfan II	3.3	3.4	U																		
4,4'-DDD	3.3	3.4	U																		
Endosulfan sulfate	3.3	3.4	U																		
4,4'-DDT	3.3	3.4	U																		
Methoxychlor	17.0	17	U																		
Endrin Ketone	3.3	3.4	U																		
Endrin Aldehyde	3.3	3.4	U																		
alpha-Chlordane	1.7	1.7	U																		
gamma-Chlordane	1.7	1.7	U																		
Toxaphene	170.0	170	U																		
Aroclor-1016	33.0	34	U																		
Aroclor-1221	33.0	68	U																		
Aroclor-1232	67.0	34	U																		
Aroclor-1242	33.0	34	U																		
Aroclor-1248	33.0	34	U																		
Aroclor-1254	33.0	34	U																		
Aroclor-1260	33.0	34	U																		

Not Validated

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M4																				
Sample Number		B080M4		B080M6		B080M7		B080M8		B080M9											
Location		116-F-2		116-F-2		116-F-2		116-F-2		116-F-2											
Remarks																					
Sample Date		02/02/93		02/02/93		02/03/93		02/03/93		02/03/93											
Extraction Date		02/11/93		02/11/93		02/11/93		02/11/93		02/11/93											
Analysis Date		02/24/93		02/24/93		02/24/93		02/24/93		02/24/93											
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.8	UJ	1.8	UJ	1.7	UJ	1.7	UJ	1.7	UJ										
beta-BHC	1.7	1.8	UJ	1.8	UJ	1.7	UJ	1.7	UJ	1.7	UJ										
delta-BHC	1.7	1.8	UJ	1.8	UJ	1.7	UJ	1.7	UJ	1.7	UJ										
gamma-BHC (Lindane)	1.7	1.8	UJ	1.8	UJ	1.7	UJ	1.7	UJ	1.7	UJ										
Heptachlor	1.7	1.8	UJ	1.8	UJ	1.7	UJ	1.7	UJ	1.7	UJ										
Aldrin	1.7	1.8	UJ	1.8	UJ	1.7	UJ	1.7	UJ	1.7	UJ										
Heptachlor epoxide	1.7	1.8	UJ	1.8	UJ	1.7	UJ	1.7	UJ	1.7	UJ										
Endosulfan I	1.7	1.8	UJ	1.8	UJ	1.7	UJ	1.7	UJ	1.7	UJ										
Dieldrin	3.3	3.5	UJ	3.5	UJ	3.3	UJ	3.4	UJ	3.4	UJ										
4,4'-DDE	3.3	3.5	UJ	3.5	UJ	3.3	UJ	3.4	UJ	3.4	UJ										
Endrin	3.3	3.5	UJ	3.5	UJ	3.3	UJ	3.4	UJ	3.4	UJ										
Endosulfan II	3.3	3.5	UJ	3.5	UJ	3.3	UJ	3.4	UJ	3.4	UJ										
4,4'-DDD	3.3	3.5	UJ	3.5	UJ	3.3	UJ	3.4	UJ	3.4	UJ										
Endosulfan sulfate	3.3	3.5	UJ	3.5	UJ	3.3	UJ	3.4	UJ	3.4	UJ										
4,4'-DDT	3.3	3.5	UJ	3.5	UJ	3.3	UJ	3.4	UJ	3.4	UJ										
Methoxychlor	17.0	18	UJ	18	UJ	17	UJ	17	UJ	17	UJ										
Endrin Ketone	3.3	3.5	UJ	3.5	UJ	3.3	UJ	3.4	UJ	3.4	UJ										
Endrin Aldehyde	3.3	3.5	UJ	3.5	UJ	3.3	UJ	3.4	UJ	3.4	UJ										
alpha-Chlordane	1.7	1.8	UJ	1.8	UJ	1.7	UJ	1.7	UJ	1.7	UJ										
gamma-Chlordane	1.7	1.8	UJ	1.8	UJ	1.7	UJ	1.7	UJ	1.7	UJ										
Toxaphene	170.0	180	UJ	180	UJ	170	UJ	170	UJ	170	UJ										
Aroclor-1016	33.0	35	UJ	35	UJ	33	UJ	34	UJ	34	UJ										
Aroclor-1221	33.0	71	UJ	72	UJ	68	UJ	68	UJ	68	UJ										
Aroclor-1232	67.0	35	UJ	35	UJ	33	UJ	34	UJ	34	UJ										
Aroclor-1242	33.0	35	UJ	35	UJ	33	UJ	34	UJ	34	UJ										
Aroclor-1248	33.0	35	UJ	35	UJ	33	UJ	34	UJ	34	UJ										
Aroclor-1254	33.0	35	UJ	35	UJ	33	UJ	34	UJ	34	UJ										
Aroclor-1260	33.0	35	UJ	35	UJ	33	UJ	34	UJ	34	UJ										

HOLDING TIME SUMMARY

SDG: B080M4	REVIEWER: SC			DATE: 8/5/93		PAGE 1 OF 1	
COMMENTS:							
FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B080M4	Pest/PCB	2/2/93	2/11/93	2/24/93	7	40	J
B080M6	Pest/PCB	2/2/93	2/11/93	2/24/93	7	40	J
B080M7	Pest/PCB	2/3/93	2/11/93	2/24/93	7	40	J
B080M8	Pest/PCB	2/3/93	2/11/93	2/24/93	7	40	J
B080M9	Pest/PCB	2/3/93	2/11/93	2/24/93	7	40	J

ACCURACY DATA SUMMARY

SDG: B080M4	REVIEWER: SC	DATE: 8/5/93	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B080M7	Tetrachloro-m-xylene	58	B080M7	J

DATA QUALIFICATION SUMMARY

SDG: B080M4	REVIEWER: SC	DATE: 8/5/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All Pest/PCB compounds	J	All	Holding times exceeded
All Pest compounds	J	B080M7	Surrogate recovery

8313042.0503

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N0																				
Sample Number		B080N0		B080N1																	
Location		116-F-1A		116-F-1A																	
Remarks		NV		NV																	
Sample Date		2/04/93		2/04/93																	
Extraction Date		2/11/93		2/11/93																	
Analysis Date		3/02/93		3/02/93																	
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.7	U	1.8	U																
beta-BHC	1.7	1.7	U	1.8	U																
delta-BHC	1.7	1.7	U	1.8	U																
gamma-BHC (Lindane)	1.7	1.7	U	1.8	U																
Heptachlor	1.7	1.7	U	1.8	U																
Aldrin	1.7	1.7	U	1.8	U																
Heptachlor epoxide	1.7	1.7	U	1.8	U																
Endosulfan I	1.7	1.7	U	1.8	U																
Dieldrin	3.3	3.4	U	3.6	U																
4,4'-DDE	3.3	3.4	U	3.6	U																
Endrin	3.3	3.4	U	3.6	U																
Endosulfan II	3.3	3.4	U	3.6	U																
4,4'-DDD	3.3	3.4	U	3.6	U																
Endosulfan sulfate	3.3	3.4	U	3.6	U																
4,4'-DDT	3.3	3.4	U	3.6	U																
Methoxychlor	17.0	17	U	18	U																
Endrin Ketone	3.3	3.4	U	3.6	U																
Endrin Aldehyde	3.3	3.4	U	3.6	U																
alpha-Chlordane	1.7	1.7	U	1.8	U																
gamma-Chlordane	1.7	1.7	U	1.8	U																
Toxaphene	170.0	170	U	180	U																
Aroclor-1016	33.0	34	U	36	U																
Aroclor-1221	33.0	69	U	73	U																
Aroclor-1232	67.0	34	U	36	U																
Aroclor-1242	33.0	34	U	36	U																
Aroclor-1248	33.0	34	U	36	U																
Aroclor-1254	33.0	34	U	36	U																
Aroclor-1260	33.0	34	U	36	U																

NV = Not Validated

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N2																				
Sample Number		B080N2		B080N3																	
Location		116-F-1A		116-F-1A																	
Remarks		NV		NV																	
Sample Date		2/08/93		2/09/93																	
Extraction Date		2/18/93		2/18/93																	
Analysis Date		3/02/93		3/02/93																	
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.7	U	1.7	U																
beta-BHC	1.7	1.7	U	1.7	U																
delta-BHC	1.7	1.7	U	1.7	U																
gamma-BHC (Lindane)	1.7	1.7	U	1.7	U																
Heptachlor	1.7	1.7	U	1.7	U																
Aldrin	1.7	1.7	U	1.7	U																
Heptachlor epoxide	1.7	1.7	U	1.7	U																
Endosulfan I	1.7	1.7	U	1.7	U																
Dieldrin	3.3	3.2	U	3.3	U																
4,4'-DDE	3.3	3.2	U	3.3	U																
Endrin	3.3	3.2	U	3.3	U																
Endosulfan II	3.3	3.2	U	3.3	U																
4,4'-DDD	3.3	3.2	U	3.3	U																
Endosulfan sulfate	3.3	3.2	U	3.3	U																
4,4'-DDT	3.3	3.2	U	3.3	U																
Methoxychlor	17.0	17	U	17	U																
Endrin Ketone	3.3	3.2	U	3.3	U																
Endrin Aldehyde	3.3	3.2	U	3.3	U																
alpha-Chlordane	1.7	1.7	U	1.7	U																
gamma-Chlordane	1.7	1.7	U	1.7	U																
Toxaphene	170.0	170	U	170	U																
Aroclor-1016	33.0	32	U	33	U																
Aroclor-1221	33.0	66	U	67	U																
Aroclor-1232	67.0	32	U	33	U																
Aroclor-1242	33.0	32	U	33	U																
Aroclor-1248	33.0	32	U	33	U																
Aroclor-1254	33.0	32	U	33	U																
Aroclor-1260	33.0	32	U	33	U																

Not Validated

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N5																				
Sample Number		B080N5		B080N6		B080N7		B080N8													
Location		116-F-9C		116-F-9C		116-F-9C		116-F-9C													
Remarks								DUP													
Sample Date		02/11/93		02/11/93		02/12/93		02/12/93													
Extraction Date		02/19/93		02/19/93		02/19/93		02/19/93													
Analysis Date		03/02/93		03/02/93		03/02/93		03/02/93													
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.8	UJ	1.8	UJ	1.7	U	1.7	U												
beta-BHC	1.7	1.8	UJ	1.8	UJ	1.7	U	1.7	U												
delta-BHC	1.7	1.8	UJ	1.8	UJ	1.7	U	1.7	U												
gamma-BHC (Lindane)	1.7	1.8	UJ	1.8	UJ	1.7	U	1.7	U												
Heptachlor	1.7	1.8	UJ	1.8	UJ	1.7	U	1.7	U												
Aldrin	1.7	1.8	UJ	1.8	UJ	1.7	U	1.7	U												
Heptachlor epoxide	1.7	1.8	UJ	1.8	UJ	1.7	U	1.7	U												
Endosulfan I	1.7	1.8	UJ	1.8	UJ	1.7	U	1.7	U												
Dieldrin	3.3	3.4	UJ	3.5	UJ	3.3	U	3.3	U												
4,4'-DDE	3.3	3.4	UJ	3.5	UJ	3.3	U	3.3	U												
Endrin	3.3	3.4	UJ	3.5	UJ	3.3	U	3.3	U												
Endosulfan II	3.3	3.4	UJ	3.5	UJ	3.3	U	3.3	U												
4,4'-DDD	3.3	3.4	UJ	3.5	UJ	3.3	U	3.3	U												
Endosulfan sulfate	3.3	3.4	UJ	3.5	UJ	3.3	U	3.3	U												
4,4'-DDT	3.3	3.4	UJ	3.5	UJ	3.3	U	3.3	U												
Methoxychlor	17.0	18	UJ	18	UJ	17	U	17	U												
Endrin Ketone	3.3	3.4	UJ	3.5	UJ	3.3	U	3.3	U												
Endrin Aldehyde	3.3	3.4	UJ	3.5	UJ	3.3	U	3.3	U												
alpha-Chlordane	1.7	1.8	UJ	4.7	R	0.37	R	1.7	U												
gamma-Chlordane	1.7	1.8	UJ	4.8	J	0.51	J	1.7	U												
Toxaphene	170.0	180	UJ	180	UJ	170	U	170	U												
Aroclor-1016	33.0	34	UJ	35	UJ	33	U	33	U												
Aroclor-1221	33.0	69	UJ	72	UJ	67	U	68	U												
Aroclor-1232	67.0	34	UJ	35	UJ	33	U	33	U												
Aroclor-1242	33.0	34	UJ	35	UJ	33	U	33	U												
Aroclor-1248	33.0	34	UJ	35	UJ	33	U	33	U												
Aroclor-1254	33.0	34	UJ	35	UJ	33	U	33	U												
Aroclor-1260	33.0	34	UJ	35	UJ	33	U	33	U												

DUP = Duplicate

HOLDING TIME SUMMARY

SDG: B080N5	REVIEWER: SC			DATE: 8/3/93		PAGE 1 OF 1	
COMMENTS:							
FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B080N5	Pest/PCB	2/11/93	2/19/93	3/2/93	7	40	J
B080N6	Pest/PCB	2/11/93	2/19/93	3/2/93	7	40	J

CALIBRATION DATA SUMMARY

SDG: B080N5	REVIEWER: SC	DATE: 8/3/93	PAGE 1 OF 1
COMMENTS: Two column comparison			
CALIB. TYPE: INITIAL CONTINUING		INSTRUMENT:	

CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
3/2/93	alpha-Chlordane		79.4	B080N6	R
3/2/93	alpha-Chlordane		112.3	B080N7	R

ACCURACY DATA SUMMARY

SDG: B080N5	REVIEWER: SC	DATE: 8/3/93	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B080N6	Tetrachloro-m-xylene	26/30	B080N6	J
B080N6	Decachlorobiphenyl	48/48	B080N6	J

DATA QUALIFICATION SUMMARY

SDG: B080N5	REVIEWER: SC	DATE: 8/3/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All Pest/PCB compounds	J	B080N5, B080N6	Holding times exceeded
All Pest/PCB compounds	J	B080N6	Low surrogate recoveries
alpha-Chlordane	R	B080N6, B080N7	%D between the two GC columns > 75%

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Roy F. Weston																					
Case	SDG: B080N9																				
Sample Number		B080N9																			
Location		116-F-9C																			
Remarks		Split																			
Sample Date		02/12/93																			
Extraction Date		02/22/93																			
Analysis Date		03/09/93																			
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.7	UJ																		
beta-BHC	1.7	1.7	UJ																		
delta-BHC	1.7	1.7	UJ																		
gamma-BHC (Lindane)	1.7	1.7	UJ																		
Heptachlor	1.7	1.7	UJ																		
Aldrin	1.7	1.7	UJ																		
Heptachlor epoxide	1.7	1.7	UJ																		
Endosulfan I	1.7	1.7	UJ																		
Dieldrin	3.3	3.3	UJ																		
4,4'-DDE	3.3	3.3	UJ																		
Endrin	3.3	3.3	UJ																		
Endosulfan II	3.3	3.3	UJ																		
4,4'-DDD	3.3	3.3	UJ																		
Endosulfan sulfate	3.3	3.3	UJ																		
4,4'-DDT	3.3	3.3	UJ																		
Methoxychlor	17.0	17	UJ																		
Endrin Ketone	3.3	3.3	UJ																		
Endrin Aldehyde	3.3	3.3	UJ																		
alpha-Chlordane	1.7	1.3	R																		
gamma-Chlordane	1.7	1.0	J																		
Toxaphene	170.0	170	UJ																		
Aroclor-1016	33.0	33	UJ																		
Aroclor-1221	33.0	67	UJ																		
Aroclor-1232	67.0	33	UJ																		
Aroclor-1242	33.0	33	UJ																		
Aroclor-1248	33.0	33	UJ																		
Aroclor-1254	33.0	33	UJ																		
Aroclor-1260	33.0	33	UJ																		

HOLDING TIME SUMMARY

SDG: B080N9	REVIEWER: SC			DATE: 7/30/93		PAGE 1 OF 1	
COMMENTS:							
FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B080N9	Pest/PCB	2/12/93	2/22/93	3/9/93	7	40	J

CALIBRATION DATA SUMMARY

SDG: B080N9	REVIEWER: SC	DATE: 7/30/93	PAGE 1 OF 1		
COMMENTS: Two column comparison					
CALIB. TYPE: INITIAL CONTINUING		INSTRUMENT:			
CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
3/9/93	alpha-Chlordane		110	B080N9	R
3/9/93	gamma-Chlordane		30	B080N9	J

DATA QUALIFICATION SUMMARY

SDG: B080N9	REVIEWER: SC	DATE: 7/30/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All Pest/PCB compounds	J	B080N9	Holding time exceeded
alpha-Chlordane	R	B080N9	%D between GC columns > 75%
gamma-Chlordane	J	B080N9	%D between GC columns = 25 - 75%

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P0																				
Sample Number		B080P0		B080P1		B080P2															
Location		116-F-9C		116-F-9C		116-F-4															
Remarks		NV		NV		NV															
Sample Date		2/17/93		2/17/93		2/17/93															
Extraction Date		2/24/93		2/24/93		2/24/93															
Analysis Date		3/02/93		3/02/93		3/02/93															
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.7	U	1.7	U	1.8	U														
beta-BHC	1.7	1.7	U	1.7	U	1.8	U														
delta-BHC	1.7	1.7	U	1.7	U	1.8	U														
gamma-BHC (Lindane)	1.7	1.7	U	1.7	U	1.8	U														
Heptachlor	1.7	1.7	U	1.7	U	1.8	U														
Aldrin	1.7	1.7	U	1.7	U	1.8	U														
Heptachlor epoxide	1.7	1.7	U	1.7	U	1.8	U														
Endosulfan I	1.7	1.7	U	1.7	U	1.8	U														
Dieldrin	3.3	3.4	U	3.2	U	3.4	U														
4,4'-DDE	3.3	3.4	U	3.2	U	3.4	U														
Endrin	3.3	3.4	U	3.2	U	3.4	U														
Endosulfan II	3.3	3.4	U	3.2	U	3.4	U														
4,4'-DDD	3.3	3.4	U	3.2	U	3.4	U														
Endosulfan sulfate	3.3	3.4	U	3.2	U	3.4	U														
4,4'-DDT	3.3	3.4	U	3.2	U	3.4	U														
Methoxychlor	17.0	17	U	17	U	18	U														
Endrin Ketone	3.3	3.4	U	3.2	U	3.4	U														
Endrin Aldehyde	3.3	3.4	U	3.2	U	3.4	U														
alpha-Chlordane	1.7	1.7	U	1.7	U	1.7	U														
gamma-Chlordane	1.7	1.7	U	1.7	U	1.7	U														
Toxaphene	170.0	170	U	170	U	180	U														
Aroclor-1016	33.0	34	U	32	U	34	U														
Aroclor-1221	33.0	69	U	66	U	69	U														
Aroclor-1232	67.0	34	U	32	U	34	U														
Aroclor-1242	33.0	34	U	32	U	34	U														
Aroclor-1248	33.0	34	U	32	U	34	U														
Aroclor-1254	33.0	34	U	32	U	34	U														
Aroclor-1260	33.0	34	U	32	U	34	U														

= Not Validated

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P4																				
Sample Number		B080P4																			
Location		116-F-4																			
Remarks																					
Sample Date		02/18/93																			
Extraction Date		02/26/93																			
Analysis Date		03/09/93																			
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.7	U																		
beta-BHC	1.7	1.7	U																		
delta-BHC	1.7	1.7	U																		
gamma-BHC (Lindane)	1.7	1.7	U																		
Heptachlor	1.7	1.7	U																		
Aldrin	1.7	1.7	U																		
Heptachlor epoxide	1.7	1.7	U																		
Endosulfan I	1.7	1.7	U																		
Dieldrin	3.3	3.3	U																		
4,4'-DDE	3.3	3.3	U																		
Endrin	3.3	3.3	U																		
Endosulfan II	3.3	3.3	U																		
4,4'-DDD	3.3	3.3	U																		
Endosulfan sulfate	3.3	3.3	U																		
4,4'-DDT	3.3	3.3	U																		
Methoxychlor	17.0	17	U																		
Endrin Ketone	3.3	3.3	U																		
Endrin Aldehyde	3.3	3.3	U																		
alpha-Chlordane	1.7	1.7	U																		
gamma-Chlordane	1.7	1.7	U																		
Toxaphene	170.0	170	U																		
Aroclor-1016	33.0	33	U																		
Aroclor-1221	33.0	67	U																		
Aroclor-1232	67.0	33	U																		
Aroclor-1242	33.0	33	U																		
Aroclor-1248	33.0	33	U																		
Aroclor-1254	33.0	33	U																		
Aroclor-1260	33.0	33	U																		

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P5																				
Sample Number		B080P5																			
Location		116-F-4																			
Remarks		NV																			
Sample Date		2/22/93																			
Extraction Date		3/02/93																			
Analysis Date		3/09/93																			
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.7	U																		
beta-BHC	1.7	1.7	U																		
delta-BHC	1.7	1.7	U																		
gamma-BHC (Lindane)	1.7	1.7	U																		
Heptachlor	1.7	1.7	U																		
Aldrin	1.7	1.7	U																		
Heptachlor epoxide	1.7	1.7	U																		
Endosulfan I	1.7	1.7	U																		
Dieldrin	3.3	3.3	U																		
4,4'-DDE	3.3	3.3	U																		
Endrin	3.3	3.3	U																		
Endosulfan II	3.3	3.3	U																		
4,4'-DDD	3.3	3.3	U																		
Endosulfan sulfate	3.3	3.3	U																		
4,4'-DDT	3.3	3.3	U																		
Methoxychlor	17.0	17	U																		
Endrin Ketone	3.3	3.3	U																		
Endrin Aldehyde	3.3	3.3	U																		
alpha-Chlordane	1.7	1.7	U																		
gamma-Chlordane	1.7	1.7	U																		
Toxaphene	170.0	170	U																		
Aroclor-1016	33.0	33	U																		
Aroclor-1221	33.0	68	U																		
Aroclor-1232	67.0	33	U																		
Aroclor-1242	33.0	33	U																		
Aroclor-1248	33.0	33	U																		
Aroclor-1254	33.0	33	U																		
Aroclor-1260	33.0	33	U																		

NV = Not Validated

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P9																				
Sample Number		B080P9		B080Q4																	
Location		116-F-4		116-F-14																	
Remarks		NV		NV																	
Sample Date		2/24/93		2/25/93																	
Extraction Date		3/03/93		3/03/93																	
Analysis Date		3/16/93		3/16/93																	
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.7	U	1.8	U																
beta-BHC	1.7	1.7	U	1.8	U																
delta-BHC	1.7	1.7	U	1.8	U																
gamma-BHC (Lindane)	1.7	1.7	U	1.8	U																
Heptachlor	1.7	1.7	U	1.8	U																
Aldrin	1.7	1.7	U	1.8	U																
Heptachlor epoxide	1.7	1.7	U	1.8	U																
Endosulfan I	1.7	1.7	U	1.8	U																
Dieldrin	3.3	3.3	U	3.6	U																
4,4'-DDE	3.3	3.3	U	3.6	U																
Endrin	3.3	3.3	U	3.6	U																
Endosulfan II	3.3	3.3	U	3.6	U																
4,4'-DDD	3.3	3.3	U	3.6	U																
Endosulfan sulfate	3.3	3.3	U	3.6	U																
4,4'-DDT	3.3	3.3	U	3.6	U																
Methoxychlor	17.0	17	U	18	U																
Endrin Ketone	3.3	3.3	U	3.6	U																
Endrin Aldehyde	3.3	3.3	U	3.6	U																
alpha-Chlordane	1.7	1.7	U	1.8	U																
gamma-Chlordane	1.7	1.7	U	1.8	U																
Toxaphene	170.0	170	U	180	U																
Aroclor-1016	33.0	33	U	36	U																
Aroclor-1221	33.0	66	U	72	U																
Aroclor-1232	67.0	33	U	36	U																
Aroclor-1242	33.0	33	U	36	U																
Aroclor-1248	33.0	33	U	36	U																
Aroclor-1254	33.0	33	U	36	U																
Aroclor-1260	33.0	33	U	36	U																

NV = Not Validated

PESTICIDE/PCB ORGANIC ANALYSIS, WATER MATRIX, (ug/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q0A																				
Sample Number		B080Q0A																			
Location		116-F-6																			
Remarks		NV,FB																			
Sample Date		2/23/93																			
Extraction Date		3/01/93																			
Analysis Date		3/09/93																			
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	0.05	0.050	U																		
beta-BHC	0.05	0.050	U																		
delta-BHC	0.05	0.050	U																		
gamma-BHC (Lindane)	0.05	0.050	U																		
Heptachlor	0.05	0.050	U																		
Aldrin	0.05	0.050	U																		
Heptachlor epoxide	0.05	0.050	U																		
Endosulfan I	0.05	0.050	U																		
Dieldrin	0.10	0.10	U																		
4,4'-DDE	0.10	0.10	U																		
Endrin	0.10	0.10	U																		
Endosulfan II	0.10	0.10	U																		
4,4'-DDD	0.10	0.10	U																		
Endosulfan sulfate	0.10	0.10	U																		
4,4'-DDT	0.10	0.10	U																		
Methoxychlor	0.50	0.50	U																		
Endrin Ketone	0.10	0.10	U																		
Endrin Aldehyde	0.10	0.10	U																		
alpha-Chlordane	0.05	0.050	U																		
gamma-Chlordane	0.05	0.050	U																		
Toxaphene	5.00	5.0	U																		
Aroclor-1016	1.00	1.0	U																		
Aroclor-1221	1.00	2.0	U																		
Aroclor-1232	2.00	1.0	U																		
Aroclor-1242	1.00	1.0	U																		
Aroclor-1248	1.00	1.0	U																		
Aroclor-1254	1.00	1.0	U																		
Aroclor-1260	1.00	1.0	U																		

NV = Not Validated, FB = Field Blank

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q3																				
Sample Number		B080Q3		B080Q7		B080Q8															
Location		116-F-14		116-F-14		116-F-14															
Remarks		NV		NV		NV															
Sample Date		2/26/93		3/01/93		3/01/93															
Extraction Date		3/09/93		3/09/93		3/09/93															
Analysis Date		3/17/93		3/17/93		3/17/93															
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.7	U	1.8	U	1.8	U														
beta-BHC	1.7	1.7	U	1.8	U	1.8	U														
delta-BHC	1.7	1.7	U	1.8	U	1.8	U														
gamma-BHC (Lindane)	1.7	1.7	U	1.8	U	1.8	U														
Heptachlor	1.7	1.7	U	1.8	U	1.8	U														
Aldrin	1.7	1.7	U	1.8	U	1.8	U														
Heptachlor epoxide	1.7	1.7	U	1.8	U	1.8	U														
Endosulfan I	1.7	1.7	U	1.8	U	1.8	U														
Dieldrin	3.3	3.3	U	3.4	U	3.4	U														
4,4'-DDE	3.3	3.3	U	3.4	U	3.4	U														
Endrin	3.3	3.3	U	3.4	U	3.4	U														
Endosulfan II	3.3	3.3	U	3.4	U	3.4	U														
4,4'-DDD	3.3	3.3	U	3.4	U	3.4	U														
Endosulfan sulfate	3.3	3.3	U	3.4	U	3.4	U														
4,4'-DDT	3.3	3.3	U	3.4	U	3.4	U														
Methoxychlor	17.0	17	U	18	U	18	U														
Endrin Ketone	3.3	3.3	U	3.4	U	3.4	U														
Endrin Aldehyde	3.3	3.3	U	3.4	U	3.4	U														
alpha-Chlordane	1.7	1.7	U	1.8	U	1.8	U														
gamma-Chlordane	1.7	1.7	U	1.8	U	1.8	U														
Toxaphene	170.0	170	U	180	U	180	U														
Aroclor-1016	33.0	33	U	34	U	34	U														
Aroclor-1221	33.0	67	U	69	U	69	U														
Aroclor-1232	67.0	33	U	34	U	34	U														
Aroclor-1242	33.0	33	U	34	U	34	U														
Aroclor-1248	33.0	33	U	34	U	34	U														
Aroclor-1254	33.0	33	U	34	U	34	U														
Aroclor-1260	33.0	33	U	34	U	34	U														

NV = Not Validated

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q5																				
Sample Number		B080Q5		B080Q6																	
Location		116-F-14		116-F-14																	
Remarks		NV		NV																	
Sample Date		2/25/93		2/26/93																	
Extraction Date		3/04/93		3/04/93																	
Analysis Date		3/16/93		3/16/93																	
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.9	U	1.8	U																
beta-BHC	1.7	1.9	U	1.8	U																
delta-BHC	1.7	1.9	U	1.8	U																
gamma-BHC (Lindane)	1.7	1.9	U	1.8	U																
Heptachlor	1.7	1.9	U	1.8	U																
Aldrin	1.7	1.9	U	1.8	U																
Heptachlor epoxide	1.7	1.9	U	1.8	U																
Endosulfan I	1.7	1.9	U	1.8	U																
Dieldrin	3.3	3.7	U	3.4	U																
4,4'-DDE	3.3	3.7	U	3.4	U																
Endrin	3.3	3.7	U	3.4	U																
Endosulfan II	3.3	3.7	U	3.4	U																
4,4'-DDD	3.3	3.7	U	3.4	U																
Endosulfan sulfate	3.3	3.7	U	3.4	U																
4,4'-DDT	3.3	3.7	U	3.4	U																
Methoxychlor	17.0	19	U	18	U																
Endrin Ketone	3.3	3.7	U	3.4	U																
Endrin Aldehyde	3.3	3.7	U	3.4	U																
alpha-Chlordane	1.7	1.9	U	1.8	U																
gamma-Chlordane	1.7	1.9	U	1.8	U																
Toxaphene	170.0	190	U	180	U																
Aroclor-1016	33.0	37	U	34	U																
Aroclor-1221	33.0	74	U	69	U																
Aroclor-1232	67.0	37	U	34	U																
Aroclor-1242	33.0	37	U	34	U																
Aroclor-1248	33.0	37	U	34	U																
Aroclor-1254	33.0	37	U	34	U																
Aroclor-1260	33.0	37	U	34	U																

NV = Not Validated

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q9																				
Sample Number		B080Q9																			
Location		116-F-14																			
Remarks		NV																			
Sample Date		3/02/93																			
Extraction Date		3/10/93																			
Analysis Date		3/17/93																			
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.7	U																		
beta-BHC	1.7	1.7	U																		
delta-BHC	1.7	1.7	U																		
gamma-BHC (Lindane)	1.7	1.7	U																		
Heptachlor	1.7	1.7	U																		
Aldrin	1.7	1.7	U																		
Heptachlor epoxide	1.7	1.7	U																		
Endosulfan I	1.7	1.7	U																		
Dieldrin	3.3	3.4	U																		
4,4'-DDE	3.3	3.4	U																		
Endrin	3.3	3.4	U																		
Endosulfan II	3.3	3.4	U																		
4,4'-DDD	3.3	3.4	U																		
Endosulfan sulfate	3.3	3.4	U																		
4,4'-DDT	3.3	3.4	U																		
Methoxychlor	17.0	17	U																		
Endrin Ketone	3.3	3.4	U																		
Endrin Aldehyde	3.3	3.4	U																		
alpha-Chlordane	1.7	1.7	U																		
gamma-Chlordane	1.7	1.7	U																		
Toxaphene	170.0	170	U																		
Aroclor-1016	33.0	34	U																		
Aroclor-1221	33.0	69	U																		
Aroclor-1232	67.0	34	U																		
Aroclor-1242	33.0	34	U																		
Aroclor-1248	33.0	34	U																		
Aroclor-1254	33.0	34	U																		
Aroclor-1260	33.0	34	U																		

NV = Not Validated

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080R1																				
Sample Number		B080R1		B080R2		B080R4		B080R5													
Location						FR. DRAIN		FR. DRAIN													
Remarks																					
Sample Date		3/09/93		3/09/93		3/09/93		3/09/93													
Extraction Date		3/18/93		3/18/93		3/18/93		3/18/93													
Analysis Date		4/09/93		4/09/93		4/22/93		4/09/93													
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.8	UJ	1.9	UJ	22	UJ	9.8	UJ												
beta-BHC	1.7	1.8	UJ	1.9	UJ	22	UJ	9.8	UJ												
delta-BHC	1.7	1.8	UJ	1.9	UJ	22	UJ	9.8	UJ												
gamma-BHC (Lindane)	1.7	1.8	UJ	1.9	UJ	22	UJ	9.8	UJ												
Heptachlor	1.7	1.8	UJ	1.9	UJ	22	UJ	9.8	UJ												
Aldrin	1.7	1.8	UJ	1.9	UJ	22	UJ	9.8	UJ												
Heptachlor epoxide	1.7	1.8	UJ	1.9	UJ	22	UJ	9.8	UJ												
Endosulfan I	1.7	1.8	UJ	1.9	UJ	22	UJ	9.8	UJ												
Dieldrin	3.3	3.5	UJ	3.6	UJ	43	UJ	19	UJ												
4,4'-DDE	3.3	3.5	UJ	3.6	UJ	43	UJ	19	UJ												
Endrin	3.3	3.5	UJ	3.6	UJ	43	UJ	19	UJ												
Endosulfan II	3.3	3.5	UJ	3.6	UJ	43	UJ	19	UJ												
4,4'-DDD	3.3	3.5	UJ	3.6	UJ	43	UJ	19	UJ												
Endosulfan sulfate	3.3	3.5	UJ	3.6	UJ	43	UJ	19	UJ												
4,4'-DDT	3.3	3.5	UJ	3.6	UJ	43	UJ	19	UJ												
Methoxychlor	17.0	18	UJ	19	UJ	220	UJ	98	UJ												
Endrin Ketone	3.3	3.5	UJ	3.6	UJ	43	UJ	19	UJ												
Endrin Aldehyde	3.3	3.5	UJ	3.6	UJ	43	UJ	19	UJ												
alpha-Chlordane	1.7	1.8	UJ	1.9	UJ	22	UJ	9.8	UJ												
gamma-Chlordane	1.7	1.8	UJ	1.9	UJ	22	UJ	9.8	UJ												
Toxaphene	170.0	180	UJ	190	UJ	2200	UJ	980	UJ												
Aroclor-1016	33.0	35	UJ	36	UJ	430	UJ	190	UJ												
Aroclor-1221	33.0	72	UJ	74	UJ	880	UJ	390	UJ												
Aroclor-1232	67.0	35	UJ	36	UJ	430	UJ	190	UJ												
Aroclor-1242	33.0	35	UJ	36	UJ	430	UJ	190	UJ												
Aroclor-1248	33.0	35	UJ	36	UJ	430	UJ	190	UJ												
Aroclor-1254	33.0	35	UJ	36	UJ	1600	R	240	J												
Aroclor-1260	33.0	35	UJ	36	UJ	720	R	150	J												

FR. DRAIN = French Drain

HOLDING TIME SUMMARY

SDG: B080R1	REVIEWER: SC			DATE: 8/5/93		PAGE 1 OF 1	
COMMENTS:							
FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B080R1	Pest/PCB	3/9/93	3/18/93	4/9/93	7	40	J
B080R2	Pest/PCB	3/9/93	3/18/93	4/9/93	7	40	J
B080R4	Pest/PCB	3/9/93	3/18/93	4/9/93	7	40	J
B080R5	Pest/PCB	3/9/93	3/18/93	4/9/93	7	40	J

CALIBRATION DATA SUMMARY

SDG: B080R1	REVIEWER: SC	DATE: 8/5/93	PAGE 1 OF 1			
COMMENTS: Two column comparison						
CALIB. TYPE:	INITIAL	CONTINUING	INSTRUMENT:			
CALIB. DATE	COMPOUND		RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
4/22/93	Aroclor-1254			87.5	B080R4	R
4/22/93	Arclor-1260			94.4	B080R4	R
4/9/93	Aroclor-1254			75.0	B080R5	J
4/9/93	Aroclor-1260			46.7	B080R5	J

ACCURACY DATA SUMMARY

SDG: B080R1	REVIEWER: SC	DATE: 8/5/93	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B080R4	Decachlorobiphenyl	168	B080R4	J

DATA QUALIFICATION SUMMARY

SDG: B080R1	REVIEWER: SC	DATE: 8/5/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All Pest/PCB compounds	J	All	Holding times exceeded
All PCB compounds	J	B080R4	High surrogate recovery
Aroclor-1254	J	B080R5	%D between GC columns = 25% - 75%
Aroclor-1260	J	B080R5	%D between GC columns = 25% - 75%
Aroclor-1254	R	B080R4	%D between GC columns > 75%
Aroclor-1260	R	B080R4	%D between GC columns > 75%

9313042.0627

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G65																				
Sample Number		B08G65		B08G66		B08G67		B08G68		B08G69		B08G70		B08G72		B08G73		B08G74		B08G75	
Location		116-F-1B		116-F-1B		116-F-1B		116-F-1B		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1B	
Remarks		NV		NV		NV		NV		FB, NV		NV		DUP, NV		NV		NV		NV	
Sample Date		4/20/93		4/20/93		4/20/93		4/20/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93	
Extraction Date		5/01/93		5/01/93		5/01/93		5/01/93		5/01/93		5/01/93		5/01/93		5/01/93		5/01/93		5/01/93	
Analysis Date		5/19/93		5/19/93		5/19/93		5/19/93		5/19/93		5/19/93		5/19/93		5/19/93		5/19/93		5/19/93	
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.8	U	1.7	U	1.8	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
beta-BHC	1.7	1.8	U	1.7	U	1.8	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
delta-BHC	1.7	1.8	U	1.7	U	1.8	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
gamma-BHC (Lindane)	1.7	1.8	U	1.7	U	1.8	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
Heptachlor	1.7	1.8	U	1.7	U	1.8	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
Aldrin	1.7	1.8	U	1.7	U	1.8	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
Heptachlor epoxide	1.7	1.8	U	1.7	U	1.8	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
Endosulfan I	1.7	1.8	U	1.7	U	1.8	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
Dieldrin	3.3	3.4	U	3.4	U	3.5	U	3.4	U	3.3	U	3.3	U	3.3	U	3.3	U	3.3	U	3.4	U
4,4'-DDE	3.3	3.4	U	3.4	U	3.5	U	3.4	U	3.3	U	3.3	U	3.3	U	3.3	U	3.3	U	3.4	U
Endrin	3.3	3.4	U	3.4	U	3.5	U	3.4	U	3.3	U	3.3	U	3.3	U	3.3	U	3.3	U	3.4	U
Endosulfan II	3.3	3.4	U	3.4	U	3.5	U	3.4	U	3.3	U	3.3	U	3.3	U	3.3	U	3.3	U	3.4	U
4,4'-DDD	3.3	3.4	U	3.4	U	3.5	U	3.4	U	3.3	U	3.3	U	3.3	U	3.3	U	3.3	U	3.4	U
Endosulfan sulfate	3.3	3.4	U	3.4	U	3.5	U	3.4	U	3.3	U	3.3	U	3.3	U	3.3	U	3.3	U	3.4	U
4,4'-DDT	3.3	3.4	U	3.4	U	3.5	U	3.4	U	3.3	U	3.3	U	3.3	U	3.3	U	3.3	U	3.4	U
Methoxychlor	17.0	18	U	17	U	18	U	17	U	17	U	17	U	17	U	17	U	17	U	17	U
Endrin Ketone	3.3	3.4	U	3.4	U	3.5	U	3.4	U	3.3	U	3.3	U	3.3	U	3.3	U	3.3	U	3.4	U
Endrin Aldehyde	3.3	3.4	U	3.4	U	3.5	U	3.4	U	3.3	U	3.3	U	3.3	U	3.3	U	3.3	U	3.4	U
alpha-Chlordane	1.7	1.8	U	1.7	U	1.8	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
gamma-Chlordane	1.7	1.8	U	1.7	U	1.8	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
Toxaphene	170.0	180	U	170	U	180	U	170	U	170	U	170	U	170	U	170	U	170	U	170	U
Aroclor-1016	33.0	34	U	34	U	35	U	34	U	33	U	33	U	33	U	33	U	33	U	34	U
Aroclor-1221	33.0	70	U	68	U	72	U	68	U	67	U	66	U	67	U	67	U	67	U	69	U
Aroclor-1232	67.0	34	U	34	U	35	U	34	U	33	U	33	U	33	U	33	U	33	U	34	U
Aroclor-1242	33.0	34	U	34	U	35	U	34	U	33	U	33	U	33	U	33	U	33	U	34	U
Aroclor-1248	33.0	34	U	34	U	35	U	34	U	33	U	33	U	33	U	33	U	33	U	34	U
Aroclor-1254	33.0	34	U	34	U	35	U	34	U	33	U	33	U	33	U	33	U	33	U	34	U
Aroclor-1260	33.0	34	U	34	U	35	U	34	U	33	U	33	U	33	U	33	U	33	U	34	U

NV = Not Validated, FB = Field Blank, DUP = Duplicate

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G65																				
Sample Number		B08G76		B08G78		B08G79		B08G80		B08G81		B08G82		B08G83							
Location		116-F-1C		116-F-9D		116-F-9D		116-F-9D		116-F-9D		116-F-3		116-F-3							
Remarks		NV		NV		NV		NV		NV		NV		NV							
Sample Date		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/22/93		4/22/93							
Extraction Date		5/01/93		5/01/93		5/01/93		5/01/93		5/01/93		5/01/93		5/01/93							
Analysis Date		5/19/93		5/19/93		5/20/93		5/19/93		5/19/93		5/20/93		5/19/93							
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.8	U	1.7	U	11	U	1.9	U	1.8	U	1.7	U	1.9	U						
beta-BHC	1.7	1.8	U	1.7	U	11	U	1.9	U	1.8	U	1.7	U	1.9	U						
delta-BHC	1.7	1.8	U	1.7	U	11	U	1.9	U	1.8	U	1.7	U	1.9	U						
gamma-BHC (Lindane)	1.7	1.8	U	1.7	U	11	U	1.9	U	1.8	U	1.7	U	1.9	U						
Heptachlor	1.7	1.8	U	1.7	U	11	U	1.9	U	1.8	U	1.7	U	1.9	U						
Aldrin	1.7	1.8	U	1.7	U	11	U	1.9	U	1.8	U	1.7	U	1.9	U						
Heptachlor epoxide	1.7	1.8	U	1.7	U	11	U	1.9	U	1.8	U	1.7	U	1.9	U						
Endosulfan I	1.7	1.8	U	1.7	U	11	U	1.9	U	1.8	U	1.7	U	1.9	U						
Dieldrin	3.3	3.4	U	3.3	U	21	U	3.7	U	3.5	U	3.4	U	3.6	U						
4,4'-DDE	3.3	3.4	U	3.3	U	21	U	3.7	U	3.5	U	3.4	U	3.6	U						
Endrin	3.3	3.4	U	3.3	U	21	U	3.7	U	3.5	U	3.4	U	3.6	U						
Endosulfan II	3.3	3.4	U	3.3	U	21	U	3.7	U	3.5	U	3.4	U	3.6	U						
4,4'-DDD	3.3	3.4	U	3.3	U	21	U	3.7	U	3.5	U	3.4	U	3.6	U						
Endosulfan sulfate	3.3	3.4	U	3.3	U	21	U	3.7	U	3.5	U	3.4	U	3.6	U						
4,4'-DDT	3.3	3.4	U	3.3	U	21	U	3.7	U	3.5	U	3.4	U	3.6	U						
Methoxychlor	17.0	18	U	17	U	110	U	19	U	18	U	17	U	19	U						
Endrin Ketone	3.3	3.4	U	3.3	U	21	U	3.7	U	3.5	U	3.4	U	3.6	U						
Endrin Aldehyde	3.3	3.4	U	3.3	U	21	U	3.7	U	3.5	U	3.4	U	3.6	U						
alpha-Chlordane	1.7	1.8	U	1.7	U	330		76		6.1		1.7	U	1.9	U						
gamma-Chlordane	1.7	1.8	U	1.7	U	200		48		4.1		1.7	U	1.9	U						
Toxaphene	170.0	180	U	170	U	1100	U	190	U	180	U	170	U	190							
Aroclor-1016	33.0	34	U	33	U	210	U	37	U	35	U	34	U	36	U						
Aroclor-1221	33.0	70	U	68	U	430	U	74	U	71	U	68	U	73	U						
Aroclor-1232	67.0	34	U	33	U	210	U	37	U	35	U	34	U	36	U						
Aroclor-1242	33.0	34	U	33	U	210	U	37	U	35	U	34	U	36	U						
Aroclor-1248	33.0	34	U	33	U	210	U	37	U	35	U	34	U	36	U						
Aroclor-1254	33.0	34	U	33	U	210	U	37	U	35	U	34	U	180							
Aroclor-1260	33.0	34	U	33	U	210	U	37	U	35	U	34	U	36	U						

Not Validated, FB = Field Blank, DUP = Duplicate

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Roy F. Weston																					
Case	SDG: B08G71																				
Sample Number		B08G71																			
Location		116-F-1C																			
Remarks		Split, NV																			
Sample Date		4/21/93																			
Extraction Date		4/27/93																			
Analysis Date		5/12/93																			
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
alpha-BHC	1.7	1.7	U																		
beta-BHC	1.7	1.7	U																		
delta-BHC	1.7	1.7	U																		
gamma-BHC (Lindane)	1.7	1.7	U																		
Heptachlor	1.7	1.7	U																		
Aldrin	1.7	1.7	U																		
Heptachlor epoxide	1.7	1.7	U																		
Endosulfan I	1.7	1.7	U																		
Dieldrin	3.3	3.4	U																		
4,4'-DDE	3.3	3.4	U																		
Endrin	3.3	3.4	U																		
Endosulfan II	3.3	3.4	U																		
4,4'-DDD	3.3	3.4	U																		
Endosulfan sulfate	3.3	3.4	U																		
4,4'-DDT	3.3	3.4	U																		
Methoxychlor	17.0	17	U																		
Endrin Ketone	3.3	3.4	U																		
Endrin Aldehyde	3.3	3.4	U																		
alpha-Chlordane	1.7	1.7	U																		
gamma-Chlordane	1.7	1.7	U																		
Toxaphene	170.0	170	U																		
Aroclor-1016	33.0	34	U																		
Aroclor-1221	33.0	68	U																		
Aroclor-1232	67.0	34	U																		
Aroclor-1242	33.0	34	U																		
Aroclor-1248	33.0	34	U																		
Aroclor-1254	33.0	34	U																		
Aroclor-1260	33.0	34	U																		

NV = Not Validated

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project: WESTINGHOUSE-HANFORD																							
Laboratory: TMA																							
Case	SDG: B08G84																						
Sample Number		B08G84		B08G85																			
Location		116-F-3		116-F-3																			
Remarks		NV		NV																			
Sample Date		4/27/93		4/27/93																			
Extraction Date		5/03/93		5/03/93																			
Analysis Date		5/19/93		5/20/93																			
Pesticide/PCB	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q		
alpha-BHC	1.7	1.7	U	1.7	U																		
beta-BHC	1.7	1.7	U	1.7	U																		
delta-BHC	1.7	1.7	U	1.7	U																		
gamma-BHC (Lindane)	1.7	1.7	U	1.7	U																		
Heptachlor	1.7	1.7	U	1.7	U																		
Aldrin	1.7	1.7	U	1.7	U																		
Heptachlor epoxide	1.7	1.7	U	1.7	U																		
Endosulfan I	1.7	1.7	U	1.7	U																		
Dieldrin	3.3	3.3	U	3.4	U																		
4,4'-DDE	3.3	3.3	U	3.4	U																		
Endrin	3.3	3.3	U	3.4	U																		
Endosulfan II	3.3	3.3	U	3.4	U																		
4,4'-DDD	3.3	3.3	U	3.4	U																		
Endosulfan sulfate	3.3	3.3	U	3.4	U																		
4,4'-DDT	3.3	3.3	U	3.4	U																		
Methoxychlor	17.0	17	U	17	U																		
Endrin Ketone	3.3	3.3	U	3.4	U																		
Endrin Aldehyde	3.3	3.3	U	3.4	U																		
alpha-Chlordane	1.7	1.7	U	1.7	U																		
gamma-Chlordane	1.7	1.7	U	1.7	U																		
Toxaphene	170.0	170	U	170	U																		
Aroclor-1016	33.0	33	U	34	U																		
Aroclor-1221	33.0	68	U	69	U																		
Aroclor-1232	67.0	33	U	34	U																		
Aroclor-1242	33.0	33	U	34	U																		
Aroclor-1248	33.0	33	U	34	U																		
Aroclor-1254	33.0	33	U	34	U																		
Aroclor-1260	33.0	33	U	34	U																		

= Not Validated

WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	V/NV	INORGANICS
116-F-6	B080L9	S	01/27/93	NV	5-8
	B080M0	S	01/28/93	NV	5-8
	B080M1	S	01/28/93	NV	5-8
	B080M2	S	01/28/93	NV	5-8
	B080M3	S	01/29/93	NV	5-9
	B080Q0A	W	02/23/93	NV	5-28
116-F-2	B080M4	S	02/02/93	V	5-10
	B080M6	S	02/02/93	V	5-10
	B080M7	S	02/03/93	V	5-10
	B080M8	S	02/03/93	V	5-10
	B080M9	S	02/03/93	V	5-10
116-F-1A	B080N0	S	02/04/93	NV	5-14
	B080N1	S	02/04/93	NV	5-14
	B080N2	S	02/08/93	NV	5-15
	B080N3	S	02/09/93	NV	5-15
	B080N4	S	02/09/93	NV	5-15
116-F-9C	B080N5	S	02/11/93	V	5-16
	B080N6	S	02/11/93	V	5-16
	B080N7	S	02/12/93	V	5-16
	B080N8	S	02/12/93	V	5-16
	B080N9	S	02/12/93	V	5-19
	B080P0	S	02/17/93	NV	5-23
	B080P1	S	02/17/93	NV	5-23
116-F-4	B080P2	S	02/17/93	NV	5-23
	B080P3	S	02/17/93	V	5-24
	B080P4	S	02/18/93	V	5-24
	B080P5	S	02/22/93	NV	5-25
	B080P9	S	02/24/93	NV	5-25
116-F-14	B080Q3	S	02/26/93	NV	5-29
	B080Q4	S	02/25/93	NV	5-25
	B080Q5	S	02/25/93	NV	5-25
	B080Q6	S	02/26/93	NV	5-25
	B080Q7	S	03/01/93	NV	5-29
	B080Q8	S	03/01/93	NV	5-29
	B080Q9	S	03/02/93	NV	5-30
	B080R1	S	03/09/93	V	5-31
	B080R2	S	03/09/93	V	5-31
FRENCH DRAIN	B080R4	S	03/09/93	V	5-31
	B080R5	S	03/09/93	V	5-31

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WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	V/NV	INORGANICS
116-F-1B	B08G65	S	04/20/93	NV	5-36
	B08G66	S	04/20/93	NV	5-36
	B08G67	S	04/20/93	NV	5-36
	B08G68	S	04/20/93	NV	5-36
116-F-1C	B08G69	S	04/21/93	NV	5-36
	B08G70	S	04/21/93	NV	5-36
	B08G71	S	04/21/93	NV	5-38
	B08G72	S	04/21/93	NV	5-36
	B08G73	S	04/21/93	NV	5-36
	B08G74	S	04/21/93	NV	5-36
	B08G75	S	04/21/93	NV	5-36
	B08G76	S	04/21/93	NV	5-37
116-F-9D	B08G78	S	04/21/93	NV	5-37
	B08G79	S	04/21/93	NV	5-37
	B08G80	S	04/21/93	NV	5-37
	B08G81	S	04/21/93	NV	5-37
116-F-3	B08G82	S	04/22/93	NV	5-37
	B08G83	S	04/22/93	NV	5-37
	B08G84	S	04/27/93	NV	5-39
	B08G85	S	04/27/93	NV	5-39

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5.0 INORGANIC DATA VALIDATION

5.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B080M4	B080N9	B080R1
B080N5	B080P3	

5.2 HOLDING TIMES

Analytical holding times for ICP metals, GFAA metals and CVAA mercury analyses were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: samples must be analyzed within twenty-eight days for mercury, 14 days for cyanide and within six months for all other metals.

All holding time requirements for all analytes in all data packages reviewed were met.

5.3 INSTRUMENT PERFORMANCE AND CALIBRATIONS

Performance of specific instrument quality assurance and quality control procedures, including deficiencies noted during the quality assurance review, are outlined below.

Three calibration standards and a blank were analyzed for arsenic, selenium, thallium, and lead by GFAA. The correlation coefficient of a least squares linear regression met the requirements for calibration in all cases.

Up to five calibration standards and a blank were analyzed for mercury by CVAA. The correlation coefficient of a least squares linear regression met the requirements for calibration.

At least one standard and a blank were analyzed by ICP for all other elements.

The above calibrations were each immediately verified with an ICV standard and a calibration blank. The ICV was prepared from a source independent of the calibration standards, at a mid-calibration range concentration. The ICV percent recovery must fall within the control limits of 90 to 110 percent for metals analyzed by ICP and GFAA, and 80 to 150 percent for mercury. Calibration linearity near the detection limit was

verified with a standard prepared at a concentration near the CRDL.

The ICVs met the recommended control limits in all cases.

The calibrations were subsequently verified at regular intervals using a CCV standard. The control windows for percent recovery of CCV standards are the same as the ICV windows described above.

The CCVs met the recommended control limits in all cases.

5.3.1 ICP Calibration

An ICS was analyzed at the beginning and end of each ICP sample run to verify the laboratory interelement and background correction factors. Results for the ICS solution must fall within the control limit of ±20 percent of the true value.

A five-fold serial dilution is required for all elements analyzed by ICP. The subsequent concentrations of the reanalysis are compared with the original analysis. If the analyte concentration is sufficiently high (a minimum factor of 50 above the IDL) then the serial dilution must agree within 10% of the original determination after correction for dilution.

The ICS has been analyzed at the proper frequency and all ICSAB solution percent recovery values fell within the control limit.

5.3.1 Atomic Absorption Calibrations

Duplicate injections are required for all GFAA analyses. The duplicate injections establish the precision of the individual analytical determinations. For sample concentrations greater than the CRDL, duplicate injections must agree within ±20 percent RSD or CV.

5.4 BLANKS

Samples with digestate concentrations (in ug/L) of less than five times (<5x) the highest amount found in any of the associated blanks have had their associated values qualified as non-detected (U). Samples with concentrations of greater than five times (>5x) the highest amount found in any of the associated blanks do not require qualification.

Due to the presence of laboratory blank contamination, the following samples were flagged "U" for antimony:

- All samples in SDG No. B080M4.

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Due to the presence of laboratory blank contamination, the following sample was flagged "U" for cadmium:

- Sample number B080N9 in SDG No. B080N9.

Due to the presence of laboratory blank contamination, the following samples were flagged "U" for copper:

- Sample numbers B080R1 and B080R2 in SDG No. B080R1.

Due to the presence of laboratory blank contamination, the following samples were flagged "U" for silver:

- Sample numbers B080R2, B080R4 and B080R5 in SDG No. B080R1.

All other laboratory blank results were acceptable.

5.5 ACCURACY

5.5.1 Matrix Spike Recovery

Matrix spike analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike recoveries must generally fall within the range of 75 to 125 percent. Samples with a spike recovery of less than 30% and a sample value below the IDL were rejected and flagged "R". All other samples with a spike recovery outside the QC limits are qualified as estimates and flagged "J".

The matrix spike recovery fell outside the QC limits and the associated results flagged "J" for antimony in the following samples:

- All samples in SDG No. B080M4.
- All samples in SDG No. B080N5.
- All samples in SDG No. B080P3.
- All samples in SDG No. B080R1.

The matrix spike recovery fell outside the QC limits and the associated results flagged "J" for lead in the following samples:

- All samples in SDG No. B080M4.

The matrix spike recovery fell outside the QC limits and the associated results flagged "J" for selenium in the following samples:

- All samples in SDG No. B080P3.

All other matrix spike recovery results were acceptable.

5.5.2 Laboratory Control Sample Recovery

The LCS monitors the overall performance of the analysis, including the sample preparation. Aqueous and solid Laboratory Control Samples (LCS) must be analyzed for each analyte of the same matrix within a Sample Delivery Group. The percent recovery for an aqueous LCS is 80-120% (with the exception of silver and antimony). The performance criteria for solid LCS samples are established through interlaboratory studies coordinated by a certifying agency (e.g., EPA or an independent commercial supplier).

One solid LCS was digested and analyzed by TMA for each of the cases in this report that contain soil samples. The results were compared against the control limits established by the certified agency. The solid LCS digested and analyzed by Roy F. Weston in SDG No. B080N9 could not be verified as a solid sample. According to Roy F. Weston digestion logbook pages for inorganics, 2 milliliters of the initial calibration verification solution (ICV) was digested, brought to a volume of 100 ml., and analyzed as an LCS-soil while the soil samples were digested using one gram of sample brought to a volume of 200 ml., and then analyzed. Under EPA CLP SOW 3/90 protocol, the ICV solution may be used as an LCS provided it is analyzed and digested in the same manner as the associated samples within a batch, and provided these samples are of an aqueous matrix. Therefore, Roy F. Weston's uses of an ICV standard as a LCS soil for soil samples did not follow protocol. Pleases refer to section E-19, paragraph 8 of the EPA CLP ILM01.0 for a more detailed explanation. Under Westinghouse Hanford data validation guidelines no provision for incorrect LCS preparation procedures has been developed, therefore samples were not qualified on this basis.

All other LCSS results were found to be acceptable.

5.6 PRECISION

5.6.1 Laboratory Duplicate Samples

The laboratory duplicate results measures the precision of the method by measuring a second aliquot of the sample that is treated the same way as the original. Samples whose precision fell outside the quality control requirements were flagged as estimates "J".

The laboratory duplicate RPD results were above QC limits and the associated results flagged "J" for iron in all samples in SDG No. B080R1.

All other laboratory duplicate recovery results were acceptable.

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5.6.5 ICP Serial Dilution

The ICP serial dilution is used to determine whether significant physical or chemical interferences exist due to sample matrix. If sample concentration is ≥ 50 times the IDL for an analyte and the %D is outside the control limits the associated data must be qualified as estimates and flagged "J".

The ICP serial dilution results were above QC limits and the associated results flagged "J" for aluminum, calcium, iron, magnesium and manganese in SDG No. B080N9.

All other ICP serial dilution results were acceptable.

5.7 FURNACE AA QUALITY CONTROL

The post-digestion analytical spike is analyzed to determine the extent of interference in the digestate matrix. When the results of the analytical spike analyses exceeds the control window of 85 to 115 percent recovery and the absorbance of the sample is greater than fifty percent of the analytical spike absorbance, then the sample must be reanalyzed using the MSA. The duplicate injections and the analytical spike recoveries establish the precision and accuracy of the individual GFAA determinations.

5.7.1 Duplicate Injections

Each furnace analysis requires a minimum of two injections (burns), except for full Method of Standard Addition (MSA). For concentrations greater than CRDL, the duplicate injection readings must agree within 20% relative standard deviation (RSD) or coefficient of variation (CV). If these requirements are not met, the analytical sample must be rerun once (i.e., two additional burns). If the readings are then still outside the QC limits, the result is qualified as an estimate and flagged "J".

All duplicate injection quality control requirements were met.

5.7.2 Analytical Spike Recoveries

For all samples whose analytical spike results are outside the 85 to 115 percent control limit, but whose absorbances are less than 50 percent of the analytical spike absorbance, the samples were flagged as estimates "J". In cases where the analytical spike recovery was 0.0 percent, the results were rejected and flagged "R".

The analytical spike recovery fell outside the established QC limits and the associated results flagged "J" for arsenic in the following sample:

- Sample number B080P4 in SDG No. B080P3.

The analytical spike recovery fell outside the established QC limits and the associated results flagged "J" for selenium in the following samples:

- Sample numbers B080M4, B080M8 and B080M9 in SDG No. B080M4.
- Sample number B080P3 in SDG No. B080P3.
- Sample number B080R5 in SDG No. B080R1.

The analytical spike recovery fell outside the established QC limits and the associated results flagged "J" for thallium in the following sample:

- Sample number B080R2 in SDG No. B080R1.

All other analytical spike recovery results were acceptable.

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5.8 ANALYTE QUANTITATION AND DETECTION LIMITS

Twenty percent of sample results and reported detection limits were recalculated to ensure that the reported results were accurate. Raw data were examined for anomalies, transcription errors, and reduction errors.

The reviewer verified that the results and detection limits fell within the linear range of the instrument.

5.9 OVERALL ASSESSMENT AND SUMMARY

All samples were analyzed and reported under the 1990 CLP protocol (EPA 1990). Several inconsistencies and deviations from the protocol were observed. They are as follows:

A CCV and CCB must be analyzed immediately after the ICV and ICB. ICAP and Mercury do not follow this protocol. For ICAP analysis a CCV and CCB were run after the initial interference checks and CRI. This is incorrect because the ICSA/AB and CRII are considered analytical samples and according to the CLP protocol a CCV and CCB must be run prior to any analytical samples. For mercury, the CCV and CCB were analyzed for after the first ten samples. Refer to Sections E-11 paragraph 5b and E-15 paragraph 4a of the EPA CLP SOW 3/90 protocol.

Internal Chains of Custody lacked sufficient information such as interdepartmental transfers, i.e., from the sample custodian to the technician responsible for sample preparation

and the dates these transfers took place. The WHC sample ID numbers which correspond to the laboratory sample ID numbers were also not provided on the internal chain of custody. Without this information Internal Chains of Custody can not be verified as those belonging to samples in this report. Refer to Sections F-5, paragraph 1.5 and F-3, paragraph 1.4 of the EPA CLP SOW 3/90 protocol.

For samples analyzed by Roy F. Weston, incorrect ICP instrument detection limits (IDL's) are being used to report results down to the IDL. Two sets of IDL's (Form 10) are included in the data package for ICAP analysis, one for instrument IC1 and one for instrument IC3. According to the case narrative addendum, Roy F. Weston states that the highest IDL of the two instruments is used as per Exhibit E, Section V, Item 10 (pg. E-53) of the EPA Statement of Work for Inorganics Analysis, Document Number ILM01.0. This is correct only when two instruments are being used to determine sample results within a data package. However, in this data package Roy F. Weston used only one ICP instrument to determine the sample results and therefore it is that instrument's IDL's which should be used to calculate results. According to Form XIV information IC1 is the instrument being used for analysis while the IDL's of IC3 are the ones reported on Forms 1-9. This can effect results flagged "U" or results which may be flagged "U" because of laboratory blank contamination.

All raw data associated with Roy F. Weston has not been labeled with the client (EPA) ID number. Results labeled with only the laboratory sample ID number is insufficient. Refer to Section B-10 of the EPA CLP SOW 3/90.

As described in detail in section 5.5.2 an aqueous LCS has been digested and analyzed for soil sample B080N9. This does not follow CLP protocol which requires a solid LCS be used. As per Westinghouse Hanford protocol the associated sample was not qualified.

Except as noted in the preceding sections, all other data are usable for all purposes.

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INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080L9																				
Sample Number		B080L9		B080M0		B080M1		B080M2													
Location		116-F-6		116-F-6		116-F-6		116-F-6													
Remarks		NV		NV		NV		NV													
Sample Date		1/27/93		1/28/93		1/28/93		1/28/93													
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	6820		5470		4800		5410													
Antimony	60	3.9	U	3.8	U	3.8	U	3.7	U												
Arsenic	10	1.4		1.5		1.4		1.6													
Barium	200	66.3		55.6		46.3		53.3													
Beryllium	5	0.32		0.26		0.24		0.26													
Cadmium	5	0.34	U	0.33	U	0.33	U	0.32	U												
Calcium	5000	3950		3540		3390		4740													
Chromium	10	9.4		30.2		17.1		11.3													
Cobalt	50	10.3		8.4		6.3		5.9													
Copper	25	13.4		26.6		12.2		12.3													
Iron	100	20800		17200		12800		13000													
Lead	3	3.5		7.0		2.9		2.7													
Magnesium	5000	4350		4010		3480		3910													
Manganese	15	315		252		216		231													
Mercury	0.2	0.23		0.19		0.05	U	0.05	U												
Nickel	40	10.4		12.1		10.5		8.9													
Potassium	5000	1400		754		626		748													
Selenium	5	0.64	U	0.65	U	0.60	U	0.63	U												
Silver	10	0.83	U	0.81	U	0.80	U	0.79	U												
Sodium	5000	162		192		191		216													
Thallium	10	0.54	U	0.54	U	0.50	U	0.53	U												
Vanadium	50	55.5		46.4		32.3		32.7													
Zinc	20	41.2		106		31.3		32.3													
Cyanide	10	0.51	U	0.53	U	0.52	U	0.51	U												

' = Not Validated

INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																							
Laboratory: TMA																							
Case	SDG: B080M3																						
Sample Number		B080M3																					
Location		116-F-6																					
Remarks		NV																					
Sample Date		1/29/93																					
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	4660																					
Antimony	60	3.6	U																				
Arsenic	10	1.2																					
Barium	200	48.8																					
Beryllium	5	0.13																					
Cadmium	5	0.31	U																				
Calcium	5000	5160																					
Chromium	10	8.4																					
Cobalt	50	5.5																					
Copper	25	10.4																					
Iron	100	10400																					
Lead	3	2.5																					
Magnesium	5000	3530																					
Manganese	15	190																					
Mercury	0.2	0.05	U																				
Nickel	40	8.0																					
Potassium	5000	607																					
Selenium	5	0.68	U																				
Silver	10	0.90																					
Sodium	5000	203																					
Thallium	10	0.31	U																				
Vanadium	50	25.5																					
Zinc	20	24.7																					
Cyanide	10	0.52	U																				

NV = Not Validated

INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M4																				
Sample Number		B080M4		B080M6		B080M7		B080M8		B080M9											
Location		116-F-2		116-F-2		116-F-2		116-F-2		116-F-2											
Remarks																					
Sample Date		02/02/93		02/02/93		02/03/93		02/03/93		02/03/93											
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	5630		5430		5230		4740		5440											
Antimony	60	6.1	UJ	6.6	UJ	4.0	UJ	4.7	UJ	4.4	UJ										
Arsenic	10	2.1		0.85		0.76		0.40	U	0.94											
Barium	200	51.7		79.1		48.0		338		67.4											
Beryllium	5	0.28		0.31		0.23		0.21		0.20											
Cadmium	5	0.32	U	1.6		0.33		0.32	U	0.33	U										
Calcium	5000	5000		4010		3580		5600		4490											
Chromium	10	11.0		98.1		30.5		14.4		18.3											
Cobalt	50	7.4		9.3		7.3		7.5		8.5											
Copper	25	13.5		22.0		13.6		13.2		12.5											
Iron	100	14700		17000		13900		13300		14500											
Lead	3	3.8	J	12.9	J	3.6	J	2.6	J	2.5	J										
Magnesium	5000	3830		3770		3980		3620		4150											
Manganese	15	253		239		231		318		215											
Mercury	0.2	0.05	U	0.96		0.23		0.16		0.05	U										
Nickel	40	9.6		11.1		10.5		8.0		11.4											
Potassium	5000	970		771		696		604		668											
Selenium	5	0.76	UJ	0.78	U	0.78	U	0.77	UJ	0.77	UJ										
Silver	10	0.79	U	0.83	U	0.80	U	0.77	U	0.80	U										
Sodium	5000	157		248		238		241		296											
Thallium	10	0.52	U	0.53	U	0.53	U	0.53	U	0.52	U										
Vanadium	50	34.0		40.4		33.2		32.5		39.5											
Zinc	20	34.1		295		54.6		33.5		32.1											
Cyanide	10	0.53	U	0.53	U	0.51	U	0.52	U	0.51	U										

BLANK AND SAMPLE DATA SUMMARY

SDG: B080M4	REVIEWER: SC	DATE: 8/5/93	PAGE 1 OF 1
COMMENTS:			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
CCB	Antimony	21.5			ug/L	107.5	215.0	All	U

ACCURACY DATA SUMMARY

SDG: B080M4	REVIEWER: SC	DATE: 8/5/93	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B080M9S	Antimony	63.3	All	J
B080M9S	Lead	150.8	All	J
B080M4A	Selenium	80.9	B080M4	J
B080M8A	Selenium	73.0	B080M8	J
B080M9A	Selenium	49.1	B080M9	J

DATA QUALIFICATION SUMMARY

SDG: B080M4	REVIEWER: SC	DATE: 8/5/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Antimony	J	All	Matrix spike
Lead	J	All	Matrix spike
Selenium	J	B080M4, B080M8, B080M9	GFAA analytical spike
Antimony	U	All	Lab blank contamination

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INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																							
Laboratory: TMA																							
Case	SDG: B080N0																						
Sample Number		B080N0		B080N1																			
Location		116-F-1A		116-F-1A																			
Remarks		NV		NV																			
Sample Date		2/04/93		2/04/93																			
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	5450		7500																			
Antimony	60	3.7	U	4.1	U																		
Arsenic	10	1.5		44.0																			
Barium	200	47.9		72.8																			
Beryllium	5	0.19		0.29																			
Cadmium	5	0.33	U	0.36	U																		
Calcium	5000	2610		3430																			
Chromium	10	20.5		19.1																			
Cobalt	50	6.5		8.1																			
Copper	25	12.9		13.5																			
Iron	100	12200		16100																			
Lead	3	3.3		207																			
Magnesium	5000	3960		3900																			
Manganese	15	240		278																			
Mercury	0.2	0.05	U	0.08																			
Nickel	40	9.8		10.9																			
Potassium	5000	528		1860																			
Selenium	5	0.64	U	0.74	U																		
Silver	10	0.79	U	0.87	U																		
Sodium	5000	126		125																			
Thallium	10	0.50	U	0.58	U																		
Vanadium	50	29.2		33.3																			
Zinc	20	28.7		44.7																			
Cyanide	10	0.51	U	0.56	U																		

= Not Validated

INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N2																				
Sample Number		B080N2		B080N3		B080N4															
Location		116-F-1A		116-F-1A		116-F-1A															
Remarks		NV		NV		NV															
Sample Date		2/08/93		2/09/93		2/09/93															
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	4760		4420		4580															
Antimony	60	3.7	U	3.6	U	3.9	U														
Arsenic	10	1.1		1.1		1.3															
Barium	200	44.8		60.2		45.8															
Beryllium	5	0.25		0.22		0.21															
Cadmium	5	0.33	U	0.31	U	0.34	U														
Calcium	5000	3490		4870		2870															
Chromium	10	9.6		8.1		7.7															
Cobalt	50	8.2		7.6		6.6															
Copper	25	15.7		13.9		12.8															
Iron	100	14600		13700		12100															
Lead	3	2.4		1.6		2.2															
Magnesium	5000	3320		3290		3440															
Manganese	15	235		201		204															
Mercury	0.2	0.05	U	0.05	U	0.05	U														
Nickel	40	7.6		8.0		8.3															
Potassium	5000	744		788		581															
Selenium	5	0.58	U	0.59	U	0.71	U														
Silver	10	0.79	U	0.77	U	0.83	U														
Sodium	5000	292		311		238															
Thallium	10	0.35	U	0.36	U	0.43	U														
Vanadium	50	40.8		37.3		29.2															
Zinc	20	32.7		29.2		31.3															
Cyanide	10	0.51	U	0.48	U	0.54	U														

NV = Not Validated

INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N5																				
Sample Number		B080N5		B080N6		B080N7		B080N8													
Location		116-F-9C		116-F-9C		116-F-9C		116-F-9C													
Remarks								DUP													
Sample Date		02/11/93		02/11/93		02/12/93		02/12/93													
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	5220		6070		3770		4250													
Antimony	60	3.8	UJ	4.0	UJ	3.7	UJ	3.5	UJ												
Arsenic	10	2.0		1.0		1.5		2.1													
Barium	200	48.1		64.7		63.3		58.8													
Beryllium	5	0.30		0.29		0.22		0.27													
Cadmium	5	0.33	U	0.34	U	0.32	U	0.31	U												
Calcium	5000	3170		3550		4050		4990													
Chromium	10	7.9		12.2		8.6		10.2													
Cobalt	50	6.7		8.8		7.0		9.1													
Copper	25	13.4		15.7		13.7		18.4													
Iron	100	13700		14800		12200		17100													
Lead	3	3.4		2.8		1.8		2.4													
Magnesium	5000	3550		3620		2750		3460													
Manganese	15	228		168		158		203													
Mercury	0.2	0.05	U	0.05	U	0.05	U	0.05	U												
Nickel	40	8.8		10.4		6.9		9.8													
Potassium	5000	882		1050		831		726													
Selenium	5	0.65	U	0.64	U	0.63	U	0.60	U												
Silver	10	0.80	U	0.84	U	0.78	U	0.75	U												
Sodium	5000	146		257		203		243													
Thallium	10	0.55	U	0.54	U	0.53	U	0.50	U												
Vanadium	50	32.1		42.4		32.4		46.0													
Zinc	20	32.0		37.0		29.1		36.5													
Cyanide	10	0.52	U	0.54	U	0.50	U	0.48	U												

² = Duplicate

ACCURACY DATA SUMMARY

SDG: B080N5	REVIEWER: SC	DATE: 8/3/93	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B080N8S	Antimony	73.7	All	J

DATA QUALIFICATION SUMMARY

SDG: B080N5	REVIEWER: SC	DATE: 8/3/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Antimony	J	All	Matrix spike

9313042.0961

INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Roy F. Weston																					
Case	SDG: B080N9																				
Sample Number		B080N9																			
Location		116-F-9C																			
Remarks		Split																			
Sample Date		02/12/93																			
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	2900	J																		
Antimony	60	11.5	U																		
Arsenic	10	0.80																			
Barium	200	48.0																			
Beryllium	5	0.22																			
Cadmium	5	0.81	U																		
Calcium	5000	3860	J																		
Chromium	10	12.0																			
Cobalt	50	6.7																			
Copper	25	12.0																			
Iron	100	12300	J																		
Lead	3	2.0																			
Magnesium	5000	2460	J																		
Manganese	15	155	J																		
Mercury	0.2	0.05																			
Nickel	40	4.6																			
Potassium	5000	592																			
Selenium	5	0.40	U																		
Silver	10	1.4	U																		
Sodium	5000	197																			
Thallium	10	0.40	U																		
Vanadium	50	27.8																			
Zinc	20	27.6																			
Cyanide	10	1.0	U																		

BLANK AND SAMPLE DATA SUMMARY

SDG: B080N9	REVIEWER: SC			DATE: 7/30/93				PAGE 1 OF 1	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
PB	Cadmium	3.7			ug/L	18.5	37.0	B080N9	U

PRECISION DATA SUMMARY

SDG: B080N9	REVIEWER: SC	DATE: 7/30/93	PAGE 1 OF 1
COMMENTS:			

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
Aluminum	B080N9	B080N9L	16.3	B080N9	J
Calcium	B080N9	B080N9L	15.6	B080N9	J
Iron	B080N9	B080N9L	15.0	B080N9	J
Magnesium	B080N9	B080N9L	16.6	B080N9	J
Manganese	B080N9	B080N9L	17.2	B080N9	J

DATA QUALIFICATION SUMMARY

SDG: B080N9	REVIEWER: SC	DATE: 7/30/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Cadmium	J	B080N9	Lab blank contamination
Aluminum	J	B080N9	ICP serial dilution
Calcium	J	B080N9	ICP serial dilution
Iron	J	B080N9	ICP serial dilution
Manganese	J	B080N9	ICP serial dilution
Magnesium	J	B080N9	ICP serial dilution

9313042.0555

...ORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P0																				
Sample Number		B080P0		B080P1		B080P2															
Location		116-F-9C		116-F-9C		116-F-4															
Remarks		NV		NV		NV															
Sample Date		2/17/93		2/17/93		2/17/93															
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	4780		43.4		7390															
Antimony	60	3.7	U	3.4	U	3.9	U														
Arsenic	10	0.91		0.50	U	2.3															
Barium	200	58.2		0.31		190															
Beryllium	5	0.18		0.09	U	0.27															
Cadmium	5	0.32	U	0.30	U	0.34	U														
Calcium	5000	4670		3.2	U	9260															
Chromium	10	13.8		0.50	U	10.0															
Cobalt	50	8.6		0.46	U	7.3															
Copper	25	13.9		0.54	U	16.0															
Iron	100	14600		148		14300															
Lead	3	2.2		0.23	U	8.8															
Magnesium	5000	3760		4.6	U	4740															
Manganese	15	215		0.49		255															
Mercury	0.2	0.05	U	0.05	U	0.05	U														
Nickel	40	9.2		0.56	U	11.1															
Potassium	5000	773		21.5	U	1060															
Selenium	5	0.65	U	0.59	U	0.60	U														
Silver	10	1.0		0.72	U	0.89															
Sodium	5000	322		37.7		303															
Thallium	10	0.54	U	0.50	U	0.51	U														
Vanadium	50	41.3		0.46	U	33.3															
Zinc	20	31.4		1.5		37.6															
Cyanide	10	0.52	U	0.48	U	0.50	U														

NV = Not Validated

INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P3																				
Sample Number		B080P3		B080P4																	
Location		116-F-4		116-F-4																	
Remarks																					
Sample Date		02/17/93		02/18/93																	
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	7320		4640																	
Antimony	60	3.9	UJ	3.7	UJ																
Arsenic	10	1.6		0.99	J																
Barium	200	208		53.3																	
Beryllium	5	0.32		0.19																	
Cadmium	5	0.34	U	0.32	U																
Calcium	5000	8440		4870																	
Chromium	10	10.5		9.6																	
Cobalt	50	8.5		8.6																	
Copper	25	18.3		14.1																	
Iron	100	16400		15400																	
Lead	3	10.2		2.4																	
Magnesium	5000	4450		3870																	
Manganese	15	249		249																	
Mercury	0.2	0.06		0.05	U																
Nickel	40	10.3		8.2																	
Potassium	5000	954		624																	
Selenium	5	0.70	UJ	0.65	UJ																
Silver	10	0.94		0.88																	
Sodium	5000	430		289																	
Thallium	10	0.55	U	0.51	U																
Vanadium	50	40.3		38.7																	
Zinc	20	39.3		34.6																	
Cyanide	10	0.53	U	0.49	U																

ACCURACY DATA SUMMARY

SDG: B080P3	REVIEWER: SC	DATE: 8/3/93	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B080P4S	Antimony	65.0	B080P3, B080P4	J
B080P4S	Selenium	70.9	B080P3, B080P4	J
B080P4A	Arsenic	80.4	B080P4	J
B080P3A	Selenium	65.8	B080P3	J

DATA QUALIFICATION SUMMARY

SDG: B080P3	REVIEWER: SC	DATE: 8/3/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Antimony	J	B080P3, B080P4	Matrix spike
Selenium	J	B080P3, B080P4	Matrix spike
Arsenic	J	B080P4	GFAA analytical spike
Selenium	J	B080P3	GFAA analytical spike

9313047.1569

INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P5																				
Sample Number		B080P5		B080P9		B080Q4		B080Q5		B080Q6											
Location		116-F-4		116-F-4		116-F-14		116-F-14		116-F-14											
Remarks		NV		NV		NV		NV		NV											
Sample Date		2/22/93		2/24/93		2/25/93		2/25/93		2/26/93											
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	5000		5310		6620		13000		6520											
Antimony	60	3.9	U	3.7	U	3.8	U	4.1	U	3.8	U										
Arsenic	10	1.1		1.2		2.0		1.4		0.89											
Barium	200	49.6		48.6		158		170		65.6											
Beryllium	5	0.20		0.18	U	0.36		0.59		0.18	U										
Cadmium	5	0.29	U	0.27	U	0.28	U	0.30	U	1.5											
Calcium	5000	5150		5830		6710		69700		6890											
Chromium	10	9.4		12.9		10.8		16.0		124											
Cobalt	50	8.1		6.2		7.9		8.3		8.0											
Copper	25	12.2		11.7		15.6		17.0		29.3											
Iron	100	15600		13100		15700		17400		15000											
Lead	3	2.5		2.9		5.0		3.4		4.5											
Magnesium	5000	3720		3920		4110		6570		4620											
Manganese	15	247		236		265		224		240											
Mercury	0.2	0.05	U	0.05	U	0.06	U	0.22		0.05	U										
Nickel	40	7.8		10.3		10.5		12.9		13.6											
Potassium	5000	824		989		1050		1200		675											
Selenium	5	0.73	U	0.77	U	0.78	U	0.78	U	0.77	U										
Silver	10	0.94	U	0.90	U	0.93	U	0.99	U	0.93	U										
Sodium	5000	371		273		245		703		266											
Thallium	10	0.37	U	0.38	U	0.39	U	0.39	U	0.38	U										
Vanadium	50	44.7		34.4		40.1		50.5		39.5											
Zinc	20	34.8		36.1		37.4		52.9		87.4											
Cyanide	10	0.48	U	0.47	U	0.55	U	0.54	U	0.52	U										

NV = Not Validated

INORGANIC ANALYSIS, WATER MATRIX, (µg/L)

Project: WESTINGHOUSE-HANFORD																							
Laboratory: TMA																							
Case	SDG: B080Q0A																						
Sample Number		B080Q0A																					
Location		116-F-6																					
Remarks		NV, FB																					
Sample Date		2/23/93																					
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	118																					
Antimony	60	18.4	U																				
Arsenic	10	2.0	U																				
Barium	200	22.2																					
Beryllium	5	0.50	U																				
Cadmium	5	1.6	U																				
Calcium	5000	20100																					
Chromium	10	2.9																					
Cobalt	50	2.5	U																				
Copper	25	23.0																					
Iron	100	3180																					
Lead	3	39.8																					
Magnesium	5000	4900																					
Manganese	15	23.2																					
Mercury	0.2	0.10	U																				
Nickel	40	3.0	U																				
Potassium	5000	8320																					
Selenium	5	3.8	U																				
Silver	10	3.9	U																				
Sodium	5000	2670																					
Thallium	10	1.5	U																				
Vanadium	50	2.6																					
Zinc	20	346																					
Cyanide	10	10.0	U																				

Not Validated, FB = Field Blank

INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q3																				
Sample Number		B080Q3		B080Q7		B080Q8															
Location		116-F-14		116-F-14		116-F-14															
Remarks		NV		NV		NV															
Sample Date		2/26/93		3/01/93		3/01/93															
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	4070		5450		6170															
Antimony	60	3.8	U	3.6	U	3.6	U														
Arsenic	10	1.2		0.82		1.4															
Barium	200	46.9		55.7		70.5															
Beryllium	5	0.21		0.26		0.23															
Cadmium	5	0.33	U	0.31	U	0.32	U														
Calcium	5000	5260		2830		2730															
Chromium	10	14.6		46.4		31.2															
Cobalt	50	8.0		6.0		6.1															
Copper	25	13.4		13.6		13.5															
Iron	100	14900		11500		12000															
Lead	3	2.7		2.5		3.6															
Magnesium	5000	3020		3960		4310															
Manganese	15	327		234		224															
Mercury	0.2	0.05	U	0.14		0.11															
Nickel	40	9.9		8.4		9.0															
Potassium	5000	672		431		619															
Selenium	5	0.79	U	0.74	U	0.81	U														
Silver	10	0.81	U	0.75	U	0.79															
Sodium	5000	386		151		158															
Thallium	10	0.54	U	0.51	U	0.55	U														
Vanadium	50	39.0		25.4		27.3															
Zinc	20	28.6		26.5		30.0															
Cyanide	10	0.52	U	0.51	U	0.50	U														

NV = Not Validated

INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																							
Laboratory: TMA																							
Case	SDG: B080Q9																						
Sample Number		B080Q9																					
Location		116-F-14																					
Remarks		NV																					
Sample Date		3/02/93																					
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	6010																					
Antimony	60	3.9	U																				
Arsenic	10	0.59																					
Barium	200	79.1																					
Beryllium	5	0.18	U																				
Cadmium	5	0.29	U																				
Calcium	5000	3960																					
Chromium	10	35.3																					
Cobalt	50	10.6																					
Copper	25	15.9																					
Iron	100	17400																					
Lead	3	2.6																					
Magnesium	5000	4820																					
Manganese	15	260																					
Mercury	0.2	0.05	U																				
Nickel	40	20.8																					
Potassium	5000	851																					
Selenium	5	0.73	U																				
Silver	10	0.94	U																				
Sodium	5000	424																					
Thallium	10	0.50	U																				
Vanadium	50	50.2																					
Zinc	20	39.2																					
Cyanide	10	0.51	U																				

= Not Validated

INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080R1																				
Sample Number		B080R1		B080R2		B080R4		B080R5													
Location						FR. DRAIN		FR. DRAIN													
Remarks																					
Sample Date		3/09/93		3/09/93		3/09/93		3/09/93													
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	5850		6310		4280		6110													
Antimony	60	4.1	J	3.8	J	3.7	J	3.9	J												
Arsenic	10	6.3		4.8		6.2		4.0													
Barium	200	53.9		52.9		64.7		37.8													
Beryllium	5	0.20		0.18		0.12		0.18													
Cadmium	5	0.35	U	0.33	U	0.32	U	0.34	U												
Calcium	5000	2690		2870		1550		2160													
Chromium	10	7.8		8.9		164		99.3													
Cobalt	50	5.0		5.6		4.7		7.1													
Copper	25	11.4	UJ	10.6	UJ	73.8		39.1													
Iron	100	11100	J	12300	J	17700	J	20500	J												
Lead	3	43.5		22.8		73.2		34.6													
Magnesium	5000	3120		3130		2210		3740													
Manganese	15	193		186		116		195													
Mercury	0.2	0.06	U	0.06	U	0.48		0.09													
Nickel	40	7.9		8.9		17.3		21.3													
Potassium	5000	1010		1020		998		1160													
Selenium	5	0.65	U	0.66	U	0.78		0.70	UJ												
Silver	10	0.86	U	1.0	U	1.5	U	2.0	U												
Sodium	5000	156		200		130		171													
Thallium	10	0.54	U	0.56	UJ	0.53	U	0.59	U												
Vanadium	50	21.8		27.9		27.2		44.2													
Zinc	20	28.9		29.3		79.7		129													
Cyanide	10	0.55	U	0.53	U	0.52	U	0.57	U												

FR. DRAIN = French Drain

BLANK AND SAMPLE DATA SUMMARY

SDG: B080R1	REVIEWER: SC	DATE: 8/6/93	PAGE 1 OF 1
COMMENTS:			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
PB	Copper	2.838			mg/kg	14.19	28.38	B080R1, B080R2	U
ICB	Silver	4.4			ug/L	22	44	B080R2, B080R4, B080R5	U

ACCURACY DATA SUMMARY

SDG: B080R1	REVIEWER: SC	DATE: 8/6/93	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B080R5S	Antimony	55.7	All	J
B080R2A	Thallium	82.1	B080R2	J
B080R5A	Selenium	62.0	B080R5	J

PRECISION DATA SUMMARY

SDG: B080R1	REVIEWER: SC	DATE: 8/5/93	PAGE 1 OF 1
COMMENTS:			

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
Iron	B080R5	B080R5D	49.9	All	J

DATA QUALIFICATION SUMMARY

SDG: B080R1	REVIEWER: SC	DATE: 8/6/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Copper	U	B080R1, B080R2	Lab blank contamination
Silver	U	B080R2, B080R4, B080R5	Lab blank contamination
Antimony	J	All	Matrix spike
Thallium	J	B080R2	GFAA analytical spike
Selenium	J	B080R5	GFAA analytical spike
Iron	J	All	Lab duplicate RPD

9312042.0668

INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G65																				
Sample Number		B08G65		B08G66		B08G67		B08G68		B08G69		B08G70		B08G72		B08G73		B08G74		B08G75	
Location		116-F-1B		116-F-1B		116-F-1B		116-F-1B		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C	
Remarks		NV		NV		NV		NV		FB, NV		NV		DUP, NV		NV		NV		NV	
Sample Date		4/20/93		4/20/93		4/20/93		4/20/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93	
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	6120		5800		6060		6190		49.4		6810		6170		4450		4700		5040	
Antimony	60	3.8	U	3.7	U	3.7	U	4.4	U	3.7	U	3.8	U	3.7	U	3.5	U	3.9	U	3.8	U
Arsenic	10	2.6		2.0		2.8		2.7		0.46	U	3.0		2.8		1.6		1.2		2.1	
Barium	200	77.9		49.6		59.2		56.9		0.45		70.3		65.0		42.0		28.3		48.1	
Beryllium	5	0.24		0.25		0.23		0.25		0.06	U	0.25		0.22		0.12		0.15		0.14	
Cadmium	5	0.29	U	0.28	U	0.28	U	0.33	U	0.28	U	0.65		0.58		0.27	U	0.29	U	0.28	U
Calcium	5000	4130		5150		5210		4430		18.7	U	3030		2760		2470		2580		2720	
Chromium	10	14.7		9.8		12.1		10.2		0.66	U	23.3		22.3		7.3		8.7		9.5	
Cobalt	50	6.6		5.9		6.4		7.1		0.58	U	8.6		7.3		6.2		6.2		6.5	
Copper	25	14.4		16.0		16.4		15.5		1.1		21.5		20.2		13.3		13.9		13.2	
Iron	100	13800		12900		13200		14000		195		16300		14500		11500		11600		11700	
Lead	3	13.1		5.8		8.1		5.0		0.30		11.5		13.8		3.5		2.6		4.0	
Magnesium	5000	3990		3810		4020		4060		9.0		4330		3860		3340		3570		3860	
Manganese	15	236		200		305		294		0.82		223		213		213		199		204	
Mercury	0.2	0.18		0.35		0.56		0.26		0.08		0.57		0.69		0.06		0.09		0.14	
Nickel	40	9.1		9.5		11.7		10.4		0.84	U	13.0		10.5		9.5		10.6		11.5	
Potassium	5000	1530		581		736		760		18.6	U	872		828		453		443		518	
Selenium	5	0.68	U	0.65	U	0.65	U	0.74	U	0.66	U	0.67	U	0.66	U	0.65	U	0.68	U	0.66	U
Silver	10	0.68	U	0.71		0.66	U	0.98		0.66	U	1.3		1.0		0.63	U	0.91		0.73	
Sodium	5000	136		152		143		146		17.0		130		117		116		140		148	
Thallium	10	0.54	U	0.51	U	0.51	U	0.58	U	0.52	U	0.53	U	0.52	U	0.51	U	0.54	U	0.52	U
Vanadium	50	32.4		31.1		29.6		32.9		0.42	U	39.0		32.5		28.1		28.4		27.5	
Zinc	20	37.0		36.3		43.5		32.1		0.96	U	142		133		24.9		25.4		28.7	
Cyanide	10	0.49	U	0.49	U	0.48	U	0.55	U	0.48	U	0.49	U	0.48	U	0.51	U	0.51	U	0.52	U

Not Validated, FB = Field Blank, DUP = Duplicate

INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G65																				
Sample Number		B08G76		B08G78		B08G79		B08G80		B08G81		B08G82		B08G83							
Location		116-F-1C		116-F-9D		116-F-9D		116-F-9D		116-F-9D		116-F-3		116-F-3							
Remarks		NV		NV		NV		NV		NV		NV		NV							
Sample Date		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/22/93		4/22/93							
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	4550		5550		6440		7760		5560		7740		7250							
Antimony	60	4.0	U	3.8	U	4.7	U	4.1	U	3.7	U	3.8	U	4.3	U						
Arsenic	10	1.7		1.9		2.9		1.7		1.2		1.0		3.1							
Barium	200	33.2		38.0		78.3		67.5		59.5		378		79.6							
Beryllium	5	0.23		0.18		0.27		0.31		0.16		0.46		0.27							
Cadmium	5	0.30	U	0.28	U	0.35	U	0.31	U	0.28	U	0.29	U	0.32	U						
Calcium	5000	3160		2840		5240		7190		3260		11500		6180							
Chromium	10	6.6		10.1		25.1		12.4		9.2		5.5		74.4							
Cobalt	50	5.3		6.4		10.1		7.9		7.0		7.8		8.5							
Copper	25	17.4		15.4		32.5		15.7		13.4		22.2		23.8							
Iron	100	10600		12900		15900		16100		13300		12200		19500							
Lead	3	3.2		3.4		14.6		5.5		3.2		18.2		49.9							
Magnesium	5000	3380		3920		3640		4740		3950		4590		4010							
Manganese	15	203		233		220		265		210		187		297							
Mercury	0.2	0.10		0.08		0.19		0.11		0.09		0.12		1.5							
Nickel	40	6.8		10.7		10.9		11.1		9.4		9.8		11.3							
Potassium	5000	529		693		1150		1400		756		979		1290							
Selenium	5	0.68	U	0.65	U	0.84	U	0.72	U	0.70	U	0.67	U	0.77	U						
Silver	10	0.70	U	1.2		7.9		1.5		1.4		0.67	U	1.3							
Sodium	5000	118		124		161		140		127		648		219							
Thallium	10	0.54	U	0.51	U	0.67	U	0.57	U	0.55	U	0.53	U	0.61	U						
Vanadium	50	23.2		31.6		38.8		34.1		32.2		30.2		36.3							
Zinc	20	23.3		27.0		246		53.4		29.6		53.3		175							
Cyanide	10	0.51	U	0.48	U	0.62	U	0.51	U	0.50	U	0.52	U	0.58	U						

NV = Not Validated, FB = Field Blank, DUP = Duplicate

INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Roy F. Weston																					
Case	SDG: B08G71																				
Sample Number		B08G71																			
Location		116-F-1C																			
Remarks		Split, NV																			
Sample Date		4/21/93																			
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	4560																			
Antimony	60	8.2	U																		
Arsenic	10	2.4																			
Barium	200	54.6																			
Beryllium	5	0.20	U																		
Cadmium	5	1.0	U																		
Calcium	5000	2400																			
Chromium	10	18.9																			
Cobalt	50	6.2																			
Copper	25	16.6																			
Iron	100	10500																			
Lead	3	9.8																			
Magnesium	5000	3140																			
Manganese	15	176																			
Mercury	0.2	0.51	U																		
Nickel	40	10.0																			
Potassium	5000	730																			
Selenium	5	0.41	U																		
Silver	10	1.8	U																		
Sodium	5000	88.9																			
Thallium	10	1.0	U																		
Vanadium	50	17.0																			
Zinc	20	132																			
Cyanide	10	1.0	U																		

* Not Validated

INORGANIC ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G84																				
Sample Number		B08G84		B08G85																	
Location		116-F-3		116-F-3																	
Remarks		NV		NV																	
Sample Date		4/27/93		4/27/93																	
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	4900		4620																	
Antimony	60	3.6	U	3.6	U																
Arsenic	10	2.3		1.8																	
Barium	200	35.7		52.3																	
Beryllium	5	0.34		0.43																	
Cadmium	5	0.34	U	0.34	U																
Calcium	5000	5070		5570																	
Chromium	10	8.7		7.9																	
Cobalt	50	5.4		5.8																	
Copper	25	11.1		11.1																	
Iron	100	10900		10700																	
Lead	3	2.8		2.8																	
Magnesium	5000	3830		3530																	
Manganese	15	215		246																	
Mercury	0.2	0.05	U	0.05	U																
Nickel	40	10.0		8.6																	
Potassium	5000	587		568																	
Selenium	5	0.54	U	0.57	U																
Silver	10	0.75	U	0.76	U																
Sodium	5000	137		144																	
Thallium	10	0.50	U	0.53	U																
Vanadium	50	27.0		25.3																	
Zinc	20	24.4		24.5																	
Cyanide	10	0.49	U	0.49	U																

NV = Not Validated

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WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	V/NV	WET CHEMISTRY
116-F-6	B080L9	S	01/27/93	NV	6-4, 6-5
	B080M0	S	01/28/93	NV	6-5, 6-6
	B080M1	S	01/28/93	NV	6-5, 6-6
	B080M2	S	01/28/93	NV	6-5, 6-6
	B080M3	S	01/29/93	NV	6-7, 6-8
	B080Q0	W	02/23/93	V	6-25
	B080Q0A	W	02/23/93	NV	6-26, 6-27
116-F-2	B080M4	S	02/02/93	V	6-9, 6-10
	B080M6	S	02/02/93	V	6-9, 6-10
	B080M7	S	02/03/93	V	6-9, 6-10
	B080M8	S	02/03/93	V	6-9, 6-10
	B080M9	S	02/03/93	V	6-9, 6-10
116-F-1A	B080N0	S	02/04/93	NV	6-11, 6-12
	B080N1	S	02/04/93	NV	6-11, 6-12
	B080N2	S	02/08/93	NV	6-13, 6-14
	B080N3	S	02/09/93	NV	6-13, 6-14
	B080N4	S	02/09/93	NV	6-13, 6-14
116-F-9C	B080N5	S	02/11/93	V	6-15, 6-16
	B080N6	S	02/11/93	V	6-15, 6-16
	B080N7	S	02/12/93	V	6-15, 6-16
	B080N8	S	02/12/93	V	6-15, 6-16
	B080N9	S	02/12/93	V	6-17
	B080P0	S	02/17/93	NV	6-18, 6-19
	B080P1	S	02/17/93	NV	6-18, 6-19
116-F-4	B080P2	S	02/17/93	NV	6-18, 6-19
	B080P4	S	02/18/93	V	6-20, 6-21
	B080P5	S	02/22/93	NV	6-22, 6-23
	B080P9	S	02/24/93	NV	6-23, 6-24
116-F-14	B080Q3	S	02/26/93	NV	6-28, 6-29
	B080Q4	S	02/25/93	NV	6-23, 6-24
	B080Q5	S	02/25/93	NV	6-23, 6-30
	B080Q6	S	02/26/93	NV	6-23, 6-30
	B080Q7	S	03/01/93	NV	6-28, 6-29
	B080Q8	S	03/01/93	NV	6-28, 6-29
	B080Q9	S	03/02/93	NV	6-31, 6-32
	B080R1	S	03/09/93	V	6-33, 6-34
	B080R2	S	03/09/93	V	6-33, 6-34
FRENCH DRAIN	B080R4	S	03/09/93	V	6-33, 6-34
	B080R5	S	03/09/93	V	6-33, 6-34

9313042.0573

WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	V/NV	WET CHEMISTRY
116-F-1B	B08G65	S	04/20/93	NV	6-35, 6-37
	B08G66	S	04/20/93	NV	6-35, 6-37
	B08G67	S	04/20/93	NV	6-35, 6-37
	B08G68	S	04/20/93	NV	6-35, 6-37
116-F-1C	B08G69	S	04/21/93	NV	6-35, 6-37
	B08G70	S	04/21/93	NV	6-35, 6-37
	B08G71	S	04/21/93	NV	6-39
	B08G72	S	04/21/93	NV	6-35, 6-37
	B08G73	S	04/21/93	NV	6-35, 6-37
	B08G74	S	04/21/93	NV	6-35, 6-37
	B08G75	S	04/21/93	NV	6-35, 6-37
	B08G76	S	04/21/93	NV	6-36, 6-38
116-F-9D	B08G78	S	04/21/93	NV	6-36, 6-38
	B08G79	S	04/21/93	NV	6-36, 6-38
	B08G80	S	04/21/93	NV	6-36, 6-38
	B08G81	S	04/21/93	NV	6-36, 6-38
116-F-3	B08G82	S	04/22/93	NV	6-36, 6-38
	B08G83	S	04/22/93	NV	6-36, 6-38
	B08G84	S	04/27/93	NV	6-40, 6-41
	B08G85	S	04/27/93	NV	6-40, 6-41

9313042.0674

6.0 WET CHEMISTRY DATA VALIDATION

6.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B080M4	B080N9	B080Q0
B080N5	B080P4	B080R1

6.2 HOLDING TIMES

Analytical holding times for fluoride, sulfate, nitrate-nitrite and TOC were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: twenty-eight days for fluoride, sulfate, nitrate-nitrite and TOC under the EPA SW846 protocols.

Holding times for all analytes reviewed met QC requirements.

6.3 CALIBRATIONS

All associated instruments were calibrated using the proper standards and procedures.

6.3.1 Initial Calibration

The following calibration procedures must be conducted:

- At least a blank and three standards were used to establish the ion chromatography, ion selective electrode, spectrophotometer and TOC analyzer calibrations prior to sample analysis and the correlation was $\geq$0.995.

All initial calibration results were acceptable, however, ICV summary forms were not submitted.

6.3.2 Continuing Calibration Verification

All CCV standards must be analyzed with the required frequency or every 20 samples. The percent recoveries must fall within the 90-110% acceptance windows.

All continuing calibration results were acceptable, however, CCV and CCB summary forms were not submitted.

9313042.0675

6.4 BLANKS

One laboratory preparation blank is analyzed at a frequency of one every 20 samples. All blank results must fall below the CRQL and if not, all associated data <5 times the amount found in the blank is qualified as non-detected "U".

All laboratory blank results were acceptable.

6.5 ACCURACY

6.5.1 Matrix Spike Recovery

Matrix spike analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations.

All matrix spike results were acceptable.

9313042.0676

6.5.2 Laboratory Control Sample Recovery

The LCS monitors the overall performance of the analysis, including the sample preparation. An LCS should be prepared (e.g., digested or distilled) and analyzed with every group of samples which have been prepared together. The performance criteria for aqueous LCS percent recovery is 80 to 150 percent. The performance criteria for solid LCS samples are established through interlaboratory studies coordinated by a certifying agency (e.g., EPA or an independent commercial supplier).

ICV results obtained from the raw data were used to calculate LCS results. All LCS results were found to be acceptable.

6.6 PRECISION

Analytical duplicate sample analyses are used to measure laboratory precision and sample homogeneity. Field duplicate analyses are used to measure both the laboratory and the field sampling procedure precision.

All duplicate analyses results were acceptable for this data.

6.7 ANALYTE QUANTITATION AND DETECTION LIMITS

Sample results and reported detection limits were recalculated to ensure that the reported results were accurate. Raw data were examined for anomalies, transcription errors, and

reduction errors. In addition, the reviewer verified that the results fell within the linear range of the instrument.

6.8 OVERALL ASSESSMENT AND SUMMARY

A review of instrument continuing calibration information and QC data indicate that instrument performance was adequate for most analyses. All results are usable for all purposes.

9313042.0677

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																							
Laboratory: TMA																							
Case	SDG: B080L9																						
Sample Number		B080L9																					
Location		116-F-6																					
Remarks		NV																					
Sample Date		1/27/93																					
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300	0.5																					
Sulfate	300	10																					
pH	9045	9.2																					

▪ Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080L9																				
Sample Number		B080L9		B080M0		B080M1		B080M2													
Location		116-F-6		116-F-6		116-F-6		116-F-6													
Remarks		NV		NV		NV		NV													
Sample Date		1/27/93		1/28/93		1/28/93		1/28/93													
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02 (mg N/Kg)	353.2	2.52	U	2.76		2.47	U	2.43	U												

NV = Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M0																				
Sample Number		B080M0		B080M1		B080M2															
Location		116-F-6		116-F-6		116-F-6															
Remarks		NV		NV		NV															
Sample Date		1/28/93		1/28/93		1/28/93															
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300	0.6		0.5		0.5															
Sulfate	300	10		7		9															
pH	9045	9.3		9.4		9.4															

Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M3																				
Sample Number		B080M3																			
Location		116-F-6																			
Remarks		NV																			
Sample Date		1/29/93																			
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300	0.3																			
Sulfate	300	6																			

NV = Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																							
Laboratory: TMA																							
Case	SDG: B080M3																						
Sample Number		B080M3																					
Location		116-F-6																					
Remarks		NV																					
Sample Date		1/29/93																					
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02 (mg N/Kg)	353.2	2.51																					

* Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M4																				
Sample Number		B080M4		B080M6		B080M7		B080M8		B080M9											
Location		116-F-2		116-F-2		116-F-2		116-F-2		116-F-2											
Remarks																					
Sample Date		02/02/93		02/02/93		02/03/93		02/03/93		02/03/93											
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300.0	0.50		0.60		0.50		0.50		0.60											
Sulfate	300.0	9.0		17.0		11.0		15.0		10.0											

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg N/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080M4																				
Sample Number		B080M4		B080M6		B080M7		B080M8		B080M9											
Location		116-F-2		116-F-2		116-F-2		116-F-2		116-F-2											
Remarks																					
Sample Date		02/02/93		02/02/93		02/03/93		02/03/93		02/03/93											
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02	353.2	2.49	U	6.16		3.61		2.50	U	2.71											

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N0																				
Sample Number		B080N0		B080N1																	
Location		116-F-1A		116-F-1A																	
Remarks		NV		NV																	
Sample Date		2/04/93		2/04/93																	
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300	0.4		0.8																	
Sulfate	300	5		9																	

NV = Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N0																				
Sample Number		B080N0		B080N1																	
Location		116-F-1A		116-F-1A																	
Remarks		NV		NV																	
Sample Date		2/04/93		2/04/93																	
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02 (mg N/Kg)	353.2	2.62		5.97																	

Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N2																				
Sample Number		B080N2		B080N3		B080N4															
Location		116-F-1A		116-F-1A		116-F-1A															
Remarks		NV		NV		NV															
Sample Date		2/08/93		2/09/93		2/09/93															
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300	0.8		0.6		0.4															
Sulfate	300	11		12		12															

NV = Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N2																				
Sample Number		B080N2		B080N3		B080N4															
Location		116-F-1A		116-F-1A		116-F-1A															
Remarks		NV		NV		NV															
Sample Date		2/08/93		2/09/93		2/09/93															
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02 (mg N/Kg)	353.2	2.49	U	2.50	U	2.50	U														

N Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N5																				
Sample Number		B080N5		B080N6		B080N7		B080N8													
Location		116-F-9C		116-F-9C		116-F-9C		116-F-9C													
Remarks								DUP													
Sample Date		02/11/93		02/11/93		02/12/93		02/12/93													
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300.0	1.0		0.90		1.2		1.0													
Sulfate	300.0	4.0		256		875		415													

DUP = Duplicate

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg N/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080N5																				
Sample Number		B080N5		B080N6		B080N7		B080N8													
Location		116-F-9C		116-F-9C		116-F-9C		116-F-9C													
Remarks								DUP													
Sample Date		02/11/93		02/11/93		02/12/93		02/12/93													
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02	353.2	2.50	U	11.0		4.71		2.49	U												

E = Duplicate

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Roy F. Weston																					
Case	SDG: B080N9																				
Sample Number		B080N9																			
Location		116-F-9C																			
Remarks		Split																			
Sample Date		02/12/93																			
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300.0	3.1																			
Sulfate	300.0	515																			
N03N02 (mg N/Kg)	353.2	1.1																			

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P0																				
Sample Number		B080P0		B080P1		B080P2															
Location		116-F-9C		116-F-9C		116-F-4															
Remarks		NV		NV		NV															
Sample Date		2/17/93		2/17/93		2/17/93															
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300	1.0		0.8		0.5															
Sulfate	300	95		5		66															

Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P0																				
Sample Number		B080P0		B080P1		B080P2															
Location		116-F-9C		116-F-9C		116-F-4															
Remarks		NV		NV		NV															
Sample Date		2/17/93		2/17/93		2/17/93															
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02 (mg N/Kg)	353.2	2.50	U	2.50	U	32.3															

NV = Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P4																				
Sample Number		B080P4																			
Location		116-F-4																			
Remarks																					
Sample Date		02/18/93																			
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300.0	0.7																			
Sulfate	300.0	19																			

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg N/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P4																				
Sample Number		B080P4																			
Location		116-F-4																			
Remarks																					
Sample Date		02/18/93																			
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02	353.2	2.50	U																		

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P5																				
Sample Number		B080P5																			
Location		116-F-4																			
Remarks		NV																			
Sample Date		2/22/93																			
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300	0.8																			
Sulfate	300	18																			

N Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg N/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P5																				
Sample Number		B080P5		B080P9		B080Q4		B080Q5		B080Q6											
Location		116-F-4		116-F-4		116-F-14		116-F-14		116-F-14											
Remarks		NV		NV		NV		NV		NV											
Sample Date		2/22/93		2/24/93		2/25/93		2/25/93		2/26/93											
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02	353.2	2.50	U	2.49	U	3.17		2.51		2.50	U										

NV = Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080P9																				
Sample Number		B080P9		B080Q4																	
Location		116-F-4		116-F-14																	
Remarks		NV		NV																	
Sample Date		2/24/93		2/25/93																	
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300	1.1		0.6																	
Sulfate	300	10		12																	

Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, WATER MATRIX, (mg/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Roy F. Weston																					
Case	SDG: B080Q0																				
Sample Number		B080Q0																			
Location		116-F-6																			
Remarks		FB																			
Sample Date		02/23/93																			
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
TOC	415.1	277																			

FB = Field Blank

WET CHEMISTRY/ANIONS ANALYSIS, WATER MATRIX, (mg/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q0A																				
Sample Number		B080Q0A																			
Location		116-F-6																			
Remarks		NV,FB																			
Sample Date		2/23/93																			
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Chloride	300.0	1.2																			
Fluoride	340.1	0.2																			
Phosphate	300.0	2.4																			
pH (pH units)	150.1	8.1																			
Sulfate	375.4	11																			
Alkalinity	310.1	69																			
Tot. Dissolved Solids	160.1	121																			
Sulfide	376.1	1	U																		
Ammonia Nitrogen	350.3	0.05	U																		
COD	410.0	930																			
Turbidity (NTU)	180.1	16																			
Elect. Conductivity (umho/cm)	120.1	174																			

N Not Validated, FB = Field Blank

WET CHEMISTRY/ANIONS ANALYSIS, WATER MATRIX, (mg N/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q0A																				
Sample Number		B080Q0A																			
Location		116-F-6																			
Remarks		NV,FB																			
Sample Date		2/23/93																			
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02	353.2	0.25	U																		

NV = Not Validated, FB = Field Blank

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q3																				
Sample Number		B080Q3		B080Q7		B080Q8															
Location		116-F-14		116-F-14		116-F-14															
Remarks		NV		NV		NV															
Sample Date		2/26/93		3/01/93		3/01/93															
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300	0.9		0.4		0.8															
Sulfate	300	19		7		8															

Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q3																				
Sample Number		B080Q3		B080Q7		B080Q8															
Location		116-F-14		116-F-14		116-F-14															
Remarks		NV		NV		NV															
Sample Date		2/26/93		3/01/93		3/01/93															
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02 (mg N/Kg)	353.2	2.50	U	2.50	U	2.50	U														

NV = Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q5																				
Sample Number		B080Q5		B080Q6																	
Location		116-F-14		116-F-14																	
Remarks		NV		NV																	
Sample Date		2/25/93		2/26/93																	
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300	0.6		0.4																	
Sulfate	300	14		57																	

• Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q9																				
Sample Number		B080Q9																			
Location		116-F-14																			
Remarks		NV																			
Sample Date		3/02/93																			
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300	0.8																			
Sulfate	300	8																			

NV = Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080Q9																				
Sample Number		B080Q9																			
Location		116-F-14																			
Remarks		NV																			
Sample Date		3/02/93																			
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02 (mg N/Kg)	353.2	2.49	U																		

Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080R1																				
Sample Number		B080R1		B080R2		B080R4		B080R5													
Location						FR. DRAIN		FR. DRAIN													
Remarks																					
Sample Date		3/09/93		3/09/93		3/09/93		3/09/93													
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300.0	1.2		1.2		0.60		0.40													
Sulfate	300.0	4.0		3.0		150		47.0													

FR. DRAIN = French Drain

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg N/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B080R1																				
Sample Number		B080R1		B080R2		B080R4		B080R5													
Location						FR. DRAIN		FR. DRAIN													
Remarks																					
Sample Date		3/09/93		3/09/93		3/09/93		3/09/93													
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02	353.2	2.49	U	2.50	U	323		85.0													

. DRAIN = French Drain

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G65																				
Sample Number		B08G65		B08G66		B08G67		B08G68		B08G69		B08G70		B08G72		B08G73		B08G74		B08G75	
Location		116-F-1B		116-F-1B		116-F-1B		116-F-1B		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C	
Remarks		NV		NV		NV		NV		FB, NV		NV		DUP, NV		NV		NV		NV	
Sample Date		4/20/93		4/20/93		4/20/93		4/20/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93	
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300	0.5		0.8		0.7		0.7		0.4		0.8		0.8		0.4		0.6		0.9	
Sulfate	300	4		71		95		18		4		3		3		4		3		6	
pH	150.1	9.3		8.6		8.9		9.0		7.4		8.2		8.1		7.5		8.1		9.0	

NV = Not Validated, FB = Field Blank, DUP = Duplicate

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G65																				
Sample Number		B08G76		B08G78		B08G79		B08G80		B08G81		B08G82		B08G83							
Location		116-F-1C		116-F-9D		116-F-9D		116-F-9D		116-F-9D		116-F-3		116-F-3							
Remarks		NV		NV		NV		NV		NV		NV		NV							
Sample Date		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/22/93		4/22/93							
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300	0.5		0.7		0.5		1.2		1.1		0.5		0.7							
Sulfate	300	11		3		480		332		240		11		26							
pH	150.1	9.4		7.8		7.9		8.0		8.1		8.8		8.7							

= Not Validated, FB = Field Blank, DUP = Duplicate

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg N/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G65																				
Sample Number		B08G65		B08G66		B08G67		B08G68		B08G69		B08G70		B08G72		B08G73		B08G74		B08G75	
Location		116-F-1B		116-F-1B		116-F-1B		116-F-1B		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C	
Remarks		NV		NV		NV		NV		FB, NV		NV		DUP, NV		NV		NV		NV	
Sample Date		4/20/93		4/20/93		4/20/93		4/20/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93	
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02	353.2	4.45		2.45	U	2.42	U	2.50	U	2.47	U	2.46	U	4.12		2.42	U	2.48	U	2.43	U

NV = Not Validated, FB = Field Blank, DUP = Duplicate

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg N/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G65																				
Sample Number		B08G76		B08G78		B08G79		B08G80		B08G81		B08G82		B08G83							
Location		116-F-1C		116-F-9D		116-F-9D		116-F-9D		116-F-9D		116-F-3		116-F-3							
Remarks		NV		NV		NV		NV		NV		NV		NV							
Sample Date		4/21/93		4/21/93		4/21/93		4/21/93		4/21/93		4/22/93		4/22/93							
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02	353.2	2.48	U	2.86		17.0		14.8		6.74		11.2		11.5							

= Not Validated, FB = Field Blank, DUP = Duplicate

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Roy F. Weston																					
Case	SDG: B08G71																				
Sample Number		B08G71																			
Location		116-F-1C																			
Remarks		Split,NV																			
Sample Date		4/21/93																			
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride by IC	300	4.1																			
Sulfate by IC	300	2.6																			
Nitrite by IC	353.2	1.3	U																		
Nitrate by IC	353.2	2.9																			

NV = Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G84																				
Sample Number		B08G84		B08G85																	
Location		116-F-3		116-F-3																	
Remarks		NV		NV																	
Sample Date		4/27/93		4/27/93																	
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300	0.4		0.8																	
Sulfate	300	12		32																	
pH	150.1	9.4		9.4																	

Not Validated

WET CHEMISTRY/ANIONS ANALYSIS, SOIL MATRIX, (mg/Kg)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B08G84																				
Sample Number		B08G84		B08G85																	
Location		116-F-3		116-F-3																	
Remarks		NV		NV																	
Sample Date		4/27/93		4/27/93																	
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
N03N02 (mg N/Kg)	353.2	2.44	U	2.43	U																

NV = Not Validated

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WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	V/NV	RADIOCHEMISTRY
116-F-6	B080L9	S	01/27/93	V	13-3
	B080M0	S	01/28/93	V	13-3
	B080M1	S	01/28/93	V	13-3
	B080M2	S	01/28/93	V	13-3
	B080M3	S	01/29/93	V	13-3
	B080Q0	W	02/23/93	V	13-8
116-F-2	B080M4	S	02/02/93	V	13-3
	B080M6	S	02/02/93	V	13-3
	B080M7	S	02/03/93	V	13-3
	B080M8	S	02/03/93	V	13-3
	B080M9	S	02/03/93	V	13-3
116-F-1A	B080N0	S	02/04/93	V	13-4
	B080N1	S	02/04/93	V	13-4
	B080N2	S	02/08/93	V	13-4
	B080N3	S	02/09/93	V	13-4
	B080N4	S	02/09/93	V	13-4
116-F-9C	B080N5	S	02/11/93	V	13-4
	B080N6	S	02/11/93	V	13-4
	B080N7	S	02/12/93	V	13-4
	B080N8	S	02/12/93	V	13-4
	B080N9	S	02/12/93	V	13-5
	B080P0	S	02/17/93	V	13-6
	B080P1	S	02/17/93	V	13-6
116-F-4	B080P2	S	02/17/93	V	13-6
	B080P3	S	02/17/93	V	13-6
	B080P4	S	02/18/93	V	13-6
	B080P5	S	02/22/93	V	13-7
	B080P9	S	02/24/93	V	13-7
116-F-14	B080Q3	S	02/26/93	V	13-7
	B080Q4	S	02/25/93	V	13-7
	B080Q5	S	02/25/93	V	13-7
	B080Q6	S	02/26/93	V	13-7
	B080Q7	S	03/01/93	V	13-7
	B080Q8	S	03/01/93	V	13-7
	B080Q9	S	03/02/93	V	13-9
	B080R1	S	03/09/93	V	13-9
	B080R2	S	03/09/93	V	13-9
FRENCH DRAIN	B080R4	S	03/09/93	V	13-9
	B080R5	S	03/09/93	V	13-9

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WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	V/NV	RADIOCHEMISTRY
116-F-1B	B08G65	S	04/20/93	V	13-10
	B08G66	S	04/20/93	V	13-10
	B08G67	S	04/20/93	V	13-10
	B08G68	S	04/20/93	V	13-10
116-F-1C	B08G69	S	04/21/93	V	13-10
	B08G70	S	04/21/93	V	13-10
	B08G71	S	04/21/93	V	13-12
	B08G72	S	04/21/93	V	13-10
	B08G73	S	04/21/93	V	13-10
	B08G74	S	04/21/93	V	13-10
	B08G75	S	04/21/93	V	13-10
	B08G76	S	04/21/93	V	13-11
116-F-9D	B08G78	S	04/21/93	V	13-11
	B08G79	S	04/21/93	V	13-11
	B08G80	S	04/21/93	V	13-11
	B08G81	S	04/21/93	V	13-11
116-F-3	B08G82	S	04/22/93	V	13-11
	B08G83	S	04/22/93	V	13-11
	B08G84	S	04/27/93	V	13-13
	B08G85	S	04/27/93	V	13-13

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7.0 GROSS ALPHA AND GROSS BETA DETERMINATION DATA VALIDATION

7.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B080L9	B080P0	B080Q0	B08G65	B08G84
B080N9	B080P5	B080Q9	B08G71	

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7.2 HOLDING TIMES

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for this analysis is six months.

All holding times were acceptable.

7.3 INSTRUMENT CALIBRATION AND PERFORMANCE

Instrument calibration is performed to establish that the gas proportional counter used for gross alpha and gross beta determination is capable of producing acceptable and reliable analytical data. The initial calibration was performed according to manufacturer's recommendations and consists of an instrument efficiency determination as a function of alpha or beta particle energy, and as a function of the mass of material submitted for counting. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible on a day-to-day basis.

Insufficient continuing calibrations were performed and, therefore, all associated gross alpha and beta results for sample numbers B080P3 and B080P4 in SDG No. B080P0 were qualified as estimates and flagged "J".

All calibration results, including efficiency checks and background counts, were acceptable.

7.4 ACCURACY

Accuracy was evaluated by analyzing soil or distilled water samples spiked with known amounts of alpha or beta emitting radionuclides. The sample activity as determined by analysis is compared to the known activity to assess accuracy. Acceptable accuracy of spiked sample data must fall within a range of 80 to

120 percent. If spiked sample results were outside this range, the associated data were qualified as estimates (J/UJ).

Due to low LCS recoveries, gross alpha results for sample numbers B080P5, B080Q6 and B080Q8 in SDG No. B080P5 were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

7.5 PRECISION

Analytical precision is expressed by the RPD between the recoveries of duplicate matrix spike analyses performed on a sample. When the laboratory has not performed duplicate spike analyses, precision may also be assessed using unspiked duplicate sample analyses. Replicates with activities greater than five times the LLD and with an RPD less than 35 percent are acceptable. If duplicate activities are both <5xLLD, a control limit of 2xLLD is used. If replicate values are both below the LLD, no control limit is applicable. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects (J) or estimated non-detects (UJ).

The laboratory failed to perform the required duplicate analysis for SDG No. B080N9. Therefore, all associated sample results were qualified as estimates and flagged "J".

All other precision results were acceptable.

7.6 BLANK SAMPLES

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination.

All blank results were acceptable.

7.7 ANALYTE QUANTITATION AND REPORTED DETECTION LIMITS

Analyte quantitation and detection limits were recalculated for all samples in each data package to verify their accuracy.

All analyte quantitation and reported detection limits were acceptable.

7.8 OVERALL ASSESSMENT AND SUMMARY

A review of instrument continuing calibration information and QC data indicates that instrument performance was adequate for these analyses. The results for two samples in one data

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package were qualified as estimates due to outdated continuing calibration data. A limited number of results were flagged as estimates due to low LCS recoveries and the lack of a duplicate analysis. All results flagged "J" are considered usable for limited purposes only. All other results were acceptable and usable for all purposes.

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8.0 ALPHA SPECTROSCOPY DATA VALIDATION

8.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B080L9	B080P0	B080Q0	B08G65	B08G84
B080N9	B080P5	B080Q9	B08G71	

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8.2 HOLDING TIMES

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for this analysis is six months.

All holding times were acceptable.

8.3 INSTRUMENT CALIBRATION AND PERFORMANCE

Instrument calibration is performed to establish that the alpha spectroscopy system used is capable of producing acceptable and reliable analytical data. The initial calibration was performed according to manufacturer's recommendations and consists of an instrument efficiency determination for each alpha radionuclide region of interest, and a system resolution assessment as measured by the full-width at half maximum for each peak. Initial calibration was performed for each counting geometry used during the analysis of Westinghouse-Hanford samples. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible on a day-to-day basis.

All calibration results, including efficiency checks and background counts, were acceptable.

8.4 ACCURACY

Accuracy was evaluated by analyzing soil or distilled water samples spiked with known amounts of alpha emitting radionuclides. The sample activity as determined by analysis is compared to the known activity to assess accuracy. The acceptable matrix spike or Laboratory Control Sample recovery range is 80 to 120 percent, while that for radiometric yields is 30 to 105%. Spike sample results outside the above ranges resulted in qualification of the associated data as estimated (J/UJ).

Due to low LCS recoveries, the uranium-235 results for sample numbers B080P0, B080P1 and B080P2 in SDG No. B080P0 were qualified as estimates and flagged "J".

Due to high LCS recoveries, the uranium-235 results for sample numbers B080P3 and B080P4 in SDG No. B080P0 were rejected and flagged "R".

Due to low radiometric yields, plutonium-238 and plutonium-239/40 results for the following samples were rejected and flagged "R":

- Sample number B080Q0 in SDG No. B080Q0.
- Sample number B08G82 in SDG No. B08G65.

Due to low radiometric yields, the americium-241 result for sample number B080M7 in SDG No. B080L9 was rejected and flagged "R".

The americium-241 and plutonium-239/40 results in sample number B080N9 in SDG No. B080N9 were qualified as estimates and flagged "J" due to insufficient standards certification.

All other accuracy results were acceptable.

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8.5 PRECISION

Analytical precision is expressed by the RPD between the recoveries of duplicate matrix spike analyses performed on a sample. When the laboratory has not performed duplicate spike analyses, precision may also be assessed using unspiked duplicate samples. Replicates with a RPD less than 35 percent are acceptable. If duplicate activities are both <5xLLD, a control limit of 2xLLD is used. If replicate values are both below the LLD, no control limit is applicable. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects (J) or estimated non-detects (UJ).

All plutonium-239/40 results for sample numbers B08G84 and B08G85 in SDG No. B08G84 were qualified as estimates and flagged "J" due to RPDs above the control limit.

The laboratory failed to perform the required duplicate analysis for SDG No. B080N9. Therefore, all associated sample results were qualified as estimates and flagged "J".

All other precision results were acceptable.

8.6 BLANK SAMPLES

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination.

Due to laboratory blank contamination, plutonium-239/240 results in sample numbers B080P9 and B080Q7 in SDG No. B080P5 and all plutonium-238 results in SDG No. B080Q9 were qualified as estimates and flagged "J".

All other blank results were acceptable.

8.7 ANALYTE QUANTITATION AND REPORTED DETECTION LIMITS

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Analyte quantitations and detection limits were recalculated for all samples in each data delivery package to verify their accuracy.

The laboratory reported MDAs above the RDL for plutonium results associated with sample number B080P4 in SDG No. B080P0. All associated results were qualified as estimates and flagged "J".

All other analyte quantitation and reported detection limits were acceptable.

8.8 OVERALL ASSESSMENT AND SUMMARY

A complete review of all QC and calibration data indicates that overall system performance was adequate. Due to low radiometric yields, results for three samples in three separate data packages were rejected and flagged "R". High LCS recoveries resulted in the rejection of the uranium-235 data for two samples. Rejected data is not usable for any purpose.

Due to low LCS recoveries and high RPDs, a limited number of results were qualified as estimates. The presence of laboratory blank contamination lead to the qualification of samples in SDG No. B080P5 and B080Q9 as estimates. Due to detection limit irregularities, the results for one sample in SDG No. B080P0 was qualified as estimated and flagged "J". Estimated data is usable for limited purposes only. All other data were acceptable and are usable for all purposes.

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9.0 GAMMA SPECTROSCOPY DATA VALIDATION

9.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B080L9	B080P0	B080Q0	B08G65	B08G84
B080N9	B080P5	B080Q9	B08G71	

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9.2 HOLDING TIMES

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for this analysis is six months.

All holding times were acceptable.

9.3 INSTRUMENT CALIBRATION AND PERFORMANCE

Instrument calibration is performed to establish that the gamma spectroscopy system used is capable of producing acceptable and reliable analytical data. The initial calibration was performed according to manufacturer's recommendations and consists of an instrument efficiency determination for each gamma radionuclide region of interest, and a system resolution assessment as measured by the full-width at half maximum for each peak. Initial calibration was performed for each counting geometry used during the analysis of Westinghouse-Hanford samples. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible on a day-to-day basis.

All calibration results, including efficiency checks and background counts, were acceptable.

9.4 ACCURACY

Accuracy was evaluated by analyzing soil or distilled water samples spiked with known amounts of gamma emitting radionuclides. The sample activity as determined by sample analysis is compared to the known activity to assess accuracy. The acceptable spiked recovery range is 80 to 120 percent. If spiked sample results were outside this range the associated data were qualified as estimated (J/UJ).

Due to high LCS recoveries, the cesium-137 results in sample numbers B080P9, B080Q3, B080Q4, B080Q5, B080Q7 and B080Q8 in SDG No. B080P5 were rejected and flagged "R".

All other accuracy results were acceptable.

9.5 PRECISION

Analytical precision is expressed by the RPD between the recoveries of duplicate matrix spike analyses performed on a sample. When the laboratory has not performed duplicate spike analyses, precision may also be assessed using unspiked duplicate sample analyses. Replicates with a RPD less than 35 percent are acceptable. If duplicate activities are both <5xLLD, a control limit of 2xLLD is used. If replicate values are both below the LLD, no control limit is applicable. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects (J) or estimated non-detects (UJ).

Due to RPDs above the QC limits, the following results were qualified as estimates and flagged "J":

- All cobalt-60 and europium-152 sample results in SDG No. B080L9.
- All gamma spectroscopy analytes in SDG No. B080N9.
- Potassium-40, thorium-232, thorium-228, and radium-236 in all samples in SDG No. B080P0.
- All cobalt-60 and europium-154 results in SDG No. B080P5.
- All cesium-137 and thorium-232 results in SDG No. B080Q9.
- All cesium-137, thorium-228 and thorium-232 sample results in SDG No. B08G65.

All other precision results were acceptable.

9.6 BLANK SAMPLES

Blank samples are analyzed to determine if positive results may be due to laboratory reagent, sample container, or detector contamination.

Due to laboratory blank contamination, all thorium-228 results in SDG No. B080Q9 were qualified as estimates and flagged "J".

All other blank results were acceptable.

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9.7 ANALYTE QUANTITATION AND REPORTED DETECTION LIMITS

Analyte quantitations and detection limits were recalculated for all samples in each data delivery package to verify their accuracy.

All analyte quantitation and reported detection limits were acceptable.

9.8 OVERALL ASSESSMENT AND SUMMARY

A review of instrument calibration information and QC data indicates that instrument performance was adequate for these analyses. Due to high LCS recoveries, results for several samples in SDG No. B080P5 were qualified as estimates and flagged "J". RPDs above QC limits led to the qualification of results for samples in SDG Nos. B080P0, B08G65, B080L9, B080N9, B080P5 and B080Q9. The associated data were qualified as estimates and flagged "J". Due to blank contamination, all thorium-228 results in SDG No. B080Q9 were also qualified as estimates. Data qualified as estimates are valid and usable for limited purposes only. All other results were acceptable and usable for all purposes.

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10.0 STRONTIUM-90 DETERMINATION DATA VALIDATION

10.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B080L9	B080P0	B080Q0	B08G65	B08G84
B080N9	B080P5	B080Q9	B08G71	

10.2 HOLDING TIMES

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for this analysis is six months.

All holding times were acceptable.

10.3 INSTRUMENT CALIBRATION AND PERFORMANCE

Instrument calibration is performed to establish that the low background counting system used for strontium-90 determination is capable of producing acceptable and reliable analytical data. The initial calibration was performed according to manufacturer's recommendations and consists of an instrument detection efficiency determination. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible on a day-to-day basis.

The laboratory did not perform sufficient continuing calibrations. Therefore, all strontium-90 results in SDG No. B080P5 were qualified as estimates and flagged "J".

All calibration results, including efficiency checks and background counts, were acceptable.

10.4 ACCURACY

All spike recoveries should be within the specified QC range of 80 to 120 percent, while all radiotraced samples should show a radiometric yield or recovery between 30 and 105%. Spiked sample results outside the above ranges resulted in qualification of the associated data as estimated (J/UJ).

All accuracy results were acceptable.

10.5 PRECISION

Analytical precision is expressed by the RPD between the recoveries of duplicate matrix spike analyses performed on a sample. When the laboratory has not performed duplicate spike analyses, precision may also be assessed using unspiked duplicate sample analyses. Replicates with an RPD less than 35 percent are acceptable. If duplicate activities are both <5xLLD, a control limit of 2xLLD is used. If replicate values are both below the LLD, no control limit is applicable. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects (J) or estimated non-detects (UJ).

The laboratory failed to perform the required duplicate analysis for SDG No. B080N9. Therefore, all associated sample results were qualified as estimates and flagged "J".

All other precision results were acceptable.

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10.6 BLANK SAMPLES

Blank samples are analyzed to determine if positive results may be due to laboratory reagent, sample container, or detector contamination.

Due to laboratory blank contamination, the strontium-90 result for sample number B080Q6 in SDG No. B080P5 was qualified as an estimate and flagged "J".

All other blank results were acceptable.

10.7 ANALYTE QUANTITATION AND REPORTED DETECTION LIMITS

Analyte quantitation and detection limits were recalculated for all samples in each data delivery package to verify their accuracy.

All analyte quantitation and reported detection limits were acceptable.

10.8 OVERALL ASSESSMENT AND SUMMARY

A review of instrument continuing calibration information and QC data indicates that instrument performance was adequate for these analyses. Due to insufficient continuing calibrations, results in SDG No. B080P5 were qualified as estimated and flagged "J". The laboratory's failure to perform a duplicate analysis resulted in the qualification as estimates of all samples in B080N9. Due to blank contamination, a sample in SDG No. B080P5 was qualified as estimated and flagged "J". All results flagged "J" are valid and usable for limited purposes only. All other results were acceptable and usable for all purposes.

11.0 TECHNETIUM-99 DETERMINATION DATA VALIDATION

11.1 DATA PACKAGE COMPLETENESS

Data package (SDG No.) B080Q0 was submitted for validation and found to be complete.

11.2 HOLDING TIMES

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for this analysis is six months.

All holding times were acceptable.

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11.3 INSTRUMENT CALIBRATION AND PERFORMANCE

Instrument calibration is performed to establish that the low background counting system used for technetium-99 determination is capable of producing acceptable and reliable analytical data. The initial calibration was performed according to manufacturer's recommendations and consists of an instrument detection efficiency determination. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible on a day-to-day basis.

All calibration results, including efficiency checks and background counts, were acceptable.

11.4 ACCURACY

All spike recoveries should be within the specified QC range of 80 to 120 percent, while all radiotraced samples should show a radiometric yield or recovery between 30 and 105%. Spiked sample results outside the above ranges resulted in qualification of the associated data as estimated.

All accuracy results were acceptable.

11.5 PRECISION

Analytical precision is expressed by the RPD between the recoveries of duplicate matrix spike analyses performed on a sample. When the laboratory has not performed duplicate spike analyses, precision may also be assessed using unspiked duplicate sample analyses. Replicates with an RPD less than 35 percent are

acceptable. If duplicate activities are both <5xLLD, a control limit of 2xLLD is used. If replicate values are both below the LLD, no control limit is applicable. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects (J) or estimated non-detects (UJ).

All precision results were acceptable.

11.6 BLANK SAMPLES

Blank samples are analyzed to determine if positive results may be due to laboratory reagent, sample container, or detector contamination.

All blank results were acceptable.

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11.7 ANALYTE QUANTITATION AND REPORTED DETECTION LIMITS

Analyte quantitation and detection limits were recalculated for all samples in each data delivery package to verify their accuracy.

All analyte quantitation and reported detection limits were acceptable.

11.8 OVERALL ASSESSMENT AND SUMMARY

A review of instrument continuing calibration information and QC data indicates that instrument performance was adequate for these analyses. All other results are acceptable and usable for all purposes.

12.0 CARBON-14 DETERMINATION DATA VALIDATION

12.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B080L9	B080P0	B080Q0	B08G65	B08G84
B080N9	B080P5	B080Q9	B08G71	

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12.2 HOLDING TIMES

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for this analysis is six months.

All holding times were acceptable.

12.3 INSTRUMENT CALIBRATION AND PERFORMANCE

Instrument calibration is performed to establish that the low background liquid scintillation counting system used for carbon-14 determination is capable of producing acceptable and reliable analytical data. The initial calibration was performed according to manufacturer's recommendations and consists of an instrument efficiency determination for each applicable radionuclide. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible on a day-to-day basis.

All calibration results, including efficiency checks and background counts, were acceptable.

12.4 ACCURACY

All spike recoveries should be within the specified QC range of 80 to 120 percent, while all radiometric yields should fall within the range of 30 to 105%. Spiked sample results outside the above ranges resulted in qualification of the associated data as estimated (J/UJ).

All accuracy results were acceptable.

12.5 PRECISION

Analytical precision is expressed by the RPD between the recoveries of duplicate matrix spike analyses performed on a sample. When the laboratory has not performed duplicate spike analyses, precision may also be assessed using unspiked duplicate sample analyses. Replicates with a RPD less than 35 percent are acceptable. If duplicate activities are both <5xLLD, a control limit of 2xLLD is used. If replicate values are both below the LLD, no control limit is applicable. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects (J) or estimated non-detects (UJ).

The laboratory failed to perform the required duplicate analysis for SDG No. B080N9. Therefore, all associated sample results were qualified as estimates and flagged "J".

All other precision results were acceptable.

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12.6 BLANK SAMPLES

Blank samples are analyzed to determine if positive results may be due to laboratory reagent, sample container, or detector contamination.

All blank results were acceptable.

12.7 ANALYTE QUANTITATION AND REPORTED DETECTION LIMITS

Analyte quantitation and detection limits were recalculated for all samples in each data delivery package to verify their accuracy.

All analyte quantitation and reported detection limits were acceptable.

12.8 OVERALL ASSESSMENT AND SUMMARY

A review of instrument performance and calibration indicates that the overall system performance is adequate. Due to the laboratory's failure to perform the required duplicate analysis, all data associated with SDG No. B080N9 were qualified as estimates and are considered usable for limited purposes only. All other were acceptable and usable for all purposes.

13.0 TRITIUM DETERMINATION DATA VALIDATION

13.1 DATA PACKAGE COMPLETENESS

Data package (SDG No.) B080Q0 was submitted for validation and found to be complete.

13.2 HOLDING TIMES

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for this analysis is six months.

All holding times were acceptable.

13.3 INSTRUMENT CALIBRATION AND PERFORMANCE

Instrument calibration is performed to establish that the low background liquid scintillation counting system used for tritium determination is capable of producing acceptable and reliable analytical data. The initial calibration was performed according to manufacturer's recommendations and consists of an instrument efficiency determination for each applicable radionuclide. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible on a day-to-day basis.

All calibration results, including efficiency checks and background counts, were acceptable.

13.4 ACCURACY

All spike recoveries should be within the specified QC range of 80 to 120 percent, while all radiometric yields should fall within the range of 30 to 105%. Spiked sample results outside the above ranges resulted in qualification of the associated data as estimated (J/UJ).

All accuracy results were acceptable.

13.5 PRECISION

Analytical precision is expressed by the RPD between the recoveries of duplicate matrix spike analyses performed on a sample. When the laboratory has not performed duplicate spike analyses, precision may also be assessed using unspiked duplicate sample analyses. Replicates with a RPD less than 35 percent are acceptable. If duplicate activities are both <5xLLD, a control limit of 2xLLD is used. If replicate values are both below the LLD, no control limit is applicable. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects (J) or estimated non-detects (UJ).

All precision results were acceptable.

13.6 BLANK SAMPLES

Blank samples are analyzed to determine if positive results may be due to laboratory reagent, sample container, or detector contamination.

All blank results were acceptable.

13.7 ANALYTE QUANTITATION AND REPORTED DETECTION LIMITS

Analyte quantitation and detection limits were recalculated for all samples in each data delivery package to verify their accuracy.

All analyte quantitation and reported detection limits and sample results were acceptable.

13.8 OVERALL ASSESSMENT AND SUMMARY

A review of instrument performance and calibration indicates that the overall system performance is adequate. All were acceptable and usable for all purposes.

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Project: WESTINGHOUSE-HANFORD																				
Laboratory: TMA																				
Case	SDG B080L9																			
Sample Number	B080L9		B080M0		B080M1		B080M2		B080M3		B080M4		B080M6		B080M7		B080M8		B080M9	
Location	116-F-6		116-F-6		116-F-6		116-F-6		116-F-6		116-F-2		116-F-2		116-F-2		116-F-2		116-F-2	
Remarks																				
Sample Date	01/27/93		01/27/93		01/28/93		01/28/93		01/29/93		02/02/93		02/02/93		02/03/93		02/03/93		02/03/93	
Radiochemistry Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Gross Alpha	2.3	U	3.0	U	5.0	U	1.5	U	0.018	U	0.19	U	11		2.1	U	10		4.1	U
Gross Beta	14		350		63		24		22		16		350		140		85		14	
Uranium-233/234	0.43		0.83		0.42		0.45		0.45		0.35		0.47		0.37		0.44		0.50	
Uranium-235	0.017	U	0.042	U	0.042	U	0.055	U	0.039	U	0.019	U	0.13	J	0.021	U	0.021	U	0.37	
Uranium-238	0.51		0.69		0.47		0.42		0.40		0.43		0.59		0.58		0.37		0.60	
Plutonium-238	0	U	0.069		-0.021	U	0.005	U	0	U	0	U	0.068		0.022	J	0.018	U	0	U
Plutonium-239/240	0.007	U	2.5		0.36		0.096		0.088		0.013	U	3.7		1.3		0.28		0.015	U
Americium-241	0.007	U	0.72		0.096		0.017	U	0.024	U	0.010	U	0.57		0.25	R	0.088		0.009	U
Strontium-90	0.23	U	4.4		2.8		4.4		2.1		0.19	U	7.6		3.2		1.3	J	0.45	U
Carbon-14	-6.6	U	1.6	U	0.62	U	-6.8	U	0.56	U	62		230		240		230		230	
Potassium-40	8.1		19		13		15		13		13		N/D	U	21		16		10	
Cobalt-58	NA		NA		NA		NA		NA		NA		NA		0.67		NA		NA	
Iron-59	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Chromium-51	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Cobalt-60	0.087	J	33	J	2.4	J	N/D	UJ	N/D	UJ	0.041	J	12	J	6.8	J	3.5	J	N/D	UJ
Zinc-65	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Ruthenium-106	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Cesium-134	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Cesium-137	0.36		230		20		0.16		N/D	U	0.21		35		31		22		2.9	
Europium-152	0.50	J	190	J	18	J	1.6	J	0.42	J	5.3	J	550	J	190	J	77	J	0.21	J
Europium-154	N/D	U	18		2.1		0.14		N/D	U	0.27		360		17		8.7		N/D	U
Europium-155	NA		NA		NA		NA		NA		NA		NA		0.65		0.41		NA	
Iridium-192	NA		NA		NA		NA		NA		NA		0.58		NA		NA		NA	
Radium-226	0.41		1.0		0.39		0.49		0.39		0.52		N/D	U	0.33		0.58		0.39	
Thorium-228	0.39		0.47		0.63		0.77		0.49		0.99		N/D	U	0.65		1.0		0.33	
Thorium-232	0.44		N/D	U	0.58		0.57		0.50		0.56		N/D	U	N/D	U	N/D	U	0.45	

N/D = Not Detected, NA = Not Analyzed

RADIOCHEMISTRY ANALYSIS, SOIL MATRIX, (pCi/g+-2 standard deviations)

Project: WESTINGHOUSE-HANFORD																						
Laboratory: TMA																						
Case	SDG B080L9																					
Sample Number	B080N0		B080N1		B080N2		B080N3		B080N4		B080N5		B080N6		B080N7		B080N8					
Location	116-F-1A		116-F-1A		116-F-1A		116-F-1A		116-F-1A		116-F-9C		116-F-9C		116-F-9C		116-F-9C					
Remarks																						
Sample Date	02/04/93		02/04/93		02/08/93		02/09/93		02/09/93		02/11/93		02/11/93		02/12/93		02/12/93					
Radiochemistry Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q		
Gross Alpha	4.6	J	5.5	J	3.7	U	2.1	U	3.4	U	1.4	U	5.8	U	1.6	U	0.90	U				
Gross Beta	16		21		14		13		15		11		52		50		43					
Uranium-233/234	0.35		0.53		0.34		0.94		0.43		0.58		0.38		0.29	J	0.29	J				
Uranium-235	0	U	0	U	0.068	U	0.10	U	0	U	0.024	U	0.019	U	0.029	U	0.055	U				
Uranium-238	0.47		0.77		0.39		0.83		0.41		0.53		0.39		0.46		0.36					
Plutonium-238	-0.002	U	0.010	U	0.014	U	-0.005	U	0.006	U	0.013	U	0.013	U	0.004	U	-0.012	U				
Plutonium-239/240	0.002	U	0.016	J	0.012	U	-0.005	U	0.003	U	0.003	U	0.015	U	0.004	U	0.015	U				
Americium-241	-0.004	U	0.003	U	-0.007	U	0.025	U	0.012	U	-0.002	U	0.007	U	-0.013	U	-0.004	U				
Strontium-90	0.32	U	-0.043	U	0.006	U	-0.27	U	-0.22	U	-0.20	U	15		17		19					
Carbon-14	230		190		220		180		160		140		120		5.4	U	0.51	U				
Potassium-40	9.5		12		11		11		11		12		12		13		12					
Iron-59	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U				
Chromium-51	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U				
Cobalt-60	N/D	UJ	N/D	UJ	N/D	UJ	N/D	UJ	N/D	UJ	N/D	UJ	N/D	UJ	N/D	UJ	N/D	UJ				
Zinc-65	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U				
Ruthenium-106	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U				
Cesium-134	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U				
Cesium-137	0.66		0.056		N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	0.050		N/D	U				
Europium-152	0.17	J	0.23	J	N/D	UJ	N/D	UJ	N/D	UJ	N/D	UJ	N/D	UJ	N/D	UJ	N/D	UJ				
Europium-154	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U				
Radium-226	0.30		0.40		0.43		0.41		0.29		0.48		0.62		0.43		0.40					
Thorium-228	0.59		0.60		0.44		0.51		0.45		0.83		0.64		0.62		0.49					
Thorium-232	0.51		0.63		0.42		0.53		0.35		0.88		0.66		0.60		0.68					

D = Not Detected, NA = Not Analyzed

RADIOCHEMISTRY ANALYSIS, SOIL MATRIX, (pCi/g+-2 standard deviations)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Teledyne																					
Case	SDG B080N9																				
Sample Number	B080N9																				
Location	116-F-9C																				
Remarks	Split																				
Sample Date	02/12/93																				
Radiochemistry Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	
Gross Alpha	9.6	J																			
Gross Beta	96	J																			
Uranium-235	0.0018	UJ																			
Uranium-238	0.11	J																			
Plutonium-239/240	0.0049	UJ																			
Americium-241	0.00042	UJ																			
Strontium-90	8.0	J																			
Carbon-14	0.13	UJ																			
Beryllium-7	0.032	UJ																			
Potassium-40	11.9	J																			
Manganese-54	-0.0005	UJ																			
Cobalt-58	0.0044	UJ																			
Iron-59	-0.014	UJ																			
Cobalt-60	0.0012	UJ																			
Zinc-65	-0.015	UJ																			
Zirconium-95	0.017	UJ																			
Ruthenium-103	0.0036	UJ																			
Ruthenium-106	0.013	UJ																			
Iodine-131	0.0049	UJ																			
Cesium-134	0.038	J																			
Cesium-137	0.0771	J																			
Barium-140	-0.013	UJ																			
Cerium-141	0.0096	UJ																			
Cerium-144	-0.096	UJ																			
Europium-152	-0.33	J																			
Europium-154	-0.02	UJ																			
Europium-155	-0.026	UJ																			
Radium-226	0.619	J																			
Thorium-228	0.393	J																			
Thorium-234	0.1	UJ																			

RADIOCHEMISTRY ANALYSIS, SOIL MATRIX, (pCi/g+-2 standard deviations)

Project: WESTINGHOUSE-HANFORD																				
Laboratory: TMA																				
Case	SDG: B080P0																			
Sample Number	B080P0		B080P1		B080P2		B080P3		B080P4											
Location	116-F-9C		116-F-9C		116-F-4		116-F-4		116-F-4											
Remarks																				
Sample Date	2/17/93		2/17/93		2/17/93		2/17/93		2/18/93											
Radiochemistry Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Gross Alpha	0.82	U	0.21	U	4.5	U	14	J	96	J										
Gross Beta	40		-2.1	U	20		440	J	4900	J										
Uranium-233/234	0.29	U	0.13	U	0.77		0.54		0.86											
Uranium-235	0.029	UJ	0	UJ	0.11	UJ	0.035	R	0.095	R										
Uranium-238	0.31		0.13	U	0.42		0.49		1.0											
Plutonium-238	-0.003	U	0.018	U	-0.004	U	0.15		1.1	UJ										
Plutonium-239/240	0.005	U	0.003	U	0.15		12		130	J										
Americium-241	0.004	U	-0.006	U	0.043	J	1.4		12											
Strontium-90	19		0.078	U	5.2		160		1500											
Carbon-14	-1.5	U	3.1	U	-0.037	U	1.4	U	-2.3	U										
Potassium-40	8.9	J	0.59	J	9.2	J	10	J	11	J										
Chromium-51	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U										
Iron-59	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U										
Cobalt-60	N/D	U	N/D	U	N/D	U	0.14		0.34											
Zinc-65	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U										
Ruthenium-106	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U										
Cesium-134	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U										
Cesium-137	N/D	U	N/D	U	3.5		340		1800											
Europium-152	N/D	U	N/D	U	N/D	U	3.1		16											
Europium-154	N/D	U	N/D	U	N/D	U	0.30		NA											
Radium-226	0.36	J	0.11	J	0.51	J	0.45	J	0.66	J										
Thorium-228	0.38	J	0.15	J	0.48	J	0.49	J	N/D	UJ										
Thorium-232	0.39	J	0.14	J	0.54	J	0.58	J	0.49	J										

NA = Not Analyzed, N/D = Not Detected

RADIOCHEMISTRY ANALYSIS, SOIL MATRIX, (pCi/g+-2 standard deviations)

Project: WESTINGHOUSE-HANFORD																				
Laboratory: TMA																				
Case	SDG B080P5																			
Sample Number	B080P5		B080P9		B080Q3		B080Q4		B080Q5		B080Q6		B080Q7		B080Q8					
Location	116-F-4		116-F-4		116-F-14		116-F-14		116-F-14		116-F-14		116-F-14		116-F-14					
Remarks																				
Sample Date	02/22/93		02/24/93		02/26/93		02/25/93		02/25/93		02/26/93		03/01/93		03/01/93					
Radiochemistry Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Gross Alpha	6.1	UJ	5.4	U	3.2	U	3.9	U	14		1.0	UJ	3.1	U	5.8	J				
Gross Beta	1400		14		12		12		440		290		21		13					
Uranium-233/234	0.63		0.45		0.45		0.41		0.57		0.94		0.55		0.50					
Uranium-235	0.067	U	0.045	U	0.019	U	0.059	U	0.083	U	0.056	U	0.056	U	0					
Uranium-238	0.74		0.45		0.48		0.33		0.66		0.76		0.53		0.38					
Plutonium-238	0.43		0.011	U	0	U	0	U	0.13		0.12		0.002	U	-0.010	U				
Plutonium-239/240	35		0.027	J	0.009	U	0.015	U	5.1		3.7		0.021	J	0.005	U				
Americium-241	3.9		0.053		-0.011	U	0.005	U	0.98		0.81		0.005	U	0.013	U				
Strontium-90	570	J	0.24	UJ	0.030	UJ	0.21	UJ	16	J	2.6	J	0.31	UJ	0.16	UJ				
Carbon-14	3.9	U	0.72	U	0.61	U	0.074	U	28	J	7.3	J	-1.4	U	0.005	U				
Potassium-40	12		7.5		11		11		N/D	U	N/D	U	12		9.4					
Chromium-51	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U				
Iron-59	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U				
Cobalt-60	N/D	UJ	N/D	UJ	N/D	UJ	N/D	UJ	43	J	53	J	N/D	UJ	N/D	UJ				
Zinc-65	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U				
Ruthenium-106	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U				
Cesium-134	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U				
Cesium-137	920		0.72	R	N/D	R	N/D	R	6.4	R	12		5.8	R	2.1	R				
Europium-152	8.6		N/D	U	N/D	U	1.2		940		450		N/D	UJ	N/D	U				
Europium-154	0.83	J	N/D	UJ	N/D	UJ	0.97	J	130	J	54	J	N/D	U	N/D	UJ				
Europium-155	N/A		N/A		N/A		N/A		6.6		2.7		N/A		N/A					
Radium-226	N/D	U	0.32		0.39		0.50		N/D	U	N/D	U	0.51		0.41					
Thorium-228	N/D	U	0.40		0.38		0.60		N/D	U	N/D	U	0.58		0.47					
Thorium-232	1.4		N/D	U	0.83		0.60		N/D	U	N/D	U	0.74		0.54					

N/D = Not Detected, N/A = Not Applicable

RADIOCHEMISTRY ANALYSIS, WATER MATRIX, (pCi/L+-2 standard deviations)

Project: WESTINGHOUSE-HANFORD																				
Laboratory: TMA																				
Case	SDG B080Q0																			
Sample Number	B080Q0																			
Location	116-F-6																			
Remarks																				
Sample Date	02/23/93																			
Analysis Date	04/13/93																			
Radiochemistry Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Gross Alpha	-0.60	U																		
Gross Beta	7.1																			
Uranium-233/234	0.23																			
Uranium-235	0.020	U																		
Uranium-238	0.15	J																		
Plutonium-238	0	R																		
Plutonium-239/240	0	R																		
Americium-241	0.005	U																		
Strontium-90	-0.10	U																		
Technetium-99	3.4	J																		
Tritium	73.0	U																		
Carbon-14	-23.0	U																		
Potassium-40	N/D	U																		
Chromium-51	N/D	U																		
Iron-59	N/D	U																		
Cobalt-60	N/D	U																		
Zinc-65	N/D	U																		
Ruthenium-106	N/D	U																		
Cesium-134	N/D	U																		
Cesium-137	N/D	U																		
Europium-152	N/D	U																		
Europium-154	N/D	U																		
Radium-226	N/D	U																		
Thorium-228	N/D	U																		
Thorium-232	N/D	U																		

) = Not Detected

RADIOCHEMISTRY ANALYSIS, SOIL MATRIX, (pCi/g+-2 standard deviations)

Project: WESTINGHOUSE-HANFORD																				
Laboratory: TMA																				
Case	SDG: B080Q9																			
Sample Number	B080Q9		B080R1		B080R2		B080R4		B080R5											
Location	116-F-14						French Drain		French Drain											
Remarks																				
Sample Date	03/02/93		03/09/93		03/09/93		03/09/93		03/09/93											
Radiochemistry Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Gross Alpha	2.1	U	3.9	U	5.9	J	250		56											
Gross Beta	11		16		17		0.75	U	13											
Uranium-233/234	0.38		0.49		0.48		0.46		0.45											
Uranium-235	0	U	0.064	U	0	U	0.063	U	0.076	U										
Uranium-238	0.38		0.74		0.35		0.47		0.42											
Plutonium-238	0.24	J	0.038	J	0.11	J	220	J	66	J										
Plutonium-239/240	0.035	J	0.014	U	0.021	J	34		11											
Americium-241	0	U	0.011	U	-0.002	U	3.3		1.2											
Strontium-90	0.045	U	0	U	0	U	0.20	U	0	U										
Carbon-14	0.62	U	3.2	U	2.4	U	3.7	U	3.7	U										
Potassium-40	15		13		14		9.5		13											
Chromium-51	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U										
Iron-59	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U										
Cobalt-60	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U										
Zinc-65	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U										
Ruthenium-106	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U										
Cesium-134	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U										
Cesium-137	1.5	J	N/D	UJ	0.048	J	1.6	J	0.74	J										
Europium-152	N/D	U	N/D	U	N/D	U	0.12		N/D	U										
Europium-154	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U										
Radium-226	0.51		0.53		0.56		0.41		0.42											
Thorium-228	0.62	J	0.79	J	0.73	J	0.55	J	0.81	J										
Thorium-232	0.75	J	0.74	J	0.77	J	0.50	J	0.75	J										

N/D = Not Detected

RADIOCHEMISTRY ANALYSIS, SOIL MATRIX, (pCi/g+-2 standard deviations)

Project: WESTINGHOUSE-HANFORD																				
Laboratory: TMA																				
Case	SDG B08G65																			
Sample Number	B08G65		B08G66		B08G67		B08G68		B08G69		B08G70		B08G72		B08G73		B08G74		B08G75	
Location	116-F-1B		116-F-1B		116-F-1B		116-F-1B		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C		116-F-1C	
Remarks																				
Sample Date	04/20/93		04/20/93		04/20/93		04/20/93		04/21/93		04/21/93		04/21/93		04/21/93		04/21/93		04/21/93	
Radiochemistry Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Gross Alpha	12		7.0	J	8.7	J	7.0	J	0.52	U	9.5	J	14		4.8	U	3.1	U	3.3	U
Gross Beta	14		16		16		16		1.5	U	17		16		16		13		17	
Uranium-233/234	0.51		0.39		0.35		0.41		0.098	J	0.40		0.71		0.53		0.44		0.30	
Uranium-235	0	U	0.059	U	0.020	U	0.030	U	0	U	0.10	U	0.15		-0.016	U	0.038	U	0.099	U
Uranium-238	0.44		0.50		0.59		0.43		0.063	J	0.36		0.73		0.48		0.44		0.31	
Plutonium-238	-0.003	U	-0.002	U	-0.002	U	0.008	U	0	U	0.016	U	0.005	U	0.002	U	-0.008	U	0.011	U
Plutonium-239/240	0.009	U	0.009	U	0.005	U	-0.005	U	-0.002	U	0.004	U	-0.002	U	-0.002	U	0.003	U	0.005	U
Americium-241	0.007	U	0.004	U	0.001	U	0.004	U	-0.002	U	0.001	U	0.003	U	0.003	U	-0.002	U	0.001	U
Strontium-90	0.066	U	-0.10	U	0.042	U	0.004	U	0.028	U	0.10	U	0.089	U	0.047	U	-0.070	U	0.002	U
Carbon-14	-0.57	U	-6.3	U	-0.99	U	-0.39	U	0.60	U	-4.1	U	-3.1	U	-3.5	U	1.7	U	-1.7	U
Potassium-40	14		13		14		13		0.38		13		13		14		13		11	
Chromium-51	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Iron-59	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Cobalt-60	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Zinc-65	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Ruthenium-103	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Ruthenium-106	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Tin-113	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Cesium-134	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Cesium-137	0.19	J	0.11	J	0.081	J	N/D	UJ	N/D	UJ	N/D	UJ	0.088	J	N/D	UJ	N/D	UJ	N/D	UJ
Cerium-144	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Europium-152	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Europium-154	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U
Radium-226	0.49		0.51		0.45		0.38		0.076		0.65		0.65		0.38		0.39		0.32	
Thorium-228	0.97	J	0.70	J	0.76	J	0.69	J	0.15	J	1.0	J	0.76	J	0.46	J	0.73	J	0.48	J
Thorium-232	0.69	J	0.79	J	0.58	J	0.56	J	0.18	J	0.89	J	0.94	J	0.69	J	0.58	J	0.52	J

U = Not Detected

RADIOCHEMISTRY ANALYSIS, SOIL MATRIX, (pCi/g+-2 standard deviations)

Project: WESTINGHOUSE-HANFORD																				
Laboratory: TMA																				
Case	SDG B08G65																			
Sample Number	B08G76		B08G78		B08G79		B08G80		B08G81		B08G82		B08G83							
Location	116-F-1C		116-F-9D		116-F-9D		116-F-9D		116-F-9D		116-F-3									
Remarks																				
Sample Date	04/21/93		04/21/93		04/21/93		04/21/93		04/21/93		04/22/93		04/22/93							
Radiochemistry Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Gross Alpha	6.4	J	8.6	J	4.5	U	5.4	J	2.9	U	6.7	J	7.1	J						
Gross Beta	19		19		100		30		29		11		71							
Uranium-233/234	0.35		0.48		0.72		0.55		0.38		0.51		0.44							
Uranium-235	0.045	U	0.044	U	0.056	U	0.014	U	0.054	U	0.060	U	0.055	J						
Uranium-238	0.41		0.45		0.64		0.44		0.37		0.36		0.46							
Plutonium-238	0.011	U	0.002	U	0.013	U	0.006	U	0.006	U	-0.046	R	0.003	U						
Plutonium-239/240	0.002	U	-0.005	U	0.028	J	0.009	U	0.006	U	0.012	R	0.46							
Americium-241	0.001	U	0	U	0.006	U	0.001	U	0.003	U	0.006	U	0.033	J						
Strontium-90	0.058	U	0.032	U	39		10		6.3		0.060	U	0.74	U						
Carbon-14	-2.3	U	2.3	U	1.0	U	-2.1	U	0.93	U	-0.95	U	-1.9	U						
Potassium-40	14		15		13		15		13		7.9		23							
Chromium-51	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U						
Iron-59	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U						
Cobalt-60	N/D	U	N/D	U	0.074		N/D	U	0.055		0.058		1.9							
Zinc-65	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U						
Ruthenium-103	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U						
Ruthenium-106	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U						
Tin-113	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U						
Cesium-134	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U						
Cesium-137	N/D	UJ	N/D	UJ	0.96	J	0.17	J	0.13	J	0.52	J	2.6	J						
Cerium-144	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U						
Europium-152	N/D	U	N/D	U	0.69		0.32	U	0.14		0.11		190							
Europium-154	N/D	U	N/D	U	N/D	U	N/D	U	N/D	U	0.075	J	9.8							
Radium-226	0.46		0.63		0.64		0.50		0.38		0.50		0.43							
Thorium-228	0.56	J	1.1	J	0.75	J	0.65	J	0.80	J	0.65	J	0.79	J						
Thorium-232	0.54	J	0.85	J	0.86	J	0.76	J	0.61	J	0.69	J	N/D	UJ						

N/D = Not Detected

RADIOCHEMISTRY ANALYSIS, SOIL MATRIX, (pCi/g+-2 standard deviations)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Teledyne																					
Case	SDG: B08G71																				
Sample Number	B08G71																				
Location	116-F-1C																				
Remarks	Split																				
Sample Date	04/21/93																				
Radiochemistry Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Gross Alpha	7.5																				
Gross Beta	35																				
Uranium-235	0.0073																				
Uranium-238	0.24																				
Plutonium-239	0.00053	U																			
Americium-241	0.0044	U																			
Strontium-90	0.13																				
Carbon-14	0.54	U																			
Beryllium-7	0.087	U																			
Potassium-40	13.5																				
Manganese-54	-0.0006	U																			
Cobalt-58	-0.0055	U																			
Iron-59	-0.021	U																			
Cobalt-60	0.0076	U																			
Zinc-65	-0.020	U																			
Zirconium-95	0.014	U																			
Ruthenium-103	-0.0009	U																			
Ruthenium-106	0.0023	U																			
Iodine-131	-0.015	U																			
Cesium-134	0.035	U																			
Cesium-137	0.0404																				
Barium-140	0.0034	U																			
Cerium-141	-0.0036	U																			
Cerium-144	-0.068	U																			
Europium-152	-0.33	U																			
Europium-154	-0.021	U																			
Europium-155	0.013	U																			
Radium-226	1.0	U																			
Thorium-228	0.587																				
Thorium-234	0.45	U																			

- Not Detected

RADIOCHEMISTRY ANALYSIS, SOIL MATRIX, (pCi/g+-2 standard deviations)

Project: WESTINGHOUSE-HANFORD																				
Laboratory: TMA																				
Case	SDG: B08G84																			
Sample Number	B08G84		B08G85																	
Location	116-F-3		116-F-3																	
Remarks																				
Sample Date	4/27/93		4/27/93																	
Radiochemistry Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Gross Alpha	7.9	J	7.4	J																
Gross Beta	22		22																	
Uranium-233/234	0.68		0.46																	
Uranium-235	0.038	U	0.049	U																
Uranium-238	0.58		0.69																	
Plutonium-238	0.013	U	0	U																
Plutonium-239/240	0.95	J	0.015	UJ																
Americium-241	0	U	-0.003	U																
Strontium-90	0.10	U	0.022	U																
Carbon-14	-0.69	U	1.1	U																
Potassium-40	15		13																	
Chromium-51	N/D	U	N/D	U																
Iron-59	N/D	U	N/D	U																
Cobalt-60	N/D	U	N/D	U																
Zinc-65	N/D	U	N/D	U																
Ruthenium-103	N/D	U	N/D	U																
Ruthenium-106	N/D	U	N/D	U																
Tin-113	N/D	U	N/D	U																
Cesium-134	N/D	U	N/D	U																
Cesium-137	N/D	U	N/D	U																
Cerium-144	N/D	U	N/D	U																
Europium-152	0.82		0.28																	
Europium-154	N/D	U	N/D	U																
Radium-226	0.55		0.38																	
Thorium-228	0.92		0.68																	
Thorium-232	0.63		0.56																	

N/D = Not Detected

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