B.01R10-DNL-062

0046445

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February 18, 1993

Mr. Mark A. Buckmaster
Westinghouse Hanford Company
P. O. Box 1970 MSIN H4-55
Richland, Washington 99352

Subject: Deliverable for 200-BP-1 Data Validation, Task Order S-92-19, WHC Contract No. MLW-SVV-073750

Dear Mr. Buckmaster:

Enclosed is a deliverable required by the referenced SAIC Task Order and WHC Contract. Included in this deliverable, please find a copy of Data Validation Summary Report for Data Packages BO1R10-PNL-062, BO1S92-PNL-063, and BO1SC7-PNL-064. This deliverable was prepared by Golder Associates under the direction of Kent Angelos.

Should you have any questions, please do not hesitate to contact Kent Angelos of Golder Associates at (206)883-0777 or Michael Hoxie or myself at (509) 783-1446.

Sincerely yours,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

for Sandra L. Muller
P. K. Brockman
Program Manager

PKB/aps

Enclosure

cc w/encl:
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LB/Task 92-19 Deliv File

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D. Caldwell, GAI

JAN 1997 RECEIVED LDMC

SwF 2-18-93

FEB 1993 RECEIVED OSM DMO

SDG: B01SC7-PNL-064

Report To

Westinghouse Hanford Company
Richland, Washington

Data Validation Report
200-BP-1 RI/FS
Laboratory: Battelle - Pacific Northwest Laboratories
Data Packages: B01R10-PNL-062, B01S92-PNL-063,
B01SC7-PNL-064
Sample Matrix: Soil and Water
Analysis Type: Organics/Inorganics/Radiochemistry

Prepared By

Golder Associates Inc.
Redmond, Washington

February 16, 1993

913-1719

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1. INTRODUCTION

This report presents the results of data validation on the following sample delivery groups (SDG) and sample numbers which were analyzed by Battelle - Pacific Northwest Laboratory. Table 1-1 provides an inventory of the samples validated.

Validated results are summarized in Appendix A. Data validation was conducted in accordance with the Westinghouse Hanford Company statement of work (WHC 1991) and validation procedures (WHC 1992a and 1992b).

Data qualifiers applied as a result of the validation performed are summarized below:

B Indicates the compound or analyte was analyzed for and detected. The value reported is less than the CRQL but greater than the IDL.

U Indicates the compound or analyte was analyzed for and not detected. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory. The data are usable for decision making purposes.

UJ Indicates the compound or analyte was analyzed for and not detected. Due to an identified quality control deficiency identified during data validation the value reported may not accurately reflect the sample quantitation limit. The data are usable for decision making purposes.

J Indicates the compound or analyte was analyzed for and detected. The associated value is estimated but the data are usable for decision making processes.

R Indicates the compound or analyte was analyzed for and due to an identified quality control deficiency the data are unusable.

NJ Indicates presumptive evidence of a compound at an estimated value.

N Indicates presumptive evidence of a compound.

2. DATA QUALITY OBJECTIVES

Completeness

The data packages were complete for all requested analyses and met the data quality objectives of the work plan. Data quality objectives for the project specified the use of CLP methods for the TCL volatiles, semivolatiles, and pesticides/PCBs and TAL metals/cyanide analytes and the use of standard methods for all other parameters.

A total of 40 samples were validated as part of this data set with a total of 2671

determinations (analyses) reported. Out of the 2671 determinations reported, 2501 were deemed valid which results in a completeness of 94 percent ([2501/2671] x 100). This completeness percentage meets the work plan objective of 80% and the QAPjP objective of 90%.

Sample Quantitation Limits

Sample quantitation limits were met for all chemical analyses with the exception of minor differences due to dilution factors and sample matrix effects. Sample quantitation limits for radiochemical analyses were met with the exception of the parameters listed in the following table.

RADIOCHEMICAL PARAMETER	NUMBER OF SAMPLES EXCEEDING WORK PLAN QUANTITATION LIMITS	RANGE OF QUANTITATION LIMITS
Cesium-137	1	0.2 U
Cobalt-60	11	0.14 U - 830 U
Ruthenium-106	16	0.47 U - 15000 U

Field Quality Control Samples

The following samples were identified as field quality control samples:

- Field blanks: B01S74, B01S70.
- Equipment blanks: B01S90, B01S72.
- Field duplicates (primary sample/duplicate sample): B01S99/B01SB1, B01SB6/B01SB7 (cyanide only), B01SD2/B01SD4, B01SF2/B01SF4.
- Field splits (primary sample/split sample): B01SH2/B01SH3, B01SG2/B01SG3, B01SB6/B01SB7.

Results for field blanks, equipment blanks and field duplicates are discussed in the sections which follow. Results for field split samples will be evaluated at a later date in the final validation summary report for the 200-BP-1 RI/FS.

3. QUALIFIED DATA

This section presents a summary of the qualifications required based on validation of the

subject data package.

3.1 Major Deficiencies

The following presents a summary of the rejected data.

Volatiles

- The raw data for the GC/MS tune performed on 4/02/92 was not provided for SDG B01SC7. All associated data (five samples) were rejected (R) due to the missing raw tuning data.

Semivolatiles

- Aldol products and other tentatively identified compounds (TICs) were detected in the preparation blanks for both SDG B01S92 and B01SC7. The aldol product and blank related TIC results in samples were rejected (R) because of the blank contamination.

3.2 Minor Deficiencies

The following qualifications were required as a result of the validation. Attachment 2 provides a summary of the samples affected.

3.2.1 Volatile Organics

Calibration

- The percent difference (%D) value for acetone exceeded 25% in the continuing calibration from SDG B01SC7. Associated sample results have been qualified as estimated (UJ for non-detects).

Blanks

The following compounds were detected in the laboratory blanks requiring qualification of associated sample results less than ten times the blank concentrations as undetected (U):

- SDG B01SC7: acetone and 2-butanone.
- SDG B01S92: acetone, 2-butanone, 4-methyl-2-pentanone, and 2-hexanone.

Surrogate Recovery

- The recovery of toluene-d8 exceeded acceptance criteria in sample B01SD9MSD of SDG B01SC7.

3.2.2 Semivolatile Organics

Holding Time

- The holding times for preparation were exceeded in SDG B01S92 for samples B01S97, B01S99, B01SB1, and B01SB3 and in SDG B01SC7 for samples B01SC7, B01SC9, B01SF7, B01SF9, and B01SG3. All of these sample results have been qualified as estimated (UJ for non-detects and J for detects).

Calibration

The following continuing calibration compounds exceeded the %D criteria of 25%, requiring qualification of associated sample quantitation limits as estimated (UJ):

- SDG B01S92: n-nitroso-di-n-propylamine and 3,3'-dichlorobenzidene.
- SDG B01SC7: n-nitroso-di-n-propylamine, 2-nitroaniline, 2,4-dinitrophenol, and 4,6-dinitro-2-methyl phenol in the first calibration check and bis(2-chloroisopropyl) ether and 3,3'-dichlorobenzidene in the second calibration check.

Blanks

- Diethylphthalate was detected in the preparation blank and sample B01SC7 of SDG B01SC7. The sample result was less than ten times the concentration found in the blank and has been qualified as a non-detect (U).

3.2.3 Pesticides/PCBs

Holding Time

- The holding times for preparation were exceeded in SDG B01S92 for samples B01S97, B01S99, B01SB1, and B01SB3 and in SDG B01SC7 for samples B01SC7, B01SC9, and B01SF7. All of these sample results have been qualified as estimated (UJ for non-detects).

Calibration

- The %D for several calibration factors in the subsequent standards in SDG B01SC7 exceeded 15%. No qualifications were required since the related target compounds were previously qualified as estimated (UJ) for matrix spike recovery.

Accuracy

- The matrix spike recovery of DDT was 138% in SDG B01S92. No qualification was required as surrogate recoveries were within limits and

DDT was not detected in the associated samples.

- The matrix spike compound recoveries and RPDs for the matrix spike duplicate sample in SDG B01SC7 were all above the project-specified limits. It appears that the high spike recoveries are due to double spiking of the matrix spike duplicate sample. However, because the laboratory did not provide adequate sample preparation information, all results for SDG BO1SC7 were qualified as estimated (UJ for non-detects) because of the matrix spike recovery problems.

3.2.4 Metals and Cyanide

Holding Times

- The holding time for total cyanide was exceeded for analysis of sample B01R10 in SDG B01R10. The associated results was qualified as estimated (J).

- The holding time for mercury was exceeded for the analysis of all but two samples in SDG B01SC7 and all samples in SDG B01S92. The associated results for mercury are qualified as estimated (J for detects.

- The holding time for free cyanide was exceeded for the analysis of samples B01R10 and B01QZ8 in SDG B01R10. The associated results for free cyanide are qualified as estimated (J).

Calibration Verification

- The correlation coefficient for mercury was less than the lower limit of 0.995 for the samples in SDG B01SC7. The associated results were qualified as estimated (J for detects).

- The percent recovery (%R) for lead was 118.8% in SDG B01S92. The associated results were qualified as estimated (J).

- The percent recovery (%R) for thallium was 112.9% in SDG B01SC7. The associated results were qualified as estimated (J).

Blanks

- Cyanide was detected in the field blank from SDG B01SC7. Associated sample results less than five times the highest blank concentration have been qualified as non-detects (U).

- Lead and antimony were detected in continuing calibration blanks from SDG B01S92. Associated sample results less than five times the highest blank

concentration have been qualified as non-detects (U).

Accuracy

- Laboratory control sample recoveries of selenium were less than the specified control limits in SDG B01SC7. Associated sample results have been qualified as estimated (UJ for non-detects).

- Laboratory control sample recoveries of lead, aluminum, and potassium were outside the specified control limits in SDG B01S92. Associated sample results have been qualified as estimated (J for detects.

Precision

- The relative percent difference (RPD) for lead in SDG B01SC7 and iron in SDG B01S92 exceeded specified control limits. The associated results were qualified as estimated (J for detects).

3.2.5 Wet Chemistry

Holding Times

- The holding times for anions were exceeded for analysis of samples B01S97, B01S99, and B01SB1 in SDG B01S92 and all samples in SDG B01SC7. The associated results was qualified as estimated (J for detects and UJ for non-detects).

Spike Recovery

- The laboratory used an expired matrix standard for the anions analyses in SDG B01S92. The associated results were qualified as estimated (J for detects and UJ for non-detects).

3.2.6 Radiochemistry

Uranium and Technetium Analyses

- The uranium and technetium analyses of the samples in SDGs B01S92, and B01SC7 were conducted along with other samples in the data package for the ICP/mass spectrometry analysis of SDGs 12 through 19. The data was reported in a prior validation report.

Accuracy

- The reported result for cobalt-60 in sample B01S99 in SDG B01S92 was corrected for a transcription error. The reported result of <70 pCi/l was changed to the correct result of <60 pCi/l.

- The plutonium results for sample B01SB2 in SDG B01S92 were reported at 5 times the amount calculated from the raw data. The reported results were changed to reflect the correct amounts for both plutonium-239/240 and plutonium-238.

Precision

- The RPD for the field duplicate sample used for the tritium analyses in SDG B01S92 was 70%. The associated sample results are qualified as estimated (J for detects or UJ for non-detects).

4. CONCLUSION

Sections 1 through 3 present a summary of the data quality for the subject data package. The results contained in this report are acceptable for use with the exception of those major deficiencies described in Section 3.1.

The appendices provide supporting documentation and a tabular summary of the qualified data. The original, as-received data packages are enclosed for submittal to the project QA record.

5. REFERENCES

WHC, 1991, Westinghouse Hanford Company, Validation of 200-BP-1 Data, Statement of Work, Revision A, November 1991. Westinghouse Hanford Company, Richland, Washington.

WHC, 1992a, Westinghouse Hanford Company, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 1, 1992. Westinghouse Hanford Company, Richland, Washington.

WHC, 1992b, Westinghouse Hanford Company, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-001, Rev. 0, 1992. Westinghouse Hanford Company, Richland, Washington.

TABLES

Table 1-1. List of Samples Validated

DATA PACKAGE ID	HEIS NO.	SAMPLE DATE	LOCATION	INTERVAL	COMMENTS
B01R10-PNL-062	B01R10	04/10/92	699-52-54		
	B01QZ8	04/14/92	699-50-53A		
B01S92-PNL-063	B01S92	02/28/92	216-B-45B	2.0-5.0	
	B01S94	02/28/92	216-B-45B	10.0-13.0	
	B01S97	03/02/92	216-B-45B	17.0-19.5	
	B01S99	03/03/92	216-B-45B	20.0-20.5	
	B01SB1	03/03/92	216-B-45B	20.0-20.5	DUP
	B01S96	03/05/92	216-B-49C	27.0-29.5	
	B01SB3	03/05/92	216-B-45B	27.0-29.5	
	B01SB7	03/10/92	216-B-45C	3.0-6.0	SPLIT,CN-DUP
	B01SB6	03/10/92	216-B-45C	3.0-6.0	
	B01SC0	03/10/92	216-B-45C	10.0-13.0	
	B01S70	03/10/92	216-B-45C		FIELD BLANK
	B01S72	03/10/92	216-B-45C		EQUIP. BLANK
	B01SB2	03/11/92	216-B-45C	17.0-20.0	
	B01SC2	03/11/92	216-B-48A	3.0-5.5	
	B01SC4	03/12/92	216-B-48A	9.0-11.5	
	B01SC6	03/11/92	216-B-45C	27.0-29.5	
B01SC7-PNL-064	B01SC7	03/13/92	216-B-48A	17.5-20.0	
	B01SC9	03/16/92	216-B-48A	28.0-30.5	
	B01SD2	03/18/92	216-B-44A	3.0-6.0	
	B01SD4	03/18/92	216-B-44A	3.0-6.0	DUP
	B01SD6	03/18/92	216-B-44A	9.0-12.0	
	B01SD9	03/19/92	216-B-44A	29.0-31.5	
	B01SD7	03/19/92	216-B-44A	21.5-24.0	
	B01SF2	03/20/92	216-B-48B	2.5-5.0	
	B01SF4	03/20/92	216-B-48B	2.5-5.0	DUP

Table 1-1. List of Samples Validated

DATA PACKAGE ID	HEIS NO.	SAMPLE DATE	LOCATION	INTERVAL	COMMENTS
	B01SF6	03/23/92	216-B-48B	10.0-12.5	
	B01SF7	03/23/92	216-B-48B	19.5-22.0	
	B01SF9	03/25/92	216-B-48B	29.5-32.0	
	B01SG3	03/25/92	216-B-44B	3.0-6.0	SPLIT,CN-DUP
	B01SG2	03/25/92	216-B-44B	3.0-6.0	
	B01SG6	03/25/92	216-B-44B	9.0-11.5	
	B01SG7	03/26/92	216-B-44B	19.0-21.4	
	B01SG9	03/30/92	216-B-44B	29.0-31.5	
	B01SH3	03/31/92	216-B-48C	3.0-5.5	SPLIT,CN-DUP
	B01SH2	03/31/92	216-B-48C	3.0-5.5	
	B01SH6	03/31/92	216-B-48C	10.0-12.5	
	B01S74	03/31/92	216-B-48C		FIELD BLANK
	B01S90	03/31/92	216-B-48C		EQUIP. BLANK

APPENDIX A

AS QUALIFIED DATA SUMMARY AND LABORATORY REPORTS

LABORATORY	PNL															
DATA PACKAGE		B01S92		B01S92		B01S92		B01S92		B01S92		B01S92		B01SC7		B01SC7	
SAMPLE NUMBER		B01S97		B01S99		B01SB1		B01SB2		B01SB3		B01SB7		B01SC7		B01SC9	
VOLATILE ORGANIC COMPOUND	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
CHLOROMETHANE	10	10	U	10	U	10	U	10	U	10	U	10	U	9	U	10	U
BROMOMETHANE	10	10	U	10	U	10	U	10	U	10	U	10	U	9	U	10	U
VINYL CHLORIDE	10	10	U	10	U	10	U	10	U	10	U	10	U	9	U	10	U
CHLOROETHANE	10	10	U	10	U	10	U	10	U	10	U	10	U	9	U	10	U
METHYLENE CHLORIDE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
ACETONE	10	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
CARBON DISULFIDE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
CHLOROFORM	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHANE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2-BUTANONE	10	10	U	10	U	10	U	10	U	11	U	10	U	10	U	10	U
1,1,1-TRICHLOROETHANE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
CARBON TETRACHLORIDE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
VINYL ACETATE	10	10	U	10	U	10	U	10	U	10	U	10	U	9	U	10	U
BROMODICHLOROMETHANE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROPROPANE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
CIS-1,3-DICHLOROPROPENE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
DIBROMOCHLOROMETHANE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,1,2-TRICHLOROETHANE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
BENZENE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
TRANS-1,3-DICHLOROPROPENE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
BROMOFORM	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-METHYL-2-PENTANONE	10	10	U	10	U	10	U	10	U	10	U	10	U	9	U	10	U
2-HEXANONE	10	10	U	10	U	10	U	10	U	10	U	10	U	9	U	10	U
TETRACHLOROETHENE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,1,2,2-TETRACHLOROETHANE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
TOLUENE	5	5	U	5	U	5	U	2	J	5	U	3	J	5	U	5	U
CHLOROBENZENE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
STYRENE	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U

LABORATORY	PNL																	
DATA PACKAGE		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		
SAMPLE NUMBER		B01SD7		B01SD9		B01SF7		B01SF9		B01SG3		B01SG7		B01SG9		B01SH3		
VOLATILE ORGANIC COMPOUND	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	
CHLOROMETHANE	10	9	U	10	U	10	U	9	R	10	R	10	R	10	R	10	R	
BROMOMETHANE	10	9	U	10	U	10	U	9	R	10	R	10	R	10	R	10	R	
VINYL CHLORIDE	10	9	U	10	U	10	U	9	R	10	R	10	R	10	R	10	R	
CHLOROETHANE	10	9	U	10	U	10	U	9	R	10	R	10	R	10	R	10	R	
METHYLENE CHLORIDE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
ACETONE	10	10	UJ	10	UJ	10	UJ	7	R	7	R	7	R	8	R	13	R	
CARBON DISULFIDE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
1,1-DICHLOROETHENE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
1,1-DICHLOROETHANE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
1,2-DICHLOROETHENE (TOTAL)	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
CHLOROFORM	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
1,2-DICHLOROETHANE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
2-BUTANONE	10	10	U	10	U	10	U	8	R	6	R	8	R	7	R	6	R	
1,1,1-TRICHLOROETHANE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
CARBON TETRACHLORIDE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
VINYL ACETATE	10	9	U	10	U	10	U	9	R	10	R	10	R	10	R	10	R	
BROMODICHLOROMETHANE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
1,2-DICHLOROPROPANE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
CIS-1,3-DICHLOROPROPENE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
TRICHLOROETHENE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
DIBROMOCHLOROMETHANE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
1,1,2-TRICHLOROETHANE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
BENZENE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
TRANS-1,3-DICHLOROPROPENE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
BROMOFORM	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
4-METHYL-2-PENTANONE	10	9	U	10	U	10	U	9	R	10	R	10	R	10	R	10	R	
2-HEXANONE	10	9	U	10	U	10	U	9	R	10	R	10	R	10	R	10	R	
TETRACHLOROETHENE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
1,1,2,2-TETRACHLOROETHANE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
TOLUENE	5	5	U	5	U	5	U	5	R	5	R	9	R	5	R	5	R	
CHLOROBENZENE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
ETHYLBENZENE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
STYRENE	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	
XYLENES (TOTAL)	5	5	U	5	U	5	U	5	R	5	R	5	R	5	R	5	R	

FILENAME: B01S92-V.WK1

LABORATORY	PNL																	
DATA PACKAGE		B01S92		B01S92		B01S92		B01S92		B01S92		B01S92		B01SC7		B01SC7		B01SC7	
SAMPLE NUMBER		B01S97		B01S99		B01SB1		B01SB2		B01SB3		B01SB7		B01SC7		B01SC9		B01SD7	
SEMIVOLATILE COMPOUND	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
PHENOL	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
BIS(2-CHLOROETHYL)ETHER	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
2-CHLOROPHENOL	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
1,3-DICHLOROBENZENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
1,4-DICHLOROBENZENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
BENZYL ALCOHOL	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
1,2-DICHLOROBENZENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
2-METHYLPHENOL	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	UJ
4-METHYLPHENOL	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
N-NITROSO-DI-N-PROPYLAMINE	330	350	UJ	340	UJ	340	UJ	350	UJ	350	UJ	340	UJ	350	UJ	330	UJ	330	UJ
HEXACHLOROETHANE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
NITROBENZENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
ISOPHORONE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
2-NITROPHENOL	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
2,4-DIMETHYLPHENOL	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
BENZOIC ACID	1600	1700	UJ	1700	UJ	1700	UJ	1700	U	1800	UJ	1700	U	1700	UJ	1700	UJ	1600	U
BIS(2-CHLOROETHOXY)METHANE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
2,4-DICHLOROPHENOL	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
1,2,4-TRICHLOROBENZENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
NAPHTHALENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
4-CHLOROANILINE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
HEXACHLOROBUTADIENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
4-CHLORO-3-METHYLPHENOL	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
2-METHYLNAPHTHALENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
HEXACHLOROCYCLOPENTADIENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
2,4,6-TRICHLOROPHENOL	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
2,4,5-TRICHLOROPHENOL	1600	1700	UJ	1700	UJ	1700	UJ	1700	U	1800	UJ	1700	U	1700	UJ	1700	UJ	1600	U
2-CHLORONAPHTHALENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
2-NITROANILINE	1600	1700	UJ	1700	UJ	1700	UJ	1700	U	1800	UJ	1700	U	1700	UJ	1700	UJ	1600	UJ
DIMETHYLPHTHALATE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
ACENAPHTHYLENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
2,6-DINITROTOLUENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U

LABORATORY	PNL																	
DATA PACKAGE		B01S92		B01S92		B01S92		B01S92		B01S92		B01S92		B01SC7		B01SC7		B01SC7	
SAMPLE NUMBER		B01S97		B01S99		B01SB1		B01SB2		B01SB3		B01SB7		B01SC7		B01SC9		B01SD7	
SEMIVOLATILE COMPOUND	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
3-NITROANILINE	1600	1700	UJ	1700	UJ	1700	UJ	1700	U	1800	UJ	1700	U	1700	UJ	1700	UJ	1600	U
ACENAPHTHENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
2,4-DINITROPHENOL	1600	1700	UJ	1700	UJ	1700	UJ	1700	U	1800	UJ	1700	U	1700	UJ	1700	UJ	1600	UJ
4-NITROPHENOL	1600	1700	UJ	1700	UJ	1700	UJ	1700	U	1800	UJ	1700	U	1700	UJ	1700	UJ	1600	U
DIBENZOFURAN	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
2,4-DINITROTOLUENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
DIETHYLPHTHALATE	330	350	UJ	340	UJ	340	UJ	33	J	350	UJ	14	J	350	UJ	330	UJ	330	U
4-CHLOROPHENYL-PHENYLETHER	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
FLUORENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
4-NITROANILINE	1600	1700	UJ	1700	UJ	1700	UJ	1700	U	1800	UJ	1700	U	1700	UJ	1700	UJ	1600	U
4,6-DINITRO-2-METHYLPHENOL	1600	1700	UJ	1700	UJ	1700	UJ	1700	U	1800	UJ	1700	U	1700	UJ	1700	UJ	1600	UJ
N-NITROSODIPHENYLAMINE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
4-BROMOPHENYL-PHENYLETHER	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
HEXACHLOROBENZENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
PHENANTHRENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
ANTHRACENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
DI-N-BUTYLPHTHALATE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
FLUORANTHENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
PYRENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
BUTYLBENZYLPHTHALATE	330	30	J	19	J	19	J	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
3,3'-DICHLOROBENZIDINE	660	690	UJ	670	UJ	680	UJ	690	UJ	700	UJ	690	UJ	690	UJ	660	UJ	660	U
BENZO(A)ANTHRACENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
CHRYSENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
BIS(2-ETHYLHEXYL)PHTHALATE	330	38	J	33	J	39	J	24	J	17	J	21	J	46	J	330	UJ	330	U
PENTACHLOROPHENOL	1600	1700	UJ	1700	UJ	1700	UJ	1700	U	1800	UJ	1700	U	1700	UJ	1700	UJ	1600	U
DI-N-OCTYLPHTHALATE	330	37	J	45	J	50	J	350	U	15	J	340	U	29	J	330	UJ	17	J
BENZO(B)FLUORANTHENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
BENZO(K)FLUORANTHENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
BENZO(A)PYRENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
INDENO(1,2,3-CD)PYRENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
DIBENZ(A,H)ANTHRACENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U
BENZO(G,H,I)PERYLENE	330	350	UJ	340	UJ	340	UJ	350	U	350	UJ	340	U	350	UJ	330	UJ	330	U

LABORATORY	PNL													
DATA PACKAGE		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7	
SAMPLE NUMBER		B01SD9		B01SF7		B01SF9		B01SG3		B01SG7		B01SG9		B01SH3	
SEMIVOLATILE COMPOUND	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
PHENOL	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
BIS(2-CHLOROETHYL)ETHER	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
2-CHLOROPHENOL	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
1,3-DICHLOROBENZENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
1,4-DICHLOROBENZENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
BENZYL ALCOHOL	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
1,2-DICHLOROBENZENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
2-METHYLPHENOL	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
BIS(2-CHLOROISOPROPYL)ETHER	330	340	UJ	340	UJ	340	UJ	340	UJ	340	UJ	340	UJ	340	UJ
4-METHYLPHENOL	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
N-NITROSO-DI-N-PROPYLAMINE	330	340	UJ	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
HEXACHLOROETHANE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
NITROBENZENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
ISOPHORONE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
2-NITROPHENOL	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
2,4-DIMETHYLPHENOL	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
BENZOIC ACID	1600	1700	U	1700	UJ	1700	UJ	1700	UJ	1700	U	1700	U	1700	U
BIS(2-CHLOROETHOXY)METHANE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
2,4-DICHLOROPHENOL	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
1,2,4-TRICHLOROBENZENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
NAPHTHALENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
4-CHLOROANILINE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
HEXACHLOROBUTADIENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
4-CHLORO-3-METHYLPHENOL	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
2-METHYLNAPHTHALENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
HEXACHLOROCYCLOPENTADIENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
2,4,6-TRICHLOROPHENOL	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
2,4,5-TRICHLOROPHENOL	1600	1700	U	1700	UJ	1700	UJ	1700	UJ	1700	U	1700	U	1700	U
2-CHLORONAPHTHALENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
2-NITROANILINE	1600	1700	UJ	1700	UJ	1700	UJ	1700	UJ	1700	U	1700	U	1700	U
DIMETHYLPHTHALATE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
ACENAPHTHYLENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
2,6-DINITROTOLUENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U

LABORATORY	PNL													
DATA PACKAGE		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7	
SAMPLE NUMBER		B01SD9		B01SF7		B01SF9		B01SG3		B01SG7		B01SG9		B01SH3	
SEMIVOLATILE COMPOUND	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
3-NITROANILINE	1600	1700	U	1700	UJ	1700	UJ	1700	UJ	1700	U	1700	U	1700	U
ACENAPHTHENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
2,4-DINITROPHENOL	1600	1700	UJ	1700	UJ	1700	UJ	1700	UJ	1700	U	1700	U	1700	U
4-NITROPHENOL	1600	1700	U	1700	UJ	1700	UJ	1700	UJ	1700	U	1700	U	1700	U
DIBENZOFURAN	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
2,4-DINITROTOLUENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
DIETHYLPHTHALATE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
4-CHLOROPHENYL-PHENYLETHER	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
FLUORENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
4-NITROANILINE	1600	1700	U	1700	UJ	1700	UJ	1700	UJ	1700	U	1700	U	1700	U
4,6-DINITRO-2-METHYLPHENOL	1600	1700	UJ	1700	UJ	1700	UJ	1700	UJ	1700	U	1700	U	1700	U
N-NITROSODIPHENYLAMINE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
4-BROMOPHENYL-PHENYLETHER	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
HEXACHLOROBENZENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
PHENANTHRENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
ANTHRACENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
DI-N-BUTYLPHTHALATE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
FLUORANTHENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
PYRENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
BUTYLBENZYLPHTHALATE	330	340	U	340	UJ	340	UJ	340	UJ	47	J	340	U	340	U
3,3'-DICHLOROBENZIDINE	660	680	U	680	UJ	680	UJ	690	UJ	670	UJ	680	UJ	690	UJ
BENZO(A)ANTHRACENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
CHRYSENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
BIS(2-ETHYLHEXYL)PHTHALATE	330	340	U	340	UJ	340	UJ	31	J	84	J	45	J	21	J
PENTACHLOROPHENOL	1600	1700	U	1700	UJ	1700	UJ	1700	UJ	1700	U	1700	U	1700	U
DI-N-OCTYLPHTHALATE	330	340	U	340	UJ	340	UJ	340	UJ	48	J	11	J	340	U
BENZO(B)FLUORANTHENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
BENZO(K)FLUORANTHENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
BENZO(A)PYRENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
INDENO(1,2,3-CD)PYRENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
DIBENZ(A,H)ANTHRACENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U
BENZO(G,H,I)PERYLENE	330	340	U	340	UJ	340	UJ	340	UJ	340	U	340	U	340	U

LABORATORY	PNL															
DATA PACKAGE		B01S92		B01S92		B01S92		B01S92		B01S92		B01S92		B01SC7		B01SC7	
SAMPLE NUMBER		B01S97		B01S99		B01SB1		B01SB2		B01SB3		B01SB7		B01SC7		B01SC9	
PESTICIDE/PCB COMPOUND	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
ALPHA-BHC	8	8.2	UJ	8.1	UJ	8.1	UJ	8.3	U	8.4	UJ	8.3	U	8.3	UJ	8	UJ
BETA-BHC	8	8.2	UJ	8.1	UJ	8.1	UJ	8.3	U	8.4	UJ	8.3	U	8.3	UJ	8	UJ
DELTA-BHC	8	8.2	UJ	8.1	UJ	8.1	UJ	8.3	U	8.4	UJ	8.3	U	8.3	UJ	8	UJ
GAMMA-BHC (LINDANE)	8	8.2	UJ	8.1	UJ	8.1	UJ	8.3	U	8.4	UJ	8.3	U	8.3	UJ	8	UJ
HEPTACHLOR	8	8.2	UJ	8.1	UJ	8.1	UJ	8.3	U	8.4	UJ	8.3	U	8.3	UJ	8	UJ
ALDRIN	8	8.2	UJ	8.1	UJ	8.1	UJ	8.3	U	8.4	UJ	8.3	U	8.3	UJ	8	UJ
HEPTACHLOR EPOXIDE	8	8.2	UJ	8.1	UJ	8.1	UJ	8.3	U	8.4	UJ	8.3	U	8.3	UJ	8	UJ
ENDOSULFAN I	8	8.2	UJ	8.1	UJ	8.1	UJ	8.3	U	8.4	UJ	8.3	U	8.3	UJ	8	UJ
DIELDRIN	16	16	UJ	16	UJ	16	UJ	17	U	17	UJ	17	U	17	UJ	16	UJ
4,4'-DDE	16	16	UJ	16	UJ	16	UJ	17	U	17	UJ	17	U	17	UJ	16	UJ
ENDRIN	16	16	UJ	16	UJ	16	UJ	17	U	17	UJ	17	U	17	UJ	16	UJ
ENDOSULFAN II	16	16	UJ	16	UJ	16	UJ	17	U	17	UJ	17	U	17	UJ	16	UJ
4,4'-DDD	16	16	UJ	16	UJ	16	UJ	17	U	17	UJ	17	U	17	UJ	16	UJ
ENDOSULFAN SULFATE	16	16	UJ	16	UJ	16	UJ	17	U	17	UJ	17	U	17	UJ	16	UJ
4,4'-DDT	16	16	UJ	16	UJ	16	UJ	17	U	17	UJ	17	U	17	UJ	16	UJ
METHOXYCHLOR	80	82	UJ	81	UJ	81	UJ	83	U	84	UJ	83	U	83	UJ	80	UJ
ENDRIN KETONE	16	16	UJ	16	UJ	16	UJ	17	U	17	UJ	17	U	17	UJ	16	UJ
ALPHA-CHLORDANE	80	82	UJ	81	UJ	81	UJ	83	U	84	UJ	83	U	83	UJ	80	UJ
GAMMA-CHLORDANE	80	82	UJ	81	UJ	81	UJ	83	U	84	UJ	83	U	83	UJ	80	UJ
TOXAPHENE	160	160	UJ	160	UJ	160	UJ	170	U	170	UJ	170	U	170	UJ	160	UJ
AROCLOR-1016	80	82	UJ	81	UJ	81	UJ	83	U	84	UJ	83	U	83	UJ	80	UJ
AROCLOR-1221	80	82	UJ	81	UJ	81	UJ	83	U	84	UJ	83	U	83	UJ	80	UJ
AROCLOR-1232	80	82	UJ	81	UJ	81	UJ	83	U	84	UJ	83	U	83	UJ	80	UJ
AROCLOR-1242	80	82	UJ	81	UJ	81	UJ	83	U	84	UJ	83	U	83	UJ	80	UJ
AROCLOR-1248	80	82	UJ	81	UJ	81	UJ	83	U	84	UJ	83	U	83	UJ	80	UJ
AROCLOR-1254	160	160	UJ	160	UJ	160	UJ	170	U	170	UJ	170	U	170	UJ	160	UJ
AROCLOR-1260	160	160	UJ	160	UJ	160	UJ	170	U	170	UJ	170	U	170	UJ	160	UJ

FILENAME: B01S92-P.WK1

LABORATORY	PNL																	
DATA PACKAGE		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		
SAMPLE NUMBER		B01SD7		B01SD9		B01SF7		B01SF9		B01SG3		B01SG7		B01SG9		B01SH3		
PESTICIDE/PCB COMPOUND	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	
ALPHA-BHC	8	7.9	UJ	8.2	UJ	8.2	UJ	8.1	UJ	8.3	UJ	8.1	UJ	8.1	UJ	8.3	UJ	
BETA-BHC	8	7.9	UJ	8.2	UJ	8.2	UJ	8.1	UJ	8.3	UJ	8.1	UJ	8.1	UJ	8.3	UJ	
DELTA-BHC	8	7.9	UJ	8.2	UJ	8.2	UJ	8.1	UJ	8.3	UJ	8.1	UJ	8.1	UJ	8.3	UJ	
GAMMA-BHC (LINDANE)	8	7.9	UJ	8.2	UJ	8.2	UJ	8.1	UJ	8.3	UJ	8.1	UJ	8.1	UJ	8.3	UJ	
HEPTACHLOR	8	7.9	UJ	8.2	UJ	8.2	UJ	8.1	UJ	8.3	UJ	8.1	UJ	8.1	UJ	8.3	UJ	
ALDRIN	8	7.9	UJ	8.2	UJ	8.2	UJ	8.1	UJ	8.3	UJ	8.1	UJ	8.1	UJ	8.3	UJ	
HEPTACHLOR EPOXIDE	8	7.9	UJ	8.2	UJ	8.2	UJ	8.1	UJ	8.3	UJ	8.1	UJ	8.1	UJ	8.3	UJ	
ENDOSULFAN I	8	7.9	UJ	8.2	UJ	8.2	UJ	8.1	UJ	8.3	UJ	8.1	UJ	8.1	UJ	8.3	UJ	
DIELDRIN	16	16	UJ	16	UJ	16	UJ	16	UJ	17	UJ	16	UJ	16	UJ	17	UJ	
4,4'-DDE	16	16	UJ	16	UJ	16	UJ	16	UJ	17	UJ	16	UJ	16	UJ	17	UJ	
ENDRIN	16	16	UJ	16	UJ	16	UJ	16	UJ	17	UJ	16	UJ	16	UJ	17	UJ	
ENDOSULFAN II	16	16	UJ	16	UJ	16	UJ	16	UJ	17	UJ	16	UJ	16	UJ	17	UJ	
4,4'-DDD	16	16	UJ	16	UJ	16	UJ	16	UJ	17	UJ	16	UJ	16	UJ	17	UJ	
ENDOSULFAN SULFATE	16	16	UJ	16	UJ	16	UJ	16	UJ	17	UJ	16	UJ	16	UJ	17	UJ	
4,4'-DDT	16	16	UJ	16	UJ	16	UJ	16	UJ	17	UJ	16	UJ	16	UJ	17	UJ	
METHOXYCHLOR	80	79	UJ	82	UJ	82	UJ	81	UJ	83	UJ	81	UJ	81	UJ	83	UJ	
ENDRIN KETONE	16	16	UJ	16	UJ	16	UJ	16	UJ	17	UJ	16	UJ	16	UJ	17	UJ	
ALPHA-CHLORDANE	80	79	UJ	82	UJ	82	UJ	81	UJ	83	UJ	81	UJ	81	UJ	83	UJ	
GAMMA-CHLORDANE	80	79	UJ	82	UJ	82	UJ	81	UJ	83	UJ	81	UJ	81	UJ	83	UJ	
TOXAPHENE	160	160	UJ	160	UJ	160	UJ	160	UJ	170	UJ	160	UJ	160	UJ	170	UJ	
AROCLOR-1016	80	79	UJ	82	UJ	82	UJ	81	UJ	83	UJ	81	UJ	81	UJ	83	UJ	
AROCLOR-1221	80	79	UJ	82	UJ	82	UJ	81	UJ	83	UJ	81	UJ	81	UJ	83	UJ	
AROCLOR-1232	80	79	UJ	82	UJ	82	UJ	81	UJ	83	UJ	81	UJ	81	UJ	83	UJ	
AROCLOR-1242	80	79	UJ	82	UJ	82	UJ	81	UJ	83	UJ	81	UJ	81	UJ	83	UJ	
AROCLOR-1248	80	79	UJ	82	UJ	82	UJ	81	UJ	83	UJ	81	UJ	81	UJ	83	UJ	
AROCLOR-1254	160	160	UJ	160	UJ	160	UJ	160	UJ	170	UJ	160	UJ	160	UJ	170	UJ	
AROCLOR-1260	160	160	UJ	160	UJ	160	UJ	160	UJ	170	UJ	160	UJ	160	UJ	170	UJ	

FILENAME: B01S92-P.WK1

LABORATORY:	PNL																	
DATA PACKAGE ID:		B01S92		B01S92		B01S92		B01S92		B01S92		B01S92		B01SC7		B01SC7		
SAMPLE NUMBER:		B01S97		B01S99		B01SB1		B01SB2		B01SB3		B01SB7		B01SC7		B01SC9		
INORGANIC ANALYTES	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	
Aluminum	40	6170	J	10200	J	10400	J	15800	J	7220	J	6240	J	5540	J	6460	J	
Antimony	12	2.6	U	2.8	U	3	U	3.2	U	2.8	U	2.8	U	3.2	U	2.7	U	
Arsenic	2	1.31	B	0.67	B	1.36	B	2.7		2.6		2.15		2.67		3.85		
Barium	40	71.4		73		75.2		91.2		61.9		64.9		60.2		64.9		
Beryllium	1	0.43	B	0.44	B	0.47	B	0.28	B	0.42	B	0.39	B	0.23	B	0.26	B	
Cadmium	1	2.7		1.7		1.7		1.1		1.5		1.3		1.1	UJ	1.4	UJ	
Calcium	1000	7350		9220		9300		8450		9460		7730		6820	J	10300	J	
Chromium	2	8.8		8.6		10.5		12.1		12.6		9.6		10.1	J	9.7	J	
Cobalt	10	8.1	B	13		13.4		8.4	B	5.7	B	6.6	B	9.3	B	8	B	
Copper	5	16.1		20.4		18.9		19.7		13		13.6		18.3	J	15.2	J	
Iron	20	22000	J	36200	J	37900	J	22500	J	17200	J	17100	J	21500	J	21100	J	
Lead	1	2.93	UJ	5.73	J	6.82	J	12.4	J	4.05	J	5.51	J	24.32	J	3.67	J	
Magnesium	1000	3860		5100		5220		4340		5190		4430		4270	J	5300	J	
Manganese	3	289		464		489		294		282		281		266	J	329	J	
Mercury	0.04	0.04	J	0.39	J	0.31	J	0.34	J	0.1	J	0.01	BJ	0.31	J	0.19	J	
Nickel	8	6.6	B	37.7		45		30.7		11.3		9		251		10.8		
Potassium	1000	624	BJ	1020	BJ	1050	BJ	875	BJ	1060	BJ	911	BJ	575	U	729	U	
Selenium	1	1.17	UJ	1.3	UJ	1.16	UJ	1.3	UJ	0.91	UJ	1.29	UJ	1.1	UJ	1.21	UJ	
Silver	2	0.13	U	0.14	U	0.13	U	0.13	U	0.11	U	0.14	U	0.12	UJ	0.13	UJ	
Sodium	1000	996	B	7520		7880		8700		2700		270	B	1460		679	B	
Thallium	2	0.07	B	0.07	U	0.09	B	0.12	B	0.1	B	0.11	B	0.12	J	0.09	J	
Vanadium	10	60.5		99.8		101		66.7		37		39.5		47.1	J	39.7	J	
Zinc	4	42.3		59.9		61.7		42.3		37.7		37.6		38.2	J	41.9	J	
Bismuth	10	0.27	U	5.01		4.65		4.3		0.28	B	0.29	U	36.55		0.28	U	
Nitrate-N	1	92	J	681	J	651	J	292	J	151	J	5.9	J	318	J	20.7	J	
Nitrite-N	1	0.9	BJ	39.5	J	38.1	J	3.1	J	27.2	J	0.8	UJ	17.6	J	0.8	UJ	
Phosphate-P	5	1.7	UJ	14	J	14.1	J	8.9	J	32	J	1.7	UJ	3.2	BJ	4.1	BJ	
Sulfate	20	51.7	J	291	J	280	J	276	J	86.6	J	8.7	BJ	177	J	13.7	BJ	
Total Organic Carbon	NA	480		446		368		244		261		561		681		95		

FILENAME: B01S92-I.WK1

LABORATORY:	PNL															
DATA PACKAGE ID:		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7	
SAMPLE NUMBER:		B01SD7		B01SD9		B01SF7		B01SF9		B01SG3		B01SG7		B01SG9		B01SH3	
INORGANIC ANALYTES	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	40	5850	J	6460	J	7430	J	6140	J	8050	J	8010	J	6430	J	8210	J
Antimony	12	2.4	U	2.7	U	2.5	U	2.4	U	3.2	U	2.9	U	2.6	U	2.9	U
Arsenic	2	2.57		5.08		2.62		2.98		3.62		2.93		2.7		3.53	
Barium	40	57.9		64.8		55.8		62.1		80.1		78.9		64.1		86.3	
Beryllium	1	0.25	B	0.29	B	0.31	B	0.26	B	0.38	B	0.25	B	0.25	B	0.36	B
Cadmium	1	3.9	UJ	0.69	UJ	0.87	UJ	0.55	UJ	0.49	UJ	3.4	UJ	0.44	UJ	0.45	UJ
Calcium	1000	6090	J	8180	J	7900	J	7320	J	9680	J	8370	J	7850	J	7310	J
Chromium	2	11.1	J	9.7	J	13.5	J	10.6	J	10	J	10.4	J	10.7	J	9.8	J
Cobalt	10	7.2	B	5.4	U	7.1	B	6.3	B	9.2		9.1	B	5.4	U	8.4	B
Copper	5	16.5	J	14.4	J	12.8	J	12.4	J	16	J	17.8	J	11.6	J	17	J
Iron	20	19700	J	16300	J	17900	J	17500	J	24400	J	25900	J	16900	J	23300	J
Lead	1	3.52	J	3.97	J	7.54	J	3.62	J	4.5	J	3.89	J	3.95	J	6.19	J
Magnesium	1000	4310	J	4700	J	5200	J	4390	J	5470	J	4670	J	4710	J	4650	J
Manganese	3	271	J	260	J	303	J	293	J	361	J	325	J	266	J	344	J
Mercury	0.04	0.08	J	0.09	J	0.38	J	0.15	J	0.02	UJ	0.02	J	0.14	J	0.02	UJ
Nickel	8	11.1		8.8		74.1		7.6		7.4	B	8.4		7.1		7.8	
Potassium	1000	595	U	839	U	1130	U	863	U	1250		767	U	981	U	1530	
Selenium	1	0.89	UJ	1.06	UJ	1.16	UJ	1.09	UJ	1.21	UJ	1.29	UJ	1.07	UJ	1.25	UJ
Silver	2	0.1	UJ	0.12	UJ	0.13	UJ	0.12	UJ	0.13	UJ	0.14	UJ	0.12	UJ	0.14	UJ
Sodium	1000	1210		2070		1210		947		327	B	1620		3270		319	B
Thallium	2	0.07	J	0.08	J	0.11	J	0.1	J	0.16	J	0.1	J	0.12	J	0.1	J
Vanadium	10	51.3	J	34.8	J	36.9	J	41.9	J	59.7	J	68.2	J	38.3	J	56.4	J
Zinc	4	40.2	J	34.7	J	39.9	J	37.1	J	45.2	J	52.5	J	33.3	J	45.8	J
Bismuth	10	0.2	U	0.24	U	3.4	B	0.24	U	0.28	U	0.3	U	0.24	U	0.29	U
Nitrate-N	1	80.6	J	289	J	568	J	4.5	J	14.3	J	316	J	860	J	33.9	J
Nitrite-N	1	0.8	UJ	2.1	J	13.7	J	0.8	UJ	0.8	UJ	0.8	UJ	6	J	0.8	UJ
Phosphate-P	5	18.9	J	40.9	J	5.3	J	4.8	BJ	1.7	UJ	2.9	BJ	73.3	J	1.8	BJ
Sulfate	20	136	J	116	J	99.3	J	5.1	BJ	23.9	J	268	J	287	J	52.1	J
Total Organic Carbon	NA	349		143		227		77.5		1020		834		248		1550	

FILENAME: B01S92-I.WK1

LABORATORY : PNL

SDG #	HEIS SAMPLE NO	TOTAL CYANIDE	Q	FREE CYANID	Q	COMPLEX CYANIDE	Q	Units
B01R10	B01R10	93.3	J	7	J	86		UG/L
B01R10	B01QZ8	533.9		26	J	508		UG/L
B01S92	B01S70	4	U					UG/L
B01S92	B01S72	4	U					UG/L
B01S92	B01S92	0.2	U					MG/KG
B01S92	B01S94	0.2	U					MG/KG
B01S92	B01S96	0.5	B					MG/KG
B01S92	B01S97	0.4	B					MG/KG
B01S92	B01S99	1.6						MG/KG
B01S92	B01SB1	1.6						MG/KG
B01S92	B01SB2	1.6						MG/KG
B01S92	B01SB3	0.5	B					MG/KG
B01S92	B01SB6	0.2	U					MG/KG
B01S92	B01SB7	0.2	U					MG/KG
B01S92	B01SC0	0.2	U					MG/KG
B01S92	B01SC2	0.2	U					MG/KG
B01S92	B01SC4	0.2	U					MG/KG
B01S92	B01SC6	0.2	U					MG/KG
B01SC7	B01S74	4	U					UG/L
B01SC7	B01S90	4.3	B					UG/L
B01SC7	B01SC7	66.8		0.9	B	65.9		MG/KG
B01SC7	B01SC9	1.6						MG/KG
B01SC7	B01SD2	0.2	U					MG/KG
B01SC7	B01SD4	0.2	U					MG/KG
B01SC7	B01SD6	0.2	U					MG/KG
B01SC7	B01SD7	3.3		0.7	B	2.6		MG/KG
B01SC7	B01SD9	0.9	U					MG/KG
B01SC7	B01SF2	0.2	U					MG/KG
B01SC7	B01SF4	0.3	U					MG/KG
B01SC7	B01SF6	0.2	U					MG/KG
B01SC7	B01SF7	59		1.1		57.9		MG/KG
B01SC7	B01SF9	1.1	U					MG/KG
B01SC7	B01SG2	0.2	U					MG/KG
B01SC7	B01SG3	0.2	U					MG/KG
B01SC7	B01SG6	0.2	U					MG/KG
B01SC7	B01SG7	7.8		2.5		5.3		MG/KG
B01SC7	B01SG9	5.9		2.7		3.2		MG/KG
B01SC7	B01SH2	0.2	U					MG/KG
B01SC7	B01SH3	0.2	U					MG/KG
B01SC7	B01SH6	0.2	U					MG/KG

FILENAME: B01S92CN.WK1

LABORATORY	PNL															
DATA PACKAGE		B01S92		B01S92		B01S92		B01S92		B01S92		B01S92		B01SC7		
SAMPLE NUMBER		B01S97		B01S99		B01SB1		B01SB2		B01SB3		B01SB7		B01SC7		
RADIOCHEMICAL ANALYTE	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	
GROSS ALPHA	10	69.4		1870		2200		2380		187		1.94		5995		
GROSS BETA	15	225000		8670000		8560000		11100000		340000		2.79		29700000		
CESIUM-137	0.1	85200		3340000		2880000		4500000		166000		0.2	U	12900000		
COBALT-60	0.05	1.11		60	U	350	U	480	U	3	U	0.14	U	830	U	
PLUTONIUM-238	1	0.519		50.3		52.9		80.9		4.63		0.003	U	0.563		
PLUTONIUM-239+240	1	34.1		1120		1320		1970		94.2		0.002	U	13		
RUTHENIUM-106	0.2	34	U	4000	U	3000	U	2500	U	210	U	0.47	U	15000	U	
STRONTIUM-90	1	58900		2980000		2900000		3530000		98900		0.65		10700000		
TRITIUM	400	20.7	J	85.7	J	41.3	J	37.5	J	42.3	J	4.7	UJ	15.5		

LABORATORY	PNL													
DATA PACKAGE		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7		B01SC7	
SAMPLE NUMBER		B01SC9		B01SD7		B01SD9		B01SF7		B01SF9		B01SG3		B01SG7	
RADIOCHEMICAL ANALYTE	CRQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
GROSS ALPHA	10	123		89.3		33.8		1092		8.3		1.93		14.5	
GROSS BETA	15	464000		1510000		18700		12800000		1680		6.62		145000	
CESIUM-137	0.1	412000		54400		912		2350000		3020		2.5		12500	
COBALT-60	0.05	3	U	2	U	0.7		210	U	0.2	U	0.3	U	1.81	
PLUTONIUM-238	1	2.6		1.78		0.0375		33.1		0.008	U	0.002	U	0.355	
PLUTONIUM-239+240	1	54.7		30.2		0.426		671		0.0732		0.002	U	5.54	
RUTHENIUM-106	0.2	190	U	140	U	16	U	14000	U	9	U	3	U	44	U
STRONTIUM-90	1	73700		712000		8960		5410000		40.8		0.3	U	72300	
TRITIUM	400	14.7		35.4		10.4		16.2		43.8		7.2		5	U

LABORATORY	PNL				
DATA PACKAGE		B01SC7		B01SC7	
SAMPLE NUMBER		B01SG9		B01SH3	
RADIOCHEMICAL ANALYTE	CRQL	Result	Q	Result	Q
GROSS ALPHA	10	83.7		2.58	
GROSS BETA	15	624000		9.4	
CESIUM-137	0.1	5640		4.39	
COBALT-60	0.05	3.1		0.3	
PLUTONIUM-238	1	0.336		0.003	U
PLUTONIUM-239+240	1	4.67		0.003	U
RUTHENIUM-106	0.2	30	U	3.5	U
STRONTIUM-90	1	299000		0.3	U
TRITIUM	400	30.5		44	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-04734

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S97

Sample wt/vol: 5.090 (g/mL) G Lab File ID: >OB004

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 3.3 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg		Q
74-87-3	Chloromethane		10.	U
74-83-9	Bromomethane		10.	U
75-01-4	Vinyl Chloride		10.	U
75-00-3	Chloroethane		10.	U
75-09-2	Methylene Chloride		5.	U
67-64-1	Acetone		10 ~~5~~	~~JB~~ U
75-15-0	Carbon Disulfide		5.	U
75-35-4	1,1-Dichloroethene		5.	U
75-34-3	1,1-Dichloroethane		5.	U
540-59-0	1,2-Dichloroethene (total)		5.	U
67-66-3	Chloroform		5.	U
107-02-2	1,2-Dichloroethane		5.	U
78-93-3	2-Butanone		10 ~~5~~	~~JB~~ U
71-55-6	1,1,1-Trichloroethane		5.	U
56-23-5	Carbon Tetrachloride		5.	U
108-05-4	Vinyl Acetate		10.	U
75-27-4	Bromodichloromethane		5.	U
78-87-5	1,2-Dichloropropane		5.	U
10061-01-5	cis-1,3-Dichloropropene		5.	U
79-01-6	Trichloroethene		5.	U
124-48-1	Dibromochloromethane		5.	U
79-00-5	1,1,2-Trichloroethane		5.	U
71-43-2	Benzene		5.	U
10061-02-6	trans-1,3-Dichloropropene		5.	U
75-25-2	Bromoform		5.	U
108-10-1	4-Methyl-2-pentanone		10.	U
591-78-6	2-Hexanone		10.	U
127-18-4	Tetrachloroethene		5.	U
79-34-5	1,1,2,2-Tetrachloroethane		5.	U
108-88-3	Toluene		5.	U
108-90-7	Chlorobenzene		5.	U
100-41-4	Ethylbenzene		5.	U
100-42-5	Styrene		5.	U
133-02-7	Xylene (total)		5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-04734

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S97

Sample wt/vol: 5.090 (g/mL) G Lab File ID: >OB004

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 3.3 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.05	26.	J N
2.					
3.					
4.					
5.					
6.					
7.					
8.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-04735

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S99

Sample wt/vol: 5.456 (g/mL) G Lab File ID: >OB006

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.0 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~8~~	~~8~~ U BA 1/12
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-04735

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S99

Sample wt/vol: 5.456 (g/mL) G Lab File ID: >OB006

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.0 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.04	10.	JN
2.	112403	Dodecane	31.16	6.	JN
3.		UNKNOWN ALKANE	31.73	7.	JN
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-04736

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB1

Sample wt/vol: 5.365 (g/mL) G Lab File ID: >OB010

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.1 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~5.~~	~~U~~ 4
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~5.~~	~~U~~ J
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

EPA SAMPLE NO.

92-04736

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB1

Sample wt/vol: 5.365 (g/mL) G Lab File ID: >OB010

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.1 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.04	11.	JN
2.		UNKNOWN ALKANE	31.27	5.	JN
3.		UNKNOWN ALKANE	31.74	8.	JN
4.	629505	Tridecane	31.94	13.	JN
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05150

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB2

Sample wt/vol: 5.234 (g/mL) G Lab File ID: >OB908

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec. 5.2 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~7.~~	~~JB~~ U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~6.~~	~~JB~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	2.	J
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1/21/93

1/21/93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05150

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB2

Sample wt/vol: 5.234 (g/mL) G Lab File ID: >OB908

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec. 5.2 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-,	31.33	10.	JN
2.					
3.					
4.					
5.					
6.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-04968

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB3

Sample wt/vol: 5.045 (g/mL) G Lab File ID: >OB012

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec. 3.0 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~6~~.	~~JB~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

JBV 1/24/

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-04968

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB3

Sample wt/vol: 5.045 (g/mL) G Lab File ID: >0B012

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec. 3.0 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	31.35	11.	J
2.					
3.					
4.					
5.					
6.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05102

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB7

Sample wt/vol: 5.072 (g/mL) G Lab File ID: >OB904

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.8 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	
74-87-3	Chloromethane	10.	U	
74-83-9	Bromomethane	10.	U	
75-01-4	Vinyl Chloride	10.	U	
75-00-3	Chloroethane	10.	U	
75-09-2	Methylene Chloride	5.	U	
67-64-1	Acetone	10 ~~5.~~	~~JB U~~	KDV
75-15-0	Carbon Disulfide	5.	U	4/24/93
75-35-4	1,1-Dichloroethene	5.	U	
75-34-3	1,1-Dichloroethane	5.	U	
540-59-0	1,2-Dichloroethene (total)	5.	U	
67-66-3	Chloroform	5.	U	
107-02-2	1,2-Dichloroethane	5.	U	
78-93-3	2-Butanone	10 ~~4.~~	~~JB U~~	KDV
71-55-6	1,1,1-Trichloroethane	5.	U	1/21/93
56-23-5	Carbon Tetrachloride	5.	U	
108-05-4	Vinyl Acetate	10.	U	
75-27-4	Bromodichloromethane	5.	U	
78-87-5	1,2-Dichloropropane	5.	U	
10061-01-5	cis-1,3-Dichloropropene	5.	U	
79-01-6	Trichloroethene	5.	U	
124-48-1	Dibromochloromethane	5.	U	
79-00-5	1,1,2-Trichloroethane	5.	U	
71-43-2	Benzene	5.	U	
10061-02-6	trans-1,3-Dichloropropene	5.	U	
75-25-2	Bromoform	5.	U	
108-10-1	4-Methyl-2-pentanone	10.	U	
591-78-6	2-Hexanone	10.	U	
127-18-4	Tetrachloroethene	5.	U	
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	
108-88-3	Toluene	3.	J	
108-90-7	Chlorobenzene	5.	U	
100-41-4	Ethylbenzene	5.	U	
100-42-5	Styrene	5.	U	
133-02-7	Xylene (total)	5.	U	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05102

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB7

Sample wt/vol: 5.072 (g/mL) G Lab File ID: >OB904

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.8 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0

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

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

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05270

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC7

Sample wt/vol: 5.655 (g/mL) G Lab File ID: >0B912

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 4.9 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	9.	U
74-83-9	Bromomethane	9.	U
75-01-4	Vinyl Chloride	9.	U
75-00-3	Chloroethane	9.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 5.	7B U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 5.	7B U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	9.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	9.	U
591-78-6	2-Hexanone	9.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1-5-93 CWL

1-5-93 CWL

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05270

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC7

Sample wt/vol: 5.655 (g/mL) G Lab File ID: >OB912

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 4.9 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-,	31.33	200.	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05271

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC9

Sample wt/vol: 5.100 (g/mL) G Lab File ID: >OB910

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 2.5 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	J B
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	J B
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

CVK 1-15-93

CVK 1-15-93

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

92-05271

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC9

Sample wt/vol: 5.100 (g/mL) G Lab File ID: >OB910

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 2.5 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-,	31.33	140.	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05353

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD7

Sample wt/vol: 5.455 (g/mL) G Lab File ID: >OD108

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec.1.6 Date Analyzed: 3/31/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	9.	U
74-83-9	Bromomethane	9.	U
75-01-4	Vinyl Chloride	9.	U
75-00-3	Chloroethane	9.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~3~~.	~~JB~~ UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~3~~.	~~JB~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	9.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	9.	U
591-78-6	2-Hexanone	9.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1-18-93

1-18-93

FORM I VOA 1/89 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05353

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD7

Sample wt/vol: 5.455 (g/mL) G Lab File ID: >OD108

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 1.6 Date Analyzed: 3/31/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.03	6.	J
2.	74381401	Propanoic acid, 2-methyl-, 1	31.28	90.	J
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FORM I VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-05352

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD9

Sample wt/vol: 5.140 (g/mL) G Lab File ID: >OD104

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 2.4 Date Analyzed: 3/31/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 K.	~~JB~~ UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 K.	~~JB~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1-18-93

1-18-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05352

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD9

Sample wt/vol: 5.140 (g/mL) G Lab File ID: >OD104

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 2.4 Date Analyzed: 3/31/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05490

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF7

Sample wt/vol: 5.121 (g/mL) G Lab File ID: >OD110

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 3.2 Date Analyzed: 3/31/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 5.	~~UB~~ UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 5.	~~28~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

UJ 1-18-93

U 1-18-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05490

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF7

Sample wt/vol: 5.121 (g/mL) G Lab File ID: >OD110

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 3.2 Date Analyzed: 3/31/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-, 1	31.33	12.	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05491

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF9

Sample wt/vol: 5.540 (g/mL) G Lab File ID: >PA204

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.2 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	9.	U R
74-83-9	Bromomethane	9.	U
75-01-4	Vinyl Chloride	9.	U
75-00-3	Chloroethane	9.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	JB
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	8.	JB
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	9.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	9.	U
591-78-6	2-Hexanone	9.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

WK 1-23-5-

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

92-05491

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF9

Sample wt/vol: 5.540 (g/mL) G Lab File ID: >PA204

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.2 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-05492

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG3

Sample wt/vol: 5.330 (g/mL) G Lab File ID: >PA208

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 4.2 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	JB
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	6.	JB
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

CWK 1-23-9

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

92-05492

Lab Name:BATTELLE-PNL Contract:------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG3

Sample wt/vol: 5.330 (g/mL) G Lab File ID: >PA208

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 4.2 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0

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

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

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05633

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG7

Sample wt/vol: 5.240 (g/mL) G Lab File ID: >PA210

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.4 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U R
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	B
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	8.	B
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	9.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

CWK 1-23-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05633

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG7

Sample wt/vol: 5.240 (g/mL) G Lab File ID: >PA210

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.4 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.07	46.	J
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05634

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG9

Sample wt/vol: 5.153 (g/mL) G Lab File ID: >PA212

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.0 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	R
74-83-9	Bromomethane	10.	
75-01-4	Vinyl Chloride	10.	
75-00-3	Chloroethane	10.	
75-09-2	Methylene Chloride	5.	
67-64-1	Acetone	8.	B
75-15-0	Carbon Disulfide	5.	
75-35-4	1,1-Dichloroethene	5.	
75-34-3	1,1-Dichloroethane	5.	
540-59-0	1,2-Dichloroethene (total)	5.	
67-66-3	Chloroform	5.	
107-02-2	1,2-Dichloroethane	5.	
78-93-3	2-Butanone	7.	B
71-55-6	1,1,1-Trichloroethane	5.	
56-23-5	Carbon Tetrachloride	5.	
108-05-4	Vinyl Acetate	10.	
75-27-4	Bromodichloromethane	5.	
78-87-5	1,2-Dichloropropane	5.	
10061-01-5	cis-1,3-Dichloropropene	5.	
79-01-6	Trichloroethene	5.	
124-48-1	Dibromochloromethane	5.	
79-00-5	1,1,2-Trichloroethane	5.	
71-43-2	Benzene	5.	
10061-02-6	trans-1,3-Dichloropropene	5.	
75-25-2	Bromoform	5.	
108-10-1	4-Methyl-2-pentanone	10.	
591-78-6	2-Hexanone	10.	
127-18-4	Tetrachloroethene	5.	
79-34-5	1,1,2,2-Tetrachloroethane	5.	
108-88-3	Toluene	5.	
108-90-7	Chlorobenzene	5.	
100-41-4	Ethylbenzene	5.	
100-42-5	Styrene	5.	
133-02-7	Xylene (total)	5.	

CWL 1-23-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05634

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG9

Sample wt/vol: 5.153 (g/mL) G Lab File ID: >PA212

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.0 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-05690

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ------ SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SH3

Sample wt/vol: 5.418 (g/mL) G Lab File ID: >PA214

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.1 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	R
74-83-9	Bromomethane	10.	
75-01-4	Vinyl Chloride	10.	
75-00-3	Chloroethane	10.	
75-09-2	Methylene Chloride	5.	
67-64-1	Acetone	13.	B
75-15-0	Carbon Disulfide	5.	
75-35-4	1,1-Dichloroethene	5.	
75-34-3	1,1-Dichloroethane	5.	
540-59-0	1,2-Dichloroethene (total)	5.	
67-66-3	Chloroform	5.	
107-02-2	1,2-Dichloroethane	5.	
78-93-3	2-Butanone	6.	B
71-55-6	1,1,1-Trichloroethane	5.	
56-23-5	Carbon Tetrachloride	5.	
108-05-4	Vinyl Acetate	10.	
75-27-4	Bromodichloromethane	5.	
78-87-5	1,2-Dichloropropane	5.	
10061-01-5	cis-1,3-Dichloropropene	5.	
79-01-6	Trichloroethene	5.	
124-48-1	Dibromochloromethane	5.	
79-00-5	1,1,2-Trichloroethane	5.	
71-43-2	Benzene	5.	
10061-02-6	trans-1,3-Dichloropropene	5.	
75-25-2	Bromoform	5.	
108-10-1	4-Methyl-2-pentanone	10.	
591-78-6	2-Hexanone	10.	
127-18-4	Tetrachloroethene	5.	
79-34-5	1,1,2,2-Tetrachloroethane	5.	
108-88-3	Toluene	5.	
108-90-7	Chlorobenzene	5.	
100-41-4	Ethylbenzene	5.	
100-42-5	Styrene	5.	
133-02-7	Xylene (total)	5.	

1-23-93 cwl

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05690

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SH3

Sample wt/vol: 5.418 (g/mL) G Lab File ID: >PA214

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.1 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S97

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4734-E1

Sample wt/vol: 30.25 (g/mL) G Lab File ID: >DA104

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.44 3.27 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 9.17 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	350.	UJ
111-44-4	bis(2-Chloroethyl)Ether	350.	U
95-57-8	2-Chlorophenol	350.	U
541-73-1	1,3-Dichlorobenzene	350.	U
106-46-7	1,4-Dichlorobenzene	350.	U
100-51-6	Benzyl alcohol	350.	U
95-50-1	1,2-Dichlorobenzene	350.	U
95-48-7	2-Methylphenol	350.	U
39638-32-9	bis(2-chloroisopropyl)ether	350.	U
106-44-5	4-Methylphenol	350.	U
621-64-7	N-Nitroso-Di-n-propylamine	350.	UJ
67-72-1	Hexachloroethane	350.	U
98-95-3	Nitrobenzene	350.	U
78-59-1	Isophorone	350.	U
88-75-5	2-Nitrophenol	350.	U
105-67-9	2,4-Dimethylphenol	350.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U
120-83-2	2,4-Dichlorophenol	350.	U
120-82-1	1,2,4-Trichlorobenzene	350.	U
91-20-3	Naphthalene	350.	U
106-47-8	4-Chloroaniline	350.	U
87-68-3	Hexachlorobutadiene	350.	U
59-50-7	4-Chloro-3-methylphenol	350.	U
91-57-6	2-Methylnaphthalene	350.	U
77-47-4	Hexachlorocyclopentadiene	350.	U
88-06-2	2,4,6-Trichlorophenol	350.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	350.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	350.	U
208-96-8	Acenaphthylene	350.	U
606-20-2	2,6-Dinitrotoluene	350.	U

1C

EPA S.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B01S9

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 1

Matrix: (soil/water) SOIL Lab Sample ID: 4734-

Sample wt/vol: 30.25 (g/mL) G Lab File ID: >DA10

Level: (low/med) LOW Date Received: 03/05

% Moisture: not dec. ~~4.44~~ 3.27 dec. -- Date Extracted:13/15

Extraction: (Sepf/Cont/Sonc) SONC 6/30/12 mlc Date Analyzed: 4/01

GPC Cleanup: (Y/N) N pH:9.17 Dilution Factor: 1.

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg
99-09-2	3-Nitroaniline	1700.
83-32-9	Acenaphthene	350.
51-28-5	2,4-Dinitrophenol	1700.
100-02-7	4-Nitrophenol	1700.
132-64-9	Dibenzofuran	350.
121-14-2	2,4-Dinitrotoluene	350.
84-66-2	Diethylphthalate	350.
7005-72-3	4-Chlorophenyl-phenylether	350.
86-73-7	Fluorene	350.
100-01-6	4-Nitroaniline	1700.
534-52-1	4,6-Dinitro-2-methylphenol	1700.
86-30-6	N-Nitrosodiphenylamine (1)	350.
101-55-3	4-Bromophenyl-phenylether	350.
118-74-1	Hexachlorobenzene	350.
87-86-5	Pentachlorophenol	1700.
85-01-8	Phenanthrene	350.
120-12-7	Anthracene	350.
84-74-2	Di-n-butylphthalate	350.
206-44-0	Fluoranthene	350.
129-00-0	Pyrene	350.
85-68-7	Butylbenzylphthalate	30.
91-94-1	3,3'-Dichlorobenzidine	690.
56-55-3	Benzo(a)anthracene	350.
218-01-9	Chrysene	350.
117-81-7	bis(2-Ethylhexyl)phthalate	38.
117-84-0	Di-n-octylphthalate	37.
205-99-2	Benzo(b)fluoranthene	350.
207-08-9	Benzo(k)fluoranthene	350.
50-32-8	Benzo(a)pyrene	350.
193-39-5	Indeno(1,2,3-cd)pyrene	350
53-70-3	Dibenz(a,h)anthracene	350
191-24-2	Benzo(g,h,i)perylene	35

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01S97

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4734-E1

Sample wt/vol: 30.25 (g/mL) G Lab File ID: >DA104

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. ~~4.44~~ 3.27 dec. -- Date Extracted:13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH:9.17 Dilution Factor: 1.00000

Number TICs found: 10 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.51	1300.	~~JAB~~ R
2.		Unknown	4.82	1700.	~~JAB~~ R
3.		Unknown	5.25	190.	J N
4.		Unknown	5.30	440.	J N
5.	104767	1-Hexanol, 2-ethyl-	5.77	210.	J N
6.		Unknown	6.05	240.	~~JA~~ R
7.		Unknown	7.51	150.	J N
8.		Unknown alkane	14.95	140.	J N
9.	126738	Phosphoric acid tributyl est	19.86	20000.	J N
10.		Unknown alkane	34.33	210.	~~JB~~ R
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S99

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4735-E1

Sample wt/vol: 30.96 (g/mL) G Lab File ID: >DA105

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.05 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.15 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	UJ
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	UJ
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

BJV 1/21/93

BJV 1/21/93

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S99

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4735-E1

Sample wt/vol: 30.96 (g/mL) G Lab File ID: >DA105

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec.4.05 dec. -- Date Extracted:13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH:10.15 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	19.	J
91-94-1	3,3'-Dichlorobenzidine	670.	UJ
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	33.	J
117-84-0	Di-n-octylphthalate	45.	J
205-99-2	Benzo(b)fluoranthene	340.	UJ
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

B01S99

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4735-E1

Sample wt/vol: 30.96 (g/mL) G Lab File ID: >DA105

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec.4.05 dec. -- Date Extracted:13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH:10.15 Dilution Factor: 1.00000

Number TICs found: 30

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.52	1100.	~~JAB~~ K
2.		Unknown	4.80	640.	~~JAB~~ K
3.		Unknown	5.26	150.	JN
4.		Unknown	5.29	280.	J
5.	104767	1-Hexanol, 2-ethyl-	5.77	200.	J
6.	112403	Dodecane	8.67	200.	J
7.	17301234	Undecane, 2,6-dimethyl-	8.97	200.	J
8.		Unknown alkane	10.27	520.	J
9.	629505	Tridecane	10.91	630.	J
10.		Unknown alkane	12.45	140.	J
11.		Unknown alkane	12.79	870.	J
12.	629594	Tetradecane	13.37	1000.	J
13.		Unknown alkane	14.61	140.	J
14.		Unknown alkane	14.97	810.	J
15.	629629	Pentadecane	15.94	730.	J
16.	544763	Hexadecane	18.49	240.	J
17.	126738	Phosphoric acid tributyl est	19.78	3400.	J
18.	57103	Hexadecanoic acid	26.98	180.	J
19.		Unknown alkane	27.71	190.	J
20.		Unknown	28.32	430.	J
21.		Unknown alkane	29.37	460.	J
22.		Unknown alkane	30.81	800.	J
23.		Unknown alkane	32.12	770.	J
24.		Unknown alkane	33.32	400.	J
25.		Unknown alkane	34.43	230.	J
26.		Unknown alkane	35.48	160.	J
27.		Unknown alkane	36.47	190.	J
28.		Unknown	37.28	340.	J
29.		Unknown alkane	38.33	190.	J
30.		Unknown	40.38	140.	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB1

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------- SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4736-E1

Sample wt/vol: 30.78 (g/mL) G Lab File ID: >DA106

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.08 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.12 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	UJ
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	UJ
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

BQV 1/21/

BQV 1/21/

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB1

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4736-E1

Sample wt/vol: 30.78 (g/mL) G Lab File ID: >DA106

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.08 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.12 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	19.	J
91-94-1	3,3'-Dichlorobenzidine	680.	UJ
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	39.	J
117-84-0	Di-n-octylphthalate	50.	J
205-99-2	Benzo(b)fluoranthene	340.	UJ
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SB1

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4736-E1

Sample wt/vol: 30.78 (g/mL) G Lab File ID: >DA106

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.08 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.12 Dilution Factor: 1.00000

Number TICs found: 22

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.52	1100.	~~JAB~~ R
2.		Unknown	4.81	600.	~~JAB~~ R
3.		Unknown	5.26	170	(JN)
4.		Unknown	5.30	210.	J
5.		Unknown	5.78	160.	J
6.	112403	Dodecane	8.68	230.	J
7.	6044719	Dodecane, 6-methyl-	8.97	200.	J
8.		Unknown alkane	10.28	560.	J
9.	629505	Tridecane	10.92	700.	J
10.		Unknown alkane	12.80	900.	J
11.	629594	Tetradecane	13.38	1100.	J
12.		Unknown alkane	14.63	140.	J
13.		Unknown alkane	14.98	850.	J
14.	629629	Pentadecane	15.94	800.	J
15.	544763	Hexadecane	18.50	250.	J
16.	126738	Phosphoric acid tributyl est	19.79	3500.	J
17.	57103	Hexadecanoic acid	26.99	190.	J
18.		Unknown	28.32	360.	J
19.		Unknown	34.24	370.	J
20.		Unknown	37.29	390.	J
21.		Unknown alkane	38.33	160.	J
22.		Unknown	40.39	160.	J
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB2

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5150-E1

Sample wt/vol: 30.44 (g/mL) G Lab File ID: >DA109

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec.5.21 dec. -- Date Extracted:13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH:8.90 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	350.	U
111-44-4	bis(2-Chloroethyl)Ether	350.	U
95-57-8	2-Chlorophenol	350.	U
541-73-1	1,3-Dichlorobenzene	350.	U
106-46-7	1,4-Dichlorobenzene	350.	U
100-51-6	Benzyl_alcohol	350.	U
95-50-1	1,2-Dichlorobenzene	350.	U
95-48-7	2-Methylphenol	350.	U
39638-32-9	bis(2-chloroisopropyl)ether	350.	U
106-44-5	4-Methylphenol	350.	U
621-64-7	N-Nitroso-Di-n-propylamine	350.	UJ
67-72-1	Hexachloroethane	350.	U
98-95-3	Nitrobenzene	350.	U
78-59-1	Isophorone	350.	U
88-75-5	2-Nitrophenol	350.	U
105-67-9	2,4-Dimethylphenol	350.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U
120-83-2	2,4-Dichlorophenol	350.	U
120-82-1	1,2,4-Trichlorobenzene	350.	U
91-20-3	Naphthalene	350.	U
106-47-8	4-Chloroaniline	350.	U
87-68-3	Hexachlorobutadiene	350.	U
59-50-7	4-Chloro-3-methylphenol	350.	U
91-57-6	2-Methylnaphthalene	350.	U
77-47-4	Hexachlorocyclopentadiene	350.	U
88-06-2	2,4,6-Trichlorophenol	350.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	350.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	350.	U
208-96-8	Acenaphthylene	350.	U
606-20-2	2,6-Dinitrotoluene	350.	U

KJV 1/21/93

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB2

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5150-E1

Sample wt/vol: 30.44 (g/mL) G Lab File ID: >DA109

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec.5.21 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH:8.90 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	350.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	350.	U
121-14-2	2,4-Dinitrotoluene	350.	U
84-66-2	Diethylphthalate	33.	J
7005-72-3	4-Chlorophenyl-phenylether	350.	U
86-73-7	Fluorene	350.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	350.	U
101-55-3	4-Bromophenyl-phenylether	350.	U
118-74-1	Hexachlorobenzene	350.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	350.	U
120-12-7	Anthracene	350.	U
84-74-2	Di-n-butylphthalate	350.	U
206-44-0	Fluoranthene	350.	U
129-00-0	Pyrene	350.	U
85-68-7	Butylbenzylphthalate	350.	U
91-94-1	3,3'-Dichlorobenzidine	690.	UJ
56-55-3	Benzo(a)anthracene	350.	U
218-01-9	Chrysene	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate	24.	J
117-84-0	Di-n-octylphthalate	350.	U
205-99-2	Benzo(b)fluoranthene	350.	U
207-08-9	Benzo(k)fluoranthene	350.	U
50-32-8	Benzo(a)pyrene	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U
53-70-3	Dibenz(a,h)anthracene	350.	U
191-24-2	Benzo(g,h,i)perylene	350.	U

KPV 1/21/93

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SB2

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5150-E1

Sample wt/vol: 30.44 (g/mL) G Lab File ID: >DA109

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec. 5.21 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 8.90 Dilution Factor: 1.00000

Number TICs found: 24

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.52	1200.	~~JAB~~
2.		Unknown	4.83	1500.	~~JAB~~
3.		Unknown	5.27	210.	JN
4.		Unknown	5.30	340.	J
5.		Unknown	7.97	150.	J
6.	112403	Dodecane	8.69	250.	J
7.	6044719	Dodecane, 6-methyl-	8.99	170.	J
8.		Unknown alkane	10.29	430.	J
9.	629505	Tridecane	10.91	590.	J
10.		Unknown	11.57	150.	J
11.		Unknown alkane	12.81	750.	J
12.	629594	Tetradecane	13.39	1000.	J
13.		Unknown alkane	14.63	140.	J
14.		Unknown alkane	14.99	860.	J
15.	629629	Pentadecane	15.96	950.	J
16.	544763	Hexadecane	18.51	370.	J
17.	126738	Phosphoric acid tributyl est	19.97	32000.	J
18.		Unknown alkane	25.78	160.	J
19.	57103	Hexadecanoic acid	27.00	200.	J
20.		Unknown alkane	27.73	250.	J
21.		Unknown alkane	29.38	180.	J
22.		Unknown alkane	34.36	380.	~~JB~~
23.		Unknown alkane	38.35	150.	JN
24.		Unknown alkane	40.41	140.	JN
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4968-E1

Sample wt/vol: 29.45 (g/mL) G Lab File ID: >DA107

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec.3.03 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.33 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	350.	UJ
111-44-4	bis(2-Chloroethyl)Ether	350.	U
95-57-8	2-Chlorophenol	350.	U
541-73-1	1,3-Dichlorobenzene	350.	U
106-46-7	1,4-Dichlorobenzene	350.	U
100-51-6	Benzyl_alcohol	350.	U
95-50-1	1,2-Dichlorobenzene	350.	U
95-48-7	2-Methylphenol	350.	U
39638-32-9	bis(2-chloroisopropyl)ether	350.	U
106-44-5	4-Methylphenol	350.	U
621-64-7	N-Nitroso-Di-n-propylamine	350.	UJ
67-72-1	Hexachloroethane	350.	U
98-95-3	Nitrobenzene	350.	U
78-59-1	Isophorone	350.	U
88-75-5	2-Nitrophenol	350.	U
105-67-9	2,4-Dimethylphenol	350.	U
65-85-0	Benzoic_acid	1800.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U
120-83-2	2,4-Dichlorophenol	350.	U
120-82-1	1,2,4-Trichlorobenzene	350.	U
91-20-3	Naphthalene	350.	U
106-47-8	4-Chloroaniline	350.	U
87-68-3	Hexachlorobutadiene	350.	U
59-50-7	4-Chloro-3-methylphenol	350.	U
91-57-6	2-Methylnaphthalene	350.	U
77-47-4	Hexachlorocyclopentadiene	350.	U
88-06-2	2,4,6-Trichlorophenol	350.	U
95-95-4	2,4,5-Trichlorophenol	1800.	U
91-58-7	2-Chloronaphthalene	350.	U
88-74-4	2-Nitroaniline	1800.	U
131-11-3	Dimethylphthalate	350.	U
208-96-8	Acenaphthylene	350.	U
606-20-2	2,6-Dinitrotoluene	350.	U

A/V 1/21/93

A/V 1/21/93

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4968-E1

Sample wt/vol: 29.45 (g/mL) G Lab File ID: >DA107

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec.3.03 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.33 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1800.	UJ
83-32-9	Acenaphthene	350.	U
51-28-5	2,4-Dinitrophenol	1800.	U
100-02-7	4-Nitrophenol	1800.	U
132-64-9	Dibenzofuran	350.	U
121-14-2	2,4-Dinitrotoluene	350.	U
84-66-2	Diethylphthalate	350.	U
7005-72-3	4-Chlorophenyl-phenylether	350.	U
86-73-7	Fluorene	350.	U
100-01-6	4-Nitroaniline	1800.	U
534-52-1	4,6-Dinitro-2-methylphenol	1800.	U
86-30-6	N-Nitrosodiphenylamine (1)	350.	U
101-55-3	4-Bromophenyl-phenylether	350.	U
118-74-1	Hexachlorobenzene	350.	U
87-86-5	Pentachlorophenol	1800.	U
85-01-8	Phenanthrene	350.	U
120-12-7	Anthracene	350.	U
84-74-2	Di-n-butylphthalate	350.	U
206-44-0	Fluoranthene	350.	U
129-00-0	Pyrene	350.	U
85-68-7	Butylbenzylphthalate	350.	U
91-94-1	3,3'-Dichlorobenzidine	700.	UJ
56-55-3	Benzo(a)anthracene	350.	U
218-01-9	Chrysene	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate	17.	J
117-84-0	Di-n-octylphthalate	15.	J
205-99-2	Benzo(b)fluoranthene	350.	UJ
207-08-9	Benzo(k)fluoranthene	350.	U
50-32-8	Benzo(a)pyrene	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U
53-70-3	Dibenz(a,h)anthracene	350.	U
191-24-2	Benzo(g,h,i)perylene	350.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SB3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4968-E1

Sample wt/vol: 29.45 (g/mL) G Lab File ID: >DA107

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec. 3.03 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.33 Dilution Factor: 1.00000

Number TICs found: 7

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.53	1300.	~~JAB~~ R
2.		Unknown	4.80	220.	~~JAB~~ R
3.	126738	Phosphoric acid tributyl est	19.73	170.	(JN)
4.		Unknown alkane	27.72	220.	J
5.		Unknown alkane	29.38	360.	J
6.		Unknown alkane	30.82	180.	J
7.		Unknown alkane	34.34	340.	~~JB~~ R
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB7

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5102-E1

Sample wt/vol: 30.21 (g/mL) G Lab File ID: >DA108

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec.3.79 dec. -- Date Extracted:13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH:9.75 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	U
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	UJ
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

VSQV V21/5

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5102-E1

Sample wt/vol: 30.21 (g/mL) G Lab File ID: >DA108

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.79 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 9.75 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	14.	J
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	690.	UJ
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	21.	J
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

1/21/93

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SB7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5102-E1

Sample wt/vol: 30.21 (g/mL) G Lab File ID: >DA108

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.79 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 9.75 Dilution Factor: 1.00000

Number TICs found: 11

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	4.53	1200.	~~JAB~~ R
2.	Unknown	4.82	1000.	~~JAB~~ R
3.	Unknown	5.27	180.	JN
4.	Unknown	5.30	210.	J
5.	Unknown	7.53	220.	J
6. 57103	Hexadecanoic acid	27.00	190.	J
7.	Unknown alkane	27.73	230.	J
8.	Unknown alkane	29.38	300.	J
9.	Unknown alkane	34.35	420.	~~JB~~ R
10.	Unknown alkane	38.35	190.	JN
11.	Unknown	40.41	210.	JN
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FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5270-E1

Sample wt/vol: 30.34 (g/mL) G Lab File ID: >DB604

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 4.96 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 8.05 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	350.	UJ
111-44-4	bis(2-Chloroethyl)Ether	350.	U
95-57-8	2-Chlorophenol	350.	U
541-73-1	1,3-Dichlorobenzene	350.	U
106-46-7	1,4-Dichlorobenzene	350.	U
100-51-6	Benzyl_alcohol	350.	U
95-50-1	1,2-Dichlorobenzene	350.	U
95-48-7	2-Methylphenol	350.	U
39638-32-9	bis(2-chloroisopropyl)ether	350.	U
106-44-5	4-Methylphenol	350.	U
621-64-7	N-Nitroso-Di-n-propylamine	350.	U
67-72-1	Hexachloroethane	350.	U
98-95-3	Nitrobenzene	350.	U
78-59-1	Isophorone	350.	U
88-75-5	2-Nitrophenol	350.	U
105-67-9	2,4-Dimethylphenol	350.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U
120-83-2	2,4-Dichlorophenol	350.	U
120-82-1	1,2,4-Trichlorobenzene	350.	U
91-20-3	Naphthalene	350.	U
106-47-8	4-Chloroaniline	350.	U
87-68-3	Hexachlorobutadiene	350.	U
59-50-7	4-Chloro-3-methylphenol	350.	U
91-57-6	2-Methylnaphthalene	350.	U
77-47-4	Hexachlorocyclopentadiene	350.	U
88-06-2	2,4,6-Trichlorophenol	350.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	350.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	350.	U
208-96-8	Acenaphthylene	350.	U
606-20-2	2,6-Dinitrotoluene	350.	U

KTV 1/22/93

FORM I SV-1 1/87 Rev.

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5270-E1

Sample wt/vol: 30.34 (g/mL) G Lab File ID: >DB604

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.4.96 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:8.05 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	
99-09-2	3-Nitroaniline	1700.	UJ	BJV 1/22/93
83-32-9	Acenaphthene	350.	U	
51-28-5	2,4-Dinitrophenol	1700.	U	
100-02-7	4-Nitrophenol	1700.	U	
132-64-9	Dibenzofuran	350.	U	
121-14-2	2,4-Dinitrotoluene	350.	U	
84-66-2	Diethylphthalate	350 ~~330.~~	~~JB~~	UJ BJV 1/22/93
7005-72-3	4-Chlorophenyl-phenylether	350.	UJ	
86-73-7	Fluorene	350.	U	
100-01-6	4-Nitroaniline	1700.	U	
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U	
86-30-6	N-Nitrosodiphenylamine (1)	350.	U	
101-55-3	4-Bromophenyl-phenylether	350.	U	
118-74-1	Hexachlorobenzene	350.	U	
87-86-5	Pentachlorophenol	1700.	U	
85-01-8	Phenanthrene	350.	U	
120-12-7	Anthracene	350.	U	
84-74-2	Di-n-butylphthalate	350.	U	
206-44-0	Fluoranthene	350.	U	
129-00-0	Pyrene	350.	U	
85-68-7	Butylbenzylphthalate	350.	U	
91-94-1	3,3'-Dichlorobenzidine	690.	U	
56-55-3	Benzo(a)anthracene	350.	U	
218-01-9	Chrysene	350.	U	
117-81-7	bis(2-Ethylhexyl)phthalate	46.	J	
117-84-0	Di-n-octylphthalate	29.	J	
205-99-2	Benzo(b)fluoranthene	350.	UJ	BJV 1/22/93
207-08-9	Benzo(k)fluoranthene	350.	U	
50-32-8	Benzo(a)pyrene	350.	U	
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U	
53-70-3	Dibenz(a,h)anthracene	350.	U	
191-24-2	Benzo(g,h,i)perylene	350.	U	

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SC7

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5270-E1

Sample wt/vol: 30.34 (g/mL) G Lab File ID: >DB604

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.4.96 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:8.05 Dilution Factor: 1.00000

Number TICs found: 30

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		Unknown	4.45	930.	~~JAB~~	R
2.		Unknown	4.76	1800.	~~JAB~~	R
3.		Unknown	5.39	180.	JN	
4.		Unknown	5.70	170.	J	
5.		Unknown	5.85	320.	J	
6.		Unknown	5.97	300.	J	
7.		Unknown	7.34	210.	J	
8.	403190	2-FLUORO-4-NITROPHENOL	7.65	410.	J	
9.	112403	Dodecane	8.58	410.	J	
10.		Unknown alkane	8.87	340.	J	
11.	95169	Benzothiazole	9.18	270.	J	
12.		Unknown alkane	10.16	770.	J	
13.	629505	Tridecane	10.79	970.	J	
14.		Unknown alkane	11.21	160.	J	
15.		Unknown	11.73	200.	J	
16.		Unknown alkane	12.66	890.	J	
17.	629594	Tetradecane	13.24	1200.	J	
18.		Unknown alkane	14.83	880.	J	
19.	629629	Pentadecane	15.80	880.	J	
20.	544763	Hexadecane	18.34	330.	J	
21.	126738	Phosphoric acid tributyl est	19.73	11000.	J	
22.	629787	Heptadecane	20.85	150.	J	
23.	99285	Phenol, 2,6-dibromo-4-nitro-	22.92	280.	J	
24.	89197693	DIBUTYL 3-HYDROXYBUTYL PHOSP	23.03	340.	J	
25.		Unknown alkane	23.26	160.	J	
26.		Unknown alkane	25.61	160.	J	
27.	57103	Hexadecanoic acid	26.83	280.	J	
28.	80079	Benzene, 1,1'-sulfonylbis[4-	31.22	300.	~~JB~~	R
29.		Unknown	33.36	190.	JN	
30.	791286	Phosphine oxide, triphenyl-	34.76	920.	~~JB~~	R

FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5271-E1

Sample wt/vol: 30.85 (g/mL) G Lab File ID: >DB605

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 2.50 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 9.60 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	330.	UJ
111-44-4	bis(2-Chloroethyl)Ether	330.	U
95-57-8	2-Chlorophenol	330.	U
541-73-1	1,3-Dichlorobenzene	330.	U
106-46-7	1,4-Dichlorobenzene	330.	U
100-51-6	Benzyl_alcohol	330.	U
95-50-1	1,2-Dichlorobenzene	330.	U
95-48-7	2-Methylphenol	330.	U
39638-32-9	bis(2-chloroisopropyl)ether	330.	U
106-44-5	4-Methylphenol	330.	U
621-64-7	N-Nitroso-Di-n-propylamine	330.	U
67-72-1	Hexachloroethane	330.	U
98-95-3	Nitrobenzene	330.	U
78-59-1	Isophorone	330.	U
88-75-5	2-Nitrophenol	330.	U
105-67-9	2,4-Dimethylphenol	330.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	330.	U
120-83-2	2,4-Dichlorophenol	330.	U
120-82-1	1,2,4-Trichlorobenzene	330.	U
91-20-3	Naphthalene	330.	U
106-47-8	4-Chloroaniline	330.	U
87-68-3	Hexachlorobutadiene	330.	U
59-50-7	4-Chloro-3-methylphenol	330.	U
91-57-6	2-Methylnaphthalene	330.	U
77-47-4	Hexachlorocyclopentadiene	330.	U
88-06-2	2,4,6-Trichlorophenol	330.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	330.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	330.	U
208-96-8	Acenaphthylene	330.	U
606-20-2	2,6-Dinitrotoluene	330.	U

HPC 1/22/93

FORM I SV-1 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5271-E1

Sample wt/vol: 30.85 (g/mL) G Lab File ID: >DB605

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 2.50 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 9.60 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	330.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	330.	U
121-14-2	2,4-Dinitrotoluene	330.	U
84-66-2	Diethylphthalate	330.	U
7005-72-3	4-Chlorophenyl-phenylether	330.	U
86-73-7	Fluorene	330.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	330.	U
101-55-3	4-Bromophenyl-phenylether	330.	U
118-74-1	Hexachlorobenzene	330.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	330.	U
120-12-7	Anthracene	330.	U
84-74-2	Di-n-butylphthalate	330.	U
206-44-0	Fluoranthene	330.	U
129-00-0	Pyrene	330.	U
85-68-7	Butylbenzylphthalate	330.	U
91-94-1	3,3'-Dichlorobenzidine	660.	U
56-55-3	Benzo(a)anthracene	330.	U
218-01-9	Chrysene	330.	U
117-81-7	bis(2-Ethylhexyl)phthalate	330.	U
117-84-0	Di-n-octylphthalate	330.	U
205-99-2	Benzo(b)fluoranthene	330.	U
207-08-9	Benzo(k)fluoranthene	330.	U
50-32-8	Benzo(a)pyrene	330.	U
193-39-5	Indeno(1,2,3-cd)pyrene	330.	U
53-70-3	Dibenz(a,h)anthracene	330.	U
191-24-2	Benzo(g,h,i)perylene	330.	U

bgv 1/22/93

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SC9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5271-E1

Sample wt/vol: 30.85 (g/mL) G Lab File ID: >DB605

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.2.50 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:9.60 Dilution Factor: 1.00000

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	4.45	800.	~~JAB~~
2.	Unknown	4.74	360.	~~JAB~~
3. 80079	Benzene, 1,1'-sulfonylbis[4-	31.22	220.	~~JB~~
4. 791286	Phosphine oxide, triphenyl-	34.76	930.	~~JB~~
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R KJ 1/2

FORM I SV-TIC 1/87 Rev.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
B01SD7

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5353-E1

Sample wt/vol: 30.92 (g/mL) G Lab File ID: >DB607

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec.1.59 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:9.57 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	330.	U
111-44-4	bis(2-Chloroethyl)Ether	330.	U
95-57-8	2-Chlorophenol	330.	U
541-73-1	1,3-Dichlorobenzene	330.	U
106-46-7	1,4-Dichlorobenzene	330.	U
100-51-6	Benzyl_alcohol	330.	U
95-50-1	1,2-Dichlorobenzene	330.	U
95-48-7	2-Methylphenol	330.	U
39638-32-9	bis(2-chloroisopropyl)ether	330.	UJ
106-44-5	4-Methylphenol	330.	U
621-64-7	N-Nitroso-Di-n-propylamine	330.	UJ
67-72-1	Hexachloroethane	330.	U
98-95-3	Nitrobenzene	330.	U
78-59-1	Isophorone	330.	U
88-75-5	2-Nitrophenol	330.	U
105-67-9	2,4-Dimethylphenol	330.	U
65-85-0	Benzoic_acid	1600.	U
111-91-1	bis(2-Chloroethoxy)methane	330.	U
120-83-2	2,4-Dichlorophenol	330.	U
120-82-1	1,2,4-Trichlorobenzene	330.	U
91-20-3	Naphthalene	330.	U
106-47-8	4-Chloroaniline	330.	U
87-68-3	Hexachlorobutadiene	330.	U
59-50-7	4-Chloro-3-methylphenol	330.	U
91-57-6	2-Methylnaphthalene	330.	U
77-47-4	Hexachlorocyclopentadiene	330.	U
88-06-2	2,4,6-Trichlorophenol	330.	U
95-95-4	2,4,5-Trichlorophenol	1600.	U
91-58-7	2-Chloronaphthalene	330.	U
88-74-4	2-Nitroaniline	1600.	UJ
131-11-3	Dimethylphthalate	330.	U
208-96-8	Acenaphthylene	330.	U
606-20-2	2,6-Dinitrotoluene	330.	U

KJV 1/22/93

KJV 1/22/93

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5353-E1

Sample wt/vol: 30.92 (g/mL) G Lab File ID: >DB607

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 1.59 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 9.57 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1600.	U
83-32-9	Acenaphthene	330.	U
51-28-5	2,4-Dinitrophenol	1600.	UJ
100-02-7	4-Nitrophenol	1600.	U
132-64-9	Dibenzofuran	330.	U
121-14-2	2,4-Dinitrotoluene	330.	U
84-66-2	Diethylphthalate	330.	U
7005-72-3	4-Chlorophenyl-phenylether	330.	U
86-73-7	Fluorene	330.	U
100-01-6	4-Nitroaniline	1600.	U
534-52-1	4,6-Dinitro-2-methylphenol	1600.	UJ
86-30-6	N-Nitrosodiphenylamine (1)	330.	U
101-55-3	4-Bromophenyl-phenylether	330.	U
118-74-1	Hexachlorobenzene	330.	U
87-86-5	Pentachlorophenol	1600.	U
85-01-8	Phenanthrene	330.	U
120-12-7	Anthracene	330.	U
84-74-2	Di-n-butylphthalate	330.	U
206-44-0	Fluoranthene	330.	U
129-00-0	Pyrene	330.	U
85-68-7	Butylbenzylphthalate	330.	U
91-94-1	3,3'-Dichlorobenzidine	660.	U
56-55-3	Benzo(a)anthracene	330.	U
218-01-9	Chrysene	330.	U
117-81-7	bis(2-Ethylhexyl)phthalate	330.	U
117-84-0	Di-n-octylphthalate	17.	J
205-99-2	Benzo(b)fluoranthene	330.	U
207-08-9	Benzo(k)fluoranthene	330.	U
50-32-8	Benzo(a)pyrene	330.	U
193-39-5	Indeno(1,2,3-cd)pyrene	330.	U
53-70-3	Dibenz(a,h)anthracene	330.	U
191-24-2	Benzo(g,h,i)perylene	330.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SD7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5353-E1

Sample wt/vol: 30.92 (g/mL) G Lab File ID: >DB607

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 1.59 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 9.57 Dilution Factor: 1.00000

Number TICs found: 14

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.38	140.	J N
2.		Unknown	4.45	880.	~~JAB~~ R
3.		Unknown	4.76	1900.	~~JAB~~ R
4.		Unknown	5.18	200.	(JN)
5.		Unknown	5.22	370.	J
6.		Unknown	5.42	130.	J
7.		Unknown	5.70	240.	J
8.		Unknown	5.83	140.	J
9.		Unknown	5.99	570.	J
10.		Unknown	7.42	140.	J
11.		Unknown	19.58	530.	J
12.	80079	Benzene, 1,1'-sulfonylbis[4-	31.22	160.	~~JB~~ R
13.	791286	Phosphine oxide, triphenyl-	34.75	770.	~~JB~~ R
14.		Unknown	37.16	160.	J N
15.					
16.					
17.					
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FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD9

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5352-E1

Sample wt/vol: 30.15 (g/mL) G Lab File ID: >DB606

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec.2.36 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:10.03 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	
108-95-2	Phenol	340.	U	
111-44-4	bis(2-Chloroethyl)Ether	340.	U	
95-57-8	2-Chlorophenol	340.	U	
541-73-1	1,3-Dichlorobenzene	340.	U	
106-46-7	1,4-Dichlorobenzene	340.	U	
100-51-6	Benzyl_alcohol	340.	U	
95-50-1	1,2-Dichlorobenzene	340.	U	
95-48-7	2-Methylphenol	340.	U	
39638-32-9	bis(2-chloroisopropyl)ether	340.	UJ	KJV 1/22/93
106-44-5	4-Methylphenol	340.	U	
621-64-7	N-Nitroso-Di-n-propylamine	340.	UJ	
67-72-1	Hexachloroethane	340.	U	
98-95-3	Nitrobenzene	340.	U	
78-59-1	Isophorone	340.	U	
88-75-5	2-Nitrophenol	340.	U	
105-67-9	2,4-Dimethylphenol	340.	U	
65-85-0	Benzoic_acid	1700.	U	
111-91-1	bis(2-Chloroethoxy)methane	340.	U	
120-83-2	2,4-Dichlorophenol	340.	U	
120-82-1	1,2,4-Trichlorobenzene	340.	U	
91-20-3	Naphthalene	340.	U	
106-47-8	4-Chloroaniline	340.	U	
87-68-3	Hexachlorobutadiene	340.	U	
59-50-7	4-Chloro-3-methylphenol	340.	U	
91-57-6	2-Methylnaphthalene	340.	U	
77-47-4	Hexachlorocyclopentadiene	340.	U	
88-06-2	2,4,6-Trichlorophenol	340.	U	
95-95-4	2,4,5-Trichlorophenol	1700.	U	
91-58-7	2-Chloronaphthalene	340.	U	
88-74-4	2-Nitroaniline	1700.	UJ	KJV 1/22/93
131-11-3	Dimethylphthalate	340.	U	
208-96-8	Acenaphthylene	340.	U	
606-20-2	2,6-Dinitrotoluene	340.	U	

FORM I SV-1 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD9

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5352-E1

Sample wt/vol: 30.15 (g/mL) G Lab File ID: >DB606

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec.2.36 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:10.03 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	UJ
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	UJ
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	680.	U
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	340.	U
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1F

EPA SAMPLE NO.

B01SD9

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: -------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5352-E1

Sample wt/vol: 30.15 (g/mL) G Lab File ID: >DB606

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec.2.36 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:10.03 Dilution Factor: 1.00000

Number TICs found: 7 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		Unknown	4.46	880.	~~JAB~~	R
2.		Unknown	4.74	600.	~~JAB~~	R
3.		Unknown	5.19	190.	JN	
4.	126738	Phosphoric acid tributyl est	19.59	590.	JN	
5.	80079	Benzene, 1,1'-sulfonylbis[4-	31.22	180.	~~JB~~	R
6.		Unknown	34.23	150.	JN	
7.	791286	Phosphine oxide, triphenyl-	34.75	860.	~~JB~~	R
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FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5490-E1

Sample wt/vol: 30.361 (g/mL) G Lab File ID: >DB504

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.3.24 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:10.26 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	UJ
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

VKP 1/22/93

FORM I SV-1 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5490-E1

Sample wt/vol: 30.361 (g/mL) G Lab File ID: >DB504

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.3.24 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:10.26 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	(UJ)
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	680.	U
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	340.	U
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

KPV 1/22/93

FORM I SV-2 1/87 Rev.

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SF7

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: -------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5490-E1

Sample wt/vol: 30.361 (g/mL) G Lab File ID: >DB504

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.3.24 dec. -- Date Extracted:04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:10.26 Dilution Factor: 1.00000

Number TICs found: 13

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		Unknown	4.47	800.	~~JAB~~	R
2.		Unknown	4.77	1500.	~~JAB~~	R
3.		Unknown	4.86	580.	~~JA~~	R
4.		Unknown	5.21	200.	J N	
5.		Unknown	7.36	440.	J	
6.	403190	2-FLUORO-4-NITROPHENOL	7.68	320.	J	
7.		Unknown	8.54	140.	J	
8.		Unknown	11.53	290.	J	
9.		Unknown	19.34	540.	J	
10.	126738	Phosphoric acid tributyl est	19.70	3800.	J	
11.	99285	Phenol, 2,6-dibromo-4-nitro-	22.95	310.	J	
12.	57103	Hexadecanoic acid	26.87	190.	J	
13.		Unknown	34.25	190.	J	
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BD 4/22/92

FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5491-E1

Sample wt/vol: 30.240 (g/mL) G Lab File ID: >DB505

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.24 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.76 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	UJ
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

BQV 1/22/93

FORM I SV-1 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF9

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5491-E1

Sample wt/vol: 30.240 (g/mL) G Lab File ID: >DB505

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.2.24 dec. -- Date Extracted:04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:7.76 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	680.	U
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	340.	U
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

BQK 1/22/93

FORM I SV-2 1/87 Rev.

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SF9

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5491-E1

Sample wt/vol: 30.240 (g/mL) G Lab File ID: >DB505

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.2.24 dec. -- Date Extracted:04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:7.76 Dilution Factor: 1.00000

Number TICs found: 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.46	700.	~~JAB~~ R
2.		Unknown	4.75	210.	~~JAB~~ R
3.		Unknown	34.27	150.	JN
4.					
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6.					
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BPV 4/22/92

FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------- SAS No.: ------- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5492-E1

Sample wt/vol: 30.295 (g/mL) G Lab File ID: >DB506

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 4.23 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 8.18 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	(UJ)
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

BJV 1/22/93

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG3

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5492-E1

Sample wt/vol: 30.295 (g/mL) G Lab File ID: >DB506

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.4.23 dec. -- Date Extracted:04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:8.18 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	690.	U
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	31.	J
117-84-0	Di-n-octylphthalate	340.	UJ
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

KBW 1/22/93

KBW 1/22/93

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SG3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5492-E1

Sample wt/vol: 30.295 (g/mL) G Lab File ID: >DB506

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 4.23 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 8.18 Dilution Factor: 1.00000

Number TICs found: 6

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.47	680.	~~JAB~~ R
2.		Unknown	4.60	400.	JN
3.		Unknown	4.78	1700.	~~JAB~~ R
4.		Unknown	5.26	610.	JN
5.		Unknown	6.01	700.	JN R/V
6.		Unknown	38.24	170.	JN 1/22/9
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FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5633-E1

Sample wt/vol: 30.394 (g/mL) G Lab File ID: >DB507

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.42 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.09 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	U
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	UJ
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

BJV 1/22/93

FORM I SV-1 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5633-E1

Sample wt/vol: 30.394 (g/mL) G Lab File ID: >DB507

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.42 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.09 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	47.	J
91-94-1	3,3'-Dichlorobenzidine	670.	(UJ)
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	84.	J
117-84-0	Di-n-octylphthalate	48.	J
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

BJV 1/22/93

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1F

EPA SAMPLE NO.

B01SG7

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5633-E1

Sample wt/vol: 30.394 (g/mL) G Lab File ID: >DB507

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec.2.42 dec. -- Date Extracted:04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:7.09 Dilution Factor: 1.00000

Number TICs found: 11

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.47	770.	~~JAB~~ R
2.		Unknown	4.77	2200.	~~JAB~~ R
3.		Unknown	5.21	240.	JN
4.		Unknown	5.25	800.	J
5.	104767	1-Hexanol, 2-ethyl-	5.72	470.	J
6.		Unknown	6.00	460.	J
7.		Unknown	7.00	160.	J
8.		Unknown	7.45	160.	J
9.	126738	Phosphoric acid tributyl est	19.76	15000.	J
10.	57103	Hexadecanoic acid	26.88	210.	J
11.		Unknown	34.26	150.	J
12.					
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B fv 1/22/93

FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5634-E1

Sample wt/vol: 30.180 (g/mL) G Lab File ID: >DB508

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec.2.01 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:6.88 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	U
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	UJ
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

BPV 1/22/93

FORM I SV-1 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5634-E1

Sample wt/vol: 30.180 (g/mL) G Lab File ID: >DB508

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec.2.01 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 6.88 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	680.	(UJ) 4/21/22/93
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	45.	J
117-84-0	Di-n-octylphthalate	11.	J
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SG9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5634-E1

Sample wt/vol: 30.180 (g/mL) G Lab File ID: >DB508

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.01 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 6.88 Dilution Factor: 1.00000

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.47	650.	~~JAB~~ R
2.		Unknown	4.76	340.	~~JAB~~ R
3.	126738	Phosphoric acid tributyl est	19.63	760.	JN
4.		Unknown	37.19	160.	JN
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
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26.					
27.					
28.					
29.					
30.					

FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SH3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5690-E1

Sample wt/vol: 30.319 (g/mL) G Lab File ID: >DB509

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.06 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.18 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	U
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	UJ
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

KJP 1/22/93

FORM I SV-1 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SH3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5690-E1

Sample wt/vol: 30.319 (g/mL) G Lab File ID: >DB509

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.06 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.18 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	690.	(UJ)
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	21.	J
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

KJV 1/22/93

FORM I SV-2 1/87 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SH3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5690-E1

Sample wt/vol: 30.319 (g/mL) G Lab File ID: >DB509

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.06 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.18 Dilution Factor: 1.00000

Number TICs found: 11 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.47	930.	~~JAB~~ K
2.		Unknown	4.78	2700.	~~JAB~~ R
3.		Unknown	5.25	340.	J N
4.	57103	Hexadecanoic acid	26.89	250.	J
5.		Unknown	34.72	470.	J
6.		Unknown alcohol	36.38	250.	J
7.		Unknown alkane	38.25	400.	J
8.		Unknown alkane	40.22	150.	J
9.		Unknown	40.29	500.	J
10.	6971400	17-Pentatriacontene	42.96	140.	J
11.		Unknown	43.71	190.	J
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
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30.					

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FORM I SV-TIC 1/87 Rev.

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S97

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-04734-P-1

Sample wt/vol: 30.25 (g/mL)g Lab File ID: >01214

Level: (low/med) low Date Received: 03/05/92

% Moisture: not dec. 3.27 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 9.17 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.20	UJ
319-85-7	Beta-BHC	8.20	U
319-86-8	Delta-BHC	8.20	U
58-89-9	Gamma-BHC (Lindane)	8.20	U
76-44-8	Heptachlor	8.20	U
309-00-2	Aldrin	8.20	U
1024-57-3	Heptachlor Epoxide	8.20	U
959-98-8	Endosulfan I	8.20	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	82.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	82.00	U
5103-74-2	gamma-Chlordane	82.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	82.00	U
11104-28-2	Aroclor-1221	82.00	U
11141-16-5	Aroclor-1232	82.00	U
53469-21-9	Aroclor-1242	82.00	U
12672-29-6	Aroclor-1248	82.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S99

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-04735-P-i

Sample wt/vol: 30.96 (g/mL)g Lab File ID: >01215

Level: (low/med) low Date Received: 03/05/92

% Moisture: not dec. 4.05 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 10.1 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	UJ
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

KSD 1/21

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB1

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-04736-P-1

Sample wt/vol: 30.78 (g/mL) g Lab File ID: >01216

Level: (low/med) low Date Received: 03/05/92

% Moisture: not dec. 4.08 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 10.1 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	UJ
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

BJ 1/2

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB2

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-05150-P-1

Sample wt/vol: 30.44 (g/mL)g Lab File ID: >01221

Level: (low/med) low Date Received: 03/11/92

% Moisture: not dec. 5.21 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 8.9 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	U
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

Validated 1/27/93

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB3

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-04968-P-1

Sample wt/vol: 29.45 (g/mL)g Lab File ID: >01217

Level: (low/med) low Date Received: 03/09/92

% Moisture: not dec. 3.03 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 10.3 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.40	UJ
319-85-7	Beta-BHC	8.40	U
319-86-8	Delta-BHC	8.40	U
58-89-9	Gamma-BHC (Lindane)	8.40	U
76-44-8	Heptachlor	8.40	U
309-00-2	Aldrin	8.40	U
1024-57-3	Heptachlor Epoxide	8.40	U
959-98-8	Endosulfan I	8.40	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	84.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	84.00	U
5103-74-2	gamma-Chlordane	84.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	84.00	U
11104-28-2	Aroclor-1221	84.00	U
11141-16-5	Aroclor-1232	84.00	U
53469-21-9	Aroclor-1242	84.00	U
12672-29-6	Aroclor-1248	84.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

KP 1/2

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-05102-P-1

Sample wt/vol: 30.21 (g/mL) g Lab File ID: >01218

Level: (low/med) low Date Received: 03/11/92

% Moisture: not dec. 3.79 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 9.75 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	U
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

No qual. regular
1/28/92

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1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05270

Sample wt/vol: 30.34 (g/mL)G Lab File ID: >02448

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 4.96 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 8.05 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	U J
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC9

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05271

Sample wt/vol: 30.85 (g/mL)G Lab File ID: >02449

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 2.5 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 9.6 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.00	UJ
319-85-7	Beta-BHC	8.00	U
319-86-8	Delta-BHC	8.00	U
58-89-9	Gamma-BHC (Lindane)	8.00	U
76-44-8	Heptachlor	8.00	U
309-00-2	Aldrin	8.00	U
1024-57-3	Heptachlor Epoxide	8.00	U
959-98-8	Endosulfan I	8.00	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	80.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	80.00	U
5103-74-2	gamma-Chlordane	80.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	80.00	U
11104-28-2	Aroclor-1221	80.00	U
11141-16-5	Aroclor-1232	80.00	U
53469-21-9	Aroclor-1242	80.00	U
12672-29-6	Aroclor-1248	80.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD9

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05352

Sample wt/vol: 30.15 (g/mL)G Lab File ID: >02450

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.36 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 10 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.20	U
319-85-7	Beta-BHC	8.20	U
319-86-8	Delta-BHC	8.20	U
58-89-9	Gamma-BHC (Lindane)	8.20	U
76-44-8	Heptachlor	8.20	U
309-00-2	Aldrin	8.20	U
1024-57-3	Heptachlor Epoxide	8.20	U
959-98-8	Endosulfan I	8.20	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	82.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	82.00	U
5103-74-2	gamma-Chlordane	82.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	82.00	U
11104-28-2	Aroclor-1221	82.00	U
11141-16-5	Aroclor-1232	82.00	U
53469-21-9	Aroclor-1242	82.00	U
12672-29-6	Aroclor-1248	82.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05353

Sample wt/vol: 30.92 (g/mL)G Lab File ID: >02455

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 1.59 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 9.57 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	7.90	(U J)
319-85-7	Beta-BHC	7.90	U
319-86-8	Delta-BHC	7.90	U
58-89-9	Gamma-BHC (Lindane)	7.90	U
76-44-8	Heptachlor	7.90	U
309-00-2	Aldrin	7.90	U
1024-57-3	Heptachlor Epoxide	7.90	U
959-98-8	Endosulfan I	7.90	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	79.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	79.00	U
5103-74-2	gamma-Chlordane	79.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	79.00	U
11104-28-2	Aroclor-1221	79.00	U
11141-16-5	Aroclor-1232	79.00	U
53469-21-9	Aroclor-1242	79.00	U
12672-29-6	Aroclor-1248	79.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05490

Sample wt/vol: 30.36 (g/mL)G Lab File ID: >02456

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 3.24 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 10.2 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.20	UJ
319-85-7	Beta-BHC	8.20	U
319-86-8	Delta-BHC	8.20	U
58-89-9	Gamma-BHC (Lindane)	8.20	U
76-44-8	Heptachlor	8.20	U
309-00-2	Aldrin	8.20	U
1024-57-3	Heptachlor Epoxide	8.20	U
959-98-8	Endosulfan I	8.20	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	82.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	82.00	U
5103-74-2	gamma-Chlordane	82.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	82.00	U
11104-28-2	Aroclor-1221	82.00	U
11141-16-5	Aroclor-1232	82.00	U
53469-21-9	Aroclor-1242	82.00	U
12672-29-6	Aroclor-1248	82.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF9

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05491

Sample wt/vol: 30.24 (g/mL)G Lab File ID: >02457

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.24 dec.. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 7.76 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	U
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG3

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05492

Sample wt/vol: 30.29 (g/mL) G Lab File ID: >02458

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 4.23 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 8.18 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	UJ
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05633

Sample wt/vol: 30.39 (g/mL)G Lab File ID: >02460

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.42 dec. Date Extracted: 04/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 7.09 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	U
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG9

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05634

Sample wt/vol: 30.18 (g/mL)G Lab File ID: >02461

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.01 dec. Date Extracted: 04/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 6.88 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	(UJ)
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

HDV 1/24/93

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SH3

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05690

Sample wt/vol: 30.31 (g/mL)G Lab File ID: >02462

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.06 dec. Date Extracted: 04/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 7.18 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	UJ
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

KDL 1/24/93

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01S97

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15____

Matrix (soil/water): SOIL_ Lab Sample ID: 92-4734B1_

Level (low/med): LOW__ Date Received: 03/05/92

% Solids: _96.7

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6170			P	J
7440-36-0	Antimony	2.6	U	N	P	U
7440-39-3	Barium	71.4			P	
7440-41-7	Beryllium	0.43	B		P	B
7440-43-9	Cadmium	2.7			P	
7440-70-2	Calcium	7350			P	
7440-47-3	Chromium	8.8		*	P	
7440-48-4	Cobalt	8.1	B		P	B
7440-50-8	Copper	16.1			P	
7439-89-6	Iron	22000		*	P	J
7439-95-4	Magnesium	3860			P	
7439-96-5	Manganese	289		*	P	
7440-02-0	Nickel	6.6	B		P	B
7440-09-7	Potassium	624	B		P	BJ
7440-23-5	Sodium	996			P	B
7440-62-2	Vanadium	60.5		*	P	
7440-66-6	Zinc	42.3			P	

2/17/93

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL_--_SOIL_SAMPLE,_ACID_LEACHED

DATE_ANALYZED:_19_MAY_92

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01S99

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15____

Matrix (soil/water): SOIL_ Lab Sample ID: 92-4735B1_

Level (low/med): LOW__ Date Received: 03/05/92

% Solids: _96.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	10200			P	J
7440-36-0	Antimony	2.8	U	N	P	U
7440-39-3	Barium	73.0			P	
7440-41-7	Beryllium	0.44	B		P	B
7440-43-9	Cadmium	1.7			P	
7440-70-2	Calcium	9220			P	
7440-47-3	Chromium	8.6		*	P	
7440-48-4	Cobalt	13.0			P	
7440-50-8	Copper	20.4			P	
7439-89-6	Iron	36200		*	P	J
7439-95-4	Magnesium	5100			P	
7439-96-5	Manganese	464		*	P	
7440-02-0	Nickel	37.7			P	
7440-09-7	Potassium	1020			P	BJ
7440-23-5	Sodium	7520			P	
7440-62-2	Vanadium	99.8		*	P	
7440-66-6	Zinc	59.9			P	

[illegible] 1/17/92

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
ORIGINAL__SOIL_SAMPLE,_ACID_LEACHED
DATE_ANALYZED:_19_MAY_92

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SB1

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15____

Matrix (soil/water): SOIL_ Lab Sample ID: 92-4736B1_

Level (low/med): LOW__ Date Received: 03/05/92

% Solids: _95.9

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	10400			P	J
7440-36-0	Antimony	3.0	U	N	P	U
7440-39-3	Barium	75.2			P	
7440-41-7	Beryllium	0.47	B		P	B
7440-43-9	Cadmium	1.7			P	
7440-70-2	Calcium	9300			P	
7440-47-3	Chromium	10.5		*	P	
7440-48-4	Cobalt	13.4			P	
7440-50-8	Copper	18.9			P	
7439-89-6	Iron	37900		*	P	J
7439-95-4	Magnesium	5220			P	
7439-96-5	Manganese	489		*	P	
7440-02-0	Nickel	45.0			P	
7440-09-7	Potassium	1050			P	BJ
7440-23-5	Sodium	7880			P	
7440-62-2	Vanadium	101		*	P	
7440-66-6	Zinc	61.7			P	

11/17/92

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 19 MAY 92

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SB2

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05150-B

Level (low/med): LOW__ Data Received: 03/13/92

% Solids: _94.8

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	15800		*	P	J
7440-36-0	Antimony	3.2	U		P	U
7440-39-3	Barium	91.2			P	
7440-41-7	Beryllium	0.28	B		P	B
7440-43-9	Cadmium	1.1		N*	P	
7440-70-2	Calcium	8450		*	P	
7440-47-3	Chromium	12.1		*	P	
7440-48-4	Cobalt	8.4	B		P	B
7440-50-8	Copper	19.7		*	P	
7439-89-6	Iron	22500		*	P	J
7439-95-4	Magnesium	4340		*	P	
7439-96-5	Manganese	294		N*	P	
7440-02-0	Nickel	30.7			P	
7440-09-7	Potassium	875	B		P	BJ
7440-23-5	Sodium	8700			P	
7440-62-2	Vanadium	66.7		*	P	
7440-66-6	Zinc	42.3		*	P	

7/19/94

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL_--_SOIL_SAMPLE,_ACID_LEACHED

DATE_ANALYZED:_20_MAY_1992

TASK_2_&_4_SDG#_15

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SB3

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15____

Matrix (soil/water): SOIL_ Lab Sample ID: 92-4968B1_

Level (low/med): LOW__ Date Received: 03/09/92

% Solids: _97.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	7220			P	J
7440-36-0	Antimony	2.8	U	N	P	UJ
7440-39-3	Barium	61.9			P	
7440-41-7	Beryllium	0.42	B		P	B
7440-43-9	Cadmium	1.5			P	
7440-70-2	Calcium	9460			P	
7440-47-3	Chromium	12.6		*	P	
7440-48-4	Cobalt	5.7	B		P	B
7440-50-8	Copper	13.0			P	
7439-89-6	Iron	17200		*	P	J
7439-95-4	Magnesium	5190			P	
7439-96-5	Manganese	282		*	P	
7440-02-0	Nickel	11.3			P	
7440-09-7	Potassium	1060			P	BJ
7440-23-5	Sodium	2700			P	
7440-62-2	Vanadium	37.0		*	P	
7440-66-6	Zinc	37.7			P	

dlw 11/17/92

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 19 MAY 92

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SB7

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15____

Matrix (soil/water): SOIL_ Lab Sample ID: 92-5102B1_

Level (low/med): LOW__ Date Received: 03/11/92

% Solids: _96.2

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6240			P	J
7440-36-0	Antimony	2.8	U	N	P	U
7440-39-3	Barium	64.9			P	
7440-41-7	Beryllium	0.39	B		P	B
7440-43-9	Cadmium	1.3			P	
7440-70-2	Calcium	7730			P	
7440-47-3	Chromium	9.6		*	P	
7440-48-4	Cobalt	6.6	B		P	B
7440-50-8	Copper	13.6			P	
7439-89-6	Iron	17100		*	P	J
7439-95-4	Magnesium	4430			P	
7439-96-5	Manganese	281		*	P	
7440-02-0	Nickel	9.0			P	
7440-09-7	Potassium	911	B		P	BJ
7440-23-5	Sodium	270	B		P	B
7440-62-2	Vanadium	39.5		*	P	
7440-66-6	Zinc	37.6			P	

11/17/92

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 19 MAY 92

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SC7

Lab Name: BATTELLE_PNL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05270-8

Level (low/med): LOW__ Date Received: 03/19/92

% Solids: _95.1

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5540		J*	P	KJV 1/25/93
7440-36-0	Antimony	3.2	U		P	
7440-39-3	Barium	60.2			P	
7440-41-7	Beryllium	0.23	B		P	
7440-43-9	Cadmium	1.1		UJN*	P	KJV 1/25/93
7440-70-2	Calcium	6820		J*	P	
7440-47-3	Chromium	10.1		J*	P	
7440-48-4	Cobalt	9.3	B		P	
7440-50-8	Copper	18.3		J*	P	
7439-89-6	Iron	21500		J*	P	
7439-95-4	Magnesium	4270		J*	P	
7439-96-5	Manganese	256		JN*	P	
7440-02-0	Nickel	251			P	
7440-09-7	Potassium	375	B	U	P	KJV 1/25/93
7440-23-5	Sodium	1460			P	
7440-62-2	Vanadium	47.1		J*	P	
7440-66-6	Zinc	38.2		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SC9

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05271-B

Level (low/med): LOW__ Date Received: 03/19/92

% Solids: _97.5

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6460		J*	P	BDV 1/25/93
7440-36-0	Antimony	2.7	U		P	
7440-39-3	Barium	64.9			P	
7440-41-7	Beryllium	0.26	B		P	
7440-43-9	Cadmium	1.4		U N*J	P	BDV 1/25/93
7440-70-2	Calcium	10300		J*	P	
7440-47-3	Chromium	9.7		J*	P	
7440-48-4	Cobalt	8.0	B		P	
7440-50-8	Copper	15.2		J*	P	
7439-89-6	Iron	21100		J*	P	
7439-95-4	Magnesium	5300		J*	P	
7439-96-5	Manganese	329		J N*	P	
7440-02-0	Nickel	10.8	B		P	
7440-09-7	Potassium	729	B	UJ	P	BDV 1/25/93
7440-23-5	Sodium	679	B		P	
7440-62-2	Vanadium	39.7		J*	P	
7440-66-6	Zinc	41.9		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SD7

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05353-B

Level (low/med): LOW__ Date Received: 03/24/92

% Solids: _98.4

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5850		J *	P	BJV 11/25/93
7440-36-0	Antimony	2.4	U		P	
7440-39-3	Barium	57.9			P	
7440-41-7	Beryllium	0.25	B		P	
7440-43-9	Cadmium	3.9		U N* J	P	BJV 11/25/93
7440-70-2	Calcium	6090		J *	P	
7440-47-3	Chromium	11.1		J *	P	
7440-48-4	Cobalt	7.2	B		P	
7440-50-8	Copper	16.5		J *	P	
7439-89-6	Iron	19700		J *	P	
7439-95-4	Magnesium	4310		J *	P	
7439-96-5	Manganese	271		J N*	P	
7440-02-0	Nickel	11.1			P	
7440-09-7	Potassium	595	B	U	P	BJV 11/25/93
7440-23-5	Sodium	1210			P	
7440-62-2	Vanadium	51.3		J *	P	
7440-66-6	Zinc	40.2		J *	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SD9

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05352-B

Level (low/med): LOW__ Date Received: 03/24/92

% Solids: _97.6

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6460		J*	P	KPV 1/25/93
7440-36-0	Antimony	2.7	U		P	
7440-39-3	Barium	64.8			P	
7440-41-7	Beryllium	0.29	B		P	
7440-43-9	Cadmium	0.69	B	UN*J	P	KPV 1/25/93
7440-70-2	Calcium	8180		J*	P	
7440-47-3	Chromium	9.7		J*	P	
7440-48-4	Cobalt	5.4	B	U	P	KPV 1/25/93
7440-50-8	Copper	14.4		J*	P	
7439-89-6	Iron	16300		J*	P	
7439-95-4	Magnesium	4700		J*	P	
7439-96-5	Manganese	260		JN*	P	
7440-02-0	Nickel	8.8			P	
7440-09-7	Potassium	839	B	U	P	KPV 1/25/93
7440-23-5	Sodium	2070			P	
7440-62-2	Vanadium	34.8		J*	P	
7440-66-6	Zinc	34.7		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SF9

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05491-B

Level (low/med): LOW__ Date Received: 03/27/92

% Solids: _97.8

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6140		J*	P	KJV 1/25/93
7440-36-0	Antimony	2.4	U		P	
7440-39-3	Barium	62.1			P	
7440-41-7	Beryllium	0.26	B		P	
7440-43-9	Cadmium	0.55	B	U N* J	P	KJV 1/25/93
7440-70-2	Calcium	7320		J*	P	
7440-47-3	Chromium	10.6		J*	P	
7440-48-4	Cobalt	6.3	B		P	
7440-50-8	Copper	12.4		J*	P	
7439-89-6	Iron	17500		J*	P	
7439-95-4	Magnesium	4390		J*	P	
7439-96-5	Manganese	293		J N*	P	
7440-02-0	Nickel	7.6			P	
7440-09-7	Potassium	863		U	P	KJV 1/25/93
7440-23-5	Sodium	947			P	
7440-62-2	Vanadium	41.9		J*	P	
7440-66-6	Zinc	37.1		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SG3

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05492-B

Level (low/med): LOW__ Date Received: 03/27/92

% Solids: _95.8

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	8050		J*	P	4/4/25/93
7440-36-0	Antimony	3.2	U		P	
7440-39-3	Barium	80.1			P	
7440-41-7	Beryllium	0.38	B		P	
7440-43-9	Cadmium	0.49	B	U N* J	P	4/4/1/25/93
7440-70-2	Calcium	9680		J*	P	
7440-47-3	Chromium	10.0		J*	P	
7440-48-4	Cobalt	9.2	B		P	
7440-50-8	Copper	16.0		J*	P	
7439-89-6	Iron	24400		J*	P	
7439-95-4	Magnesium	5470		J*	P	
7439-96-5	Manganese	361		J N*	P	4/4/ 1/25/93
7440-02-0	Nickel	7.4	B		P	
7440-09-7	Potassium	1250			P	
7440-23-5	Sodium	327	B		P	
7440-62-2	Vanadium	59.7		J*	P	
7440-66-6	Zinc	45.2		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SF7

Lab Name: BATTELLE_PNL Contract:

Lab Code: Case No.: SAS No.: SDG No.: 15--17

Matrix (soil/water): SOIL Lab Sample ID: 92-05490-B

Level (low/med): LOW Date Received: 03/27/92

% Solids: 96.8

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	7430		J*	P	HPV 1/25/93
7440-36-0	Antimony	2.5	U		P	
7440-39-3	Barium	55.8			P	
7440-41-7	Beryllium	0.31	B		P	
7440-43-9	Cadmium	0.87		U N* J	P	HPV 1/25/93
7440-70-2	Calcium	7900		J*	P	
7440-47-3	Chromium	13.5		J*	P	
7440-48-4	Cobalt	7.1	B		P	
7440-50-8	Copper	12.8		J*	P	
7439-89-6	Iron	17900		J*	P	
7439-95-4	Magnesium	5200		J*	P	
7439-96-5	Manganese	303		J N*	P	
7440-02-0	Nickel	74.1			P	
7440-09-7	Potassium	1130		U	P	HPV 1/25/93
7440-23-5	Sodium	1210			P	
7440-62-2	Vanadium	36.9		J*	P	
7440-66-6	Zinc	39.9		J*	P	

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

FORM I - IN

3/90

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SG7

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05633-B

Level (low/med): LOW__ Date Received: 03/31/92

% Solids: _97.6

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	8010		J*	P	KPV 1/25/93
7440-36-0	Antimony	2.9	U		P	
7440-39-3	Barium	78.9			P	
7440-41-7	Beryllium	0.25	B		P	
7440-43-9	Cadmium	3.4		UN*J	P	KPV 1/25/93
7440-70-2	Calcium	8370		J*	P	
7440-47-3	Chromium	10.4		J*	P	
7440-48-4	Cobalt	9.1	B		P	
7440-50-8	Copper	17.8		J*	P	
7439-89-6	Iron	25900		J*	P	
7439-95-4	Magnesium	4670		J*	P	
7439-96-5	Manganese	325		JN*	P	
7440-02-0	Nickel	8.4			P	
7440-09-7	Potassium	767	B	U	P	KPV 1/25/93
7440-23-5	Sodium	1620			P	
7440-62-2	Vanadium	68.2		J*	P	
7440-66-6	Zinc	52.5		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

FORM I - IN

3/90

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SG9

Lab Name: BATTELLE_PNL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05634-B

Level (low/med): LOW__ Date Received: 03/31/92

% Solids: _98.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6430		J*	P	
7440-36-0	Antimony	2.6	U		P	
7440-39-3	Barium	64.1			P	
7440-41-7	Beryllium	0.25	B		P	
7440-43-9	Cadmium	0.44	B	U N* J	P	
7440-70-2	Calcium	7850		J*	P	
7440-47-3	Chromium	10.7		J*	P	
7440-48-4	Cobalt	5.4	B	U	P	
7440-50-8	Copper	11.6		J*	P	
7439-89-6	Iron	16900		J*	P	
7439-95-4	Magnesium	4710		J*	P	
7439-96-5	Manganese	266		J N*	P	
7440-02-0	Nickel	7.1			P	
7440-09-7	Potassium	981		U	P	
7440-23-5	Sodium	3270			P	
7440-62-2	Vanadium	38.3		J*	P	
7440-66-6	Zinc	33.3		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

FORM I - IN

3/90

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SH3

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05690-B

Level (low/med): LOW__ Date Received: 04/01/92

% Solids: _95.9

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	8210		J*	P	BPV 1/25/95
7440-36-0	Antimony	2.9	U		P	
7440-39-3	Barium	86.3			P	
7440-41-7	Beryllium	0.36	B		P	
7440-43-9	Cadmium	0.45	B	U N* J	P	BPV 1/25/95
7440-70-2	Calcium	7310		J*	P	
7440-47-3	Chromium	9.8		J*	P	
7440-48-4	Cobalt	8.4	B		P	
7440-50-8	Copper	17.0		J*	P	
7439-89-6	Iron	23300		J*	P	
7439-95-4	Magnesium	4650		J*	P	
7439-96-5	Manganese	344		J N*	P	BPV 1/25/95
7440-02-0	Nickel	7.8			P	
7440-09-7	Potassium	1530			P	
7440-23-5	Sodium	319	B		P	
7440-62-2	Vanadium	56.4		J*	P	
7440-66-6	Zinc	45.8		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

FORM I - IN 3/90

TABLE 7a: GRAPHITE FURNACE AA ANALYSIS DATA FOR TASKS 2 & 4 -- SDG #15

			B1				B2					B5			B3		B6 (a) B4		
Analyte	Sample ID#	PNL Log#	Sample mg/Kg	Post Spike Rec	Flags C	Q	Dupl. mg/Kg	Post Spike Rec	C	Q	B1&B2 RPD	Blank mg/Kg	Post Spike Rec	C	Sample+ Spike mg/Kg	Digest Spike Rec	LCS mg/Kg	LCS Rec	Post Spike Rec
Ag	B01SB7	92-05102	0.14U	95%	U		0.13U	95%	U		N/A	0.14	97%	U			22.48	101%	85%
As	B01SB7	92-05102	2.15	104%			3.05	88%			35%	0.19	105%	U			946.66	103%	95%
Bi	B01SB7	92-05102	0.29UA	96%	U		0.28UA	95%	U		N/A	0.29	99%	U			1936.0	97%	(b)
Pb	B01SB7	92-05102	5.51J	93%		*	4.35J	93%		*	24%	0.11	97%	B			(c)304.66	129%	96%
Se	B01SB7	92-05102	1.29UJ	67%	U	W	1.20UJ	71%	U	W	N/A	0.13	98%	U			33.73	86%	92%
Tl	B01SB7	92-05102	0.11B	104%	B		0.11B	108%	B		0%	0.07	101%	U			45.98	118%	99%
Ag	B01S97	92-04734	0.13U	94%	U										11.74	114%			
As	B01S97	92-04734	1.31B	102%	B										441.73	108%			
Bi	B01S97	92-04734	0.27U	94%	U										2107.0	103%			
Pb	B01S97	92-04734	2.93UJ	92%		*									101.47	97%			
Se	B01S97	92-04734	1.17UJ	66%	U	W									394.84	97%			
Tl	B01S97	92-04734	0.07B	109%	B										417.78	102%			
Ag	B01S99	92-04735	0.14U	95%	U														
As	B01S99	92-04735	0.67B	113%	B														
Bi	B01S99	92-04735	5.01	92%															
Pb	B01S99	92-04735	5.73J	92%		*													
Se	B01S99	92-04735	1.30UJ	57%	U	W													
Tl	B01S99	92-04735	0.07U	111%	B														

The CRDL (IDL) in ug/L: for AA5100 PE (05/18/92) Ag=10 (0.69), As=10 (0.93), Bi=60 (0.1.44), Pb=3 (0.45), Se=5 (0.63), Tl=10 (0.33)
The CRDL (IDL) in mg/Kg @200X: Ag=2.0 (0.14), As=2.0 (0.18), Bi=12 (0.30), Pb=0.6 (0.09), Se=1.0 (0.13), Tl=2.0 (0.07)
The analytical spike levels in ug/L is 20 for As, Bi, Pb, Tl and 10 for Ag, Se.
LCS standard: Ag, As, Pb, Se, Tl -- ICF 0287; Bi -- Inorganic Ventures G-BI0119
ICV/CCV used during analyses: Ag, Pb, Tl -- ICF ICV4(1290); As, Se -- ICF ICV2(1290); Bi--IV G-BI0119.

Pre-digestion spike (ug/L): Ag=50, As=2000, Bi=10000, Pb=500, Se=2000, Tl=2000. Note that these spike levels are for those required by ICP (not GFAA); no redigestions for GFAA levels were performed.

(a) The spiked blank (B6) is used for the Bi control standard; spike is at 10,000 ug/L (equivalent to 2000 mg/Kg).
(b) No analytical spike performed on these samples.
(c) Pb bias slightly high by measureable CCB; value corrected for CCB within limits (284.6 mg/Kg).
(d) Analysis dates: Ag (6/4/92), As (5/27/92), Bi (6/3/92), Pb (6/10/92), Se (5/29 & 6/2/92), Tl (6/3/92).

CLP Flags: U = [Analyte] < IDL B = IDL <= [Analyte] < CRDL
N = Pre-digestion Spike Recovery not within control limits.
W = Post-digestion spike recovery not within control limits; sample absorbance < 50% of spike absorbance.
* = RPD not within control limits.

TABLE 7b: GRAPHITE FURNACE AA ANALYSIS DATA FOR TASKS 2 & 4 -- SDG #15

Analyte	Sample ID#	PNL Log#	Bi (a) Sample mg/Kg	Bi Post Spike Rec	Flags C	Flags Q
Ag	B01SB1	92-04736	0.13 U	96%	U	
As	B01SB1	92-04736	1.36 B	104%	B	
Bi	B01SB1	92-04736	4.65	86%		
Pb	B01SB1	92-04736	6.82 J	88%		*
Se	B01SB1	92-04736	1.16 UJ	58%	U	W
Tl	B01SB1	92-04736	0.09 B	112%	B	
Ag	B01SB3	92-04968	0.11 U	97%	U	
As	B01SB3	92-04968	2.60	108%		
Bi	B01SB3	92-04968	0.28 B	102%	B	
Pb	B01SB3	92-04968	4.05 J	94%		*
Se	B01SB3	92-04968	0.91 UJ	69%	U	W
Tl	B01SB3	92-04968	0.10 B	114%	B	
Ag	B01SB2	92-05150	0.13 U	96%	U	
As	B01SB2	92-05150	2.70	(b)		
Bi	B01SB2	92-05150	4.30	91%		
Pb	B01SB2	92-05150	12.40 J	95%		*
Se	B01SB2	92-05150	1.30 UJ	73%	U	W
Tl	B01SB2	92-05150	0.12 B	110%	B	

The CRDL (IDL) in ug/L: for AA5100 PE (05/18/92) Ag=10 (0.69), As=10 (0.93), Bi=60 (0.1.44), Pb=3 (0.45), Se=5 (0.63), Tl=10 (0.33)

The CRDL (IDL) in mg/Kg 8200X: Ag=2.0 (0.14), As=2.0 (0.18), Bi=12 (0.30), Pb=0.6 (0.09), Se=1.0 (0.13), Tl=2.0 (0.07)
The analytical spike levels in ug/L is 20 for As, Bi, Pb, Tl and 10 for Ag, Se.

(a) Supporting QC (e.g., LCS, duplicates, pre-digestion spikes) shown in Table 7a.
(b) No analytical spike performed on these samples; see narrative.
(c) Analysis dates: Ag (6/4/92), As (5/27/92), Bi (6/3/92), Pb (6/10/92), Se (5/29 & 6/2/92), Tl (6/3/92).

CLP Flags: U = [Analyte] < IDL B = IDL <= [Analyte] < CRDL
W = Post-digestion spike recovery not within control limits; sample absorbance < 50% of spike absorbance.
* = RPD for batch duplicate not within control limits.

TABLE 7a: GRAPHITE FURNACE AA ANALYSIS DATA FOR TASKS 2 & 4 -- SDG #16

			B1				B2					B5			B3		B6 (a) B4		
Analyte	Sample ID#	PNL Log#	Sample mg/Kg	Post Spike Rec	Flags C	Q	Dupl. mg/Kg	Post Spike Rec	C	Q	B1&B2 RPD	Blank mg/Kg	Post Spike Rec	C	Sample+ Spike mg/Kg	Digest Spike Rec	LCS mg/Kg	LCS Rec	Post Spike Rec
Ag	B01SG7	92-05633	0.14 ~~UJ~~	95%	U		0.12	96%	U		N/A	0.14	95%	U	9.82	101%	8.46	38%	94%
As	B01SG7	92-05633	2.93	112%			3.55	110%			19%	0.19	102%	U	413.87	106%	890.49	97%	102%
Bi	B01SG7	92-05633	0.30 U	100%	U		0.24	97%	U		N/A	0.29	98%	U	1940.9	100%	1927.6	96%	(b)
Pb	B01SG7	92-05633	3.89 J	97%		*	6.03 J	92%		*	43%	0.13	98%	B	98.55	95%	239.30	101%	98%
Se	B01SG7	92-05633	1.29 UJ	71%	~~J~~	W	1.07 UJ	66%	~~J~~	W	~~N/A~~	0.13	98%	U	382.66	99%	29.88	76%	94%
Tl	B01SG7	92-05633	0.10 ~~B~~	105%	~~J~~	J	0.08 ~~B~~	106%	B		22%	0.07	101%	U	393.71	102%	43.73	112%	98%
Ag	B01SC7	92-05270	0.12 UJ	95%	U														
As	B01SC7	92-05270	2.67	110%															
Bi	B01SC7	92-05270	36.55	99%															
Pb	B01SC7	92-05270	24.32 J	95%		*													
Se	B01SC7	92-05270	1.10 UJ	71%	~~J~~	W													
Tl	B01SC7	92-05270	0.12 ~~B~~	105%	~~J~~	J													
Ag	B01SC9	92-05271	0.13 UJ	98%	U														
As	B01SC9	92-05271	3.85	106%															
Bi	B01SC9	92-05271	0.28 U	98%	U														
Pb	B01SC9	92-05271	3.67 J	96%		*													
Se	B01SC9	92-05271	1.21 UJ	77%	~~J~~	W													
Tl	B01SC9	92-05271	0.09 ~~B~~	107%	~~J~~	J													

8/15/93

The CRDL (IDL) in ug/L: for AA5100 PE (05/18/92) Ag=10 (0.69), As=10 (0.93), Bi=60 (1.44), Pb=3 (0.45), Se=5 (0.63), Tl=10 (0.33)
The CRDL (IDL) in mg/Kg @200X: Ag=2.0 (0.14), As=2.0 (0.18), Bi=12 (0.30), Pb=0.6 (0.09), Se=1.0 (0.13), Tl=2.0 (0.07)
The analytical spike levels in ug/L is 20 for As, Bi, Pb, Tl and 10 for Ag, Se.
LCS standard: Ag, As, Pb, Se, Tl -- ICF 0287; Bi -- Inorganic Ventures G-BI0119

ICV/CCV used during analyses: Ag, Pb, Tl -- ICF ICV4(1290); As, Se -- ICF ICV2(1290); Bi--IV G-BI0119.
Pre-digestion spike (ug/L): Ag=50, As=2000, Bi=10000, Pb=500, Se=2000, Tl=2000. Note that these spike levels are for those required by ICP (not GFAA); no redigestions for GFAA levels were performed.

(a) The spiked blank (B6) is used for the Bi control standard; spike is at 10,000 ug/L (equivalent to 2000 mg/Kg).
(b) No analytical spike performed on these samples.
(c) Analysis dates: Ag (6/15/92), As (6/11/92), Bi (6/19 & 6/24/92), Pb (6/22 &6/25/92), Se (6/17 & 6/18/92), Tl (6/12 & 6/18/92).

CLP Flags: U = [Analyte] < IDL B = IDL <= [Analyte] < CRDL
N = Pre-digestion Spike Recovery not within control limits.
W = Post-digestion spike recovery not within control limits; sample absorbance < 50% of spike absorbance.
* = RPD not within control limits.

TABLE 7b: GRAPHITE FURNACE AA ANALYSIS DATA FOR TASKS 2 & 4 -- SDG #16

Analyte	Sample ID#	PNL Log#	B1 (a) Sample mg/Kg	B1 Post Spike Rec	Flags C	Flags Q
Ag	B01SD9	92-05352	0.12 UJ	99%	U	
As	B01SD9	92-05352	5.08	108%		
Bi	B01SD9	92-05352	0.24 U	95%	U	
Pb	B01SD9	92-05352	3.97 J	93%		*
Se	B01SD9	92-05352	1.06 JU	80%	U	W
Tl	B01SD9	92-05352	0.08 B	108%	B	J
Ag	B01SD7	92-05353	0.10 UJ	97%	U	
As	B01SD7	92-05353	2.57	106%		
Bi	B01SD7	92-05353	0.20 U	100%	U	
Pb	B01SD7	92-05353	3.52 J	81%		*
Se	B01SD7	92-05353	0.89 UJ	66%	U	W
Tl	B01SD7	92-05353	0.07 B	107%	B	J
Ag	B01SF7	92-05490	0.13 UJ	94%	U	
As	B01SF7	92-05490	2.62	103%		
Bi	B01SF7	92-05490	3.40 B	88%		
Pb	B01SF7	92-05490	7.54 J	89%		*
Se	B01SF7	92-05490	1.16 UJ	84%	U	W
Tl	B01SF7	92-05490	0.11 B	103%	B	J
Ag	B01SF9	92-05491	0.12 UJ	95%	U	
As	B01SF9	92-05491	2.98	99%		
Bi	B01SF9	92-05491	0.24 U	92%	U	
Pb	B01SF9	92-05491	3.62 J	98%		*
Se	B01SF9	92-05491	1.09 UJ	81%	U	W
Tl	B01SF9	92-05491	0.10 B	103%	B	J

Analyte	Sample ID#	PNL Log#	B1 (a) Sample mg/Kg	B1 Post Spike Rec	Flags C	Flags Q
Ag	B01SG3	92-05492	0.13 UJ	95%	U	
As	B01SG3	92-05492	3.62	100%		
Bi	B01SG3	92-05492	0.28 U	92%	U	
Pb	B01SG3	92-05492	4.50 J	99%		*
Se	B01SG3	92-05492	1.21 JU	78%	U	W
Tl	B01SG3	92-05492	0.16 B	101%	B	J
Ag	B01SG9	92-05634	0.12 UJ	98%	U	
As	B01SG9	92-05634	2.70	97%		
Bi	B01SG9	92-05634	0.24 U	95%	B	
Pb	B01SG9	92-05634	3.95 J	100%		*
Se	B01SG9	92-05634	1.07 JU	81%	U	W
Tl	B01SG9	92-05634	0.12 B	102%	B	J
Ag	B01SH3	92-05690	0.14 UJ	98%	U	
As	B01SH3	92-05690	3.53	106%		
Bi	B01SH3	92-05690	0.29 U	95%	U	
Pb	B01SH3	92-05690	6.19 J	96%		*
Se	B01SH3	92-05690	1.25 JU	81%	U	W
Tl	B01SH3	92-05690	0.10 B	102%	B	J

2/15/93

2/15/93

The CRDL (IDL) in ug/L: for AA5100 PE (05/18/92) Ag=10 (0.69), As=10 (0.93), Bi=60 (0.1.44), Pb=3 (0.45), Se=5 (0.63), Tl=10 (0.33)
The CRDL (IDL) in mg/Kg @200X: Ag=2.0 (0.14), As=2.0 (0.18), Bi=12 (0.30), Pb=0.6 (0.09), Se=1.0 (0.13), Tl=2.0 (0.07) → 1.3
The analytical spike levels in ug/L is 20 for As, Bi, Pb, Tl and 10 for Ag, Se.

(a) Supporting QC (e.g., LCS, duplicates, pre-digestion spikes) shown in Table 7a.
(b) Analysis dates: Ag (6/15/92), As (6/11/92), Bi (6/19 & 6/24/92), Pb (6/22 &6/25/92), Se (6/17 & 6/18/92), Tl (6/12 & 6/16/92).

CLP Flags: U = [Analyte] < IDL B = IDL <= [Analyte] < CRDL
W = Post-digestion spike recovery not within control limits; sample absorbance < 50% of spike absorbance.
* = RPD for batch duplicate not within control limits.

TABLE 8: Hg COLD VAPOR AA ANALYSIS DATA
SDG #15

SOLID SAMPLES

		B1			B2			B5		B3 (a)		B4 (b)	
Sample ID#	PNL Log#	Sample mg/Kg	Flags C	Q	Dupl. mg/Kg	C	B1&B2 %RPD	Blank ug/L	C	Sample +Spike mg/Kg	Digest Spike %rec	LCS mg/Kg	LCS %rec
B01S97	92-04734	0.04J		H	0.03		10%	0.004	U	0.24	100%	13.65	108%
B01S99	92-04735	0.39J		H									
B01SB1	92-04736	0.31J		H									
B01SB3	92-04968	0.10J		H									
B01SB7	92-05102	0.01J	B	H									
B01SB2	92-05150	0.34J		H									

2/15/94

(a) B3 Predigestion Spike Level = 0.05 ug Hg in 25 mL aliquot.
(b) LCS 0287 Hg certified at 12.7 mg/Kg (Range 8.5 to 17.0 mg/Kg)
(c) If analyzed, NIST SRM2704 certified at 1.47 ug/g Hg
(d) RPD only calculated if both sample and duplicate are >IDL
(e) IDL = 0.04 ug/L [or 0.004 mg/kg -- (.04ug/L * 0.1L) / 1g]
(f) CRDL = 0.2 ug/L [or 0.02 mg/kg -- (0.2ug/L * 0.1L) / 1g]
(g) Calibration standards NIST SRM3133, ICV/CCV standard Johnson-Matthey 14395

CLP Flags
U: [Analyte] < IDL
H: Hold time not met
B: IDL ≤ [Analyte] < CRDL

TABLE 8: Hg COLD VAPOR AA ANALYSIS DATA

SOLID SAMPLES

		B1			B2			B5		B3 (a)		B4 (b)	
Sample ID#	PNL Log#	Sample mg/Kg	Flags C	Q	Dupl. mg/Kg	C	B1&B2 %RPD	Blank ug/L	C	Sample +Spike mg/Kg	Digest Spike %rec	LCS mg/Kg	LCS %rec
B01SC9	92-05271	0.19 J		N	0.16		18%	0.004	U	0.35	74%	10.3	81%
B01SC7	92-05270	0.31 J		N									
B01SD9	92-05352	0.09 J		N									
B01SD7	92-05353	0.08 J		N									
B01SF7	92-05490	0.38 J		N									
B01SF9	92-05491	0.15 J		N									
B01SG3	92-05492	0.00 J	U	N									
B01SG7	92-05633	0.02 J		N									
B01SG9	92-05634	0.14 J		N									
B01SH3	92-05690	0.00 J	U	N									
	SRM 2704											1.49	101%

2/15/93

(a) B3 Predigestion Spike = 0.05 ug Hg in 25 mL aliquot. (Analysis aliquot: sample 25mL, spike 10mL)
(b) LCS 0287 Hg certified at 12.7 mg/Kg (Range 8.5 to 17.0 mg/Kg)
(c) If analyzed, NIST SRM2704 certified at 1.47 ug/g Hg
(d) RPD only calculated if both sample and duplicate are >IDL
(e) IDL = 0.04 ug/L [or 0.004 mg/kg -- (0.04ug/L * 0.1L) / 1g]
(f) CRDL = 0.2 ug/L [or 0.02 mg/kg -- (0.2ug/L * 0.1L) / 1g]
(g) Calibration standards NIST SRM3133, ICV/CCV standard Johnson-Matthey 14395

CLP Flags
N: Spike recovery not within control limits
U: [Analyte] < IDL

TABLE 3A: ANION IC ANALYSIS DATA
NITRITE (NO2-N)
TASK 2 & 4 SDG 15

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B01SR5	92-03236+	12.2					0.8	U							93%	
B01SS1	92-03300+	0.8	U			0%			119	128	119	128	93%	93%		
B01S75	92-03738+	28.6														
B01S77	92-03901+	7.3														
B01S89	92-03902+	1.6														
B01S97	92-04734	0.9	BJ	0.9	BJ											
B01S99	92-04735	39.5	J													
B01SB1	92-04736	38.1	J													
B01SB3	92-04968	27.2	J			2%			147	128	145	128	94%	92%		
B01SB7	92-05102	0.8	UJ													
B01SB2	92-05150	3.1	J	2.9	J	7%										

2/15/93

NOTES:

1. + Not samples in this SDG but reported for QC purposes.
2. 42 ppm X anal. dil. factor / frac. solids spike in sample; see run narrative.
3. RPD values have been calculated using sample duplicates OR the two % spike recovery values.
4. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
5. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
6. Estimated IDL = 0.8 mg/Kg.
7. CRDL= 1.0 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3A: ANION IC ANALYSIS DATA TASK 2 & 4 SDG 16
NITRITE (NO2-N)

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B01SC7	92-05270	17.6	J				0.8	U							89%	
B01SC9	92-05271	0.8	UJ	0.8	UJ											
B01SD9	92-05352	2.1	J													
B01SD7	92-05353	0.8	UJ													
B01SF7	92-05490	13.7	J													
B01SF9	92-05491	0.8	UJ													
B01SG3	92-05492	0.8	UJ			0%			14.2	15.9	14.2	15.9	89%	89%		
B01SG7	92-05633	0.8	UJ													
B01SG9	92-05634	6.0	J													
B01SH3	92-05690	0.8	UJ													

11/15/93

NOTES:

1. 5 ppm NO2 spike in extract OR 5 ppm X dil. factor / frac. solids spike in sample; see run narrative.
2. RPD values have been calculated using sample duplicates OR the two sample plus spike values.
3. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
4. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
5. Estimated IDL = 0.8 mg/Kg.
6. CRDL= 1.0 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3B: ANION IC ANALYSIS DATA
NITRATE (NO3-N)
TASK 2 & 4 SDG I5

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B01SR5	92-03236+	359					0.8	U							95%	
B01SS1	92-03300+	92				2%			222	135	224	135	96%	98%		
B01S75	92-03738+	379														
B01S77	92-03901+	59.4														
B01S89	92-03902+	151														
B01S97	92-04734	92	J	83	J	10%										
B01S99	92-04735	681	J													
B01SB1	92-04736	651	J													
B01SB3	92-04968	151	J			5%			298	136	291	136	108%	103%		
B01SB7	92-05102	5.9	J													
B01SB2	92-05150	292	J	283	J	3%										

11/15/93

NOTES:

1. + Not samples in this SDG but reported for QC purposes.
2. 60 ppm X anal. dil. factor / frac. solids spike in sample; see run narrative.
3. RPD values have been calculated using sample duplicates OR the two % spike recovery values.
4. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
5. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
6. Estimated IDL = 0.8 mg/Kg.
7. CRDL = 1.0 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3B: ANION IC ANALYSIS DATA TASK 2 & 4 SDG 16
NITRATE (NO3-N)

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B01SC7	92-05270	318	J				0.8	U							101%	
B01SC9	92-05271	20.7	J	24.0	J	15%										
B01SD9	92-05352	289	J													
B01SD7	92-05353	80.6	J													
B01SF7	92-05490	568	J													
B01SF9	92-05491	4.5	J													
B01SG3	92-05492	14.3	J			9%			28.8	11.8	26.3	11.8	123%	102%		
B01SG7	92-05633	316	J													
B01SG9	92-05634	860	J													
B01SH3	92-05690	33.9	J													

11/15/95

NOTES:

1. 5 ppm NO3 spike in extract OR 5 ppm X dil. factor / frac. solids spike in sample; see run narrative.
2. RPD values have been calculated using sample duplicates OR the two sample plus spike values.
3. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
4. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
5. Estimated IDL = 0.8 mg/Kg.
6. CRDL = 1.0 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3C: ANION IC ANALYSIS DATA
PHOSPHATE (PO4-P)
TASK 2 & 4 SDG I5

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	%R C3 SMPL SPIKE	%R C6 DUP SPIKE	%R C4 CNTRL STD.	Q
B015R5	92-03236+	20					1.7	U							94%	
B015S1	92-03300+	1.7	U			1%			153	160	151	160	96%	94%		
B01S75	92-03738+	14.4														
B01S77	92-03901+	22.9														
B01S89	92-03902+	10.4														
B01S97	92-04734	1.7	UJ	1.7	UJ											
B01S99	92-04735	14	J													
B01SB1	92-04736	14.1	J													
B01SB3	92-04968	32	J			1%			165	161	163	160	83%	82%		
B01SB7	92-05102	1.7	UJ													
B01SB2	92-05150	8.9	J	8.1	J	9%										

NOTES:

1. + Not samples in this SDG but reported for QC purposes.
2. 49 ppm X anal. dil. factor / frac. solids spike in sample; see run narrative.
3. RPD values have been calculated using sample duplicates OR the two % spike recovery values.
4. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
5. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
6. Estimated IDL = 1.7 mg/Kg.
7. CRDL= 5 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3C: ANION IC ANALYSIS DATA TASK 2 & 4 SDG 16
PHOSPHATE (PO4-P)

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	%RECOVERY C3 SMPL SPIKE	%RECOVERY C6 DUP SPIKE	%RECOVERY C4 CNTRL STD.	Q
B01SC7	92-05270	3.2	BJ				1.7	U							98%	
B01SC9	92-05271	4.1	BJ	4.3	BJ	5%										
B01SD9	92-05352	40.9	J													
B01SD7	92-05353	18.9	J													
B01SF7	92-05490	5.3	J													
B01SF9	92-05491	4.8	BJ													
B01SG3	92-05492	1.7	UJ			1%			13.9	17	14	17	82%	82%		
B01SG7	92-05633	2.9	BJ													
B01SG9	92-05634	73.3	J													
B01SH3	92-05690	1.8	BJ													

NOTES:

1. 5 ppm PO4 spike in extract OR 5 ppm X dil. factor / frac. solids spike in sample; see run narrative.
2. RPD values have been calculated using sample duplicates OR the two sample plus spike values.
3. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
4. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
5. Estimated IDL = 1.7 mg/Kg.
6. CRDL= 5 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3D: ANION IC ANALYSIS DATA
SULFATE (SO4)
TASK 2 & 4 SDG 15

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	%R C3 SMPL SPIKE	%R C6 DUP SPIKE	%R C4 CNTRL STD.	Q
B01SR5	92-03238+	165					4	U							95%	
B01SS1	92-03300+	44.1				0%			523	500	524	500	96%	96%		
B01S75	92-03738+	344														
B01S77	92-03901+	68.6														
B01S89	92-03902+	91.9														
B01S97	92-04734	51.7	J	48.2 J		7%										
B01S99	92-04735	291	J													
B01SB1	92-04736	280	J													
B01SB3	92-04968	86.6	J			1%			572	500	567	500	97%	96%		
B01SB7	92-05102	8.7	BJ													
B01SB2	92-05150	276	J	266.4 J		4%										

8/15/94

NOTES:

1. + Not samples in this SDG but reported for QC purposes.
2. 50 ppm X anal. dil. factor / frac. solids. spike in sample; see run narrative.
3. RPD values have been calculated using sample duplicates OR the two % spike recovery values.
4. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
5. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
6. Estimated IDL= 4 mg/Kg.
7. CRDL= 20 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3D: ANION IC ANALYSIS DATA TASK 2 & 4 SDG 16
SULFATE (SO4)

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B01SC7	92-05270	177	J				4	U							98%	
B01SC9	92-05271	13.7	BJ	15.6	BJ	13%										
B01SD9	02-05352	116	J													
B01SD7	92-05353	136	J													
B01SF7	92-05490	99.3	J													
B01SF9	92-05491	5.1	BJ													
B01S63	92-05492	23.9	J			4%			76.4	52.2	73.3	52.2	101%	95%		
B01S67	92-05633	268	J													
B01S69	92-05634	287	J													
B01SH3	92-05690	52.1	J													

11/15/93

NOTES:

1. 5 ppm SO4 spike in extract OR 5 ppm X dil. factor / frac. solids spike in sample; see run narrative.
2. RPD values have been calulated using sample duplicates OR the two sample plus spike values.
3. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
4. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
5. Estimated IDL= 4 mg/Kg.
6. CRDL= 20 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 16: TOTAL ORGANIC CARBON DATA FOR TASKS 2 & 4
SDG #15

Soil Samples

WHC Sample	PNL ALO #	Sample Type	Sample wt. g	ug C Results	ug C in Sample	mgC/Kg Sample	RPD Dups	% rec.* standard	Date Received	Date Analyzed
B01S97	92-04734-1	Sample	0.10484	67.41	50.81	480	3.1		3-05-92	3-18-92
B01S97	92-04734-2	Duplicate	0.14796	90.54	73.94	495			3-05-92	3-18-92
B01S99	92-04735-1	Sample	0.10344	63.21	46.61	446	12.9		3-05-92	3-18-92
B01S99	92-04735-2	Duplicate	0.12258	65.13	48.53	392			3-05-92	3-18-92
B01SB1	92-04736-1	Sample	0.09134	50.51	33.91	368	8.9		3-05-92	3-18-92
B01SB1	92-04736-2	Duplicate	0.10530	59.33	42.73	402			3-05-92	3-18-92
B01SB1	92-04736-3	Standard	0.00489	2037	2021		3.4	103		3-18-92
B01SB1	92-04736-3	Std Dup	0.00468	1878	1862			99.5		3-18-92
B01SB1	92-04736-4	Blank		16.60						3-18-92
B01SB3	92-04968-1	Sample	0.13416	54.39	34.59	261	3.8		3-09-92	3-19-92
B01SB3	92-04968-2	Duplicate	0.13012	54.62	34.82	271			3-09-92	3-19-92
B01SB7	92-05102-1	Sample	0.13091	92.39	72.59	561	10.0		3-11-92	3-19-92
B01SB7	92-05102-2	Duplicate	0.09216	76.23	56.43	620			3-11-92	3-19-92
B01SB2	92-05150-1	Sample	0.12800	50.66	30.86	244	2.9		3-13-92	3-19-92
B01SB2	92-05150-2	Duplicate	0.13810	52.15	32.35	237			3-13-92	3-19-92
B01SB2	92-05150-3	Standard	0.00503	2019	1999		1.3	99.4		3-19-92
B01SB2	92-05150-3	Std Dup	0.00349	1389	1369			98.1		3-19-92
B01SB2	92-05150-4	Blank		19.80						3-19-92

* Based on standard carbon content of 40.0% by weight.

Total Organic Carbon by Procedure PNL-ALO-380, on Instrument WA92040, 325 Bldg., rm 701. Data reported from LRB 52821, pp 80-89.

TABLE 16: TOTAL ORGANIC CARBON DATA FOR TASKS 2 & 4 SDG #16

Soil Samples

WHC Sample	PNL ALO #	Sample Type	Sample wt. g	ug C Results	ug C in Sample	mgC/Kg Sample	RPD Dups	% rec.* standard	Date Received	Date Analyzed
B01SC7	92-05270-1	Sample	0.05445	42.68	36.68	681	11.5		3-19-92	3-30-92
B01SC7	92-05270-2	Duplicate	0.07187	49.15	43.15	607			3-19-92	3-30-92
B01SC9	92-05271-1	Sample	0.09127	14.58	8.58	95.0	5.1		3-19-92	3-30-92
B01SC9	92-05271-2	Duplicate	0.10951	16.86	10.86	100			3-19-92	3-30-92
B01SD9	92-05352-1	Sample	0.10930	21.49	15.49	143	10.0		3-24-92	3-30-92
B01SD9	92-05352-2	Duplicate	0.12196	25.04	19.04	158			3-24-92	3-30-92
B01SD7	92-05353-1	Sample	0.07005	30.20	24.20	349	17.3		3-24-92	3-30-92
B01SD7	92-05353-2	Duplicate	0.07142	35.32	29.32	415			3-24-92	3-30-92
B01SD7	92-05353-3	Standard	0.00487	1945.54	1939.54		1.4	99.6		3-30-92
B01SD7	92-05353-3	Std Dup	0.00720	2832.98	2826.98			98.2		
B01SD7	92-05353-4	Blank		6.00						3-30-92
B01SF7	92-05490-1	Sample	0.12256	41.89	27.79	227	6.4		3-27-92	4-02-92
B01SF7	92-05490-2	Duplicate	0.11161	41.17	27.07	242			3-27-92	4-02-92
B01SF9	92-05491-1	Sample	0.10018	21.86	7.76	77.5	2.9		3-27-92	4-02-92
B01SF9	92-05491-2	Duplicate	0.10612	22.09	7.99	75.3			3-27-92	4-02-92
B01SG3	92-05492-1	Sample	0.04879	63.92	49.82	1020	17.8		3-27-92	4-02-92
B01SG3	92-05492-2	Duplicate	0.05833	85.34	71.24	1220			3-27-92	4-02-92
B01SG3	92-05492-3	Standard	0.00514	2078.94	2064.84		0.8	100		4-02-92
B01SG3	92-05492-3	Std Dup	0.00575	2303.98	2289.86			99.6		
B01SG3	92-05492-4	Blank		14.10						4-02-92
B01SG7	92-05633-1	Sample	0.05462	55.25	45.55	834	21.0		3-31-92	4-09-92
B01SG7	92-05633-2	Duplicate	0.05577	66.98	57.28	1030			3-31-92	4-09-92
B01SG9	92-05634-1	Sample	0.07824	29.08	19.38	248	12.1		3-31-92	4-09-92
B01SG9	92-05634-2	Duplicate	0.08390	33.24	23.54	280			3-31-92	4-09-92
B01SH3	92-05690-1	Sample	0.02653	50.95	41.25	1550	12.1		4-01-92	4-09-92
B01SH3	92-05690-2	Duplicate	0.02821	59.15	49.45	1750			4-01-92	4-09-92
B01SH3	92-05690-3	Standard	0.00516	2068.14	2058.44		1.3	99.7		4-09-92
B01SH3	92-05690-3	Std Dup	0.00498	2029.49	2019.79			101		4-09-92
B01SH3	92-05690-4	Blank		9.70						4-09-92
		Standard 2	0.00521	1917.12	1907.42			91.5		4-09-92
		Standard 3	0.00664	2680.29	2670.59			100		4-09-92

Key: Standard 2: 1st post-sample std Standard 3: 2nd post-sample std * Based on std C content of 40.0% by wt.
Total Organic Carbon by Procedure PNL-ALO-380, on Instrument WA92040,
325 Bldg., rm 701. Data reported from LRB 52821, pp 90-1**

TABLE 2: TOTAL CYANIDE ANALYSIS DATA FOR TASK 7
SDG #15

WATERS Sample ID	PNL Log#	Sample G1 (µg/L)	C	Sample Dup G2 (µg/L)	C	RPD	Blank G5 (µg/L)	C	Spike added (µg)	Sample+ Spike G3 (µg/L)	ICV G4 (mg/L)	%Recoveries Smpl+ Spk G3	%Recoveries ICV G4	Q	Footnote#
B01R10	92-06291	93.3 J		90.1		3.5%	2.0	U	49	307.7	10.4	109%	111%		1-5
B01QZ8	92-06292	533.9													2,3,5
											Mean	109%	111%		
											Std Dev	N/A	N/A		

Footnotes
1. Stock ICV-6-9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for water = 10 µg/L.
3. IDL for liquids is 2 µg/L based on 500 mL sample; Sample IDL adjusted for volume distilled.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 3: FREE CYANIDE ANALYSIS
Task 7 SDG #15

Sample ID#	PNL Log#	Sample J1 ug/L	C	Sample dup. J2 ug/L	C	RPD	J5 Matrix Blank ug/L	C	J3 Sample+ Spike ug/L	J3 Spike Added ug/L	J6 Dup. + Spike ug/L	J6 Spike Added ug/L	J4 Control Std. ug/L	J4 Standard Added ug/L	% Recovery J3 Spike Rec.	% Recovery J6 Dup. + Spike Rec.	% Recovery J4 Control Std. Rec.	Q Flags
B01R10	92-06291	.7	U				5	U	48	40	49	40	52	50	103	108	104	H,E
B01QZ8	92-06292	26	J	24		4												H,E

1-23-93

Concentration Flags [C]

U : Analyzed but not detected (less than IDL)
B : Result is greater than or equal to IDL but less than CRDL

CRDL = 10 ug/L
Estimated IDL = 5 ug/L

Quality Flags [Q]

H: Hold time not met
E: Estimated Value
N: Spike recovery not within control limits
* : Duplicate Analysis not within control limits

NOTES:

1. + This sample is not part of this SDG but included for QC and documentation purposes.
2. 100% spike level is expected to be 40 ug/L.
3. J4: The spiked blank, at 50 ug/L, is used as the control for these samples.
4. J5: The method blank value has been used in this column.
5. RPD value based on duplicate results.
6. Samples analyzed on 5/14/92.

TABLE 4: COMPLEX CYANIDE DETERMINATION
FOR TASK 7 SDG #15

Sample ID#	PNL Log#	Total CN mg/Kg	Free CN mg/Kg	Complex CN mg/Kg (1)
B01R10	92-06291	93	7	86
B01QZ8	92-06292	534	26	508

(1) Results calculated by subtracting the Free cyanide results from the total cyanide results.

TABLE 4a: TOTAL CYANIDE ANALYSIS DATA TASK 2&4
SDG #15

SOILS-SEDIMENTS		Sample G1		Sample Dup G2			Blank G5		Spike added	Sample + Spike G3	ICV G4	%Recoveries			
Sample ID	PHL Log#	(mg/kg)	C	(mg/kg)	C	RPD	(µg/L)	C	(µg)	(mg/kg)	(mg/L)	Smpl + Spk G3	ICV G4	Q	Notes
B01S92	92-04661	0.2	U	0.2	U	N/A	2.0	U	48.3	10.3	9.4	100%	100%		1-5
B01S94	92-04662	0.2	U												
B01S96	92-04963	0.5	B	0.4	B	14%	2.0	U	48.3	10.1	9.6	97%	102%		1-5
B01S97	92-04734	0.4	B												2,3,5
B01S99	92-04735	1.6		1.7		4%	2.0	U	48.6	11.4	9.3	100%	99%		1-5
B01S81	92-04736	1.6													2,3,5
B01SB7	92-05102	0.2	U	0.2	U	N/A	2.0	U	48.6	10.1	10.0	100%	106%		1-5
B01SB3	92-04968	0.5	B												2,3,5
B01SB6	92-05103	0.2	U	0.2	U	N/A	2.0	U	48.6	10.2	9.5	101%	101%		1-5
B01SC0	92-05104	0.2	U												2,3,5
B01SC2	92-05151	0.2	U	0.2	U	N/A	2.0	U	48.8	10.3	10.0	101%	106%		1-5
B01SC4	92-05152	0.2	U												2,3,5
B01SC6	92-05153	0.2	U	0.2	U	N/A	2.0	U	49.1	9.4	9.4	92%	100%		1-5
B01SB2	92-05150	1.6													2,3,5
											Mean	99%	102%		
											Std Dev	3%	3%		

Footnotes
1. Stock ICV-G=9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for soil-sediment = 1.0 mg/kg.
3. IDL for solids is 0.2 mg/kg based on 5 g sample; Sample IDL adjusted for weight used.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 4b: TOTAL CYANIDE ANALYSIS DATA TASK 2&4
SDG #15

WATERS Sample ID	PNL Log#	Sample 61 (µg/L)	C	Sample Dup 62 (µg/L)	C	RPD	Blank 65 (µg/L)	C	Spike added (µg)	Sample+ Spike 63 (µg/L)	ICV 64 (mg/L)	%Recoveries Sml+ Spk 63	%Recoveries ICV 64	Q	Footnote#
B01S70	92-05105	4.0	U	4.0	U	N/A	2.0	U	48.8	98.3	9.3	101%	99%		1-5
B01S72	92-05106	4.0	U												2,3,5
											Mean	101%	99%		
											Std Dev	N/A	N/A		

98.3 → 19664

Footnotes
1. Stock ICV-6-9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for water = 10 µg/L.
3. IDL for liquids is 2 µg/L based on 500 mL sample; Sample IDL adjusted for volume distilled.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 4a: TOTAL CYANIDE ANALYSIS DATA TASK 2&4
SOG #16

SOILS-SEDIMENTS Sample ID	PNL Log#	Sample G1 (mg/kg)	C	Sample Dup G2 (mg/kg)	C	RPD	Blank G5 (µg/L)	C	Spike added (µg)	Sample + Spike G3 (mg/kg)	ICV G4 (mg/L)	%Recoveries Smpl + Spk G3	ICV G4	Q	Notes
B01SD2	92-05337	0.2 U	U	0.2	U	N/A	2.0	U	49.1	10.0	9.7	98%	104%		1-5
B01SC9	92-05271	1.6													
B01SD4	92-05338*	0.2 U	U	0.2	U	N/A	2.0	U	49.1	10.1	9.7	100%	103%		1-5
B01SC7	92-05270	66.8													2,3,5
B01SD4	92-05338*	0.2 U	U	0.2	U	N/A	2.0	U	49.1	10.6	10.0	105%	106%		1-5
B01SD9	92-05352	0.9 U	B												2,3,5
B01SD6	92-05339	0.2 U	U	0.2	U	N/A	2.0	U	49.1	10.8	9.5	106%	101%		1-5
B01SD7	92-05353	3.3													2,3,5
B01SF2	92-05367	0.2 U	B	0.3	B	12%	2.0	U	48.8	9.6	9.2	94%	98%		1-5
B01SF4	92-05368	0.3 U	B												2,3,5
B01SF6	92-05369	0.2 U	U	0.2	U	88%	2.0	U	48.8	9.7	9.7	91%	103%		1-5
B01SF7	92-05490	59.0													2,3,5

* Note: B01SD4 (92-05338) analyzed four times.

Mean	99%	103%
Std Dev	5%	2%

Footnotes
1. Stock ICV-6=9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for soil-sediment = 1.0 mg/kg.
3. IDL for solids is 0.2 mg/kg based on 5 g sample; Sample IDL adjusted for weight used.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 4b: TOTAL CYANIDE ANALYSIS DATA TASK 2&4
SDG #16

SOILS-SEDIMENTS Sample ID	PNL Log#	Sample G1 (mg/kg)	C	Sample Dup G2 (mg/kg)	C	RPD	Blank G5 (µg/L)	C	Spike added (µg)	Sample + Spike G3 (mg/kg)	ICV G4 (mg/L)	%Recoveries Smpl + Spk G3	%Recoveries ICV G4	Q	Notes
B01SG3	92-05492	0.2	U	0.2	U	N/A	2.0	U	48.8	10.3	9.6	100%	102%		1-5
B01SF9	92-05491	1.1	U												
B01SG2	92-05493	0.2	U	0.2	U	N/A	2.0	U	48.8	10.2	9.7	100%	103%		1-5
B01SG6	92-05494	0.2	U												2,3,5
B01SH3	92-05690	0.2	U	0.2	U	N/A	2.0	U	48.8	10.3	9.8	102%	105%		1-5
B01SG7	92-05633	7.8													2,3,5
B01SH2	92-05691	0.2	U	0.2	U	N/A	2.0	U	48.8	10.6	10.6	105%	112%		1-5
B01SG9	92-05634	5.9													2,3,5
B01SH6	92-05692	0.2	U	0.2	U	N/A	2.0	U	48.8	10.2	10.2	100%	108%		1-5
B01SH7	92-05877*	104.4													2,3,5
											Mean	101%	106%		
											Std Dev	2%	4%		
											SDG 16 Mean	100%	104%		
											Std Dev	4%	4%		

* Note: B01SH7 (92-5877) not part of SDG 16.

Footnotes
1. Stock ICV-G=9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for soil-sediment = 1.0 mg/kg.
3. IDL for solids is 0.2 mg/kg based on 5 g sample; Sample IDL adjusted for weight used.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 4c: TOTAL CYANIDE ANALYSIS DATA TASK 284
SDG #16

WATERS Sample ID	PNL Log#	Sample G1 (µg/L)	C	Sample Dup G2 (µg/L)	C	RPD	Blank G5 (µg/L)	C	Spike added (µg)	Sample+ Spike G3 (µg/L)	ICV G4 (mg/L)	%Recoveries Sampl+ Spk G3	ICV G4	Q	Footnote#
B01S74	92-05693	4.0 U	U	4.0	U	N/A	2.0	U	48.8	101.5	10.3	103%	109%		1-5
B01S90	92-05694	4.3 B	B												2,3,5
											Mean	103%	109%		
											Std Dev	N/A	N/A		

Footnotes
1. Stock ICV-6=9.4 mg/L: 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for water = 10 µg/L.
3. IDL for liquids is 2 µg/L based on 500 mL sample; Sample IDL adjusted for volume distilled.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 5: FREE CYANIDE ANALYSIS FOR TASKS 2 & 4
SDG # 16

																% Recovery			
							--J5--		-------J3	-----	-------J4	--------	------J6	-----	--J3--	--J6--	--J4--		
Sample ID#	PNL Log#	Sample J1 mg/kg	C	Sample dup. J2 mg/kg	C	RPD	Matrix Blank ug/L	C	Sample+ Spike mg/kg	Spike Added mg/kg	Control Std. mg/kg	Standard Added mg/kg	Dup. + Spike mg/kg	Spike Added mg/kg	Spike Rec.	Dup. + Spike Rec.	Control Std. Rec.	Q Flags	
B01SC7	92-05270	0.9	B	1.2		29%	5	U			5.1	5.0					102%	E	
B01SD7	92-05353	0.7	B						5.8	5.1			5.9	5.1	100%	102%			
B01SF7	92-05490	1.1					5	U			4.4	5.0					88%	H	
B01SG2 +	92-05493	2.0		1.3		42%													
B01SG7	92-05633	2.5																	
B01SG9	92-05634	2.7							6.9	5.0			7.0	5.1	84%	84%			

Concentration Flags [C]

U : [ANALYTE] < IDL
B : IDL <= [ANALYTE] < CRDL

Quality Flags [Q]

H: Hold time not met
E: Estimated Value
N: Spike recovery not within control limits
* : Duplicate Analysis not within control limits

CRDL = 1.0 mg/kg
Estimated IDL = 5 ug/L , 0.5 mg/kg

NOTES:

1. + This sample is included for QC and documentation purposes.
2. 100% spike level is expected to be 50 ug/L in the extract and 5 mg/kg in a 0.2 gm sample containing no moisture.
3. 100 % extraction efficiency is assumed in defining the extraction dilution as (diluent vol / sample wt) x 1.00 gm/ml .
4. J4: The spiked blank is the control for these samples. J5: The method blank value has been used in this column.
5. Samples 92-05270 and 92-05353 were analyzed on 3/31/92; the rest were analyzed on 4/10/92.

TABLE 6: COMPLEX CYANIDE DETERMINATION
FOR TASKS 2 & 4 SDG #16

Sample ID#	PNL Log#	Total CN mg/Kg	Free CN mg/Kg	Complex CN mg/Kg (1)
B01SC7	92-05270	66.8	0.9	65.9
B01SD7	92-05353	3.3	0.7	2.6
B01SF7	92-05490	59.0	1.1	57.9
B01SG7	92-05633	7.8	2.5	5.3
B01SG9	92-05634	5.9	2.7	3.2

(1) Results calculated by subtracting the free cyanide results from the total cyanide results.

Table 10: Gamma Energy Analysis of Soils

Diode L

(Radionuclide activity in pCi/g[a])

Transcription err
BJW 1/19/93

WHC Sample ID	Sample ID	Collection Date	Weight (g)	Co-60	Ru-106	Cs-137
B01S97	92-04734-L-1	3/2/92 10:12	16.433	1.11 ± 0.09	<34	(8.52 ± 0.09) X 10^4
B01S99	92-04735-L-1	3/3/92 10:15	1.0717	~~<20~~ <60	<4000	(3.34 ± 0.06) X 10^6
B01SB1	92-04736-L-1	3/3/92 10:15	12.074	<350	<3000	(2.88 ± 0.03) X 10^6
B01SB1	92-04736-L-2	3/3/92 10:15	1.0962	<40	<3300	(2.75 ± 0.01) X 10^6
B01SB3	92-04968-L-1	3/5/92 10:40	15.846	<3	<210	(1.66 ± 0.02) X 10^5
B01SB7	92-05102-L-1	3/10/92 08:33	15.275	<0.14	<0.47	<0.20
B01SB2	92-05150-L-1	3/11/92 08:50	1.2004	<480	<2500	(4.50 ± 0.05) X 10^6
B01SC7	92-05270-L-1*	3/13/92 08:55	1.0658	<830	<15000	(1.29 ± 0.01) X 10^7
B01SC7	92-05271-L-1*	3/16/92 14:00	14.838	<3	<190	(4.12 ± 0.04) X 10^5
B01SD9	92-05352-L-1*	3/19/92 14:32	15.179	0.70 ± 0.20	<16	(9.12 ± 0.28 X 10^2
B01SD9	92-05352-L-2*	3/19/92 14:32	16.621	0.596 ± 0.006	<2	(9.47 ± 0.09) X 10^2
B01SD7	92-05353-L-1*	3/19/92 10:20	14.404	<2	<140	(5.44 ± 0.03) X 10^4
B01SF7	92-05490-L-1*	3/23/92 14:16	14.144	<210	<14000	(2.35 ± 0.02) X 10^6
B01SF7	92-05490-L-2*	3/23/92/14:16	0.9269	<90	<5300	(1.84 ± 0.02) X 10^6
B01SF9	92-05491-L-1*	3/25/92 09:04	14.794	<0.2	<9	(3.02 ± 0.03) X 10^3
B01SG3	92-05492-L-1*	3/25/92 13:26	14.464	<0.3	<3	2.50 ± 0.36
B01SG9	92-05634-L-1*	3/30/92 10:02	13.680	3.1 ± 0.1	<30	(5.64 ± 0.06) X 10^3
B01SH3	92-05690-L-1*	3/31/92 09:03	13.214	<0.3	<3.5	4.39 ± 0.40
B01SG7	92-05633-L-1*	3/26/92 10:45	16.738	1.81 ± 0.17	<44	(1.25 ± 0.01) X 10^4
B01SH7	92-05877-L-1*	4/1/92 10:21	1.0683	62 ± 10	<2700	(4.41 ± 0.04) X 10^6
B01SB4	92-05953-L-1*	4/8/92 08:34	1.2256	<90	<5600	(2.88 ± 0.03) X 10^6

Table 10: Gamma Energy Analysis of Soils Continued

B01SC8	92-05954-L-1*	4/8/92 10:21	15.268	50 ± 2	<690	(1.37 ± 0.01) X 10^6
B01SC8	92-05954-L-2*	4/8/92 10:21	0.8959	64 ± 7	<2200	(1.60 ± 0.03) X 10^6
B01SC8	92-05954-L-5*	4/8/92 10:21	14.7	<0.19	<1.9	<0.14

Footnotes

[a] The one sigma uncertainties are based on counting statistics. All "<" values are detection limits associated with each "not detected" analysis. The detection limits are calculated as if the isotope was present at a level that is 2.5 times the square root of twice the average background.

* Sample not in this SDG but reported for QC and analytical batch purposes.

TABLE 11: TOTAL ALPHA ANALYSIS DATA
TASKS 2 & 4 SDG #15

WHC Sample ID	Parameters of Interest Sample #	Sample Type	Alpha (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.
First Batch									
B01S97	92-04734-A-1a	Soil	69.4	8.7	<20				
B01S99	92-04735-A-1a	Soil	1870	250	<600				
B01SB1	92-04736-A-1a	Soil	2200	280	<600				
B01SB1	92-04736-A-2a	Duplicate	2390	300	<700	8			
B01SB3	92-04968-A-1a	Soil	187	16	<20				
B01SB2	92-05150-A-1a	Soil	2380	230	<400				
	92-04736-A-3a	Matrix Spike	11680	860	<600		9430	200	100
	92-04736-A-4a	Blank Spike	25.1	1.6	<0.7		23.84	0.13	106
	92-04736-A-5a	Method Blank	<0.7						
Second Batch									
B01SB7	92-05102-A-1a	Soil	1.94	0.40	<0.1				
B01SF9	92-05491-A-1a +	Soil	8.30	0.93	<0.2				
B01SF9	92-05491-A-2a +	Duplicate	6.59	0.89	<0.1	23			
	92-05491-A-3a +	Matrix Spike	89.7	7.1	<0.5		99.64	0.56	83
	92-05491-A-4a +	Blank Spike	133	11	<0.6		119.77	0.64	111
	92-05491-A-5a +	Method Blank	<0.6						

*One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

**Blank value normalized to sample size analyzed. See narrative for details.

+ Sample not a part of this SDG.

TABLE 11: TOTAL ALPHA ANALYSIS DATA
SDG #16

Parameters of Interest									
WHC Sample ID	Sample #	Sample Type	Alpha (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.
First Batch									
B01SF9	92-05491-A-1a	Soil	8.30	0.93	<0.2				
B01SF9	92-05491-A-2a	Duplicate	6.59	0.89	<0.1	23			
B01SG3	92-05492-A-1a	Soil	1.93	0.44	<0.2				
B01SH3	92-05690-A-1a	Soil	2.58	0.47	<0.2				
	92-05491-A-3a	Matrix Spike	89.7	7.1	<0.5		99.64	0.56	83
	92-05491-A-4a	Blank Spike	133	11	<0.6		119.77	0.64	111
	92-05491-A-5a	Method Blank	<0.6						
Second Batch									
B01SC7	92-05270-A-1a	Soil	5995	462	<223				
B01SC9	92-05271-A-1a	Soil	123	11	<3				
B01SD9	92-05352-A-1a	Soil	33.8	4.3	<3				
B01SD9	92-05352-A-2a	Duplicate	43.7	4.8	<3	26			
B01SD7	92-05353-A-1a	Soil	89.3	9.3	<3				
B01SF7	92-05490-A-1a	Soil	1092	86	<13				
B01SG7	92-05633-A-1a	Soil	14.5	2.0	<0.7				
B01SG9	92-05634-A-1a	Soil	83.7	7.8	<2				
	92-05352-A-3a	Matrix Spike	147	16	<7		139.9	4.1	78
	92-05352-A-4a	Blank Spike	20.6	1.4	<0.6		23.81	0.13	87
	92-05352-A-5a	Method Blank	<0.6						

*One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

**Blank value normalized to sample size analyzed. See narrative for details.

TABLE 12: TOTAL BETA ANALYSIS DATA
TASKS 2 & 4 SDG #15

Parameters of Interest									
WHC Sample ID	Sample #	Sample Type	Beta (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.
First Batch									
B01S97	92-04734-A-1a	Soil	2.25E+05	5.8E+03	4.3E+03				
B01S99	92-04735-A-1a	Soil	8.67E+06	3.2E+05	5.4E+05				
B01SB1	92-04736-A-1a	Soil	8.56E+06	3.2E+05	5.4E+05				
B01SB1	92-04736-A-2a	Duplicate	8.88E+06	3.3E+05	5.6E+05	4			
B01SB3	92-04968-A-1a	Soil	3.40E+05	1.3E+04	2.4E+04				
B01SB2	92-05150-A-1a	Soil	1.11E+07	4.4E+05	9.0E+05				
	92-04736-A-3a	Matrix Spike	1.80E+07	6.1E+05	5.4E+05		9.48E+06	5.4E+05	100
	92-04736-A-4a	Blank Spike	46.3	1.9	13.7		47.9	2.4	97
	92-04736-A-5a	Method Blank	13.7	1.7					
Second Batch									
B01SB7	92-05102-A-1a	Soil	2.79	0.42	<0.43				
B01SF9	92-05491-A-1a+	Soil	1680	92	<0.43				
B01SF9	92-05491-A-2a+	Duplicate	1580	88	<0.43	6			
	92-05491-A-3a+	Matrix Spike	1044	56	<0.57		75.7	3.8	(a)
		MS Replate	1772	98	<0.57		75.7	3.8	(a)
	92-05491-A-4a+	Blank Spike	249	14	<1.7		240	12	104
	92-05491-A-5a+	Method Blank	<1.7						

*One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

**Blank value normalized to sample size analyzed. See narrative for details.

a) See narrative for discussion of matrix spike.

+ Samples not a part of this SDG.

TABLE 12: TOTAL BETA ANALYSIS DATA
TASKS 2 & 4 SDG #16

WHC Sample ID	Parameters of Interest Sample #	Sample Type	Beta (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.
Batch One									
B01SF9	92-05491-A-1a	Soil	1680	92	<0.43				
B01SF9	92-05491-A-2a	Duplicate	1580	88	<0.43	6			
	92-05491-A-3a	Matrix Spike	1044	56	<0.57		75.7	3.8	(a)
		MS Recount	1772	98	<0.57		75.7	3.8	(a)
	92-05491-A-4a	Blank Spike	249	14	<1.7		240	12	104
	92-05491-A-5a	Method Blank	<1.7						
B01SG3	92-05492-A-1a	Soil	6.62	0.70	<0.43				
B01SH3	92-05690-A-1a	Soil	9.40	0.88	<0.43				
Batch Two									
B01SC7	92-05270-A-1a	Soil	2.97E+07	1.2E+06	9.3E+05				
B01SC9	92-05271-A-1a	Soil	4.64E+05	1.8E+04	2.2E+04				
B01SD9	92-05352-A-1a	Soil	1.87E+04	5.2E+02	4.4E+02				
B01SD9	92-05352-A-2a	Duplicate	1.60E+04	4.5E+02	4.1E+02	16			
B01SD7	92-05353-A-1a	Soil	1.51E+06	6.2E+04	4.4E+04				
B01SG7	92-05633-A-1a	Soil	1.45E+05	5.4E+03	5.7E+03				
B01SG9	92-05634-A-1a	Soil	6.24E+05	2.1E+04	3.8E+03				
B01SF7	92-05490-A-1a	Soil	1.28E+07	4.8E+05	5.4E+05				
	92-05352-A-3a	Matrix Spike	1.83E+04	5.4E+02	5.9E+02		2.84E+03	1.63E+02	(a)
	92-05352-A-4a	Blank Spike	90.0	2.5	4.9		95.1	4.7	95
	92-05352-A-5a	Method Blank	4.9	1.2	4.9				

* One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

** Blank value normalized to sample size analyzed. See narrative for details.

a) See narrative for discussion of the matrix spike.

calculation of by Factor of 5
B/V 1/19/93

TABLE 13: PLUTONIUM ANALYSIS DATA FOR TASKS 2 & 4
SDG #15

Client Sample ID	Program Sample ID	Sample Type	Pu-239+240 pCi/g	+/- 1 sigma*	Pu-239+240 RPD	Pu-239+240 Normalized Blank**	Pu-238 pCi/g	+/- 1 sigma*	Pu-238 RPD	Pu-238 Normalized Blank**	Pu-239 Spike pCi/sample	+/- 1 sigma	% Recovery
Batch One													
B01S97	92-04734-A-1c	Soil	3.41E+01	1.25E+00		< 7 E-02	5.19E-01	5.28E-02		< 5 E-02			
B01S99	92-04735-A-1c	Soil	1.12E+03	4.08E+01		< 2 E+00	5.03E+01	3.12E+00		< 2 E+00			
B01SB1	92-04736-A-1c	Soil	1.32E+03	5.00E+01		< 4 E+00	5.29E+01	4.23E+00		< 3 E+00			
B01SB1	92-04736-A-2c	Duplicate	1.53E+03	5.79E+01	15	< 4 E+00	6.43E+01	4.98E+00	19	< 3 E+00			
B01SB3	92-04968-A-1c	Soil	9.42E+01	3.33E+00		< 7 E-02	4.63E+00	2.16E-01		< 6 E-02			
B01SB2	92-05150-A-1c	Soil	~~9.85E+03~~ 1.97E+3	3.82E+02		< 7 E+00	~~4.09E+02~~	3.50E+01		< 6 E+00			
	92-04736-A-5c	Blank	< 2 E-02				< 2 E-02						
	92-04736-A-4c	Blank Spike	1.02E+01	3.30E-01			< 1 E-02				1.22E+01	2.20E-01	84
Batch Two													
B01S87	92-05102-A-1c	Soil	< 2 E-03			1 E-03	< 3 E-03			< 7 E-04			
B01SF9	92-05491-A-1c	Soil +	7.32E-02	1.03E-02		1 E-03	< 8 E-03			< 7 E-04			
B01SF9	92-05491-A-2c	Duplicate +	6.59E-02	5.41E-03	11	1 E-03	4.05E-03	1.60E-03	na	< 7 E-04			
	92-05491-A-5c	Blank +	2.06E-03	9.24E-04			< 2 E-03						
	92-05491-A-4c	Blank Spike +	1.08E+01	2.99E-01			< 3 E-03				1.19E+01	1.10E-01	91

* Propogated error based on combination of counting, pipetting, and volume uncertianties.
** Blank value when normalized to actual sample size analyzed, in pCi/g.
\+ Samples included for QC purposes--these were the batch duplicates.

All sample analyses are based on received sample weight, i.e. no correction for weight percent solids.

TABLE 13: PLUTONIUM ANALYSIS DATA FOR TASKS 284
SDG #16

Batch One of Two

Client Sample ID	Program Sample ID	Sample Type	Pu-239+240 pCi/g	+/- 1 sigma	Pu-239+240 RPD	Pu-239+240 Normalized Blank**	Pu-238 pCi/g	+/- 1 sigma	Pu-238 RPD	Pu-238 Normalized Blank**	Pu-239 Spike pCi/sample	+/- 1 sigma	% Recovery
B01SF9	92-05491-A-1c	Soil	7.32E-02	1.03E-02		<1 E-03	<8 E-03			<7 E-04			
B01SF9	92-05491-A-2c	Duplicate	6.59E-02	5.41E-03	11	<1 E-03	4.05E-03	1.60E-03	NA	<7 E-04			
	92-05491-A-5c	Blank*	2.06E-03	9.24E-04			<2 E-03						
	92-05491-A-4c	Blank Spike*	1.08E+01	2.99E-01			<3 E-03				1.19E+01	1.10E-01	91
B01SG3	92-05492-A-1c	Soil	<2 E-03			<1 E-03	<2 E-03			<7 E-04			
B01SH3	92-05690-A-1c	Soil	<3 E-03			<1 E-03	<3 E-03			<7 E-04			

* Reported in pCi/sample
** Blank value when normalized to actual sample size analyzed, in pCi/g.

Using a 1 gram sample size results in a detection limit of approximately 2 E-3 pCi/g for Pu-239+240 and 3 E-3 pCi/g for Pu-238.

One sigma uncertainties are the propagated error of individual measurements.

All sample analyses are based on received sample weight, i.e., no correction for weight percent solids.

TABLE 13: PLUTONIUM ANALYSIS DATA FOR TASKS 2&4
SDG #16 (continued)

Batch Two of Two

Client Sample ID	Program Sample ID	Sample Type	Pu-239+240 pCi/g	+/- 1 sigma	Pu-239+240 RPD	Pu-239+240 Normalized Blank**	Pu-238 pCi/g	+/- 1 sigma	Pu-238 RPD	Pu-238 Normalized Blank**	Pu-239 Spike pCi/sample	+/- 1 sigma	% Recovery
B01SC7	92-05270-A-1c	Soil	1.30E+01	5.04E-01		<4 E-02	5.63E-01	4.74E-02		<5 E-02			
B01SC9	92-05271-A-1c	Soil	5.47E+01	2.03E+00		<6 E-02	2.60E+00	1.52E-01		<8 E-02			
B01SD9	92-05352-A-1c	Soil	4.26E-01	3.87E-02		<6 E-02	3.75E-02	1.23E-02		<8 E-02			
B01SD9	92-05352-A-2c	Duplicate	4.87E-01	3.60E-02	13	<6 E-02	4.09E-02	1.01E-02	9	<7 E-02			
	92-05352-A-5c	Blank*	<2 E-02				<3 E-02						
	92-05352-A-4c	Blank Spike*	1.05E+01	3.42E-01			<1 E-02				1.18E+01	9.09E-02	89
B01SD7	92-05353-A-1c	Soil	3.02E+01	1.15E+00		<6 E-02	1.78E+00	1.18E-01		<8 E-02			
B01SF7	92-05490-A-1c	Soil	6.71E+02	2.49E+01		<1 E+00	3.31E+01	2.09E+00		<1 E+00			
B01SG7	92-05633-A-1c	Soil	5.54E+00	2.24E-01		<1 E-02	3.55E-01	2.67E-02		<2 E-02			
B01SG9	92-05634-A-1c	Soil	4.67E+00	2.07E-01		<4 E-02	3.36E-01	3.67E-02		<5 E-02			

* Reported in pCi/sample
** Blank value when normalized to actual sample size analyzed, in pCi/g.

Using a 1 gram sample size results in a detection limit of approximately 2 E-2 pCi/g for Pu-239+240 and 3 E-2 pCi/g for Pu-238.

One sigma uncertainties are the propagated error of individual measurements.

All sample analyses are based on received sample weight, i.e., no correction for weight percent solids.

TABLE 14: STRONTIUM-90 ANALYSIS DATA
TASKS 2 & 4 SDG #15

WHC Sample ID	Parameters of Interest: Sample #	Sample Type	Strontium (pCi/g)	+/- 1 sigma*	Normalized Blank***	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.	Normalized % Yield**
First Batch										
B01S97	92-04734-A-1b	Soil	5.89E+04	4.67E+03	8.9E+02					
B01S99	92-04735-A-1b	Soil	2.98E+06	2.71E+05	1.4E+05					
B01SB1	92-04736-A-1b	Soil	2.90E+06	2.58E+05	1.4E+05					
B01SB1	92-04736-A-2b	Duplicate	3.32E+06	2.92E+05	1.5E+05	13.5				
B01SB3	92-04968-A-1b	Soil	9.89E+04	8.29E+03	2.5E+03					
B01SB2	92-05150-A-1b	Soil	3.53E+06	2.97E+05	9.3E+04					
	92-04736-A-3b	Matrix Spike	431	32.9	1.4		414	21	104	
	92-04736-A-3b	Yield Spike	Used to determine Batch yield							95
	92-04736-A-4b	Blank Spike	53.5	4.7	1.4		48.3	2.4	111	
	92-04736-A-5b	Method Blank	1.41	0.44						
Second Batch										
B01SB7	92-05102-A-1b	Soil	0.65	0.20	<0.3					
B01SF9	92-05491-A-1b +	Soil	40.8	3.2	<0.2					
B01SF9	92-05491-A-2b +	Duplicate	36.0	2.9	<0.2	12.7				
	92-05491-A-3b +	Matrix Spike	294	22	<0.4		274	14	93	
	92-05491-A-3b +	Yield Spike	Used to determine Batch yield							96
	92-05491-A-4b +	Blank Spike	46.0	4.1	<0.6		47.4	2.4	97	
	92-05491-A-5b +	Method Blank	<0.61							

* One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

** All Sr-90 analyses are calculated on the basis of their ratio to the matrix spike recovery which has been normalized to 100% chemical recovery.

*** Blank value when normalized to actual sample mass analyzed.

\+ Sample not a part of this SDG.

TABLE 14: STRONTIUM-90 ANALYSIS DATA FOR TASKS 2 & 4
SDG #16

WHC Sample ID	Parameters of Interest: Sample #	Sample Type	Strontium (pCi/g)	+/- 1 sigma*	Normalized Blank***	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.	Normalized % Yield**
First Batch										
B01SC7	92-05270-A-1b	Soil	1.07E+07	8.50E+05	<7E+03					
B01SC9	92-05271-A-1b	Soil	7.37E+04	6.07E+03	<3E+02					
B01SD9	92-05352-A-1b	Soil	8.96E+03	7.07E+02	<3E+01					
B01SD9	92-05352-A-2b	Duplicate	7.67E+03	6.11E+02	<3E+01	15.5				
B0S1J7	92-05353-A-1b	Soil	7.12E+05	5.89E+04	<3E+03					
B01SG7	92-05633-A-1b	Soil	7.23E+04	6.12E+03	<1E+03					
B01SG9	92-05634-A-1b	Soil	2.99E+05	2.38E+04	<3E+02					
B01SF7	92-05490-A-1b	Soil	5.41E+06	4.67E+05	<3E+04					
	92-05352-A-3b	Matrix Spike	8.93E+03	7.17E+02	<31		1422	81		
	92-05352-A-3b	Yield Spike	Used to determine Batch yield							100
	92-05352-A-4b	Blank Spike	115	9.1	0.62		118	6	97	
	92-05352-A-5b	Method Blank	<0.6							
Second Batch										
B01SG3	92-05492-A-1b	Soil	<0.3		<0.3					
B01SH3	92-05690-A-1b	Soil	<0.3		<0.3					
B01SF9	92-05491-A-1b	Soil	40.8	3.2	<0.2					
B01SF9	92-05491-A-2b	Duplicate	36.0	2.9	<0.2	12.7				
	92-05491-A-3b	Matrix Spike	294	22	<0.4		274	14	93	
	92-05491-A-3b	Yield Spike	Used to determine Batch yield							96
	92-05491-A-4b	Blank Spike	46.0	4.1	<0.6		47.4	2.4	97	
	92-05491-A-5b	Method Blank	<0.6							

* One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

** All Sr-90 analyses are calculated on the basis of their ratio to the matrix spike recovery which has been normalized to 100% chemical recovery.

*** Blank value when normalized to actual sample mass analyzed.

TABLE 15: TRITIUM ANALYSIS DATA
TASKS 2 & 4 SDG #15

HPV 1/20/93

WHC Sample ID	Sample #	Sample Type	Tritium (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.	RCF Fs***
	Parameters of Interest									
B01S97	92-04734-K-1	Soil	20.7 J	1.6	<3					
B01S99	92-04735-K-1	Soil	85.7 J	3.5	<4					
B01SB1	92-04736-K-1	Soil	41.3 J	2.5	<4					
B01SB3	92-04968-K-1	Soil	42.3 J	2.1	<4					
B01SB3	92-04968-K-2	Duplicate	38.6 J	2.0	<4	9				
B01SB7	92-05102-K-1	Soil	<4.7 UJ		na					
B01SB2	92-05150-K-1	Soil	37.5 J	2.3	<4					
	92-03901-K-4	Matrix Spike	663 J	21	<4		772	13	80.7	
	92-03300-K-4	Blank Spike	3608 J	116	<21		4225	49	85.4	
	92-03901-K-5	Method Blank	<21 UJ							
	92-03901-K-4	Yield spike to determine Fs								85.1

* One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.
** Blank value normalized to sample size analyzed (pCi/g). Refer to narrative for details.
*** Recovery Correction Factor, Fs.
nd: not detected
na: not applicable

TABLE 15: TRITIUM ANALYSIS DATA FOR TASKS 2 & 4
SDG #16

WHC Sample ID	Sample #	Sample Type	Tritium (pCi/g)	+/- 1 sigma*	RPD	Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.	RCF Fs**
B01SC7	92-05270-K-1	Soil	15.5	1.9					
B01SC9	92-05271-K-1	Soil	14.7	1.6					
B01SC9	92-05271-K-2	Duplicate	14.2	1.6	3				
B01SD9	92-05352-K-1	Soil	10.4	1.3					
B01SD7	92-05353-K-1	Soil	35.4	1.8					
B01SF7	92-05490-K-1	Soil	16.2	1.8					
B01SF9	92-05491-K-1	Soil	43.8	1.8					
B01SG3	92-05492-K-1	Soil	7.2	1.8					
B01SG7	92-05633-K-1	Soil	<5						
B01SG9	92-05634-K-1	Soil	30.5	2.0					
B01SH3	92-05690-K-1	Soil	44.0	1.9					
	92-05271-K-4	Matrix Spike	632	13		700	12	88	
	92-05271-K-	Blank Spike	4470	86		4177	73	107	
	92-05271-K-5	Method Blank	<4						
	92-05271-K-4	Yield spike to determine Fs							81.5

*One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.
**Recovery Correction Factor, Fs.

APPENDIX B

DATA VALIDATION SUPPORTING DOCUMENTATION

SDG: B01R10-PNL-062

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST - FORM A-6

PROJECT: 200-BP-1	REVIEWER: C. Kruger	DATE: 11-JAN-93
LABORATORY: PNL	CASE: Task 7 #15	SDG: B01R10
SAMPLES/MATRIX:		
B01R10 (AQUEOUS)		
B01Q78 (AQUEOUS)		

1. COMPLETENESS AND CONTRACT COMPLIANCE

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

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

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

2. HOLDING TIMES

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

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

3. INITIAL CALIBRATIONS

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

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

Was a midrange cyanide standard distilled? (Yes) No N/A

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

4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

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

Are there calculation errors? Yes (No) N/A

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

5. ICP INTERFERENCE CHECK SAMPLE

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

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

Are there calculation errors? Yes No (N/A)

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

6. LABORATORY BLANKS

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

ACTION: Qualify all associated sample results for any analyte <5 times the amount in any laboratory blank as nondetected (U). If analyte concentrations in the blank are >CRDL or below the negative CRDL, verify the laboratory has redigested and reanalyzed associated samples with analyte concentrations <10 times the blank concentration. If the laboratory has not redigested and reanalyzed the samples, note in the validation narrative.

7. FIELD BLANKS

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

ACTION: Qualify all sample results for any analyte <5 times the amount in any valid field blank as nondetected (U).

8. MATRIX SPIKE SAMPLE ANALYSIS

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

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

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

9. LABORATORY CONTROL SAMPLE

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

Are there calculation errors? Yes (No) N/A

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

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

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

10. PERFORMANCE AUDIT ANALYSES

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

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

11. DUPLICATE SAMPLE ANALYSIS

Are RPD values acceptable? (Yes) No N/A

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

12. ICP SERIAL DILUTION

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

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

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

13. FIELD DUPLICATE SAMPLES

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

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

14. FIELD SPLIT SAMPLES

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

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

1516. FURNACE ATOMIC ABSORPTION QUALITY CONTROL

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

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

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

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

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

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

ACTION: If duplicate injections are outside the acceptance limits and the sample has not been reanalyzed or the reanalysis is outside the acceptance limits, qualify the associated data as estimated (J for detects and UJ for nondetects). If the analytical spike recovery is <40% qualify detects as estimated (J). If the analytical spike recovery is $\geq$10% but <40%, qualify all nondetects as estimated (UJ) and if the analytical spike recovery is <10%, reject all nondetects (R). If the sample absorbance is <50% of the analytical spike absorbance and the analytical spike recovery is <85% or >115%, qualify all results as estimated (J for detects and UJ for nondetects). If method of standard additions (MSA) was required but was not performed, the MSA samples were spiked incorrectly, or the MSA correlation coefficient was <0.995, qualify the associated detected results as estimated (J).

17. ANALYTE QUANTITATION AND DETECTION LIMITS

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

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

18. OVERALL ASSESSMENT AND SUMMARY

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

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

COMMENTS (attach additional sheets as necessary):

HOLDING TIMES!

TOTAL CYANIDE ANALYSIS – Sample B01R10 received 'J' qualifier due to missed holding times.

FREE CYANIDE ANALYSIS – samples B01R10 and B01Q78 received J qualifiers due to missed holding times.

HOLDING TIME SUMMARY - FORM B-1

SDG: B01R10	REVIEWER: C. Kruger	DATE: 11-JAN-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
B01R10	TOTAL CYANIDE	10-APR-92	23-APR-92	27-APR-92	13	17	J
B01QZ8	"	14-APR-92	23-APR-92	27-APR-92	9	13	-
B01R10	FREE CYANIDE	10-APR-92	14-MAY-92	14-MAY-92	34	34	J
B01QZ8	"	14-APR-92	14-MAY-92	14-MAY-92	30	30	J

CALIBRATION DATA SUMMARY - FORM B-2

SDG: B01R1D	REVIEWER: C. KRUGER	DATE: 11-JAN-93	PAGE 1 OF 1
COMMENTS: NO EXCEPTIONS NOTED			
CALIB. TYPE: INITIAL CONTINUING		INSTRUMENT:	

CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: B01R10	REVIEWER: C. Kruger	DATE: 11-JAN-93	PAGE 1 OF 1
COMMENTS:	NO EXCEPTIONS NOTED		

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER

ACCURACY DATA SUMMARY - FORM B-4

SDG: B01R10	REVIEWER: C. Kruger	DATE: 11-JAN-93	PAGE 1 OF 1
COMMENTS: NO EXCEPTIONS NOTED NO EXCEPTIONS NOTED			

SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED

PRECISION DATA SUMMARY - FORM B-5

SDG: B01R10	REVIEWER C. Kruger	DATE: 11-JAN-93	PAGE 1 OF 1

COMMENTS: DATA ALL MET ACCEPTANCE CRITERIA; RPD for field dup Free CN⁻ miscalculated

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER

CALCULATION SUMMARY - FORM B-6

SDG: B01R10	REVIEWER: C. Kruger	DATE: 11-JAN-93	PAGE 1 OF 1

COMMENTS: CALCULATION ERRORS AS NOTED BELOW!

FREE CYANIDE ANALYSES!

CALCULATION OF RPD FOR SAMPLE B01QZ8 AND DUPLICATE:

CALCULATED IN ERROR AS 4%

GIVEN 24 µg/L and 26 µg/L,

RPD SHOULD BE 8%.

CALCULATION ERROR DOES NOT AFFECT DATA QUALITY.

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: B01R10	REVIEWER: C. KRUEGER	DATE: 11-JAN-93	PAGE 1 OF 1
COMMENTS: SAMPLES QUALIFIED BELOW			
COMPOUND	**QUALIFIER**	**SAMPLES AFFECTED**	**REASON**
TOTAL CYANIDE	J	B01R10	HOLDING TIME
FREE CYANIDE	J	B01R10, B01QZB	HOLDING TIME

TABLE 2: TOTAL CYANIDE ANALYSIS DATA FOR TASK 7
SDG #15

WATERS Sample ID	PNL Log#	Sample G1' (µg/L)	C	Sample Dup G2 (µg/L)	C	RPD	Blank G5 (µg/L)	C	Spike added (µg)	Sample+ Spike G3 (µg/L)	ICV G4 (mg/L)	%Recoveries Smpl+ Spk G3	%Recoveries ICV G4	Q	Footnote#
B01R10	92-06291	93.3	J	90.1		3.5%	2.0	U	49	307.7	10.4	109%	111%		1-5
B01QZ8	92-06292	533.9													2,3,5
											Mean	109%	111%		
											Std Dev	N/A	N/A		

Footnotes
1. Stock ICV-6=9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for water = 10 µg/L.
3. IDL for liquids is 2 µg/L based on 500 mL sample; Sample IDL adjusted for volume distilled.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 3: FREE CYANIDE ANALYSIS
Task 7 SDG #15

Sample ID#	PNL Log#	Sample J1 ug/L	C	Sample dup. J2 ug/L	C	RPD	J5 Matrix Blank ug/L	C	J3 Sample+ Spike ug/L	J3 Spike Added ug/L	J6 Dup. + Spike ug/L	J6 Spike Added ug/L	J4 Control Std. ug/L	J4 Standard Added ug/L	% Recovery J3 Spike Rec.	% Recovery J6 Dup. + Spike Rec.	% Recovery J4 Control Std. Rec.	Q Flags
B01R10	92-06291	7	~~B~~ J	CUR 1-23-93			5	U	48	40	49	40	52	50	103	106	104	H,E
B01QZ8	92-06292	26	J	24		4												H,E

Concentration Flags [C]

U : Analyzed but not detected (less than IDL)
B : Result is greater than or equal to IDL but less than CRDL

CRDL = 10 ug/L
Estimated IDL = 5 ug/L

Quality Flags [Q]

H: Hold time not met
E: Estimated Value
N: Spike recovery not within control limits
* : Duplicate Analysis not within control limits

NOTES:

1. + This sample is not part of this SDG but included for QC and documentation purposes.
2. 100% spike level is expected to be 40 ug/L.
3. J4: The spiked blank, at 50 ug/L, is used as the control for these samples.
4. J5: The method blank value has been used in this column.
5. RPD value based on duplicate results.
6. Samples analyzed on 5/14/92.

TABLE 4: COMPLEX CYANIDE DETERMINATION
FOR TASK 7 SDG #15

Sample ID#	PNL Log#	Total CN mg/Kg	Free CN mg/Kg	Complex CN mg/Kg (1)
B01R10	92-06291	93	7	86
B01QZ8	92-06292	534	26	508

(1) Results calculated by subtracting the Free cyanide results from the total cyanide results.

APPENDIX C

DATA VALIDATION SUPPORTING DOCUMENTATION

SDG: B01S92-PNL-063

VOLATILE ORGANIC DATA VALIDATION CHECKLIST - FORM A-1

↗200 BP-1 Site Investigation

PROJECT: B0I597-PNL-063	REVIEWER:	DATE: 1/21/93
LABORATORY: Battelle PNL	CASE: B0I592-PNL	SDG: 15
SAMPLES/MATRIX: B0I597, B0I599, B0I5B1 (duplicate of B0I599), B0I5B3, B0I5B7, and B0I5B2 soils		

1. DATA PACKAGE COMPLETENESS

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

Data Package Item	Present?:	Yes	No	N/A
Case Narrative		✓	—	—
Data Summary		✓	—	—
Chain-of-Custody		✓	—	—
QC Summary				
Surrogate report		✓	—	—
MS/MSD report		✓	—	—
Blank summary report		✓	—	—
GC/MS tuning report		✓	—	—
Internal standard summary report		✓	—	—
Sample Data				
Sample reports		✓	—	—
TIC reports for each sample		✓	—	—
RIC reports for all samples		✓	—	—
Raw and corrected spectra for all detected results		✓	—	—
Raw and corrected library search data for all reported TIC		✓	—	—
Quantitation and calculation data for all TIC		✓	—	—
Standards Data				
Initial calibration report		✓	—	—
RIC and quantitation reports for initial calibration		—	✓(1)	—
Continuing calibration reports		✓	—	—
RIC and quantitation reports for cont. calibrations		✓	—	—
Internal standard summary report		✓	—	—
Raw QC Data				
Tuning report, spectra and mass lists		✓	—	—
Blank analysis reports		✓	—	—
TIC reports for all blanks		✓	—	—
RIC and quantitation reports for blanks		✓	—	—
Raw and corrected spectra for all detected results in blanks		✓	—	—
Raw and corrected library search data for all reported TIC		✓	—	—

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

2. HOLDING TIMES

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

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

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

3. INSTRUMENT CALIBRATION, TUNING AND PERFORMANCE CHECKS

3.1 GC/MS TUNING AND PERFORMANCE CHECKS

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

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

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

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

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

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

3.2 INITIAL CALIBRATION

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

Are all RSD values ≤30% (2/88 SOW)? (Yes) (1) No N/A

Are all RRF values ≥0.05 (2/88 SOW)? (Yes) (1) No N/A

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

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

3.3. CONTINUING CALIBRATION

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

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

4. BLANKS

4.1 LABORATORY BLANKS

Has the laboratory conducted a method blank analysis per matrix for every 12-h period in which samples were analyzed?	(Yes)	No	N/A
Are TCL compounds present in the laboratory blanks?	(Yes) see Form B-3	No	N/A

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

4.2. FIELD BLANKS

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

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

5. ACCURACY

5.1 SURROGATE/SYSTEM MONITORING COMPOUND RECOVERY

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

Are any surrogate recoveries $< 10\%$? Yes (No) N/A

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

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

5.2 MATRIX SPIKE RECOVERY

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

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

Are there any calculation errors? Yes (No) N/A

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

5.3 PERFORMANCE AUDIT SAMPLES

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

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

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATES

Are RPD values within specification? (Yes) No N/A

Are there any calculation errors? Yes (No) N/A

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

6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? Yes No (N/A) (2)

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

6.3 FIELD SPLIT SAMPLES

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

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

7. SYSTEM PERFORMANCE

7.1 INTERNAL STANDARDS PERFORMANCE

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

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

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

8. COMPOUND IDENTIFICATION AND QUANTITATION

8.1 COMPOUND IDENTIFICATION

Are detected compounds within ±0.06 relative retention time units of the associated calibration standard?	(Yes)	No	N/A
Are all ions at a relative intensity of ≥ 10% in the standard spectra present in the sample spectra?	(Yes)	No	N/A
Do the relative intensities between the standard and sample spectra agree within 20%?	(Yes)	No	N/A
Have all ions > 10% in the sample spectra that are not present in the standard spectra been reviewed for possible background contamination?	Yes	No	(N/A)
Are molecular ions present in the reference specrum present in the sample spectrum?	(Yes)	No	N/A

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

8.2 REPORTED RESULTS AND QUANTITTATION LIMITS

Has the laboratory used the correct RRF values and internal standard(s) for quantitation?	(Yes)	No	N/A
Are results and quantitation limits calculated properly?	(Yes)	No	N/A
Has the laboratory reported the sample quantitation limits within 5xCRQL values?	(Yes)	No	N/A

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

8.3 TENTATIVELY IDENTIFIED COMPOUNDS (TIC)

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

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

9. OVERALL ASSESSMENT AND SUMMARY

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

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

COMMENTS (attach additional sheets as necessary):

① Initial calibration raw data not provided. Therefore, RRFs for ICAL could not be validated.

② Field duplicate results were all below CRQL, therefore, RPDs could not be calculated

HOLDING TIME SUMMARY - FORM B-1

SDG: 15	REVIEWER: BJV	DATE: 1/21/93	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
B01S97	VOA	3/2/92	NA	3/10/92	NA	8	None
B01S99	"	3/3/92	"	"	"	7	"
B01SB1	"	3/3/92	"	"	"	7	"
B01SB3	"	3/5/92	"	"	"	5	"
B01SB7	"	3/10/92	"	3/19/92	"	9	None
B01SB2	"	3/11/92	"	3/19/92	"	8	None

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 15	REVIEWER: [illegible]	DATE: 1/21/93	PAGE 1 OF 1
COMMENTS: No calibration problems indicated			
CALIB. TYPE: INITIAL CONTINUING		INSTRUMENT:	

CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 15	REVIEWER: BJV	DATE: 1/21/93	PAGE 1 OF 2
COMMENTS:			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
Blank	Acetone	12Φ			ug/kg		12Φ	B01S97	1ΦU
								~~B01S97D~~	~~BJV 1/14/93~~
								B01S99	1ΦU
								B01SB1	1ΦU
								B01SB1D	1ΦU
								~~B01SB3~~	~~BJV 1/21/93~~
Blank	2-Butanone	1Φ			ug/kg		10Φ	B01S97	1ΦU
								B01S97D	1ΦU
								B01SB1	1ΦU
								B01SB3	1ΦU
Blank	4-Methyl-2-pentanone	3	J		ug/kg	15		None	None
Blank	2-Hexanone	4	J		"	20		None	None
Blank	Acetone	5	J		ug/kg		5Φ	B01SB7	1ΦU
								B01SB7D	1ΦU
								B01SB2	1ΦU

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 15	REVIEWER: BJV	DATE: 1/21/93	PAGE 2 OF 2

COMMENTS:

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
Blank	2-Butanone	4	J		ug/kg		4Φ	B015B7	1Φ U
1	1	1	1		1		1	B015B7D	1Φ U
1	1	1	1		1		1	B015B2	1Φ U

ACCURACY DATA SUMMARY - FORM B-4

SDG: 15	REVIEWER: [illegible]	DATE: 1/21/93	PAGE 1 OF 1	
COMMENTS: All accuracy data acceptable				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED

PRECISION DATA SUMMARY - FORM B-5

SDG: 15	REVIEWER [illegible]	DATE: 1/21/93	PAGE 1 OF 1
COMMENTS: Precision acceptable			

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER

CALCULATION SUMMARY - FORM B-6

SDG: 15	REVIEWER: [illegible]	DATE: ~~1/21/93~~ 1/21/93	PAGE 1 OF 1
COMMENTS: Calculations checked and are correct			

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-04734

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S97

Sample wt/vol: 5.090 (g/mL) G Lab File ID: >OB004

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 3.3 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~5~~	~~JB~~ U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~5~~	~~JB~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 15	REVIEWER: [illegible]	DATE: 1/21/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Acetone	U	See form B-3	Blank contamination
2-Butanone	U	See form B-3	Blank contamination
TICs	N	B01SB2 and B01SB2D	Tentatively identified.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-04735

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S99

Sample wt/vol: 5.456 (g/mL) G Lab File ID: >OB006

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.0 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~8~~	~~JB~~ 4
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-04734

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S97

Sample wt/vol: 5.090 (g/mL) G Lab File ID: >OB004

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 3.3 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.05	26.	J N
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-04736

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB1

Sample wt/vol: 5.365 (g/mL) G Lab File ID: >OB010

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.1 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~5.~~	~~JB~~ 4
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~6.~~	~~JB~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

EPA SAMPLE NO.

92-04735

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S99

Sample wt/vol: 5.456 (g/mL) G Lab File ID: >OB006

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.0 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.04	10.	JN
2.	112403	Dodecane	31.16	6.	JN
3.		UNKNOWN ALKANE	31.73	7.	JN
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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-04736

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB1

Sample wt/vol: 5.365 (g/mL) G Lab File ID: >0B010

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.1 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.04	11.	JN
2.		UNKNOWN ALKANE	31.27	5.	JN
3.		UNKNOWN ALKANE	31.74	8.	JN
4.	629505	Tridecane	31.94	13.	JN
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-04968

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB3

Sample wt/vol: 5.045 (g/mL) G Lab File ID: >OB012

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec. 3.0 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~6~~.	~~JB~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

kgv 1/21

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-04968

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB3

Sample wt/vol: 5.045 (g/mL) G Lab File ID: >OB012

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec. 3.0 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	31.35	11.	J N
2.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05102

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB7

Sample wt/vol: 5.072 (g/mL) G Lab File ID: >OB904

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.8 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	
74-87-3	Chloromethane	10.	U	
74-83-9	Bromomethane	10.	U	
75-01-4	Vinyl Chloride	10.	U	
75-00-3	Chloroethane	10.	U	
75-09-2	Methylene Chloride	5.	U	
67-64-1	Acetone	10 ~~5.~~	~~JB U~~	KQV 4/24
75-15-0	Carbon Disulfide	5.	U	
75-35-4	1,1-Dichloroethene	5.	U	
75-34-3	1,1-Dichloroethane	5.	U	
540-59-0	1,2-Dichloroethene (total)	5.	U	
67-66-3	Chloroform	5.	U	
107-02-2	1,2-Dichloroethane	5.	U	
78-93-3	2-Butanone	10 ~~4.~~	~~JB U~~	KQV 4/21/93
71-55-6	1,1,1-Trichloroethane	5.	U	
56-23-5	Carbon Tetrachloride	5.	U	
108-05-4	Vinyl Acetate	10.	U	
75-27-4	Bromodichloromethane	5.	U	
78-87-5	1,2-Dichloropropane	5.	U	
10061-01-5	cis-1,3-Dichloropropene	5.	U	
79-01-6	Trichloroethene	5.	U	
124-48-1	Dibromochloromethane	5.	U	
79-00-5	1,1,2-Trichloroethane	5.	U	
71-43-2	Benzene	5.	U	
10061-02-6	trans-1,3-Dichloropropene	5.	U	
75-25-2	Bromoform	5.	U	
108-10-1	4-Methyl-2-pentanone	10.	U	
591-78-6	2-Hexanone	10.	U	
127-18-4	Tetrachloroethene	5.	U	
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	
108-88-3	Toluene	3.	J	
108-90-7	Chlorobenzene	5.	U	
100-41-4	Ethylbenzene	5.	U	
100-42-5	Styrene	5.	U	
133-02-7	Xylene (total)	5.	U	

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

92-05102

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: BO1SB7

Sample wt/vol: 5.072 (g/mL) G Lab File ID: >OB904

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.8 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05150

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB2

Sample wt/vol: 5.234 (g/mL) G Lab File ID: >OB908

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec. 5.2 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~7.~~	~~JB~~ U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~6.~~	~~JB~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	2.	J
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05150

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB2

Sample wt/vol: 5.234 (g/mL) G Lab File ID: >OB908

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec. 5.2 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-,	31.33	10.	JN
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-04734 DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S97 DUPE

Sample wt/vol: 5.491 (g/mL) G Lab File ID: >OB005

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 3.3 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	2.	J
74-83-9	Bromomethane	9.	U
75-01-4	Vinyl Chloride	9.	U
75-00-3	Chloroethane	9.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	9.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~5~~.	~~JB~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	9.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	9.	U
591-78-6	2-Hexanone	9.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

BJV 1/2

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-04734 DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S97 DUPE

Sample wt/vol: 5.491 (g/mL) G Lab File ID: >OB005

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 3.3 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.05	33.	J N
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-04735 DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S99 DUPE

Sample wt/vol: 5.089 (g/mL) G Lab File ID: >OB007

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.0 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-04735 DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S99 DUPE

Sample wt/vol: 5.089 (g/mL) G Lab File ID: >OB007

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.0 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 4 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.04	8.	JN
2.	112403	Dodecane	31.16	6.	JN
3.		UNKNOWN ALKANE	31.28	6.	JN
4.		UNKNOWN ALKANE	31.73	9.	JN
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-04736 DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB1 DUPE

Sample wt/vol: 5.118 (g/mL) G Lab File ID: >OB011

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.1 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	~~3.~~ 10	~~JB~~ U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

FORM I VOA 1/89 Rev

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-04736 DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB1 DUPE

Sample wt/vol: 5.118 (g/mL) G Lab File ID: >OB011

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.1 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 5

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.04	6.	JN
2.	112403	Dodecane	31.16	8.	JN
3.		UNKNOWN ALKANE	31.28	9.	JN
4.		UNKNOWN ALKANE	31.74	10.	JN
5.	629505	Tridecane	31.95	16.	JN
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-04968 DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB3 DUPE

Sample wt/vol: 5.042 (g/mL) G Lab File ID: >OB013

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec. 3.0 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-04968 DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB3 DUPE

Sample wt/vol: 5.042 (g/mL) G Lab File ID: >OB013

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec. 3.0 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	31.48	13.	JN
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05102 DU

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB7 DUPE

Sample wt/vol: 5.162 (g/mL) G Lab File ID: >OB905

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.8 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10	J B U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10	J B U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	1.	J
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

92-05102 DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB7 DUPE

Sample wt/vol: 5.162. (g/mL) G Lab File ID: >OB905

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.8 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05150 DU

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB2 DUPE

Sample wt/vol: 5.333 (g/mL) G Lab File ID: >OB909

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec. 5.2 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	.8	J
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05150 DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB2 DUPE

Sample wt/vol: 5.333 (g/mL) G Lab File ID: >OB909

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec. 5.2 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-,	31.33	120.	J N
2.					
3.					
4.					
5.					
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SEMI-VOLATILE ORGANIC DATA VALIDATION CHECKLIST - FORM A-2

PROJECT: 200 BP1 Site Investigation	REVIEWER: BJL	DATE: 1/21/93
LABORATORY:	CASE: B0S92-PNL-063	SDG: 15
SAMPLES/MATRIX:		
B0S97, B0S99, B0SB1 (duplicate of B0S99),		
B0SB3, B0SB7, and B0SB2 soils.		

1. DATA PACKAGE COMPLETENESS

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

Data Package Item	Present?:	Yes	No	N/A
Case Narrative		✓	—	—
Data Summary		✓	—	—
Chain-of-Custody		✓	—	—
QC Summary				
Surrogate report		✓	—	—
MS/MSD report		✓	—	—
Blank summary report		✓	—	—
GC/MS tuning report		✓	—	—
Internal standard summary report		✓	—	—
Sample Data				
Sample reports		✓	—	—
TIC reports for each sample		✓	—	—
RIC reports for all samples		✓	—	—
Raw and corrected spectra for all detected results		✓	—	—
Raw and corrected library search data for all reported TIC		✓	—	—
Quantitation and calculation data for all TIC		✓	—	—
Standards Data				
Initial calibration report		✓	—	—
RIC and quantitation reports for initial calibration		—	✓(1)	—
Continuing calibration reports		✓	—	—
RIC and quantitation reports for cont. calibrations		✓	—	—
Internal standard summary report		✓	—	—
Raw QC Data				
Tuning report, spectra and mass lists		✓	—	—
Blank analysis reports		✓	—	—
TIC reports for all blanks		✓	—	—
RIC and quantitation reports for blanks		✓	—	—
Raw and corrected spectra for all detected results in blanks		✓	—	—
Raw and corrected library search data for all reported TIC		✓	—	—
Quantitation and calculation data for all TIC		✓	—	—
MS/MSD report forms		✓	—	—

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

2. HOLDING TIMES

see form B-1

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

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

3. INSTRUMENT CALIBRATION, TUNING AND PERFORMANCE CHECKS

3.1 GC/MS TUNING AND PERFORMANCE CHECKS

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

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

3.2 INITIAL CALIBRATION

	Yes	No	N/A
Is an initial calibration report provided for all instruments?	(Yes)	No	N/A
Are all RSD values ≤30% (2/88 SOW)?	(Yes) 1/21/92	No	N/A
Are all RRF values ≥0.05 (2/88 SOW)?	(Yes)	No	N/A
Are all applicable RSD values ≤20.5% (3/90 SOW)?	Yes	No	(N/A)
Are all applicable RSD values ≤40% (3/90 SOW)?	Yes	No	(N/A)

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

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

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

3.3. CONTINUING CALIBRATION

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

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

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

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

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

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

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

4. BLANKS

4.1 LABORATORY BLANKS

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

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

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

4.2. FIELD BLANKS

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

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

5. ACCURACY

5.1 SURROGATE RECOVERY/SYSTEM MONITORING COMPOUND RECOVERY

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

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

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

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

5.2 MATRIX SPIKE RECOVERY

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

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

Are there any calculation errors? Yes (No) N/A

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

5.3 PERFORMANCE AUDIT SAMPLES

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

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

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATES

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

Are there any calculation errors? Yes (No) N/A

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

6.2 FIELD DUPLICATE SAMPLES

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

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

6.3 FIELD SPLIT SAMPLES

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

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

7. SYSTEM PERFORMANCE

7.1 INTERNAL STANDARDS PERFORMANCE

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

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

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

8. COMPOUND IDENTIFICATION AND QUANTITATION

8.1 COMPOUND IDENTIFICATION

Are detected compounds within ±0.06 relative retention time units of the associated calibration standard?	(Yes)	No	N/A
Are all ions at a relative intensity of ≥10% in the standard spectra present in the sample spectra?	(Yes)	No	N/A
Do the relative intensities between the standard and sample spectra agree within 20%?	(Yes)	No	N/A
Have all ions >10% in the sample spectra that are not present in the standard spectra been reviewed for possible background contamination?	(Yes)	No	N/A
Are molecular ions in the reference spectrum present in the sample spectrum?	(Yes)	No	N/A

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

8.2 REPORTED RESULTS AND QUANTITATION LIMITS

Has the laboratory used the correct RRF values and internal standards for quantitation?	(Yes)	No	N/A
Are results and quantitation limits calculated properly?	(Yes)	No	N/A
Has the laboratory reported the sample quantitation limits within 5xCRQL values?	(Yes)	No	N/A

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

8.3 TENTATIVELY IDENTIFIED COMPOUNDS

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

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

9. OVERALL ASSESSMENT AND SUMMARY

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

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

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

COMMENTS (attach additional sheets as necessary):

① The initial calibration raw data was not provided, therefore, the reported RRFs, $\overline{RRF}$s, and %RSDs could not be validated.

② All TICs present in the prep. blank were rejected whenever they were reported in the investigative samples.

HOLDING TIME SUMMARY - FORM B-1

SDG: 15	REVIEWER: BJV	DATE: 1/21/93	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
B01S97	SVOAs	3/2/92	3/15/92	4/1/92	13	17	J/UJ
B01S99	"	3/3/92	"	"	12	"	"
B01SB1	"	3/3/92	"	"	12	"	"
B01SB3	"	3/5/92	"	"	10	"	"
B01SB7	"	3/10/92	"	"	5	"	None
B01SB2	"	3/11/92	"	"	4	"	None

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 15	REVIEWER: [illegible]	DATE: 1/21/93	PAGE 1 OF 1		
COMMENTS:					
CALIB. TYPE:	INITIAL (CONTINUING)	INSTRUMENT:			
CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
4/1/92	N-Nitroso-di-n-propylamine		25.8	SDG 15	J/UJ
4/1/92	3,3'-Dichlorobenzidene		30.1	SDG 15	J/UJ

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 15	REVIEWER: KJV	DATE: 1/21/93	PAGE 1 OF 1

COMMENTS:

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
SBLK95	TICs +							All	R
	Aldol products								

ACCURACY DATA SUMMARY - FORM B-4

SDG: 15	REVIEWER: RGV	DATE: 1/21/93	PAGE 1 OF 1	
COMMENTS: Accuracy acceptable				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED

PRECISION DATA SUMMARY - FORM B-5

SDG: 15	REVIEWER KJW	DATE: 1/15/93	PAGE 1 OF 1
COMMENTS: Precision acceptable			

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER

CALCULATION SUMMARY - FORM B-6

SDG: 15	REVIEWER: [illegible]	DATE: 1/21/93	PAGE 1 OF 1
COMMENTS: All calculations checked were correct.			

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 15	REVIEWER: KJW	DATE: 1/21/93	PAGE 1 OF ___
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	J/UJ	B01597	Holding time
"	"	B01599	for extraction
"	"	B01581	exceeded
"	"	B01583	
N-Nitroso-di-n-propylamine	UJ	B01587	%D > 25%
"	"	B01582	"
3,3'-Dichlorobenzidine	UJ	B01587	"
"	"	B01582	"
TICs in Blank	R	SDG15	Blank contamination
TICs in Samples	N R KJW 1/21/93	SDG15	Tentatively identified

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S97

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4734-E1

Sample wt/vol: 30.25 (g/mL) G Lab File ID: >DA104

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.44 3.27 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 9.17 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	350.	UJ
111-44-4	bis(2-Chloroethyl)Ether	350.	U
95-57-8	2-Chlorophenol	350.	U
541-73-1	1,3-Dichlorobenzene	350.	U
106-46-7	1,4-Dichlorobenzene	350.	U
100-51-6	Benzyl alcohol	350.	U
95-50-1	1,2-Dichlorobenzene	350.	U
95-48-7	2-Methylphenol	350.	U
39638-32-9	bis(2-chloroisopropyl)ether	350.	U
106-44-5	4-Methylphenol	350.	U
621-64-7	N-Nitroso-Di-n-propylamine	350.	UJ
67-72-1	Hexachloroethane	350.	U
98-95-3	Nitrobenzene	350.	U
78-59-1	Isophorone	350.	U
88-75-5	2-Nitrophenol	350.	U
105-67-9	2,4-Dimethylphenol	350.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U
120-83-2	2,4-Dichlorophenol	350.	U
120-82-1	1,2,4-Trichlorobenzene	350.	U
91-20-3	Naphthalene	350.	U
106-47-8	4-Chloroaniline	350.	U
87-68-3	Hexachlorobutadiene	350.	U
59-50-7	4-Chloro-3-methylphenol	350.	U
91-57-6	2-Methylnaphthalene	350.	U
77-47-4	Hexachlorocyclopentadiene	350.	U
88-06-2	2,4,6-Trichlorophenol	350.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	350.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	350.	U
208-96-8	Acenaphthylene	350.	U
606-20-2	2,6-Dinitrotoluene	350.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S97

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4734-E1

Sample wt/vol: 30.25 (g/mL) G Lab File ID: >DA104

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. ~~4.44~~ 3.27 dec. -- Date Extracted: 13/15/92

6/30/92 M.C.

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 9.17 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	350.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	350.	U
121-14-2	2,4-Dinitrotoluene	350.	U
84-66-2	Diethylphthalate	350.	U
7005-72-3	4-Chlorophenyl-phenylether	350.	U
86-73-7	Fluorene	350.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	350.	U
101-55-3	4-Bromophenyl-phenylether	350.	U
118-74-1	Hexachlorobenzene	350.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	350.	U
120-12-7	Anthracene	350.	U
84-74-2	Di-n-butylphthalate	350.	U
206-44-0	Fluoranthene	350.	U
129-00-0	Pyrene	350.	U
85-68-7	Butylbenzylphthalate	30.	J
91-94-1	3,3'-Dichlorobenzidine	690.	UJ
56-55-3	Benzo(a)anthracene	350.	U
218-01-9	Chrysene	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate	38.	J
117-84-0	Di-n-octylphthalate	37.	J
205-99-2	Benzo(b)fluoranthene	350.	UJ
207-08-9	Benzo(k)fluoranthene	350.	U
50-32-8	Benzo(a)pyrene	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U
53-70-3	Dibenz(a,h)anthracene	350.	U
191-24-2	Benzo(g,h,i)perylene	350.	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01S97

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4734-E1

Sample wt/vol: 30.25 (g/mL) G Lab File ID: >DA104

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. ~~4.44~~ 3.27 dec. -- Date Extracted:13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH:9.17 Dilution Factor: 1.00000

Number TICs found: 10 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.51	1300.	~~JAB~~ R
2.		Unknown	4.82	1700.	~~JAB~~ R
3.		Unknown	5.25	190.	J N
4.		Unknown	5.30	440.	J N
5.	104767	1-Hexanol, 2-ethyl-	5.77	210.	J N
6.		Unknown	6.05	240.	~~JA~~ R
7.		Unknown	7.51	150.	J N
8.		Unknown alkane	14.95	140.	J N
9.	126738	Phosphoric acid tributyl est	19.86	20000.	J N
10.		Unknown alkane	34.33	210.	~~JB~~ R
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
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28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S99

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4735-E1

Sample wt/vol: 30.96 (g/mL) G Lab File ID: >DA105

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.05 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.15 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	UJ
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	UJ
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S99

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4735-E1

Sample wt/vol: 30.96 (g/mL) G Lab File ID: >DA105

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.05 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.15 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	19.	J
91-94-1	3,3'-Dichlorobenzidine	670.	UJ
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	33.	J
117-84-0	Di-n-octylphthalate	45.	J
205-99-2	Benzo(b)fluoranthene	340.	UJ
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01S99

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4735-E1

Sample wt/vol: 30.96 (g/mL) G Lab File ID: >DA105

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec.4.05 dec. -- Date Extracted:13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH:10.15 Dilution Factor: 1.00000

Number TICs found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.52	1100.	~~JAB~~
2.		Unknown	4.80	640.	~~JAB~~
3.		Unknown	5.26	150.	JN
4.		Unknown	5.29	280.	J
5.	104767	1-Hexanol, 2-ethyl-	5.77	200.	J
6.	112403	Dodecane	8.67	200.	J
7.	17301234	Undecane, 2,6-dimethyl-	8.97	200.	J
8.		Unknown alkane	10.27	520.	J
9.	629505	Tridecane	10.91	630.	J
10.		Unknown alkane	12.45	140.	J
11.		Unknown alkane	12.79	870.	J
12.	629594	Tetradecane	13.37	1000.	J
13.		Unknown alkane	14.61	140.	J
14.		Unknown alkane	14.97	810.	J
15.	629629	Pentadecane	15.94	730.	J
16.	544763	Hexadecane	18.49	240.	J
17.	126738	Phosphoric acid tributyl est	19.78	3400.	J
18.	57103	Hexadecanoic acid	26.98	180.	J
19.		Unknown alkane	27.71	190.	J
20.		Unknown	28.32	430.	J
21.		Unknown alkane	29.37	460.	J
22.		Unknown alkane	30.81	800.	J
23.		Unknown alkane	32.12	770.	J
24.		Unknown alkane	33.32	400.	J
25.		Unknown alkane	34.43	230.	J
26.		Unknown alkane	35.48	160.	J
27.		Unknown alkane	36.47	190.	J
28.		Unknown	37.28	340.	J
29.		Unknown alkane	38.33	190.	J
30.		Unknown	40.38	140.	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB1

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4736-E1

Sample wt/vol: 30.78 (g/mL) G Lab File ID: >DA106

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec.4.08 dec. -- Date Extracted:13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH:10.12 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	UJ
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	UJ
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

BQL 1/21

BQL 1/21

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB1

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4736-E1

Sample wt/vol: 30.78 (g/mL) G Lab File ID: >DA106

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.08 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.12 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	19.	J
91-94-1	3,3'-Dichlorobenzidine	680.	UJ
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	39.	J
117-84-0	Di-n-octylphthalate	50.	J
205-99-2	Benzo(b)fluoranthene	340.	UJ
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SB1

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4736-E1

Sample wt/vol: 30.78 (g/mL) G Lab File ID: >DA106

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.08 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.12 Dilution Factor: 1.00000

Number TICs found: 22

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.52	1100.	~~JAB~~ R
2.		Unknown	4.81	600.	~~JAB~~ R
3.		Unknown	5.26	170	JN
4.		Unknown	5.30	210.	J
5.		Unknown	5.78	160.	J
6.	112403	Dodecane	8.68	230.	J
7.	6044719	Dodecane, 6-methyl-	8.97	200.	J
8.		Unknown alkane	10.28	560.	J
9.	629505	Tridecane	10.92	700.	J
10.		Unknown alkane	12.80	900.	J
11.	629594	Tetradecane	13.38	1100.	J
12.		Unknown alkane	14.63	140.	J
13.		Unknown alkane	14.98	850.	J
14.	629629	Pentadecane	15.94	800.	J
15.	544763	Hexadecane	18.50	250.	J
16.	126738	Phosphoric acid tributyl est	19.79	3500.	J
17.	57103	Hexadecanoic acid	26.99	190.	J
18.		Unknown	28.32	360.	J
19.		Unknown	34.24	370.	J
20.		Unknown	37.29	390.	J
21.		Unknown alkane	38.33	160.	J
22.		Unknown	40.39	160.	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4968-E1

Sample wt/vol: 29.45 (g/mL) G Lab File ID: >DA107

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec. 3.03 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.33 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	350.	UJ
111-44-4	bis(2-Chloroethyl)Ether	350.	U
95-57-8	2-Chlorophenol	350.	U
541-73-1	1,3-Dichlorobenzene	350.	U
106-46-7	1,4-Dichlorobenzene	350.	U
100-51-6	Benzyl_alcohol	350.	U
95-50-1	1,2-Dichlorobenzene	350.	U
95-48-7	2-Methylphenol	350.	U
39638-32-9	bis(2-chloroisopropyl)ether	350.	U
106-44-5	4-Methylphenol	350.	U
621-64-7	N-Nitroso-Di-n-propylamine	350.	UJ
67-72-1	Hexachloroethane	350.	U
98-95-3	Nitrobenzene	350.	U
78-59-1	Isophorone	350.	U
88-75-5	2-Nitrophenol	350.	U
105-67-9	2,4-Dimethylphenol	350.	U
65-85-0	Benzoic_acid	1800.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U
120-83-2	2,4-Dichlorophenol	350.	U
120-82-1	1,2,4-Trichlorobenzene	350.	U
91-20-3	Naphthalene	350.	U
106-47-8	4-Chloroaniline	350.	U
87-68-3	Hexachlorobutadiene	350.	U
59-50-7	4-Chloro-3-methylphenol	350.	U
91-57-6	2-Methylnaphthalene	350.	U
77-47-4	Hexachlorocyclopentadiene	350.	U
88-06-2	2,4,6-Trichlorophenol	350.	U
95-95-4	2,4,5-Trichlorophenol	1800.	U
91-58-7	2-Chloronaphthalene	350.	U
88-74-4	2-Nitroaniline	1800.	U
131-11-3	Dimethylphthalate	350.	U
208-96-8	Acenaphthylene	350.	U
606-20-2	2,6-Dinitrotoluene	350.	U

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4968-E1

Sample wt/vol: 29.45 (g/mL) G Lab File ID: >DA107

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec. 3.03 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.33 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1800.	UJ
83-32-9	Acenaphthene	350.	U
51-28-5	2,4-Dinitrophenol	1800.	U
100-02-7	4-Nitrophenol	1800.	U
132-64-9	Dibenzofuran	350.	U
121-14-2	2,4-Dinitrotoluene	350.	U
84-66-2	Diethylphthalate	350.	U
7005-72-3	4-Chlorophenyl-phenylether	350.	U
86-73-7	Fluorene	350.	U
100-01-6	4-Nitroaniline	1800.	U
534-52-1	4,6-Dinitro-2-methylphenol	1800.	U
86-30-6	N-Nitrosodiphenylamine (1)	350.	U
101-55-3	4-Bromophenyl-phenylether	350.	U
118-74-1	Hexachlorobenzene	350.	U
87-86-5	Pentachlorophenol	1800.	U
85-01-8	Phenanthrene	350.	U
120-12-7	Anthracene	350.	U
84-74-2	Di-n-butylphthalate	350.	U
206-44-0	Fluoranthene	350.	U
129-00-0	Pyrene	350.	U
85-68-7	Butylbenzylphthalate	350.	U
91-94-1	3,3'-Dichlorobenzidine	700.	UJ
56-55-3	Benzo(a)anthracene	350.	U
218-01-9	Chrysene	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate	17.	J
117-84-0	Di-n-octylphthalate	15.	J
205-99-2	Benzo(b)fluoranthene	350.	UJ
207-08-9	Benzo(k)fluoranthene	350.	U
50-32-8	Benzo(a)pyrene	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U
53-70-3	Dibenz(a,h)anthracene	350.	U
191-24-2	Benzo(g,h,i)perylene	350.	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SB3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4968-E1

Sample wt/vol: 29.45 (g/mL) G Lab File ID: >DA107

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec. 3.03 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.33 Dilution Factor: 1.00000

Number TICs found: 7

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.53	1300.	~~JAB~~
2.		Unknown	4.80	220.	~~JAB~~
3.	126738	Phosphoric acid tributyl est	19.73	170.	JN
4.		Unknown alkane	27.72	220.	J
5.		Unknown alkane	29.38	360.	J
6.		Unknown alkane	30.82	180.	J
7.		Unknown alkane	34.34	340.	~~JB~~
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5102-E1

Sample wt/vol: 30.21 (g/mL) G Lab File ID: >DA108

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.79 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 9.75 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	U
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	UJ
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: -------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5102-E1

Sample wt/vol: 30.21 (g/mL) G Lab File ID: >DA108

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.79 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 9.75 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	14.	J
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	690.	UJ
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	21.	J
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

HDV 1/21/

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SB7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5102-E1

Sample wt/vol: 30.21 (g/mL) G Lab File ID: >DA108

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.79 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 9.75 Dilution Factor: 1.00000

Number TICs found: 11

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.53	1200.	~~JAB~~ R
2.		Unknown	4.82	1000.	~~JAB~~ R
3.		Unknown	5.27	180.	(JN)
4.		Unknown	5.30	210.	J
5.		Unknown	7.53	220.	J
6.	57103	Hexadecanoic acid	27.00	190.	J
7.		Unknown alkane	27.73	230.	J
8.		Unknown alkane	29.38	300.	J
9.		Unknown alkane	34.35	420.	~~JB~~ R
10.		Unknown alkane	38.35	190.	JN
11.		Unknown	40.41	210.	JN
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB2

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5150-E1

Sample wt/vol: 30.44 (g/mL) G Lab File ID: >DA109

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec.5.21 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 8.90 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	350.	U
111-44-4	bis(2-Chloroethyl)Ether	350.	U
95-57-8	2-Chlorophenol	350.	U
541-73-1	1,3-Dichlorobenzene	350.	U
106-46-7	1,4-Dichlorobenzene	350.	U
100-51-6	Benzyl_alcohol	350.	U
95-50-1	1,2-Dichlorobenzene	350.	U
95-48-7	2-Methylphenol	350.	U
39638-32-9	bis(2-chloroisopropyl)ether	350.	U
106-44-5	4-Methylphenol	350.	U
621-64-7	N-Nitroso-Di-n-propylamine	350.	UJ
67-72-1	Hexachloroethane	350.	U
98-95-3	Nitrobenzene	350.	U
78-59-1	Isophorone	350.	U
88-75-5	2-Nitrophenol	350.	U
105-67-9	2,4-Dimethylphenol	350.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U
120-83-2	2,4-Dichlorophenol	350.	U
120-82-1	1,2,4-Trichlorobenzene	350.	U
91-20-3	Naphthalene	350.	U
106-47-8	4-Chloroaniline	350.	U
87-68-3	Hexachlorobutadiene	350.	U
59-50-7	4-Chloro-3-methylphenol	350.	U
91-57-6	2-Methylnaphthalene	350.	U
77-47-4	Hexachlorocyclopentadiene	350.	U
88-06-2	2,4,6-Trichlorophenol	350.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	350.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	350.	U
208-96-8	Acenaphthylene	350.	U
606-20-2	2,6-Dinitrotoluene	350.	U

KJV 1/21/

FORM I SV-1 1/87 Rev

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB2

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5150-E1

Sample wt/vol: 30.44 (g/mL) G Lab File ID: >DA109

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec. 5.21 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 8.90 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	350.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	350.	U
121-14-2	2,4-Dinitrotoluene	350.	U
84-66-2	Diethylphthalate	33.	J
7005-72-3	4-Chlorophenyl-phenylether	350.	U
86-73-7	Fluorene	350.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	350.	U
101-55-3	4-Bromophenyl-phenylether	350.	U
118-74-1	Hexachlorobenzene	350.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	350.	U
120-12-7	Anthracene	350.	U
84-74-2	Di-n-butylphthalate	350.	U
206-44-0	Fluoranthene	350.	U
129-00-0	Pyrene	350.	U
85-68-7	Butylbenzylphthalate	350.	U
91-94-1	3,3'-Dichlorobenzidine	690.	UJ
56-55-3	Benzo(a)anthracene	350.	U
218-01-9	Chrysene	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate	24.	J
117-84-0	Di-n-octylphthalate	350.	U
205-99-2	Benzo(b)fluoranthene	350.	U
207-08-9	Benzo(k)fluoranthene	350.	U
50-32-8	Benzo(a)pyrene	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U
53-70-3	Dibenz(a,h)anthracene	350.	U
191-24-2	Benzo(g,h,i)perylene	350.	U

KQV 1/21/93

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SB2

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5150-E1

Sample wt/vol: 30.44 (g/mL) G Lab File ID: >DA109

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec. 5.21 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 8.90 Dilution Factor: 1.00000

Number TICs found: 24

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.52	1200.	~~JAB~~
2.		Unknown	4.83	1500.	~~JAB~~
3.		Unknown	5.27	210.	JN
4.		Unknown	5.30	340.	J
5.		Unknown	7.97	150.	J
6.	112403	Dodecane	8.69	250.	J
7.	6044719	Dodecane, 6-methyl-	8.99	170.	J
8.		Unknown alkane	10.29	430.	J
9.	629505	Tridecane	10.91	590.	J
10.		Unknown	11.57	150.	J
11.		Unknown alkane	12.81	750.	J
12.	629594	Tetradecane	13.39	1000.	J
13.		Unknown alkane	14.63	140.	J
14.		Unknown alkane	14.99	860.	J
15.	629629	Pentadecane	15.96	950.	J
16.	544763	Hexadecane	18.51	370.	J
17.	126738	Phosphoric acid tributyl est	19.97	32000.	J
18.		Unknown alkane	25.78	160.	J
19.	57103	Hexadecanoic acid	27.00	200.	J
20.		Unknown alkane	27.73	250.	J
21.		Unknown alkane	29.38	180.	J
22.		Unknown alkane	34.36	380.	~~JB~~
23.		Unknown alkane	38.35	150.	JN
24.		Unknown alkane	40.41	140.	JN
25.					
26.					
27.					
28.					
29.					
30.					

PESTICIDE/PCB DATA VALIDATION CHECKLIST - FORM A-3

PROJECT: 200BP-1 Site Investigation	REVIEWER: KPW	DATE: 1/2093
LABORATORY: Battelle PNL	CASE: B01592-PNL-063	SDG: 15
SAMPLES/MATRIX:		
B01597, B01599, B015B1 (Duplicate of B01599),		
B01583, B015B7, and B015B2		

1. DATA PACKAGE COMPLETENESS

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

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

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

2. HOLDING TIMES

See Form B-1

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

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

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

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

3.1 INSTRUMENT PERFORMANCE (2/88 SOW)

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

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

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

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

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

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

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

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

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

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

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

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

3.2 CALIBRATIONS (2/88 SOW)

Are RSD values for aldrin, endrin, DDT and DBC ≤10%?	(Yes)	No	N/A
Have all standards been analyzed within 72 h of any sample?	(Yes)	No	N/A
Has a 3-point calibration been conducted for DDT or toxaphene?	Yes	No	(N/A)
Have all standards been analyzed at the start of each 72-h sequence?	(Yes)	No	N/A
Have evaluation standards A, B, and C been analyzed within 72 h of any sample?	(Yes)	No	N/A
Has the confirmation standard mix been analyzed after every five samples?	(Yes)	No	N/A
Has evaluation standard B analyzed every 10 samples?	(Yes)	No	N/A
Are %D values for initial and subsequent standards ≤15% for quantitation standards and ≤20% for confirmation standards?	(Yes)	No	N/A

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

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

Is peak resolution acceptable? Yes No (N/A)

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

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

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

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

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

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

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

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

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

3.4 CALIBRATION VERIFICATION (3/90 SOW)

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

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

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

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

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

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

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

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

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

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

4. BLANKS

4.1 LABORATORY BLANKS

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

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

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

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

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

4.2 FIELD BLANKS

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

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

5. ACCURACY

5.1 SURROGATE RECOVERY

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

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

5.2 MATRIX SPIKE RECOVERY

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

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

5.3 PERFORMANCE AUDIT SAMPLES

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

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

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES

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

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

6.2 FIELD DUPLICATE SAMPLES

(2)

Are field duplicate RPD values acceptable? Yes No (N/A) BDV 1/21/93

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

6.3 FIELD SPLIT SAMPLES

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

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

7. COMPOUND IDENTIFICATION AND QUANTITATION

7.1 COMPOUND IDENTIFICATION

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

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

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

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

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

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

7.2 REPORTED RESULTS AND QUANTITATION LIMITS

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

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

8. OVERALL ASSESSMENT AND SUMMARY

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

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

COMMENTS (attach additional sheets as necessary):

① MSD result for 4,4'-DDT is higher than the specified recovery limit however, since 4,4'-DDT was not detected in any sample, the results do not require qualification.

② Field duplicate RPD's could not be calculated because there were no detections ~~of~~ in either sample.

HOLDING TIME SUMMARY - FORM B-1

SDG: 16	REVIEWER: KPW	DATE: 1/20/93	PAGE 1 OF __
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B01597	Pest/PCB	3/2/92	3/15/92	3/20/92	13	5	UJ
B015B9	"	3/3/92	"	"	12	"	UJ
B015B1	"	3/3/92	"	"	12	"	UJ
B015B3	"	3/5/92	"	"	10	"	UJ
B015B7	"	3/10/92	"	"	5	"	None
B015B2	"	3/11/92	"	"	4	"	None

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 15	REVIEWER: [illegible]	DATE: 1/21/93	PAGE 1 OF 1
COMMENTS: Calibrations within required limits			
CALIB. TYPE: INITIAL CONTINUING		INSTRUMENT:	

CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 15	REVIEWER: [illegible]	DATE: 1/21/93	PAGE 1 OF 1
COMMENTS: No blank contamination indicated.			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER

ACCURACY DATA SUMMARY - FORM B-4

SDG: 15	REVIEWER: KDV	DATE: 1/21/93	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
BGSB7MSD	4,4'-DDT	138%	SDG 15	X none
				KDV 1/21/93
				duplicate not required because results are
				all below CRQL

PRECISION DATA SUMMARY - FORM B-5

SDG: 15	REVIEWER MV	DATE: 1/21/93	PAGE 1 OF 1

COMMENTS: Precision within project-specified limits

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER

CALCULATION SUMMARY - FORM B-6

SDG: 15	REVIEWER:	DATE: 1/21/93	PAGE 1 OF 1

COMMENTS:

used

$$\text{Concentration} = \frac{\text{Area of Peak in sample} \times 0.95\text{ml} \times 20}{\text{Calibration factor} \times \text{weight} \times \%\text{Solids}}$$

$$\text{Calibration factor}^{*} = \frac{\text{Area of peak in Standard}}{\text{Concentration of standard}}$$

* Assuming injection sizes are identical

DATA QUALIFICATION SUMMARY - FORM B-7 1/21/93 KJV 1/21/93

SDG: 15	REVIEWER: KJV	DATE: ~~1/6~~	PAGE 1 OF 1
COMMENTS: See form B-1 for details			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	UJ	B01597, B01599,	Holding time
		B01563, & B01561	violation

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S97

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-04734-P-1

Sample wt/vol: 30.25 (g/mL)g Lab File ID: >01214

Level: (low/med) low Date Received: 03/05/92

% Moisture: not dec. 3.27 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 9.17 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.20	UJ
319-85-7	Beta-BHC	8.20	U
319-86-8	Delta-BHC	8.20	U
58-89-9	Gamma-BHC (Lindane)	8.20	U
76-44-8	Heptachlor	8.20	U
309-00-2	Aldrin	8.20	U
1024-57-3	Heptachlor Epoxide	8.20	U
959-98-8	Endosulfan I	8.20	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	82.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	82.00	U
5103-74-2	gamma-Chlordane	82.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	82.00	U
11104-28-2	Aroclor-1221	82.00	U
11141-16-5	Aroclor-1232	82.00	U
53469-21-9	Aroclor-1242	82.00	U
12672-29-6	Aroclor-1248	82.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO: B01S99

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-04735-P-i

Sample wt/vol: 30.96 (g/mL) g Lab File ID: >01215

Level: (low/med) low Date Received: 03/05/92

% Moisture: not dec. 4.05 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 10.1 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	UJ
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

B01SB1

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-04736-P-1

Sample wt/vol: 30.78 (g/mL)g Lab File ID: >01216

Level: (low/med) low Date Received: 03/05/92

% Moisture: not dec. 4.08 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 10.1 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	U J
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB2

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-05150-P-1

Sample wt/vol: 30.44 (g/mL)g Lab File ID: >01221

Level: (low/med) low Date Received: 03/11/92

% Moisture: not dec. 5.21 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 8.9 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	U
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

Validated 1/28/93

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB3

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-04968-P-1

Sample wt/vol: 29.45 (g/mL)g Lab File ID: >01217

Level: (low/med) low Date Received: 03/09/92

% Moisture: not dec. 3.03 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 10.3 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg		Q
319-84-6	Alpha-BHC	8.40	UJ	
319-85-7	Beta-BHC	8.40	U	
319-86-8	Delta-BHC	8.40	U	
58-89-9	Gamma-BHC (Lindane)	8.40	U	
76-44-8	Heptachlor	8.40	U	
309-00-2	Aldrin	8.40	U	
1024-57-3	Heptachlor Epoxide	8.40	U	
959-98-8	Endosulfan I	8.40	U	
60-57-1	Dieldrin	17.00	U	
72-55-9	4,4'-DDE	17.00	U	
72-20-8	Endrin	17.00	U	
33213-65-9	Endosulfan II	17.00	U	
72-54-8	4,4'-DDD	17.00	U	
1013-07-8	Endosulfan Sulfate	17.00	U	
50-29-3	4,4'-DDT	17.00	U	
72-43-5	Methoxychlor	84.00	U	
53494-70-5	Endrin Ketone	17.00	U	
5103-71-9	alpha-Chlordane	84.00	U	
5103-74-2	gamma-Chlordane	84.00	U	
8001-35-2	Toxaphene	170.00	U	
12674-11-2	Aroclor-1016	84.00	U	
11104-28-2	Aroclor-1221	84.00	U	
11141-16-5	Aroclor-1232	84.00	U	
53469-21-9	Aroclor-1242	84.00	U	
12672-29-6	Aroclor-1248	84.00	U	
11097-69-1	Aroclor-1254	170.00	U	
11096-82-5	Aroclor-1260	170.00	U	

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-05102-P-1

Sample wt/vol: 30.21 (g/mL)g Lab File ID: >01218

Level: (low/med) low Date Received: 03/11/92

% Moisture: not dec. 3.79 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 9.75 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	U
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

No qual - reqd
1/89
1/28/93

FORM I PEST

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST - FORM A-6

PROJECT: 200-BP-1 Site Investigation	REVIEWER: R. Brown	DATE: 1/11
LABORATORY: Pacific Northwest Laboratory	CASE:	SDG: 15
SAMPLES/MATRIX: Full Suite (all soil): B01597, B01599, B015B1, B015B3, B015B7, B015B2 (including CN suite)		
CN Suite for Soil unless noted otherwise): B0159J, B01594, B01596, B015B6, B015C0, B01570 (water), B01572 (water), B015C2, B015C4, B015C6		

1. COMPLETENESS AND CONTRACT COMPLIANCE

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

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

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

2. HOLDING TIMES

Have all samples been analyzed within holding times? Yes (No) N/A
Mercury exceeded holding times.

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

3. INITIAL CALIBRATIONS

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

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

Was a midrange cyanide standard distilled? (Yes) No N/A

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

4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

Are ICV and CCV percent recoveries within control? See Calib. Data Summary, Form B-2. Yes (No) N/A

Are there calculation errors? Yes (No) N/A

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

5. ICP INTERFERENCE CHECK SAMPLE

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

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

Are there calculation errors? Yes (No) N/A

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

6. LABORATORY BLANKS

Are target analytes present in the laboratory blanks? See Blank and Sample Data Summary - Form B-3 (Yes) No N/A

ACTION: Qualify all associated sample results for any analyte <5 times the amount in any laboratory blank as nondetected (U). If analyte concentrations in the blank are >CRDL or below the negative CRDL, verify the laboratory has redigested and reanalyzed associated samples with analyte concentrations <10 times the blank concentration. If the laboratory has not redigested and reanalyzed the samples, note in the validation narrative.

7. FIELD BLANKS

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

ACTION: Qualify all sample results for any analyte <5 times the amount in any valid field blank as nondetected (U).

8. MATRIX SPIKE SAMPLE ANALYSIS

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

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

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

9. LABORATORY CONTROL SAMPLE

Are percent recoveries within the acceptance limits? See Accuracy Data Summary - Form B-4 Yes (No) N/A

Are there calculation errors? Yes (No) N/A

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

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

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

10. PERFORMANCE AUDIT ANALYSES

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

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

11. DUPLICATE SAMPLE ANALYSIS

Are RPD values acceptable? See Precision Data Summary - Form B-5 Yes (No) N/A

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

12. ICP SERIAL DILUTION

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

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

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

13. FIELD DUPLICATE SAMPLES

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

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

14. FIELD SPLIT SAMPLES

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

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

1516. FURNACE ATOMIC ABSORPTION QUALITY CONTROL

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

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

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

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

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

A.S. spike recoveries for Selenium not within control limits - See notes pgs 17-18.

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

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

17. ANALYTE QUANTITATION AND DETECTION LIMITS

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

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

18. OVERALL ASSESSMENT AND SUMMARY

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

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

COMMENTS (attach additional sheets as necessary):

HOLDING TIME SUMMARY - FORM B-I

SDG: 15	REVIEWER: R. Brown	DATE: 1/12/93	PAGE 1 OF 1

COMMENTS: Inorganic Data Holding Times

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED				DATE ANALYZED				PREP. HOLDING TIME, DAYS				ANALYSIS HOLDING TIME, DAYS				QUALIFIER			
			CN	Hg	GFAA	ICP	CN	Hg	GFAA	ICP	CN	Hg	GFAA	ICP	CN	Hg	GFAA	ICP	CN	Hg	GFAA	ICP
B01592	CN suite	2-28-92	3/3				3/3				1				4				-			
B01594	CN suite	2-28-92	3/3				3/3				1				4				-			
B01597	Full suite	3-2-92	3/6			3/18	3/6	4/22	5/07		1			16	4	51	3MO.	1½ MO.	-	J	-	-
B01599	Full suite	3-3-92	3/9			3/18	3/10	4/22	5/07		2			17	6	50	3MO.	1½ MO.	-	J	-	-
B01581	Full suite	3-3-92	3/9			3/18	3/10	4/23	5/07		2			17	6	50	3MO.	1½ MO.	-	J	-	-
B01596	CN suite	3-2-92	3/6				3/6				1				4				-			
B01583	Full suite	3-5-92	3/12			3/18	3/13	4/22	5/07		2			13	7	48	3MO.	1½ MO.	-	J	-	-
B01587	Full suite	3-10-92	3/12			3/18	3/13	4/22	5/07		2			8	2	43	3MO.	1½ MO.	-	J	-	-
B01586	CN suite	3-10-92	3/13				3/13				1				3				-			
B01580	CN suite	3-10-92	3/13				3/13				1				3				-			
B01570	CN suite	3-10-92	3/17				3/17				1				7				-			
B01572	CN suite	3-10-92	3/17				3/17				1				7				-			
B01582	Full suite	3-11-92	3/20			3/18	3/23	4/22	5/27		4				9	42	3MO.	1½ MO.	-	J	-	-
B01582	CN suite	3-11-92	3/19				3/19				1				8				-			
B01584	CN suite	3-12-92	3/19				3/17				1				7				-			
B01586	CN suite	3-11-92	3/20				3/23				4				9				-			

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 15	REVIEWER: R. Brown	DATE: 1/19/93	PAGE 1 OF 1
COMMENTS: No ICV or CCV ~~problems with~~ Cyanide, Mercury, or ICP analyses.			
CALIB. TYPE: INITIAL (CONTINUING)		INSTRUMENT: Graphite Furnace	

CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
6/2/93	LEAD - CCV		111.8%	B015B2, B015B3	J

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 15	REVIEWER: R. Brown	DATE: 1-13-93	PAGE 1 OF 1

COMMENTS:

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
All ICBs and CCBs	Lead	All above IDL. Highest = 1.14			µg/l	5.7 µg/l	11.4 µg/l	B0597	U
ICB	Aluminum	35.8			µg/l	179 µg/l	895 µg/l	None	-
All CCB	Antimony	29.1			µg/l	145.5 µg/l	727.5 µg/l	All	U

ACCURACY DATA SUMMARY - FORM B-4

SDG: 15	REVIEWER: R. Brown	DATE: 1/19/93	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	**COMPOUND**	**% RECOVERY**	**SAMPLE(S) AFFECTED**	**QUALIFIER REQUIRED**
LCS	LEAD	129%	All	J
LCS	Aluminum	63.9%	All	J
LCS	Potassium	0.0%	All	J

PRECISION DATA SUMMARY - FORM B-5

SDG: 15	REVIEWER R. Brown	DATE: 1/13/93	PAGE 1 OF 1

COMMENTS:

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
IRON	B01SB7	B01SB7 Dup	40.2%	All	J

CALCULATION SUMMARY - FORM B-6

SDG: 15	REVIEWER: R. Brown	DATE: 1/13/93	PAGE 1 OF 2

COMMENTS:

(1) Initial Calibration Verification (ICV) for Cyanide:

A discrepancy was noted when checking the calculated CN concentration in ICV-6 for sample num 93-044661-64. The discrepancy is within the Colorimetric ICV-6 Dilution Correction Factor. The laboratory data report states that this correction factor is:

$$CF = \frac{\text{final distillate volume (250 ml)} \times \text{final distillate volume (250 ml)}}{\text{Volume of distillate analyzed (50 ml)} \times \text{Volume of ICV-6 added to distillate flask (2 ml)}}$$

$\Rightarrow CF = 1625$ (no units).

Then, to find the CN concentration in ICV-6, the calculation is shown as:

CN conc = CF × total CN in aliquot analyzed.

For the 93-044661-64 case, total CN in aliquot analyzed = 3.773 µg.

Thus, following the calculations presented, CN conc. should be:

CN conc in ICV-6 = 1625 (3.773 µg) = 2,358 µg

Clearly, the units here are incorrect (should be µg/ml).

$\Rightarrow$ Thus there is a problem with the correction factor.

The problem with the correction factor appears to be the (final distillate volume)^2 in the numerator. The purpose of having two of these factors in the numerator is unclear. If, however, only one of these factors is present such that:

$$CF = \frac{\text{final distillate volume (250 ml)}}{\text{vol. of distillate analyzed (50 ml)} \times \text{vol. of ICV-6 added to distillate flask (2 ml)}}$$

$\Rightarrow CF = 2.5$ /ml

CALCULATION SUMMARY - FORM B-6

SDG: 15	REVIEWER: R Brown	DATE: 1/13/93	PAGE 2 OF 2

COMMENTS:

Therefore CN conc. in ICV-6 well is:

CN Conc = CF * total CN in aliquot analyzed

= (2.5/ml)(3.773 ug) = 9.43 ug/ml

This CN Conc. is consistent with the concentration given for 92-04661-64.

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 15	REVIEWER: R. Bilson	DATE: 1/13/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	**QUALIFIER**	**SAMPLES AFFECTED**	**REASON**
Cyanide	U	B01592, B01599, B01587, B01586, B01580, B01582, B01585, B01570, B01572	Conc. < IDL
Cyanide	B	B01594, B01597, B01593	Conc. > IDL, < CRQL
Mercury	J	All	Holding times exceeded
Lead	J	B01582, B01583	CCV exceeded control limits
Lead	U	B01597	Analyte found in blanks
Lead	J	All	LCS exceeded control limits
Selenium	UJ	All	Analytical Spike recoveries exceeded control limits
Silver	U	All	Conc. < IDL
Bismuth	U	B01587, B01587 Dup, B01597	Conc. < IDL
Bismuth	B	B01583	Conc. > IDL, < CRQL
Thallium	U	B01599	Conc. < IDL
Thallium	B	B01587, B01587 Dup, B01597, B01581, B01583, B01582	Conc. > IDL, < CRQL
Arsenic	B	B01597, B01599, B01581	Conc. > IDL, < CRQL
Antimony	U	All	Analyte found in blanks
Aluminum	J	All	LCS recovery not within control limits
Potassium	J	All	LCS recovery not within control limits
Iron	J	All	Lab duplicate not within control limits
Beryllium	B	All	Conc. > IDL, < CRQL
Cobalt	B	B01583, B01587, B01597, B01582	Conc. > IDL, < CRQL
Potassium	B	All	Conc. > IDL, < CRQL
Sodium	B	B01587, B01597	Conc. > IDL, < CRQL
Nickel	B	B01597	Conc. > IDL, < CRQL

TABLE 4a: TOTAL CYANIDE ANALYSIS DATA TASK 2&4
SDG #15

SOILS-SEDIMENTS Sample ID	PNL Log#	Sample G1 (mg/kg)	C	Sample Dup G2 (mg/kg)	C	RPD	Blank G5 (µg/L)	C	Spike added (µg)	Sample + Spike G3 (mg/kg)	ICV G4 (mg/L)	%Recoveries Smpl + Spk G3	ICV G4	Q	Notes
B01S92	92-04661	0.2	U	0.2	U	N/A	2.0	U	48.3	10.3	9.4	100%	100%		1-5
B01S94	92-04662	0.2	U												
B01S96	92-04963	0.5	B	0.4	B	14%	2.0	U	48.3	10.1	9.6	97%	102%		1-5
B01S97	92-04734	0.4	B												2,3,5
B01S99	92-04735	1.6		1.7		4%	2.0	U	48.6	11.4	9.3	100%	99%		1-5
B01SB1	92-04736	1.6													2,3,5
B01SB7	92-05102	0.2	U	0.2	U	N/A	2.0	U	48.6	10.1	10.0	100%	106%		1-5
B01SB3	92-04968	0.5	B												2,3,5
B01SB6	92-05103	0.2	U	0.2	U	N/A	2.0	U	48.6	10.2	9.5	101%	101%		1-5
B01SC0	92-05104	0.2	U												2,3,5
B01SC2	92-05151	0.2	U	0.2	U	N/A	2.0	U	48.8	10.3	10.0	101%	106%		1-5
B01SC4	92-05152	0.2	U												2,3,5
B01SC6	92-05153	0.2	U	0.2	U	N/A	2.0	U	49.1	9.4	9.4	92%	100%		1-5
B01SB2	92-05150	1.6													2,3,5
											Mean	99%	102%		
											Std Dev	3%	3%		

Footnotes
1. Stock ICV-G=9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for soil-sediment = 1.0 mg/kg.
3. IDL for solids is 0.2 mg/kg based on 5 g sample; Sample IDL adjusted for weight used.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 4b: TOTAL CYANIDE ANALYSIS DATA TASK 2&4
SDG #15

WATERS Sample ID	PNL Log#	Sample G1 (µg/L)	C	Sample Dup G2 (µg/L)	C	RPD	Blank G5 (µg/L)	C	Spike added (µg)	Sample+ Spike G3 (µg/L)	ICV G4 (mg/L)	%Recoveries Smpl+ Spk G3	ICV G4	Q	Footnote#
B01S70	92-05105	4.0	U	4.0	U	N/A	2.0	U	48.8	98.3	9.3	101%	99%		1-5
B01S72	92-05106	4.0	U												2,3,5
											Mean	101%	99%		
											Std Dev	N/A	N/A		

Footnotes
1. Stock ICV-6=9.4 mg/L; 2 ml (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for water = 10 µg/L.
3. IDL for liquids is 2 µg/L based on 500 mL sample; Sample IDL adjusted for volume distilled.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 8: Hg COLD VAPOR AA ANALYSIS DATA
SDG #15

SOLID SAMPLES

		B1			B2			B5		B3 (a)		B4 (b)	
Sample ID#	PNL Log#	Sample mg/Kg	Flags C	Q	Dupl. mg/Kg	C	B1&B2 %RPD	Blank ug/L	C	Sample +Spike mg/Kg	Digest Spike %rec	LCS mg/Kg	LCS %rec
B01S97	92-04734	0.04J		H	0.03		10%	0.004	U	0.24	100%	13.65	108%
B01S99	92-04735	0.39J		H									
B01SB1	92-04736	0.31J		H									
B01SB3	92-04968	0.10J		H									
B01SB7	92-05102	0.01J	B	H									
B01SB2	92-05150	0.34J		H									

(a) B3 Predigestion Spike Level = 0.05 ug Hg in 25 mL aliquot.
(b) LCS 0287 Hg certified at 12.7 mg/Kg (Range 8.5 to 17.0 mg/Kg)
(c) If analyzed, NIST SRM2704 certified at 1.47 ug/g Hg
(d) RPD only calculated if both sample and duplicate are >IDL
(e) IDL = 0.04 ug/L [or 0.004 mg/kg -- (.04ug/L * 0.1L) / 1g]
(f) CRDL = 0.2 ug/L [or 0.02 mg/kg -- (0.2ug/L * 0.1L) / 1g]
(g) Calibration standards NIST SRM3133, ICV/CCV standard Johnson-Matthey 14395

CLP Flags
U: [Analyte] < IDL
H: Hold time not met
B: IDL ≤ [Analyte] < CRDL

TABLE 7a: GRAPHITE FURNACE AA ANALYSIS DATA FOR TASKS 2 & 4 -- SDG #15

			B1				B2					B5			B3		B6 (a) B4		
Analyte	Sample ID#	PML Log#	Sample mg/Kg	Post Spike Rec	C	Q	Dupl. mg/Kg	Post Spike Rec	C	Q	B1&B2 RPD	Blank mg/Kg	Post Spike Rec	C	Sample+ Spike mg/Kg	Digest Spike Rec	LCS mg/Kg	LCS Rec	Post Spike Rec
Ag	B01SB7	92-05102	0.14 U	95%	U		0.13 U	95%	U		N/A	0.14	97%	U			22.48	101%	85%
As	B01SB7	92-05102	2.15	104%			3.05	88%			35%	0.19	105%	U			946.66	103%	95%
Bi	B01SB7	92-05102	0.29 U	96%	U		0.28 U	95%	U		N/A	0.29	99%	U			1936.0	97%	(b)
Pb	B01SB7	92-05102	5.51 J	93%		*	4.35 J	93%		*	24%	0.11	97%	B			(c)304.66	129%	96%
Se	B01SB7	92-05102	1.29 UJ	67%	U	W	1.20 UJ	71%	U	W	N/A	0.13	98%	U			33.73	86%	92%
Tl	B01SB7	92-05102	0.11 B	104%	B		0.11 B	108%	B		0%	0.07	101%	U			45.98	118%	99%
Ag	B01S97	92-04734	0.13 U	94%	U										11.74	114%			
As	B01S97	92-04734	1.31 B	102%	B										441.73	108%			
Bi	B01S97	92-04734	0.27 U	94%	U										2107.0	103%			
Pb	B01S97	92-04734	2.93 UJ	92%		*									101.47	97%			
Se	B01S97	92-04734	1.17 UJ	66%	U	W									394.84	97%			
Tl	B01S97	92-04734	0.07 B	109%	B										417.78	102%			
Ag	B01S99	92-04735	0.14 U	95%	U														
As	B01S99	92-04735	0.67 B	113%	B														
Bi	B01S99	92-04735	5.01	92%															
Pb	B01S99	92-04735	5.73 J	92%		*													
Se	B01S99	92-04735	1.30 UJ	57%	U	W													
Tl	B01S99	92-04735	0.07 U	111%	B														

2/15/93

The CRDL (IDL) in ug/L: for AA5100 PE (05/18/92) Ag=10 (0.69), As=10 (0.93), Bi=60 (0.1.44), Pb=3 (0.45), Se=5 (0.63), Tl=10 (0.33)
The CRDL (IDL) in mg/Kg @200X: Ag=2.0 (0.14), As=2.0 (0.18), Bi=12 (0.30), Pb=0.6 (0.09), Se=1.0 (0.13), Tl=2.0 (0.07)
The analytical spike levels in ug/L is 20 for As, Bi, Pb, Tl and 10 for Ag, Se.
LCS standard: Ag, As, Pb, Se, Tl -- ICF 0287; Bi -- Inorganic Ventures G-BI0119
ICV/CCV used during analyses: Ag, Pb, Tl -- ICF ICV4(1290); As, Se -- ICF ICV2(1290); Bi--IV G-BI0119.

Pre-digestion spike (ug/L): Ag=50, As=2000, Bi=10000, Pb=500, Se=2000, Tl=2000. Note that these spike levels are for those required by ICP (not GFAA); no redigestions for GFAA levels were performed.

(a) The spiked blank (86) is used for the Bi control standard; spike is at 10,000 ug/L (equivalent to 2000 mg/Kg).
(b) No analytical spike performed on these samples.
(c) Pb bias slightly high by measureable CCB; value corrected for CCB within limits (284.6 mg/Kg).
(d) Analysis dates: Ag (6/4/92), As (5/27/92), Bi (6/3/92), Pb (6/10/92), Se (5/29 & 6/2/92), Tl (6/3/92).

CLP Flags: U = [Analyte] < IDL B = IDL <= [Analyte] < CRDL
N = Pre-digestion Spike Recovery not within control limits.
W = Post-digestion spike recovery not within control limits; sample absorbance < 50% of spike absorbance.
* = RPD not within control limits.

TABLE 7b: GRAPHITE FURNACE AA ANALYSIS DATA FOR TASKS 2 & 4 -- SDG #15

Analyte	Sample ID#	PNL Log#	---------Bi---------- (a) Sample mg/Kg	Post Spike Rec	Flags C	Q
Ag	B01SB1	92-04736	0.13 U	96%	U	
As	B01SB1	92-04736	1.36 B	104%	B	
Bi	B01SB1	92-04736	4.65	86%		
Pb	B01SB1	92-04736	6.82 J	88%		*
Se	B01SB1	92-04736	1.16 UJ	58%	U	W
Tl	B01SB1	92-04736	0.09 B	112%	B	
Ag	B01SB3	92-04968	0.11 U	97%	U	
As	B01SB3	92-04968	2.60	108%		
Bi	B01SB3	92-04968	0.28 B	102%	B	
Pb	B01SB3	92-04968	4.05 J	94%		*
Se	B01SB3	92-04968	0.91 UJ	69%	U	W
Tl	B01SB3	92-04968	0.10 B	114%	B	
Ag	B01SB2	92-05150	0.13 U	96%	U	
As	B01SB2	92-05150	2.70	(b)		
Bi	B01SB2	92-05150	4.30	91%		
Pb	B01SB2	92-05150	12.40 J	95%		*
Se	B01SB2	92-05150	1.30 UJ	73%	U	W
Tl	B01SB2	92-05150	0.12 B	110%	B	

2/15/93

The CRDL (IDL) in ug/L: for AA5100 PE (05/18/92) Ag=10 (0.69), As=10 (0.93), Bi=60 (0.1.44), Pb=3 (0.45), Se=5 (0.63), Tl=10 (0.33)

The CRDL (IDL) in mg/Kg @200X: Ag=2.0 (0.14), As=2.0 (0.18), Bi=12 (0.30), Pb=0.6 (0.09), Se=1.0 (0.13), Tl=2.0 (0.07)
The analytical spike levels in ug/L is 20 for As, Bi, Pb, Tl and 10 for Ag, Se.

(a) Supporting QC (e.g., LCS, duplicates, pre-digestion spikes) shown in Table 7a.
(b) No analytical spike performed on these samples; see narrative.
(c) Analysis dates: Ag (6/4/92), As (5/27/92), Bi (6/3/92), Pb (6/10/92), Se (5/29 & 6/2/92), Tl (6/3/92).

CLP Flags: U = [Analyte] < IDL B = IDL <= [Analyte] < CRDL
W = Post-digestion spike recovery not within control limits; sample absorbance < 50% of spike absorbance.
* = RPD for batch duplicate not within control limits.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SB1

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15____

Matrix (soil/water): SOIL_ Lab Sample ID: 92-4736B1_

Level (low/med): LOW__ Date Received: 03/05/92

% Solids: _95.9

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	10400			P	J
7440-36-0	Antimony	3.0	U	N	P	U
7440-39-3	Barium	75.2			P	
7440-41-7	Beryllium	0.47	B		P	B
7440-43-9	Cadmium	1.7			P	
7440-70-2	Calcium	9300			P	
7440-47-3	Chromium	10.5		*	P	
7440-48-4	Cobalt	13.4			P	
7440-50-8	Copper	18.9			P	
7439-89-6	Iron	37900		*	P	J
7439-95-4	Magnesium	5220			P	
7439-96-5	Manganese	489		*	P	
7440-02-0	Nickel	45.0			P	
7440-09-7	Potassium	1050			P	BJ
7440-23-5	Sodium	7880			P	
7440-62-2	Vanadium	101		*	P	
7440-66-6	Zinc	61.7			P	

2/18/93

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL_--_SOIL_SAMPLE,_ACID_LEACHED

DATE_ANALYZED:_19_MAY_92

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SB3

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15____

Matrix (soil/water): SOIL_ Lab Sample ID: 92-4968B1_

Level (low/med): LOW__ Date Received: 03/09/92

% Solids: _97.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	7220			P	J
7440-36-0	Antimony	2.8	U	N	P	U
7440-39-3	Barium	61.9			P	
7440-41-7	Beryllium	0.42	B		P	B
7440-43-9	Cadmium	1.5			P	
7440-70-2	Calcium	9460			P	
7440-47-3	Chromium	12.6		*	P	
7440-48-4	Cobalt	5.7	B		P	B
7440-50-8	Copper	13.0			P	
7439-89-6	Iron	17200		*	P	J
7439-95-4	Magnesium	5190			P	
7439-96-5	Manganese	282		*	P	
7440-02-0	Nickel	11.3			P	
7440-09-7	Potassium	1060			P	BJ
7440-23-5	Sodium	2700			P	
7440-62-2	Vanadium	37.0		*	P	
7440-66-6	Zinc	37.7			P	

2/15/93

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 19 MAY 92

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0ISB7

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15____

Matrix (soil/water): SOIL_ Lab Sample ID: 92-5102B1_

Level (low/med): LOW__ Date Received: 03/11/92

% Solids: _96.2

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6240			P	J
7440-36-0	Antimony	2.8	U	N	P	U
7440-39-3	Barium	64.9			P	
7440-41-7	Beryllium	0.39	B		P	B
7440-43-9	Cadmium	1.3			P	
7440-70-2	Calcium	7730			P	
7440-47-3	Chromium	9.6		*	P	
7440-48-4	Cobalt	6.6	B		P	B
7440-50-8	Copper	13.6			P	
7439-89-6	Iron	17100		*	P	J
7439-95-4	Magnesium	4430			P	
7439-96-5	Manganese	281		*	P	
7440-02-0	Nickel	9.0			P	
7440-09-7	Potassium	911	B		P	~~B~~ J
7440-23-5	Sodium	270	B		P	B
7440-62-2	Vanadium	39.5		*	P	
7440-66-6	Zinc	37.6			P	

2/15/93

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 19 MAY 92

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01S97

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15___

Matrix (soil/water): SOIL_ Lab Sample ID: 92-4734B1_

Level (low/med): LOW__ Date Received: 03/05/92

% Solids: _96.7

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6170			P	J
7440-36-0	Antimony	2.6	U	N	P	U
7440-39-3	Barium	71.4			P	
7440-41-7	Beryllium	0.43	B		P	B
7440-43-9	Cadmium	2.7			P	
7440-70-2	Calcium	7350			P	
7440-47-3	Chromium	8.8		*	P	
7440-48-4	Cobalt	8.1	B		P	B
7440-50-8	Copper	16.1			P	
7439-89-6	Iron	22000		*	P	J
7439-95-4	Magnesium	3860			P	
7439-96-5	Manganese	289		*	P	
7440-02-0	Nickel	6.6	B		P	B
7440-09-7	Potassium	624	B		P	~~B~~ J
7440-23-5	Sodium	996			P	B
7440-62-2	Vanadium	60.5		*	P	
7440-66-6	Zinc	42.3			P	

2/15/93

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 19 MAY 92

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01S99

Lab Name: BATTELLE_PNL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15____

Matrix (soil/water): SOIL_ Lab Sample ID: 92-4735B1_

Level (low/med): LOW__ Date Received: 03/05/92

% Solids: _96.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	10200			P	J
7440-36-0	Antimony	2.8	U	N	P	U
7440-39-3	Barium	73.0			P	
7440-41-7	Beryllium	0.44	B		P	B
7440-43-9	Cadmium	1.7			P	
7440-70-2	Calcium	9220			P	
7440-47-3	Chromium	8.6		*	P	
7440-48-4	Cobalt	13.0			P	
7440-50-8	Copper	20.4			P	
7439-89-6	Iron	36200		*	P	J
7439-95-4	Magnesium	5100			P	
7439-96-5	Manganese	464		*	P	
7440-02-0	Nickel	37.7			P	
7440-09-7	Potassium	1020			P	BJ
7440-23-5	Sodium	7520			P	
7440-62-2	Vanadium	99.8		*	P	
7440-66-6	Zinc	59.9			P	

5/15/93

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 19 MAY 92

FORM I - IN

3/90

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SB2

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05150-B

Level (low/med): LOW__ Date Received: 03/13/92

% Solids: _94.8

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	15800		*	P	J
7440-36-0	Antimony	3.2	U		P	U
7440-39-3	Barium	91.2			P	
7440-41-7	Beryllium	0.28	B		P	B
7440-43-9	Cadmium	1.1		N*	P	
7440-70-2	Calcium	8450		*	P	
7440-47-3	Chromium	12.1		*	P	
7440-48-4	Cobalt	8.4	B		P	B
7440-50-8	Copper	19.7		*	P	
7439-89-6	Iron	22500		*	P	J
7439-95-4	Magnesium	4340		*	P	
7439-96-5	Manganese	294		N*	P	
7440-02-0	Nickel	30.7			P	
7440-09-7	Potassium	875	B		P	BJ
7440-23-5	Sodium	8700			P	
7440-62-2	Vanadium	66.7		*	P	
7440-66-6	Zinc	42.3		*	P	

5/15/93

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 15

FORM I - IN

3/90

WET CHEMISTRY DATA VALIDATION CHECKLIST - FORM A-7

PROJECT: 200-BP-1 Site Investigation	REVIEWER: R. Brown	DATE: 1/7-1/11/93
LABORATORY: Pacific Northwest Laboratory	CASE:	SDG: 15
SAMPLES/MATRIX: Soil: B01597, B01599, B01SB3, B01SB7, B01SB2, B01SB1		

1. DATA PACKAGE COMPLETENESS

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

Data Package Item	Present?: Yes	No	N/A
Case Narrative	✓	—	—
Cover Page	✓	—	—
Traffic Reports/Chain-of-Custody	✓	—	—
Sample Analysis Data Report Forms	✓	—	—
Standards Data	✓	—	—
QC Summary			
Blanks Summary Report Forms	✓	—	—
Spike Sample Recovery Report Forms	✓	—	—
Duplicate Sample Analysis Report Forms	✓	—	—
Laboratory Control Sample Report Forms	✓	—	—
Raw Data			
Ion Chromatograph Chromatograms	✓	—	—
TOC and TOX Instrument Printouts	✓	—	—
Laboratory Bench Sheets	✓	—	—
Additional Data			
Laboratory Sample Preparation Logs	✓	—	—
Instrument Run Logs	✓	—	—
Internal Laboratory Chain-of-Custory	✓	—	—
Percent Solids Analysis Records	✓	—	—
Reduction Formulae	✓	—	—
Chemist Notebook Pages	✓	—	—

2. HOLDING TIMES

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

See Table B-1 for more details

Action: If any holding times were exceeded qualify all affected results as estimated (J for detects and UJ for nondetects).

3. INITIAL CALIBRATIONS

Were all instruments calibrated daily, each set-up time and were the proper number of standards used?	(Yes)	No	N/A
Are the correlation coefficients ≥0.995?	Yes	No	(N/A)
Was a balance check conducted prior to the TDS analysis?	Yes	No	(N/A)
Was the titrant normality checked?	Yes	No	(N/A)

ACTION: Qualify all data as unusable (R) if reported from an analysis in which the above criteria were not met.

4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

Have ICV and CCV been analyzed at the proper frequency?	(Yes)	No	N/A
Are ICV and CCV percent recoveries within control?	(Yes)	No	N/A
Are there calculation errors? See comment (4) on Comments page (A7-5)	(Yes)	No	N/A

ACTION: Qualify all affected data in accordance with the validation requirements.

5. LABORATORY BLANKS

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

ACTION: Qualify all associated sample results for any analyte <5 times the amount in any laboratory blank as nondetected (U) and list the affected samples and analytes below.

6. FIELD BLANKS

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

ACTION: Qualify all sample results for any analyte <5 times the amount in any valid field blank as nondetected (U).

7. MATRIX SPIKE SAMPLE ANALYSIS

Are spike recoveries within the acceptance limits?	(Yes)	No	N/A

ACTION: If the sample concentration exceeds the spike concentration by a factor of 4 or more, and spike recoveries are outside the acceptance limits, no qualification is necessary. If spike recovery is outside the control limits and the sample results are >CRQL, qualify the data as estimated (J). If the spike recovery is <30% and the sample results are less then the IDL qualify the data as unusable (R).

8. LABORATORY CONTROL SAMPLE

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

Are there calculation errors? See comment #8 on comments page (A7-5) (Yes) No N/A

ACTION: Qualify the affected results according to the following requirements:

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

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

9. PERFORMANCE AUDIT ANALYSES

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

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

10. DUPLICATE SAMPLE ANALYSIS

Are RPD values within the acceptance limits? (Yes) No N/A

Action: Qualify the results for all associated samples of the same matrix as estimated (J) if the RPD falls outside the acceptance limits.

11. FIELD DUPLICATE SAMPLES

Do RPD values exceed the acceptance limits? Yes (No) N/A

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

12. FIELD SPLIT SAMPLES

Do RPD values exceed the acceptance limits? Yes No (N/A)

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

13. ANALYTE QUANTITATION AND DETECTION LIMITS

Have results been reported and calculated correctly?	(Yes)	No	N/A
Are instrument detection limits below the CRDL?	(Yes)	No	N/A

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

14. OVERALL ASSESSMENT AND SUMMARY

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

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

COMMENTS (attach additional sheets as necessary):

(4) Initial and Continuing Calibration Verification: ICV and CCV percent recoveries are within control, however the calculations could not be traced in the raw data and it is unclear where, in the data summary sheets, the % recoveries are presented.

(8) Laboratory Control Sample: Percent recoveries of the LCS are within acceptance limits, however the calculations for % recoveries could not be traced in the raw data and it is unclear where in the data summary sheets the % recoveries are presented.

(8a) The spike solution used for spiking these samples was prepared in June 1991 and originally contained 200 ppm halides and 500 ppm oxy-anions. Oxidation of the nitrite has resulted in approximately 75 ppm of the nitrite being converted to nitrate (according to the Anion Analysis Results Report, pgs. 8–10). This spike solution is expired and therefore all analyses in this data set will be flagged 'J'.

HOLDING TIME SUMMARY - FORM B-1

SDG: 15	REVIEWER: R. Brown	DATE: 1/11/93	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
B01S97	NO_2, NO_3, PO_4, SO_4	3/2/92	4/2/92 4:30pm	4/2/92	31	4 hrs	J
B01S99	↓	3/2/92	↓	↓	30	4 hrs	J
B01SB1		3/3/92			30	5 hrs	J
B01SB3		3/5/92			28	5 hrs	—
B01SB7		3/10/92			23	5½ hrs	—
B01SB2	↓	3/11/92	↓	↓	22	5½ hrs	—
B01S97	TOC	3/2/92	N/A	3/18/92	16	N/A	—
B01S99	↓	3/2/92	↓	3/18/92	15	↓	—
B01SB1		3/3/92		3/18/92	15		—
B01SB3		3/5/92		3/19/92	14		—
B01SB7		3/10/92		3/19/92	9		—
B01SB2	↓	3/11/92	↓	3/19/92	8	↓	—

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 15	REVIEWER: R. Brown	DATE: 1/11/93	PAGE 1 OF 1
COMMENTS: All calibration verifications are within control. See note (4) pg A7-5.			
CALIB. TYPE: INITIAL CONTINUING		INSTRUMENT:	

CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 15	REVIEWER: R. Brown	DATE: 1/11/93	PAGE 1 OF 1
COMMENTS: All laboratory blanks show no target analytes. No field blanks.			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER

ACCURACY DATA SUMMARY - FORM B-4

SDG: 15	REVIEWER: R. Brown	DATE: 1/11/93	PAGE 1 OF 1
COMMENTS: Matrix spike recovery and LCS recovery are within acceptance limits. See note (8a) on pg. A7.			

SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED

PRECISION DATA SUMMARY - FORM B-5

SDG: 15	REVIEWER R. Brown	DATE: 1/11/93	PAGE 1 OF 1

COMMENTS: Lab duplicates and field duplicates RPDs are within acceptance limits. No field splits.

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER

CALCULATION SUMMARY - FORM B-6

SDG: 15	REVIEWER: R. Brown	DATE: 1/11/93	PAGE 1 OF 1
COMMENTS: No calculation errors.			

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 15	REVIEWER: R. Brown	DATE: 1/11/93	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
NO_2, NO_3, PO_4, SO_4	J	B01S97, B01S99, B01S81, B01SB3, B01SB7, B01SB2	Expired spike solution used for sample spiking
NO_2, NO_3, PO_4, SO_4	J	B01S97, B01S99, B01S81	Holding time exceeded

TABLE 3A: ANION IC ANALYSIS DATA
NITRITE (NO2-N)
TASK 2 & 4 SDG 15

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B015R5	92-03236+	12.2					0.8	U							93%	
B015S1	92-03300+	0.8	U			0%			119	128	119	128	93%	93%		
B01S75	92-03738+	28.6														
B01S77	92-03901+	7.3														
B01S89	92-03902+	1.6														
B01S97	92-04734	0.9	BJ	0.9	BJ											
B01S99	92-04735	39.5	J													
B01SB1	92-04736	38.1	J													
B01SB3	92-04968	27.2	J			2%			147	128	145	128	94%	92%		
B01SB7	92-05102	0.8	UJ													
B01SB2	92-05150	3.1	J	2.9	J	7%										

NOTES:

1. + Not samples in this SDG but reported for QC purposes.
2. 42 ppm X anal. dil. factor / frac. solids spike in sample; see run narrative.
3. RPD values have been calculated using sample duplicates OR the two % spike recovery values.
4. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
5. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
6. Estimated IDL = 0.8 mg/Kg.
7. CRDL= 1.0 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3B: ANION IC ANALYSIS DATA
NITRATE (NO3-N)
TASK 2 & 4 SDG 15

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B015R5	92-03236+	359					0.8	U							95%	
B015S1	92-03300+	92				2%			222	135	224	135	96%	98%		
B01S75	92-03738+	379														
B01S77	92-03901+	59.4														
B01S89	92-03902+	151														
B01S97	92-04734	92	J	83	J	10%										
B01S99	92-04735	681	J													
B01SB1	92-04736	651	J													
B01SB3	92-04968	151	J			5%			298	136	291	136	108%	103%		
B01SB7	92-05102	5.9	J													
B01SB2	92-05150	292	J	283	J	3%										

MOT 2/15/92

NOTES:

1. + Not samples in this SDG but reported for QC purposes.
2. 60 ppm X anal. dil. factor / frac. solids spike in sample; see run narrative.
3. RPD values have been calculated using sample duplicates OR the two % spike recovery values.
4. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
5. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
6. Estimated IDL = 0.8 mg/Kg. .
7. CRDL = 1.0 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3C: ANION IC ANALYSIS DATA
PHOSPHATE (PO4-P)
TASK 2 & 4 SDG 15

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	----C3---- SMPL+ SPIKE (mg/Kg)	SPIKE (mg/Kg)	----C6---- DUP+ SPIKE (mg/Kg)	SPIKE (mg/Kg)	%RECOVERY ---C3--- SMPL SPIKE	---C6--- DUP SPIKE	---C4--- CNTRL STD.	Q
B015R5	92-03236+	20					1.7	U							94%	
B015S1	92-03300+	1.7	U			1%			153	160	151	160	96%	94%		
B015S5	92-03738+	14.4														
B015S7	92-03901+	22.9														
B015S9	92-03902+	10.4														
B015S7	92-04734	1.7	UJ	1.7	UJ											
B015S9	92-04735	14	J													
B015B1	92-04736	14.1	J													
B015B3	92-04968	32	J			1%			165	161	163	160	83%	82%		
B015B7	92-05102	1.7	UJ													
B015B2	92-05150	8.9	J	8.1	J	9%										

2/15/93

NOTES:

1. + Not samples in this SDG but reported for QC purposes.
2. 49 ppm X anal. dil. factor / frac. solids spike in sample; see run narrative.
3. RPD values have been calculated using sample duplicates OR the two % spike recovery values.
4. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
5. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
6. Estimated IDL = 1.7 mg/Kg.
7. CRDL= 5 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3D: ANION IC ANALYSIS DATA
SULFATE (SO4)
TASK 2 & 4 SDG 15

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	%R C3 SMPL SPIKE	%R C6 DUP SPIKE	%R C4 CNTRL STD.	Q
B015R5	92-03236+	165					4	U							95%	
B015S1	92-03300+	44.1				0%			523	500	524	500	96%	96%		
B01S75	92-03738+	344														
B01S77	92-03901+	68.6														
B01S89	92-03902+	91.9														
B01S97	92-04734	51.7	J	48.2J		7%										
B01S99	92-04735	291	J													
B01SB1	92-04736	280	J													
B01SB3	92-04968	86.6	J			1%			572	500	567	500	97%	96%		
B01SB7	92-05102	8.7	BJ													
B01SB2	92-05150	276	J	266.4J		4%										

11/5/93

NOTES:

1. + Not samples in this SDG but reported for QC purposes.
2. 50 ppm X anal. dil. factor / frac. solids spike in sample; see run narrative.
3. RPD values have been calculated using sample duplicates OR the two % spike recovery values.
4. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
5. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
6. Estimated IDL= 4 mg/Kg.
7. CRDL= 20 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 16: TOTAL ORGANIC CARBON DATA FOR TASKS 2 & 4
SDG #15

Soil Samples

WHC Sample	PNL ALO #	Sample Type	Sample wt. g	ug C Results	ug C in Sample	mgC/Kg Sample	RPD Dups	% rec.* standard	Date Received	Date Analyzed
B01S97	92-04734-1	Sample	0.10484	67.41	50.81	480	3.1		3-05-92	3-18-92
B01S97	92-04734-2	Duplicate	0.14796	90.54	73.94	495			3-05-92	3-18-92
B01S99	92-04735-1	Sample	0.10344	63.21	46.61	446	12.9		3-05-92	3-18-92
B01S99	92-04735-2	Duplicate	0.12258	65.13	48.53	392			3-05-92	3-18-92
B01SB1	92-04736-1	Sample	0.09134	50.51	33.91	368	8.9		3-05-92	3-18-92
B01SB1	92-04736-2	Duplicate	0.10530	59.33	42.73	402			3-05-92	3-18-92
B01SB1	92-04736-3	Standard	0.00489	2037	2021		3.4	103		3-18-92
B01SB1	92-04736-3	Std Dup	0.00468	1878	1862			99.5		3-18-92
B01SB1	92-04736-4	Blank		16.60						3-18-92
B01SB3	92-04968-1	Sample	0.13416	54.39	34.59	261	3.8		3-09-92	3-19-92
B01SB3	92-04968-2	Duplicate	0.13012	54.62	34.82	271			3-09-92	3-19-92
B01SB7	92-05102-1	Sample	0.13091	92.39	72.59	561	10.0		3-11-92	3-19-92
B01SB7	92-05102-2	Duplicate	0.09216	76.23	56.43	620			3-11-92	3-19-92
B01SB2	92-05150-1	Sample	0.12800	50.66	30.86	244	2.9		3-13-92	3-19-92
B01SB2	92-05150-2	Duplicate	0.13810	52.15	32.35	237			3-13-92	3-19-92
B01SB2	92-05150-3	Standard	0.00503	2019	1999		1.3	99.4		3-19-92
B01SB2	92-05150-3	Std Dup	0.00349	1389	1369			98.1		3-19-92
B01SB2	92-05150-4	Blank		19.80						3-19-92

* Based on standard carbon content of 40.0% by weight.

2/15/93

Total Organic Carbon by Procedure PNL-ALO-380, on Instrument WA92040, 325 Bldg., rm 701. Data reported from LRB 52821, pp 80-89.

RADIOCHEMISTRY DATA VALIDATION CHECKLIST

Data Package ID: B01S92 - PNL - 063 Laboratory: PNL

Data Validator: Bart J. Vanden Plas Date: 1/19/93

Analysis/Sample Identification/Matrix:

B01S97, B01S99, B01SB1, B01SB3, B01SB7, & B01SB2

B01S99 & B01SB1 are field duplicates

1. Completeness

1.1 Completeness Checklist (Complete the appropriate checklist for each analysis type and attach).

2. Calibration

2.1 Initial Calibration

Was instrument calibrated within specified time period or annually? (Y/N/NA) Yes

If NO, qualify all associated data as unusable (R).

Was each detector used for the associated data calibrated? (Y/N/NA) Yes

If NO, qualify all associated data as unusable (R).

Are calibration standards NIST traceable or equivalent? (Y/N/NA) Yes

If NO, qualify all associated data as unusable (R).

Were calibration standards expired? (Y/N/NA) No

If YES, qualify all associated data as unusable (R).

Comments/Qualified Results: Calibration results were found to be complete and acceptable.

2.2 Continuing Calibration

Is check source identified by activity and radionuclides? (Y/N/NA) Yes

If NO, qualify all associated data as estimated (J).

Has check source been counted daily? (Y/N/NA) Yes

If NO, qualify all associated data as unusable (R).

Are check source counts within ±3S control limits? (Y/N/NA) Yes

If NO, qualify all associated data as unusable (R).

Have background counts been performed at least weekly and before and after all field and QC samples associated with the SDG? (Y/N/NA) Yes

If NO, qualify all associated results as unusable (R).

Are background counts within ±3S control limits? (Y/N/NA) Yes

If NO, qualify all associated results as unusable (R).

Comments/Qualified Results: Calibrations + backgrounds documented and acceptable.

3. Blanks

Have reagent/method/field blanks been analyzed with the SDG? (Y/N/NA) Yes

If NO, qualify all results >LLD as estimated (J).

Are positive results reported in the reagent/method/field blanks? (Y/N/NA) Yes (1)

If YES, qualify positive results less than the MDA as nondetects (U). Qualify sample results <10X the blank value but greater than the MDA as estimated (J).

Can blank results be verified/calculated properly? (Y/N/NA):

Comments/Notes/Qualified Results:

(1) There was beta activity in the blank for the high level samples, however since the sample activities were so high, the blank level had no affect. For Plutonium - the blank related to sample B01SB7 showed Pu 239/240 activity however sample B01SB2 did not show Pu-239/240 activity.

Strontium - 90 was also at detectable activities in the blank related to the high-level samples however the blank level was ~~reading~~ very small compared to the sample levels.

4. Detection Limits and Sample Results

Can LLDs and MDAs be verified? (Y/N/NA) Yes ②

If NO, qualify all results as estimated detects (J) or estimated nondetects (UJ).

Do reported results meet the detection limit requirements? (Y/N/NA)

Note discrepancies in the validation report narrative under representativeness.

Can reported results be verified? (Y/N/NA) N ①

If NO, note missing data in the validation report. Correct results on the photocopied report forms and include in the validation report.

Comments/Notes/Qualified Results:

① The Co-60 result for sample B01599 was reported as < Zero. This is due to a transcription error. The actual Co-60 result is < 60.

The Plutonium 239/240 results and PU-238 results for B01582 were reported at 5 times the results calculated by the reviewer. Therefore, the results were changed as follows:

- Plutonium 239/240 = 1.97E+3 (not 9.95E+3)
- " 238 = 80.9 (not 409)

② LLDs + MDAs were not checked for some analytes because of errors in the calculation spreadsheet.

5. Radiometric and Gravimetric Yields

Were spikes/tracers/chemical yields analyzed in each SDG and/or sample as appropriate for the analytical method? (Y/N/NA) Yes

If NO or if inappropriate tracers were used qualify associated results as unusable (R).

Was a field blank used for the spike/tracer/chemical yield analysis? (Y/N/NA) No

If YES, note in the validation narrative.

Is spike/tracer/chemical yield recovery within the limits of 30-105% for sample results <4X the spike activity? (Y/N/NA) Yes

Verify the spike recoveries and qualify associated results as follows:

%R:	<30%	30-105%	>105%	>115%
<LLD	R	acceptable	UJ	R
>LLD	R	acceptable	J	R

Comments/Notes/Qualified Results: Spike/tracer use acceptable.

6. Duplicate Samples and Analyses

Has at least one duplicate analysis been performed for every 10 samples in the SDG? (Y/N/NA) Yes

If NO, qualify all associated results as estimated (J).

Has the field blank been used for duplicate or MS/MSD analysis? (Y/N/NA) No

Are RPD valus ≤35% for results >5X the LLD and within ±2X the LLD for results <5X the LLD? (Y/N/NA) No ①

If NO, qualify associated results <LLD as estimated nondetects (UJ) and all associated results >LLD as estimated detects (J).

Comments/Notes/Qualified Results:

① The field duplicate sample for tritium resulted in an RPD of 70%. Therefore all tritium results are qualified J or UJ. All other duplicate results acceptable.

7. Laboratory Control Samples

Are LCS results within the control limits of 80-120% (Y/N/NA): Yes

If NO, qualify results as follows:

%R:	<50%	50-79%	>120%
Results < LLD:	R	UJ	R
Results > LLD:	R	J	R

Has at least one LCS been analyzed with the SDG? (Y/N/NA): Yes

If NO, qualify all associated results as estimated (J).

Comments/Notes/Qualified Results: LCS analyses acceptable

8. Holding Times

Have all samples/analyses been completed within 5 half-lives or 180 days, whichever comes first? (Y/N/NA): Yes

If NO, qualify all associated results >LLD as estimated detects (J) and all associated results <LLD as estimated non-detects (UJ). For gross exceedances (>2X criteria) qualify all associated results as unusable (R).

Comments/Notes/Qualified Results: Holding times not exceeded.

9. Method Specific and Other Quality Control

9.1 Gas Proportional Counters

Are field and QC sample preparations outside the range of the self absorption curves? (Y/N/NA): No

If YES, qualify all associated data as estimated (J).

Are initial detector efficiencies <20%? (Y/N/NA): No

If YES, qualify all associated data as unusable (R).

Have statistical tests been performed routinely (at least weekly)? (Y/N/NA): Yes

If NO, qualify all associated data as estimated (J).

Have stability verifications been performed after each gas change? (Y/N/NA): NA

If NO, qualify all associated data as estimated (J).

Comments/Notes/Qualified Results: Gas changes not recorded

9.2 Alpha Spectroscopy

Has detector system been calibrated across the energy range of interest? (Y/N/NA): Yes

If NO, qualify all results as unusable (R).

Is detector resolution adequate to identify each peak centroid? (Y/N/NA): Yes

If NO or if resolution cannot be determined, qualify all results as unusable (R).

Is resolution at least 20 keV FWHM? (Y/N/NA): Yes

If NO, qualify all results as estimated (J).

Do check source efficiencies agree within 5% of initial calibration efficiencies or are they within the control limits or ±3S of the mean? (Y/N/NA): Yes

If NO, qualify all associated results as unusable (R).

Was each sample spiked with a tracer? (Y/N/NA): Yes

If NO, qualify all associated results as unusable (R).

Are tracer recoveries within the control limits of 30 to 105%? (Y/N/NA): Yes

If NO, qualify all results as follows:

%R:	<30%	30-105%	>105%	>115%
Results <LLD:	R	acceptable	UJ	R
Results >LLD:	R	acceptable	J	R

Comments/Notes/Qualified Results: The platinum results for the k015b7 blank showed activity, but k015B2 did not.

① The results for k015B2 were reported at 5 times the concentration calculated by the reviewer.

9.3 Gamma Spectroscopy

Does efficiency calibration approximate a smooth semi-log curve? (Y/N/NA): Yes

If NO, qualify all results as unusable (R).

Have geometry or matrix factors been accounted for in all analyses? (Y/N/NA): Yes

If NO, qualify all associated results as unusable (R).

Does the detector calibration cover the energy range of interest and at least 0 to 2 MeV? (Y/N/NA): Yes

If NO, qualify all results outside the energy range as unusable (R).

Is resolution of the detector system adequate and less than 5 FWHM? (Y/N/NA): Yes

If NO, qualify all results as estimated (J).

Comments/Notes/Qualified Results: γ-energy analysis acceptable with the correction to the I transcription error found.

9.4 Alpha Emitting Radium Isotopes NA KJV 1/19/93

Have single radium isotopes (Ra-223, Ra-224, Ra-226) been reported? (Y/N/NA):_____

If YES, qualify all results attributed to a single radium isotope as estimated (J) if the contribution to the total from individual isotopes is unknown.

Can time from sample precipitation to counting be verified? (Y/N/NA):_____

If NO, qualify all associated results >MDA as estimated (J).

Have barium interferences been identified and accounted for? (Y/N/NA):_____

If NO, qualify all associated results with elevated barium levels as estimated (J).

Has counting efficiency for Ra-226 been determined for each SDG? (Y/N/NA):_____

If NO, qualify all associated results as unusable (R).

Have blanks been analyzed with each group to check for possible radium contamination in the reagents? (Y/N/NA):_____

If NO, qualify all associated results as estimated (J).

Are LCS recoveries with the control limits listed below? (Y/N/NA):_____

If no, qualify sample results as follows:

%R:	<50%	50-69%	70-130%	>130%
Results <MDA	R	UJ	Acceptable	R
Results >MDA	R	J	Acceptable	R

If sample was preserved at collection has analysis been completed within 180 days or 5 half-lives? (Y/N/NA):_____

If NO, qualify results >LLD as estimated detects (J) and results < LLD as estimated non-detects (UJ).

If samples were not preserved, were samples received within 5 days of sampling? (Y/N/NA):_____

- Were samples preserved at the laboratory upon receipt? (Y/N/NA):_____
- Were samples held after preservation for at least 16 days? (Y/N/NA):_____

If NO, to any of the above, qualify associated sample results as estimated (J).

Comments/Notes/Qualified Results:_____

NA [illegible] 1/19/93

9.5 Radium 226 Analysis using Scintillation (Lucas) Cell Counting

Is calibration data present and can it be associated with the samples? (Y/N/NA):_____

If NO, qualify associated sample results as unusable (R).

Was the counting system calibrated each day that samples were analyzed? (Y/N/NA):_____

If NO, qualify associated results as estimated (J).

Was the counting system calibrated after replacing the scintillation cell? (Y/N/NA):_____

If NO, qualify associated results as estimated (J) if the cell has a previously determined calibration constant and unusable (R) if no constant is available for the replacement cell.

Were blanks analyzed with each sample group to check for radium contamination in reagents? (Y/N/NA):_____

If NO, qualify associated results as estimated (J).

If sample was preserved at collection has analysis been completed within 180 days or 5 half-lives? (Y/N/NA):_____

If NO, qualify results >LLD as estimated detects (J) and results < LLD as estimated non-detects (UJ).

If samples were not preserved, were samples received within 5 days of sampling? (Y/N/NA):_____

- Were samples preserved at the laboratory upon receipt? (Y/N/NA):_____
- Were samples held after preservation for at least 16 days? (Y/N/NA):_____

If NO, to any of the above, qualify associated sample results as estimated (J).

Comments/Notes/Qualified Results:_____

9.6 Tritium Analysis by Liquid Scintillation Counting

Do calibration standard matrices match the sample matrices? (Y/N/NA): Yes

If NO, qualify associated results as estimated (J).

Has at least one calibration standard been processed with the samples (Y/N/NA): Yes

If NO, qualify results associated with runs lacking calibration standards as unusable (R).

Have results for counting efficiency determination been provided? (Y/N/NA): Yes

If NO, qualify all associated results as unusable (R).

Do tritium levels in the blanks exceed the MDA? (Y/N/NA): No

If YES, qualify associated results less than 10X the background tritium level (blanks) as estimated (J).

Have blanks been analyzed with each sample run to check for potential contamination in the chemical reagents? (Y/N/NA): Yes

If NO, qualify associated results as estimated (J).

Comments/Notes/Qualified Results: The field duplicate results for BO1599 + BO15B1 gave an RPD of 70%. Therefore all tritium results were qualified J on UJ.

NA MPV 1/19/93

9.7 Fluorometric Analysis of Uranium

Has the laboratory provided evidence that cation and anion interferences are negligible for the matrix or that matrix interferences have been accounted for? (Y/N/NA):_____

If NO, qualify associated results as estimated (J).

Has the laboratory provided a description of the method of fusion standardization or provided data supporting fusion standardization? (Y/N/NA):_____

If NO, qualify associated results as estimated (J).

Was calibration performed immediately prior to sample analysis? (Y/N/NA):_____

If NO, qualify associated results as estimated (J).

Comments/Notes/Qualified Results:_____

Comments/Notes/Qualified Results:

4- ① The result for Co-60 in B01599 was corrected for a transcription error. The correct result is <60.

6- ① The Field duplicate sample for tritium resulted in an RPD of 70% Therefore all tritium results are qualified J or UJ.

10- ① The plutonium results for B01582 were reported at 5 times the activity calculated by the reviewer. The results were changed to reflect the amount supported by the raw data provided.

GAS PROPORTIONAL COUNTERS
LOW BACKGROUND BETA COUNTERS

Data Package ID: B01592 - PNL-063

Analysis: α + β

A.0 Completeness Checklist

Analysis Results

- ✓ Results Report for Sample Analyses and Reanalyses
- ✓ Raw Data (Counting Logs, Printouts, Notebook Pages)
- ✓ Calculation Sheets
- ✓ Sample Identifications
- ✓ Detector Identification
- ✓ Analysis Date and Initials of Analyst
- ✓ Amounts of Samples Prepared or Counted
- ✓ Weights of Solids Counted

Initial and Continuing Calibration

- ✓ Detector Identification
- ✓ Calibration Date(s) and Initials of Analyst
- ✓ Identification of Calibration and Check Standards including Radionuclide, Certification, Expiration Date, and Activity
- ✓ Amount of Check Standard Used
- ✓ Raw Data including Counts and Count Duration for Standards
- ✓ Weights of Preparations
- ✓ Efficiencies
- ✓ Weights of Carriers Added, If Applicable
- ✓ Results of Statistical Tests Used to Evaluate Instrument Reliability and Efficiency Checks
- ✓ Raw Data of Background Counts and Count Duration
- ✓ Results of Statistical Test Used to Evaluate Instrument Background
- ✓ Control Limits fo Check Source and Background Counts

Blanks

- ✓ Detector Identification
- ✓ Date of Analysis
- ✓ MDA of Method
- ✓ Amounts of Reagents Used in Blank

Radiometric and Gravimetric Yields

- ✓ Amounts (Volumes, Concentrations, Activity) of Spikes, Tracers, or Carriers Used
- ✓ Weights of Precipitates or Solids Counted
- ✓ Calculated Recoveries

Duplicates

- ✓ Detector Identification
- ✓ Date of Analysis
- ✓ Aliquots of Samples
- ✓ Weights of Solids Counted
- ✓ Count Durations
- ✓ Sample Identifications
- ✓ Calculated Precision

Laboratory Control Samples

- ✓ Detector Identification
- ✓ Date of Analysis
- ✓ Calculation of Recoveries
- ✓ Results of Analyses

Comments/Qualified Results: MS recoveries for second batch did not apply because of the sample activity levels.

ALPHA SPECTROSCOPY

Data Package ID: B01592 - PNL - 063

Analysis: Plutonium

B.0 Completeness Checklist

Analysis Results

- ✓ Results Report for Sample Analyses and Reanalyses
- ✓ Raw Data (Spectra, Printouts, Notebook Pages)
- ✓ Calculation Sheets
- ✓ Sample Identifications
- ✓ Detector Identification
- ✓ Analysis Date and Initials of Analyst
- ✓ Amounts of Samples Counted (Precipitated or Deposited)

Initial and Contiuing Calibration

- ✓ Detector Identification
- ✓ Calibration Date(s) and Initials of Analyst
- ✓ Identification of Calibration and Check Standards including Radionuclide, Certification, Expiration Date, and Activity
- ✓ Amount of (Check) Standard Used
- ✓ Raw Data including Spectra or Counts per Channel
- ✓ Kev/channel
- ✓ Count Duration for Standards
- ✓ Efficiencies
- ✓ Raw Data of Background Counts, Dates Counted, and Duration of Counts

Blanks

- ✓ Detector Identification
- ✓ Date of Analysis
- ✓ MDA of Method
- ✓ Amounts of Reagents Used in Blank

Duplicates

- ✓ Detector Identification
- ✓ Date of Analysis
- ✓ Amounts of Samples Counted
- ✓ Count Durations
- ✓ Sample Identifications
- ✓ Calculated Precision

Radiometric and Gravimetric Yields

- ✓ Amounts (Volumes, Concentrations, Activity) or Spikes, Tracers, or Carriers Used
- ✓ NIST Traceability of Spikes, Tracers or Carriers
- ✓ Weights of Precipitates or Solids Counted
- ✓ Calculated Recoveries

Laboratory Control Samples

✓ Detector Identification
✓ Date of Analysis
✓ Calculation of Recoveries
✓ Results of Analyses

Comments/Qualified Results: See comments from earlier section for Plutonium by α-energy analysis.

GAMMA SPECTROSCOPY

Data Package ID: B01592-PNL-063

C.0 Completeness Checklist

Analysis Results

- ✓ Results Report for Sample Analyses and Reanalyses
- ✓ Raw Data (Spectra, Printouts of Counts per Channel, Notebook Pages)
- ✓ Calculation Sheets
- ✓ Sample Identifications
- ✓ Detector Identification and Counting Position
- ✓ Analysis Date and Initials of Analyst
- ✓ Amounts of Samples Counted

Initial and Continuing Calibration

- ✓ Detector Identification
- ✓ Calibration Date(s) and Initials of Analyst
- ✓ Identification of Calibration and Check Standards including Radionuclides, Certification, Expiration Date, and Activity
- ✓ Amount of (Check) Standard Used
- ✓ Raw Data including Counts and Count Duration for Standards
- ✓ Efficiencies and/or Geometry and Matrix Factors
- ✓ Raw Data of Background Counts, Count Dates, and Duration of Counts
- ✓ KeV/Channel
- ✓ FWHM

Blanks

- ✓ Detector Identification
- ✓ Date of Analysis
- ✓ MDA of Method
- ✓ Amounts of Reagents Used in Blank
- ✓ Raw Data

Duplicates

- ✓ Detector Identification
- ✓ Date of Analysis
- ✓ Amounts of Samples
- ✓ Count Durations
- ✓ Sample Identifications
- ✓ Results of Analyses and Calculated Precision
- ✓ Raw Data

Radiometric and Gravimetric Yields

- ✓ Amounts (Volumes, Concentrations, Activity) of Spikes, Tracers or Carriers Used
- ✓ Weights of Precipitates or Solids Counted
- ✓ Calculated Recoveries

Laboratory Control Samples

✓ Detector Identification
✓ Date of Analysis
✓ Calculation of Recoveries
✓ Results of Analyses

Comments/Qualified Results: The γ-energy analysis is acceptable with the one correction noted for Co-60 in sample B01599. The correct Co-60 result is <60 for this sample.

TRITIUM ANALYSIS USING
LIQUID SCINTILLATION COUNTING

Data Package ID: B01S92-PNL-063

F.0 Completeness Checklist

Analysis Results

- ✓ Results Report for Sample Analyses and Reanalyses
- ✓ Raw Data (Gross Counts, Count Duration, Background Count, and Background Count Duration)
- ✓ Calculation Sheets
- ✓ Sample Identifications
- ✓ Instrument Identification
- ✓ Analysis Date and Analyst Initials
- ✓ Sample Weight

Initial and Continuing Instrument Calibration

- ✓ Instrument Identification
- ✓ Identification of Calibration Standards including Radionuclides, Certification, Issue or Expiration Date and Activity
- ✓ Raw Data (Gross Counts, Count Duration, Background Count, and Background Count Duration)
- ✓ Counting Efficiency Determination Method and Results
- ✓ Quench Correction Method

Blanks

- ✓ Instrument Identification
- ✓ Date of Analysis
- ✓ MDA of Method
- ✓ Amounts of Reagents Used
- ✓ Lot Numbers of Reagents Used
- ✓ Raw Data (Gross Counts, Count Duration, Background Count, Background Count Duration)
- ✓ Tritium Levels in Background Water

Duplicates

- ✓ Instrument Identification
- ✓ Date of Analysis
- ✓ Amounts of Samples
- ✓ Amount of Spike for Spiked Duplicates
- ✓ Raw Data (Gross Counts, Count Duration, Background Counts, and Background Count Duration)

Radiometric Yields

✓ Amount of Tritium Standard Used for Radiometric Yield Determination
✓ Radiometric Yield Calculations and Results

Laboratory Control Samples

✓ Sample Identification
✓ Instrument Identification
✓ Date of Analysis
✓ Calculated Recoveries
✓ Results of Analyses

Comments/Qualified Results: Field duplicate RPD = 79 %
all results flagged as estimated.

LABORATORY: BATTELLE-PACIFIC NORTHWEST LABORATORIES
SDG NO. 15
TOTAL ALPHA RESULT VERIFICATION

SAMPLE ID	LAB ID	CALC. RESULT	RPTD RESULT	CALC. MDA	RPTD MDA	
BO1S97	92-04734-L1	69.36	69.4	3.15		NR
BO1S99	92-04735-L1	1871.04	1870	154.18		NR
BO1SB1	92-04736-L1	2200.56	2200	161.28		NR
BO1SB1	92-04736-L2	2388.38	2390	193.05		NA
BO1SB3	92-04968-L1	187.20	187	2.59		NA
BO1SB2	92-05150-L1	2380.21	2380	79.34		NR
BO1SB1	92-04736-L3	11677.93	11680	50.15		NR
BO1SB1	92-04736-L4	25.06	25.1	0.14		NA
BO1SB1	92-04736-L5	0.10	< 0.7	0.65		NA
BO1SB7	92-05102-L1	1.94	1.94	0.37		NR

TOTAL BETA RESULT VERIFICATION

SAMPLE ID	LAB ID	CALC. RESULT	RPTD RESULT	CALC. MDA	RPTD MDA	
BO1S97	92-04734-L1	2.25E+05	2.25E+05	1028.49		NR
BO1S99	92-04735-L1	8.68E+06	8.67E+06	134828.56		NR
BO1SB1	92-04736-L1	8.56E+06	8.56E+06	131442.82		NR
BO1SB1	92-04736-L2	8.89E+06	8.88E+06	NA		NA
BO1SB3	92-04968-L1	3.40E+05	3.40E+05	NA		NA
BO1SB2	92-05150-L1	1.11E+07	1.11E+07	216413.92		NR
BO1SB1	92-04736-L3	1.80E+07	1.80E+07	131442.82		NR
BO1SB1	92-04736-L4	4.63E+01	4.63E+01	2.37		NR
BO1SB1	92-04736-L5	1.37E+01	1.37E+01	NA		NA
BO1SB7	92-05102-L1	2.78E+00	2.79E+00	NA		NA

PLUTONIUM-239/240 RESULT VERIFICATION

SAMPLE ID	LAB ID	PU-239 BKGD	PU-238 COUNTS	PU-238 BKGD	PU-239 CALC	PU-239 RPT	PU-238 CALC	PU-238 RPT
BO1S97	92-04734-L1	1	113	1	3.40E+01	3.41E+01	5.20E-01	5.19E-01
BO1S99	92-04735-L1	0	380	1	1.12E+03	1.12E+03	5.03E+01	5.03E+01
BO1SB1	92-04736-L1	1	196	1	1.32E+03	1.32E+03	5.28E+01	5.29E+01
BO1SB1	92-04736-L2	0	220	4	1.53E+03	1.53E+03	6.41E+01	6.43E+01
BO1SB3	92-04968-L1	0	1018	1	9.42E+01	9.42E+01	4.62E+00	4.63E+00
BO1SB2	92-05150-L1	1	167	1	1.97E+03	**** 9950	8.09E+01	4.09E+02
BO1SB1	92-04736-L4	0	0	3	1.02E+01	1.02E+01	-5.65E-03	<1 E-2
BO1SB1	92-04736-L5	1	2	1	0.00E+00	<2 E-2	6.60E-03	<2 E-2
BO1SB7	92-05102-L1	1	0	1	-8.20E-04	<2 E-3	-8.20E-04	<3 E-3

STRONTIUM-90 RESULT VERIFICATION

SAMPLE ID	LAB ID	SAMPLE AMOUNT	CALC SR-90	RPTD SR-90	CALC MDA	RPTD MDA	TIME	
BO1S97	92-04734-L1	0.00795	5.89E+04	5.89E+04	-1.21E+02	NR	10.000	1.0002713
BO1S99	92-04735-L1	0.0000507	2.98E+06	2.98E+06	-3.48E+04	NR	10.000	1.0008824
BO1SB1	92-04736-L1	0.00005	2.90E+06	2.90E+06	-3.37E+04	NR	10.000	0.9986464
BO1SB1	92-04736-L2	0.0000484	3.32E+06	3.32E+06	-4.00E+04	NR	10.000	0.9988065
BO1SB3	92-04968-L1	0.00289	9.89E+04	9.89E+04	-5.10E+02	NR	10.000	0.9997476
BO1SB2	92-05150-L1	0.0000764	3.53E+06	3.53E+06	-1.87E+04	NR	10.000	0.9992987
BO1SB1	92-04736-L4	1	5.35E+01	5.35E+01	-2.22E+00	NR	30.000	0.9990781
BO1SB1	92-04736-L5	1	1.41E+00	1.41E+00	-1.94E+00	NR	30.000	1.0021099
BO1SB7	92-05102-L1	2.018	6.51E-01	6.50E-01	-6.95E-01	NR	30.000	0.9990386

TRITIUM RESULT VERIFICATION

SAMPLE ID	LAB ID	CALC H3	RPTD H3	CALC MDA	RPTD MDA	FLASK BEFORE	FLASK AFTER	LEACH ALIQUOT
BO1S97	92-04734-L1	2.07E+01	20.7	4.64E+00	17.952	123.475	90.384	35
BO1S99	92-04735-L1	8.56E+01	85.7	5.75E+00	19.302	124.218	90.286	35
BO1SB1	92-04736-L1	4.13E+01	41.3	4.93E+02	420	126.609	90.913	37
BO1SB3	92-04968-L1	4.22E+01	42.3	4.93E+02	420	123.365	90.191	35
BO1SB3	92-04968-L2	3.86E+01	38.6	4.93E+02	420	124.272	91.042	35
BO1SB2	92-05150-L1	3.75E+01	37.5	6.50E+00	17.952	124.3	91.929	35
BO1SB1	92-04736-L3	6.63E+02	663	5.23E+00	19.302	124.699	90.273	36
BO1SB1	92-04736-L4	3.61E+03	3608	4.93E+02	420	124.307	91.464	35
BO1SB1	92-04736-L5	5.92E+00	< 21	4.93E+02	420	134.588	91.472	45

Table 10: Gamma Energy Analysis of Soils

Diode L

(Radionuclide activity in pCi/g[a])

Transcription err MJV 1/19/93

WHC Sample ID	Sample ID	Collection Date	Weight (g)	Co-60	Ru-106	Cs-137
B01S97	92-04734-L-1	3/2/92 10:12	16.433	1.11 ± 0.09	<34	(8.52 ± 0.09) X 10^4
B01S99	92-04735-L-1	3/3/92 10:15	1.0717	~~<20~~ <60	<4000	(3.34 ± 0.06) X 10^6
B01SB1	92-04736-L-1	3/3/92 10:15	12.074	<350	<3000	(2.88 ± 0.03) X 10^6
B01SB1	92-04736-L-2	3/3/92 10:15	1.0962	<40	<3300	(2.75 ± 0.01) X 10^6
B01SB3	92-04968-L-1	3/5/92 10:40	15.846	<3	<210	(1.66 ± 0.02) X 10^5
B01SB7	92-05102-L-1	3/10/92 08:33	15.275	<0.14	<0.47	<0.20
B01SB2	92-05150-L-1	3/11/92 08:50	1.2004	<480	<2500	(4.50 ± 0.05) X 10^6
B01SC7	92-05270-L-1*	3/13/92 08:55	1.0658	<830	<15000	(1.29 ± 0.01) X 10^7
B01SC7	92-05271-L-1*	3/16/92 14:00	14.838	<3	<190	(4.12 ± 0.04) X 10^5
B01SD9	92-05352-L-1*	3/19/92 14:32	15.179	0.70 ± 0.20	<16	(9.12 ± 0.28 X 10^2
B01SD9	92-05352-L-2*	3/19/92 14:32	16.621	0.596 ± 0.006	<2	(9.47 ± 0.09) X 10^2
B01SD7	92-05353-L-1*	3/19/92 10:20	14.404	<2	<140	(5.44 ± 0.03) X 10^4
B01SF7	92-05490-L-1*	3/23/92 14:16	14.144	<210	<14000	(2.35 ± 0.02) X 10^6
B01SF7	92-05490-L-2*	3/23/92/14:16	0.9269	<90	<5300	(1.84 ± 0.02) X 10^6
B01SF9	92-05491-L-1*	3/25/92 09:04	14.794	<0.2	<9	(3.02 ± 0.03) X 10^3
B01SG3	92-05492-L-1*	3/25/92 13:26	14.464	<0.3	<3	2.50 ± 0.36
B01SG9	92-05634-L-1*	3/30/92 10:02	13.680	3.1 ± 0.1	<30	(5.64 ± 0.06) X 10^3
B01SH3	92-05690-L-1*	3/31/92 09:03	13.214	<0.3	<3.5	4.39 ± 0.40
B01SG7	92-05633-L-1*	3/26/92 10:45	16.738	1.81 ± 0.17	<44	(1.25 ± 0.01) X 10^4
B01SH7	92-05877-L-1*	4/1/92 10:21	1.0683	62 ± 10	<2700	(4.41 ± 0.04) X 10^6
B01SB4	92-05953-L-1*	4/8/92 08:34	1.2256	<90	<5600	(2.88 ± 0.03) X 10^6

Table 10: Gamma Energy Analysis of Soils Continued

B01SC8	92-05954-L-1*	4/8/92 10:21	15.268	50 ± 2	<690	(1.37 ± 0.01) X 10^6
B01SC8	92-05954-L-2*	4/8/92 10:21	0.8959	64 ± 7	<2200	(1.60 ± 0.03) X 10^6
B01SC8	92-05954-L-5*	4/8/92 10:21	14.7	<0.19	<1.9	<0.14

Footnotes

[a] The one sigma uncertainties are based on counting statistics. All "<" values are detection limits associated with each "not detected" analysis. The detection limits are calculated as if the isotope was present at a level that is 2.5 times the square root of twice the average background.

* Sample not in this SDG but reported for QC and analytical batch purposes.

TABLE 11: TOTAL ALPHA ANALYSIS DATA
TASKS 2 & 4 SDG #15

Parameters of Interest									
WHC Sample ID	Sample #	Sample Type	Alpha (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.
First Batch									
B01S97	92-04734-A-1a	Soil	69.4	8.7	<20				
B01S99	92-04735-A-1a	Soil	1870	250	<600				
B01SB1	92-04736-A-1a	Soil	2200	280	<600				
B01SB1	92-04736-A-2a	Duplicate	2390	300	<700	8			
B01SB3	92-04968-A-1a	Soil	187	16	<20				
B01SB2	92-05150-A-1a	Soil	2380	230	<400				
	92-04736-A-3a	Matrix Spike	11680	860	<600		9430	200	100
	92-04736-A-4a	Blank Spike	25.1	1.6	<0.7		23.84	0.13	106
	92-04736-A-5a	Method Blank	<0.7						
Second Batch									
B01SB7	92-05102-A-1a	Soil	1.94	0.40	<0.1				
B01SF9	92-05491-A-1a +	Soil	8.30	0.93	<0.2				
B01SF9	92-05491-A-2a +	Duplicate	6.59	0.89	<0.1	23			
	92-05491-A-3a +	Matrix Spike	89.7	7.1	<0.5		99.64	0.56	83
	92-05491-A-4a +	Blank Spike	133	11	<0.6		119.77	0.64	111
	92-05491-A-5a +	Method Blank	<0.6						

*One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

**Blank value normalized to sample size analyzed. See narrative for details.

+ Sample not a part of this SDG.

TABLE 12: TOTAL BETA ANALYSIS DATA
TASKS 2 & 4 SDG #15

Parameters of Interest									
WHC Sample ID	Sample #	Sample Type	Beta (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.
First Batch									
B01S97	92-04734-A-1a	Soil	2.25E+05	5.8E+03	4.3E+03				
B01S99	92-04735-A-1a	Soil	8.67E+06	3.2E+05	5.4E+05				
B01SB1	92-04736-A-1a	Soil	8.56E+06	3.2E+05	5.4E+05				
B01SB1	92-04736-A-2a	Duplicate	8.88E+06	3.3E+05	5.6E+05	4			
B01SB3	92-04968-A-1a	Soil	3.40E+05	1.3E+04	2.4E+04				
B01SB2	92-05150-A-1a	Soil	1.11E+07	4.4E+05	9.0E+05				
	92-04736-A-3a	Matrix Spike	1.80E+07	6.1E+05	5.4E+05		9.48E+06	5.4E+05	100
	92-04736-A-4a	Blank Spike	46.3	1.9	13.7		47.9	2.4	97
	92-04736-A-5a	Method Blank	13.7	1.7					
Second Batch									
B01SB7	92-05102-A-1a	Soil	2.79	0.42	<0.43				
B01SF9	92-05491-A-1a+	Soil	1680	92	<0.43				
B01SF9	92-05491-A-2a+	Duplicate	1580	88	<0.43	6			
	92-05491-A-3a+	Matrix Spike	1044	56	<0.57		75.7	3.8	(a)
		MS Replate	1772	98	<0.57		75.7	3.8	(a)
	92-05491-A-4a+	Blank Spike	249	14	<1.7		240	12	104
	92-05491-A-5a+	Method Blank	<1.7						

*One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

**Blank value normalized to sample size analyzed. See narrative for details.

a) See narrative for discussion of matrix spike.

+ Samples not a part of this SDG.

calculation of by Factor of 5
BJH 1/19/93

TABLE 13: PLUTONIUM ANALYSIS DATA FOR TASKS 2 & 4
SDG #15

Client Sample ID	Program Sample ID	Sample Type	Pu-239+240 pCi/g	+/- 1 sigma*	Pu-239+240 RPD	Pu-239+240 Normalized Blank**	Pu-238 pCi/g	+/- 1 sigma*	Pu-238 RPD	Pu-238 Normalized Blank**	Pu-239 Spike pCi/sample	+/- 1 sigma	% Recovery
Batch One													
B01S97	92-04734-A-1c	Soil	3.41E+01	1.25E+00		< 7 E-02	5.19E-01	5.28E-02		< 5 E-02			
B01S99	92-04735-A-1c	Soil	1.12E+03	4.08E+01		< 2 E+00	5.03E+01	3.12E+00		< 2 E+00			
B01SB1	92-04736-A-1c	Soil	1.32E+03	5.00E+01		< 4 E+00	5.29E+01	4.23E+00		< 3 E+00			
B01SB1	92-04736-A-2c	Duplicate	1.53E+03	5.79E+01	15	< 4 E+00	6.43E+01	4.98E+00	19	< 3 E+00			
B01SB3	92-04968-A-1c	Soil	9.42E+01	3.33E+00		< 7 E-02	4.63E+00	2.16E-01		< 6 E-02			
B01SB2	92-05150-A-1c	Soil	~~9.93E+03~~ 1.97E+3	3.82E+02		< 7 E+00	~~4.09E+02~~ 8.09E+1	3.50E+01		< 6 E+00			
	92-04736-A-5c	Blank	< 2 E-02				< 2 E-02						
	92-04736-A-4c	Blank Spike	1.02E+01	3.30E-01			< 1 E-02				1.22E+01	2.20E-01	84
Batch Two													
B01SB7	92-05102-A-1c	Soil	< 2 E-03			1 E-03	< 3 E-03			< 7 E-04			
B01SF9	92-05491-A-1c	Soil +	7.32E-02	1.03E-02		1 E-03	< 8 E-03			< 7 E-04			
B01SF9	92-05491-A-2c	Duplicate +	6.59E-02	5.41E-03	11	1 E-03	4.05E-03	1.60E-03	na	< 7 E-04			
	92-05491-A-5c	Blank +	2.06E-03	9.24E-04			< 2 E-03						
	92-05491-A-4c	Blank Spike +	1.08E+01	2.99E-01			< 3 E-03				1.19E+01	1.10E-01	91

* Propogated error based on combination of counting, pipetting, and volume uncertianties.
** Blank value when normalized to actual sample size analyzed, in pCi/g.
\+ Samples included for QC purposes--these were the batch duplicates.

All sample analyses are based on received sample weight, i.e. no correction for weight percent solids.

TABLE 14: STRONTIUM-90 ANALYSIS DATA
TASKS 2 & 4 SDG #15

Parameters of Interest										
WHC Sample ID	Sample #	Sample Type	Strontium (pCi/g)	+/- 1 sigma*	Normalized Blank***	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.	Normalized % Yield**
First Batch										
B01S97	92-04734-A-1b	Soil	5.89E+04	4.67E+03	8.9E+02					
B01S99	92-04735-A-1b	Soil	2.98E+06	2.71E+05	1.4E+05					
B01SB1	92-04736-A-1b	Soil	2.90E+06	2.58E+05	1.4E+05					
B01SB1	92-04736-A-2b	Duplicate	3.32E+06	2.92E+05	1.5E+05	13.5				
B01SB3	92-04968-A-1b	Soil	9.89E+04	8.29E+03	2.5E+03					
B01SB2	92-05150-A-1b	Soil	3.53E+06	2.97E+05	9.3E+04					
	92-04736-A-3b	Matrix Spike	431	32.9	1.4		414	21	104	
	92-04736-A-3b	Yield Spike	Used to determine Batch yield							95
	92-04736-A-4b	Blank Spike	53.5	4.7	1.4		48.3	2.4	111	
	92-04736-A-5b	Method Blank	1.41	0.44						
Second Batch										
B01SB7	92-05102-A-1b	Soil	0.65	0.20	<0.3					
B01SF9	92-05491-A-1b +	Soil	40.8	3.2	<0.2					
B01SF9	92-05491-A-2b +	Duplicate	36.0	2.9	<0.2	12.7				
	92-05491-A-3b +	Matrix Spike	294	22	<0.4		274	14	93	
	92-05491-A-3b +	Yield Spike	Used to determine Batch yield							96
	92-05491-A-4b +	Blank Spike	46.0	4.1	<0.6		47.4	2.4	97	
	92-05491-A-5b +	Method Blank	<0.61							

* One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

** All Sr-90 analyses are calculated on the basis of their ratio to the matrix spike recovery which has been normalized to 100% chemical recovery.

*** Blank value when normalized to actual sample mass analyzed.

\+ Sample not a part of this SDG.

TABLE 15: TRITIUM ANALYSIS DATA
TASKS 2 & 4 SDG #15

KJV 1/20/93

WHC Sample ID	Parameters of Interest Sample #	Sample Type	Tritium (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.	RCF Fs***
B01S97	92-04734-K-1	Soil	20.7 J	1.6	<3					
B01S99	92-04735-K-1	Soil	85.7 J	3.5	<4					
B01SB1	92-04736-K-1	Soil	41.3 J	2.5	<4					
B01SB3	92-04968-K-1	Soil	42.3 J	2.1	<4					
B01SB3	92-04968-K-2	Duplicate	38.6 J	2.0	<4	9				
B01SB7	92-05102-K-1	Soil	<4.7 UJ		na					
B01SB2	92-05150-K-1	Soil	37.5 J	2.3	<4					
	92-03901-K-4	Matrix Spike	663 J	21	<4		772	13	80.7	
	92-03300-K-4	Blank Spike	3608 J	116	<21		4225	49	85.4	
	92-03901-K-5	Method Blank	<21 U J							
	92-03901-K-4	Yield spike to determine Fs								85.1

* One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.
** Blank value normalized to sample size analyzed (pCi/g). Refer to narrative for details.
*** Recovery Correction Factor, Fs.
nd: not detected
na: not applicable

APPENDIX D

DATA REVIEW SUPPORTING DOCUMENTATION

SDG: B01SC7-PNL-064

VOLATILE ORGANIC DATA VALIDATION CHECKLIST - FORM A-1

PROJECT: 200-BP-1	REVIEWER: C. Kruger	DATE: 1-25-93
LABORATORY: PNL	CASE:	SDG: B01SC7
SAMPLES/MATRIX: SOIL: B01SC7 B01SC9 B01SD3 (WH) B01SD4 (CW) B01SD6 (CW)		
B01SD9 B01SD7 B01SF2 (CW) B01SF4 (CW) B01SF6 (CW) B01SF7 B01SF9		
B01SG3 B01SG4 (CW) B01SG6 (CW) B01SG7 B01SG9 B01SH3		
B01SH5 (CW) B01SH6 (CW)		
WATER: B01S74 (CW) B01S90 (CW)		

1. DATA PACKAGE COMPLETENESS

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

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

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

2. HOLDING TIMES

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

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

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

3. INSTRUMENT CALIBRATION, TUNING AND PERFORMANCE CHECKS

3.1 GC/MS TUNING AND PERFORMANCE CHECKS

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

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

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

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

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

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

3.2 INITIAL CALIBRATION

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

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

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

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

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

3.3. CONTINUING CALIBRATION

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

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

4. BLANKS

4.1 LABORATORY BLANKS

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

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

4.2. FIELD BLANKS

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

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

5. ACCURACY

5.1 SURROGATE/SYSTEM MONITORING COMPOUND RECOVERY

Are any surrogate recoveries out of specification?	(Yes)	No	N/A
Are any surrogate recoveries < 10%?	Yes	(No)	N/A
Are any method blank surrogate recoveries out of specification?	Yes	(No)	N/A

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

5.2 MATRIX SPIKE RECOVERY

Has an MS/MSD analysis been conducted per matrix in the sample group?	(Yes)	No	N/A
Are MS/MSD recoveries within specification?	(Yes)	No	N/A
Are there any calculation errors?	Yes	(No)	N/A

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

5.3 PERFORMANCE AUDIT SAMPLES

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

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

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATES

Are RPD values within specification? (Yes) No N/A

Are there any calculation errors? Yes (No) N/A

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

6.2 FIELD DUPLICATE SAMPLES

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

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

6.3 FIELD SPLIT SAMPLES

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

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

7. SYSTEM PERFORMANCE

7.1 INTERNAL STANDARDS PERFORMANCE

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

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

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

8. COMPOUND IDENTIFICATION AND QUANTITATION

8.1 COMPOUND IDENTIFICATION

Are detected compounds within ±0.06 relative retention time units of the associated calibration standard?	(Yes)	No	N/A
Are all ions at a relative intensity of ≥ 10% in the standard spectra present in the sample spectra?	(Yes)	No	N/A
Do the relative intensities between the standard and sample spectra agree within 20%?	(Yes)	No	N/A
Have all ions > 10% in the sample spectra that are not present in the standard spectra been reviewed for possible background contamination?	(Yes)	No	N/A
Are molecular ions present in the reference spectrum present in the sample spectrum?	(Yes)	No	N/A

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

8.2 REPORTED RESULTS AND QUANTITATION LIMITS

Has the laboratory used the correct RRF values and internal standard(s) for quantitation?	(Yes)	No	N/A
Are results and quantitation limits calculated properly?	(Yes)	No	N/A
Has the laboratory reported the sample quantitation limits within 5xCRQL values?	(Yes)	No	N/A

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

8.3 TENTATIVELY IDENTIFIED COMPOUNDS (TIC)

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

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

9. OVERALL ASSESSMENT AND SUMMARY

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

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

COMMENTS (attach additional sheets as necessary):

1. DATA PACKAGE COMPLETENESS/RAW QC DATA: The raw data for the GC/MS tune was not provided for 4/2/92 tune. All data associated qualified as rejected (R.).

3.3 CONTINUING CALIBRATION: %D Acetone 42.5%. Associated samples qualified as estimated (J).

4.1 LABORATORY BLANKS: Acetone and 2-butanone were reported in two laboratory blanks. Associated sample results less than ten times the concentration in the blanks qualified as non-detects. (U).

5.1 ACCURACY/SURROGATES: Surrogate Toluene-d8 exceeded acceptance criteria in sample B01SD9-MSD. No qualification necessary as exceedance occured in the MSD only.

HOLDING TIME SUMMARY - FORM B-1

SDG: B01SC7	REVIEWER: C. Kruger	DATE: 1-14-93	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
B01SC7	VOA	13-MAR-92		19-MAR-92		6	—
B01SC9	VOA	16-MAR-92		19-MAR-92		3	—
B01SD9	VOA	19-MAR-92		31-MAR-92		12	—
B01SD7	VOA	19-MAR-92		31-MAR-92		12	—
B01SF7	VOA	23-MAR-92		31-MAR-92		8	—

CALIBRATION DATA SUMMARY - FORM B-2

SDG: B015C7	REVIEWER: C. Kruger	DATE: 1-16-93	PAGE 1 OF 2
COMMENTS:			
CALIB. TYPE: (INITIAL) CONTINUING		INSTRUMENT:	

CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
4/2/92	ALL	No RF data provided	tuning	B015F9	R
				B015F9-Dup	R
				B015G3	R
				B015G3-Dup	R
				B015G7	R
				B015G7-Dup	R
				B015H3	R
				B015H3-Dup	R
				B015G9	R
				B015G9-Dup	R

CALIBRATION DATA SUMMARY - FORM B-2

SDG: B01SC7	REVIEWER: C Knigge	DATE: 1-16-93	PAGE 2 OF 2
COMMENTS:			
CALIB. TYPE: INITIAL CONTINUING		INSTRUMENT:	

CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
3/31/92	ACETONE		%D=42.5	B01SD9	UJ
				B01SD9-Dup	UJ
				B01SD7	UJ
				B01SD7-Dup	UJ
				B01SF7	UJ
				B01SF7-Dup	UJ
				B01SD9-MS	UJ
				B01SD9-MSD	UJ
				BLANK	UJ

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: B01SC7	REVIEWER: C Kruger	DATE: 1-17-93	PAGE 1 OF 2
COMMENTS:			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
BLANK	ACETONE	5	JB		ug/kg	25		B01SB7	U 10
								B01SB7 (Dup)	U 10
								B01SB7 (MS)	U 10
								B01SB7 (MSD)	U 10
								B01SC9	U 10
								B01SC9 (Dup)	U 10
								B01SC7	U 10
								B01SC7 (Dup)	U 10
BLANK	2-BUTANONE	4	JB		ug/kg	20		B01SB7	U 10
								B01SB7 (Dup)	U 10
								B01SB7 (MS)	U 10
								B01SB7 (MSD)	U 10
								B01SC9	U 10
								B01SC9 (Dup)	U 10
								B01SC7	U 10
								B01SC7 (Dup)	U 10

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: B01SC7	REVIEWER: CKruger			DATE: 1-17-93				PAGE 2 OF 2	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
BLANK	ACETONE	3	J		ug/Kg	15		B01SD9	U 10
								B01SD7	U 10
								B01SF7	U 10
								B01SD9 (Dup)	U 10
								B01SD7 (Dup)	U 10
								B01SF7 (Dup)	U 10
								B01SD9 MS	U 10
								B01SD9 MSD	U 10
BLANK	2-BUTANONE	3	J		ug/Kg	15		B01SD9	U 10
								B01SD7	U 10
								B01SF7	U 10
								B01SD9 (Dup)	U 10
								B01SD7 (Dup)	U 10
								B01SF7 (Dup)	U 10
								B01SD9 (MS)	U 10
								B01SD9 (MSD)	U 10

ACCURACY DATA SUMMARY - FORM B-4

SDG: B01SC7	REVIEWER: C Krueger	DATE: 1-17-93	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	**COMPOUND**	**% RECOVERY**	**SAMPLE(S) AFFECTED**	**QUALIFIER REQUIRED**
B01SD9 (MSD)	Toluene-d8	120.8	B01SD9-MSD	NONE

PRECISION DATA SUMMARY - FORM B-5

SDG: B01SC7	REVIEWER C Krueger	DATE: 1-22-93	PAGE 1 OF 1
COMMENTS: No exceptions noted			

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER

CALCULATION SUMMARY - FORM B-6

SDG: B01SC7	REVIEWER: C. Kruger	DATE: 1-17-93	PAGE 1 OF 1

COMMENTS:

Minor rounding errors noted in reporting of RPD, Recovery of MS/MSD B01SB7. Errors do not affect data quality or require qualifiers.

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: B01SC7	REVIEWER: C. Krueger	DATE: 1-22-93	PAGE 1 OF 3
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
ALL VOA	R	B01SF9	No tuning data provided (HALL)
		B01SG3	
		B01SG7	
		B01SH3	
		B01SG9	
		B01SF9 (Lab Dup)	
		B01SG3 (Lab Dup)	
		B01SG7 (Lab Dup)	
		B01SH3 (Dup)	
		B01SG9 (Dup)	
ACETONE	UJ	B01SD9	%D = 42.5
	UJ	B01SD9-Dup	
	UJ	B01SD7	
	UJ	B01SD7-Dup	
	UJ	B01SF7	
	UJ	B01SF7-Dup	
	UJ	B01SD9-MS	
	UJ	B01SD9-MSD	
	UJ	BLANK	
ACETONE	U 10	B01SB7	~~U~~ ~~10~~ ID BLANK
	U 10	B01SB7-Dup	~~U~~ ~~10~~
	U 10	B01SB7-MS	~~U~~ ~~10~~
	U 10	B01SB7-MSD	~~U~~ ~~10~~

MS/MSD B01SD9.

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: B01SC7	REVIEWER: C Kluge	DATE: 1-22 93	PAGE 2 OF 3
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
ACETONE	U 10	B01SC9	In blank <5X
	U 10	B01SC9-Dup	
	U 10	B01SC7	
	U 10	B01SC7-Dup	
2-BUTANONE	U 10	B01SB7	In blank <5X
	U 10	B01SB7-Dup	
	U 10	B01SB7-MS	
	U 10	B01SB7-MSD	
	U 10	B01SC9	
	U 10	B01SC9-Dup	
	U 10	B01SC7	
	U 10	B01SC7-Dup	
ACETONE	U 10	B01SD9	In blank <5X
	U 10	B01SD9-Dup	
	U 10	B01SD7	
	U 10	B01SD7-Dup	
	U 10	B01SF7	
	U 10	B01SF7-Dup	
	U 10	B01SD9-MS	
	U 10	B01SD9-MSD	
2-BUTANONE	U 10	B01SD9	In blank <5X
	U 10	B01SD7	
	U 10	B01SD9-Dup	
	U 10	B01SD7-Dup	

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: B01SC7	REVIEWER: CHughes	DATE: 1-22-93	PAGE 3 OF 3
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
2-BUTANONE	U 10	B01SF7	In blank <5x
	U 10	B01SF7-Dup	
	U 10	B01SD9-MS	
	U 10	B01SD9-MSD	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05271

Lab Name:BATTELLE-PNL Contract:------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC9

Sample wt/vol: 5.100 (g/mL) G Lab File ID: >OB910

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 2.5 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	JB U CVK 1-5-93
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	JB U CVK 1-5-93
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-04734

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S97

Sample wt/vol: 5.090 (g/mL) G Lab File ID: >0B004

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 3.3 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.05	26.	JN
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-04734

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S97

Sample wt/vol: 5.090 (g/mL) G Lab File ID: >0B004

Level: (low/med) LOW Data Received: 03/05/92

% Moisture: not dec. 3.3 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~5~~	~~JB~~ U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~5~~	~~JB~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-04735

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S99

Sample wt/vol: 5.456 (g/mL) G Lab File ID: >OB006

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.0 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.04	10.	JN
2.	112403	Dodecane	31.16	6.	JN
3.		UNKNOWN ALKANE	31.73	7.	JN
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-04735

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01S99

Sample wt/vol: 5.456 (g/mL) G Lab File ID: >OB006

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec.4.0 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~8.~~	~~JB~~ U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-04736

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB1

Sample wt/vol: 5.365 (g/mL) G Lab File ID: >OB010

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.1 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.04	11.	JN
2.		UNKNOWN ALKANE	31.27	5.	JN
3.		UNKNOWN ALKANE	31.74	8.	JN
4.	629505	Tridecane	31.94	13.	JN
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-04736

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB1

Sample wt/vol: 5.365 (g/mL) G Lab File ID: >OB010

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.1 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~5.~~	~~JB~~ 4
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~6.~~	~~JB~~ 4
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

KGV 1/21.

KGV 4/2.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05150

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB2

Sample wt/vol: 5.234 (g/mL) G Lab File ID: >OB908

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec. 5.2 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-,	31.33	10.	JN
2.					
3.					
4.					
5.					
6.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-05150

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB2

Sample wt/vol: 5.234 (g/mL) G Lab File ID: >OB908

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec. 5.2 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~7.~~	~~JB~~
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~6.~~	~~JB~~
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	2.	J
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-04968

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB3

Sample wt/vol: 5.045 (g/mL) G Lab File ID: >OB012

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec. 3.0 Date Analyzed: 3/10/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	31.35	11.	J N
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-04968

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB3

Sample wt/vol: 5.045 (g/mL) G Lab File ID: >OB012

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec. 3.0 Date Analyzed: 3/10/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~5.~~	~~U~~ J B U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

KJW 1/12.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05102

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: BO1SB7

Sample wt/vol: 5.072 (g/mL) G Lab File ID: >OB904

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.8 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05102

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: B01SB7

Sample wt/vol: 5.072 (g/mL) G Lab File ID: >OB904

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.8 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	
74-87-3	Chloromethane	10.	U	
74-83-9	Bromomethane	10.	U	
75-01-4	Vinyl Chloride	10.	U	
75-00-3	Chloroethane	10.	U	
75-09-2	Methylene Chloride	5.	U	
67-64-1	Acetone	10 ~~5.~~	~~JB~~ U	BQV 4/24/5
75-15-0	Carbon Disulfide	5.	U	
75-35-4	1,1-Dichloroethene	5.	U	
75-34-3	1,1-Dichloroethane	5.	U	
540-59-0	1,2-Dichloroethene (total)	5.	U	
67-66-3	Chloroform	5.	U	
107-02-2	1,2-Dichloroethane	5.	U	
78-93-3	2-Butanone	10 ~~4.~~	~~JB~~ U	HJV 1/21/93
71-55-6	1,1,1-Trichloroethane	5.	U	
56-23-5	Carbon Tetrachloride	5.	U	
108-05-4	Vinyl Acetate	10.	U	
75-27-4	Bromodichloromethane	5.	U	
78-87-5	1,2-Dichloropropane	5.	U	
10061-01-5	cis-1,3-Dichloropropene	5.	U	
79-01-6	Trichloroethene	5.	U	
124-48-1	Dibromochloromethane	5.	U	
79-00-5	1,1,2-Trichloroethane	5.	U	
71-43-2	Benzene	5.	U	
10061-02-6	trans-1,3-Dichloropropene	5.	U	
75-25-2	Bromoform	5.	U	
108-10-1	4-Methyl-2-pentanone	10.	U	
591-78-6	2-Hexanone	10.	U	
127-18-4	Tetrachloroethene	5.	U	
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	
108-88-3	Toluene	3.	J	
108-90-7	Chlorobenzene	5.	U	
100-41-4	Ethylbenzene	5.	U	
100-42-5	Styrene	5.	U	
133-02-7	Xylene (total)	5.	U	

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

92-05270

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC7

Sample wt/vol: 5.655 (g/mL) G Lab File ID: >OB912

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 4.9 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-,	31.33	200.	J
2.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05270

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC7

Sample wt/vol: 5.655 (g/mL) G Lab File ID: >OB912

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.4.9 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	9.	U
74-83-9	Bromomethane	9.	U
75-01-4	Vinyl Chloride	9.	U
75-00-3	Chloroethane	9.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~5.~~	~~JB~~ U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~2.~~	~~JB~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	9.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	9.	U
591-78-6	2-Hexanone	9.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1-15-93 [illegible]

1-15-93 [illegible]

FORM I VOA 1/89 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05271

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC9

Sample wt/vol: 5.100 (g/mL) G Lab File ID: >OB910

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 2.5 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-,	31.33	140.	J
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-05271

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC9

Sample wt/vol: 5.100 (g/mL) G Lab File ID: >OB910

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 2.5 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	J B U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	J B U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

CVK 1-15-4

CVK 1-15-4

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05353

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD7

Sample wt/vol: 5.455 (g/mL) G Lab File ID: >OD108

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 1.6 Date Analyzed: 3/31/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.03	6.	J
2.	74381401	Propanoic acid, 2-methyl-, 1	31.28	90.	J
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05353

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD7

Sample wt/vol: 5.455 (g/mL) G Lab File ID: >OD108

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 1.6 Date Analyzed: 3/31/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	9.	U
74-83-9	Bromomethane	9.	U
75-01-4	Vinyl Chloride	9.	U
75-00-3	Chloroethane	9.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10	~~U~~ UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10	~~U~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	9.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	9.	U
591-78-6	2-Hexanone	9.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1-18-93

1-18-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05352

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD9

Sample wt/vol: 5.140 (g/mL) G Lab File ID: >OD104

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 2.4 Date Analyzed: 3/31/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-05352

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD9

Sample wt/vol: 5.140 (g/mL) G Lab File ID: >OD104

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 2.4 Date Analyzed: 3/31/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 K.	JB UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 K.	JB U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1-18-93

1-18-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05490

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF7

Sample wt/vol: 5.121 (g/mL) G Lab File ID: >OD110

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 3.2 Date Analyzed: 3/31/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-, 1	31.33	12.	J
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3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05490

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF7

Sample wt/vol: 5.121 (g/mL) G Lab File ID: >OD110

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 3.2 Date Analyzed: 3/31/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 5.	18 U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 5.	28 U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

FORM I VOA 1/89 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05491

Lab Name:BATTELLE-PNL Contract:------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF9

Sample wt/vol: 5.540 (g/mL) G Lab File ID: >PA204

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.2 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05491

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF9

Sample wt/vol: 5.540 (g/mL) G Lab File ID: >PA204

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.2 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	9.	R
74-83-9	Bromomethane	9.	R
75-01-4	Vinyl Chloride	9.	R
75-00-3	Chloroethane	9.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	JB
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	8.	JB
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	9.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	9.	U
591-78-6	2-Hexanone	9.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

WR 1-23-5

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05492

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG3

Sample wt/vol: 5.330 (g/mL) G Lab File ID: >PA208

Level: (low/mad) LOW Date Received: 03/27/92

% Moisture: not dec. 4.2 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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6.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-05492

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG3

Sample wt/vol: 5.330 (g/mL) G Lab File ID: >PA208

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 4.2 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	JB
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	6.	JB
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

CLK 1-23

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05633

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG7

Sample wt/vol: 5.240 (g/mL) G Lab File ID: >PA210

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.4 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.07	46.	J
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05633

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG7

Sample wt/vol: 5.240 (g/mL) G Lab File ID: >PA210

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.4 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	B
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	8.	B
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	9.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

R

CWK 1-23-5

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

92-05634

Lab.Name:BATTELLE-PNL Contract:------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG9

Sample wt/vol: 5.153 (g/mL) G Lab File ID: >PA212

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.0 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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FORM I VOA-TIC 1/87 Rev.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05634

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG9

Sample wt/vol: 5.153 (g/mL) G Lab File ID: >PA212

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.0 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	R
74-83-9	Bromomethane	10.	
75-01-4	Vinyl Chloride	10.	
75-00-3	Chloroethane	10.	
75-09-2	Methylene Chloride	5.	
67-64-1	Acetone	8.	B
75-15-0	Carbon Disulfide	5.	
75-35-4	1,1-Dichloroethene	5.	
75-34-3	1,1-Dichloroethane	5.	
540-59-0	1,2-Dichloroethene (total)	5.	
67-66-3	Chloroform	5.	
107-02-2	1,2-Dichloroethane	5.	
78-93-3	2-Butanone	7.	B
71-55-6	1,1,1-Trichloroethane	5.	
56-23-5	Carbon Tetrachloride	5.	
108-05-4	Vinyl Acetate	10.	
75-27-4	Bromodichloromethane	5.	
78-87-5	1,2-Dichloropropane	5.	
10061-01-5	cis-1,3-Dichloropropene	5.	
79-01-6	Trichloroethene	5.	
124-48-1	Dibromochloromethane	5.	
79-00-5	1,1,2-Trichloroethane	5.	
71-43-2	Benzene	5.	
10061-02-6	trans-1,3-Dichloropropene	5.	
75-25-2	Bromoform	5.	
108-10-1	4-Methyl-2-pentanone	10.	
591-78-6	2-Hexanone	10.	
127-18-4	Tetrachloroethene	5.	
79-34-5	1,1,2,2-Tetrachloroethane	5.	
108-88-3	Toluene	5.	
108-90-7	Chlorobenzene	5.	
100-41-4	Ethylbenzene	5.	
100-42-5	Styrene	5.	
133-02-7	Xylene (total)	5.	

CWL 1-23-

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05690

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SH3

Sample wt/vol: 5.418 (g/mL) G Lab File ID: >PA214

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.1 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-05690

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SH3

Sample wt/vol: 5.418 (g/mL) G Lab File ID: >PA214

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.1 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	R
74-83-9	Bromomethane	10.	
75-01-4	Vinyl Chloride	10.	
75-00-3	Chloroethane	10.	
75-09-2	Methylene Chloride	5.	
67-64-1	Acetone	13.	B
75-15-0	Carbon Disulfide	5.	
75-35-4	1,1-Dichloroethene	5.	
75-34-3	1,1-Dichloroethane	5.	
540-59-0	1,2-Dichloroethene (total)	5.	
67-66-3	Chloroform	5.	
107-02-2	1,2-Dichloroethane	5.	
78-93-3	2-Butanone	6.	B
71-55-6	1,1,1-Trichloroethane	5.	
56-23-5	Carbon Tetrachloride	5.	
108-05-4	Vinyl Acetate	10.	
75-27-4	Bromodichloromethane	5.	
78-87-5	1,2-Dichloropropane	5.	
10061-01-5	cis-1,3-Dichloropropene	5.	
79-01-6	Trichloroethene	5.	
124-48-1	Dibromochloromethane	5.	
79-00-5	1,1,2-Trichloroethane	5.	
71-43-2	Benzene	5.	
10061-02-6	trans-1,3-Dichloropropene	5.	
75-25-2	Bromoform	5.	
108-10-1	4-Methyl-2-pentanone	10.	
591-78-6	2-Hexanone	10.	
127-18-4	Tetrachloroethene	5.	
79-34-5	1,1,2,2-Tetrachloroethane	5.	
108-88-3	Toluene	5.	
108-90-7	Chlorobenzene	5.	
100-41-4	Ethylbenzene	5.	
100-42-5	Styrene	5.	
133-02-7	Xylene (total)	5.	

1-23-93 CML

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S97

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------- SAS No.: ------- SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4734-E1

Sample wt/vol: 30.25 (g/mL) G Lab File ID: >DA104

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. ~~4.44~~ 3.27 dec. -- Date Extracted: 13/15/92

6/30/92 mlc

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 9.17 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	350.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	350.	U
121-14-2	2,4-Dinitrotoluene	350.	U
84-66-2	Diethylphthalate	350.	U
7005-72-3	4-Chlorophenyl-phenylether	350.	U
86-73-7	Fluorene	350.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	350.	U
101-55-3	4-Bromophenyl-phenylether	350.	U
118-74-1	Hexachlorobenzene	350.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	350.	U
120-12-7	Anthracene	350.	U
84-74-2	Di-n-butylphthalate	350.	U
206-44-0	Fluoranthene	350.	U
129-00-0	Pyrene	350.	U
85-68-7	Butylbenzylphthalate	30.	J
91-94-1	3,3'-Dichlorobenzidine	690.	UJ
56-55-3	Benzo(a)anthracene	350.	U
218-01-9	Chrysene	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate	38.	J
117-84-0	Di-n-octylphthalate	37.	J
205-99-2	Benzo(b)fluoranthene	350.	UJ
207-08-9	Benzo(k)fluoranthene	350.	U
50-32-8	Benzo(a)pyrene	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U
53-70-3	Dibenz(a,h)anthracene	350.	U
191-24-2	Benzo(g,h,i)perylene	350.	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S97

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4734-E1

Sample wt/vol: 30.25 (g/mL) G Lab File ID: >DA104

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. ~~4.44~~ 3.27 dec. -- Date Extracted: 3/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 9.17 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	350.	UJ
111-44-4	bis(2-Chloroethyl)Ether	350.	U
95-57-8	2-Chlorophenol	350.	U
541-73-1	1,3-Dichlorobenzene	350.	U
106-46-7	1,4-Dichlorobenzene	350.	U
100-51-6	Benzyl alcohol	350.	U
95-50-1	1,2-Dichlorobenzene	350.	U
95-48-7	2-Methylphenol	350.	U
39638-32-9	bis(2-chloroisopropyl)ether	350.	U
106-44-5	4-Methylphenol	350.	U
621-64-7	N-Nitroso-Di-n-propylamine	350.	UJ
67-72-1	Hexachloroethane	350.	U
98-95-3	Nitrobenzene	350.	U
78-59-1	Isophorone	350.	U
88-75-5	2-Nitrophenol	350.	U
105-67-9	2,4-Dimethylphenol	350.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U
120-83-2	2,4-Dichlorophenol	350.	U
120-82-1	1,2,4-Trichlorobenzene	350.	U
91-20-3	Naphthalene	350.	U
106-47-8	4-Chloroaniline	350.	U
87-68-3	Hexachlorobutadiene	350.	U
59-50-7	4-Chloro-3-methylphenol	350.	U
91-57-6	2-Methylnaphthalene	350.	U
77-47-4	Hexachlorocyclopentadiene	350.	U
88-06-2	2,4,6-Trichlorophenol	350.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	350.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	350.	U
208-96-8	Acenaphthylene	350.	U
606-20-2	2,6-Dinitrotoluene	350.	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S99

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4735-E1

Sample wt/vol: 30.96 (g/mL) G Lab File ID: >DA105

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.05 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.15 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	UJ
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	UJ
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

SQV 11/24/92

BQV 11/24/92

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01S97

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4734-E1

Sample wt/vol: 30.25 (g/mL) G Lab File ID: >DA104

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. ~~4.44~~ 3.27 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 9.17 Dilution Factor: 1.00000

Number TICs found: 10 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.51	1300.	~~JKB~~ R
2.		Unknown	4.82	1700.	~~JKB~~ R
3.		Unknown	5.25	190.	J N
4.		Unknown	5.30	440.	J N
5.	104767	1-Hexanol, 2-ethyl-	5.77	210.	J N
6.		Unknown	6.05	240.	~~JK~~ R
7.		Unknown	7.51	150.	J N
8.		Unknown alkane	14.95	140.	J N
9.	126738	Phosphoric acid tributyl est	19.86	20000.	J N
10.		Unknown alkane	34.33	210.	~~JB~~ R
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
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27.					
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29.					
30.					

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01S99

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4735-E1

Sample wt/vol: 30.96 (g/mL) G Lab File ID: >DA105

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.05 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.15 Dilution Factor: 1.00000

Number TICs found: 30

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.52	1100.	~~JAB~~ K
2.		Unknown	4.80	640.	~~JAB~~ K
3.		Unknown	5.26	150.	JN
4.		Unknown	5.29	280.	J
5.	104767	1-Hexanol, 2-ethyl-	5.77	200.	J
6.	112403	Dodecane	8.67	200.	J
7.	17301234	Undecane, 2,6-dimethyl-	8.97	200.	J
8.		Unknown alkane	10.27	520.	J
9.	629505	Tridecane	10.91	630.	J
10.		Unknown alkane	12.45	140.	J
11.		Unknown alkane	12.79	870.	J
12.	629594	Tetradecane	13.37	1000.	J
13.		Unknown alkane	14.61	140.	J
14.		Unknown alkane	14.97	810.	J
15.	629629	Pentadecane	15.94	730.	J
16.	544763	Hexadecane	18.49	240.	J
17.	126738	Phosphoric acid tributyl est	19.78	3400.	J
18.	57103	Hexadecanoic acid	26.98	180.	J
19.		Unknown alkane	27.71	190.	J
20.		Unknown	28.32	430.	J
21.		Unknown alkane	29.37	460.	J
22.		Unknown alkane	30.81	800.	J
23.		Unknown alkane	32.12	770.	J
24.		Unknown alkane	33.32	400.	J
25.		Unknown alkane	34.43	230.	J
26.		Unknown alkane	35.48	160.	J
27.		Unknown alkane	36.47	190.	J
28.		Unknown	37.28	340.	J
29.		Unknown alkane	38.33	190.	J
30.		Unknown	40.38	140.	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S99

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4735-E1

Sample wt/vol: 30.96 (g/mL) G Lab File ID: >DA105

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec.4.05 dec. -- Date Extracted:13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH:10.15 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	19.	J
91-94-1	3,3'-Dichlorobenzidine	670.	UJ
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	33.	J
117-84-0	Di-n-octylphthalate	45.	J
205-99-2	Benzo(b)fluoranthene	340.	UJ
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB1

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4736-E1

Sample wt/vol: 30.78 (g/mL) G Lab File ID: >DA106

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.08 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.12 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	19.	J
91-94-1	3,3'-Dichlorobenzidine	680.	UJ
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	39.	J
117-84-0	Di-n-octylphthalate	50.	J
205-99-2	Benzo(b)fluoranthene	340.	UJ
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB1

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4736-E1

Sample wt/vol: 30.78 (g/mL) G Lab File ID: >DA106

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.08 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.12 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	UJ
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	UJ
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

RDV 1/21/

RDV 1/21/

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB2

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5150-E1

Sample wt/vol: 30.44 (g/mL) G Lab File ID: >DA109

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec.5.21 dec. -- Date Extracted:13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH:8.90 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	350.	U
111-44-4	bis(2-Chloroethyl)Ether	350.	U
95-57-8	2-Chlorophenol	350.	U
541-73-1	1,3-Dichlorobenzene	350.	U
106-46-7	1,4-Dichlorobenzene	350.	U
100-51-6	Benzyl_alcohol	350.	U
95-50-1	1,2-Dichlorobenzene	350.	U
95-48-7	2-Methylphenol	350.	U
39638-32-9	bis(2-chloroisopropyl)ether	350.	U
106-44-5	4-Methylphenol	350.	U
621-64-7	N-Nitroso-Di-n-propylamine	350.	UJ
67-72-1	Hexachloroethane	350.	U
98-95-3	Nitrobenzene	350.	U
78-59-1	Isophorone	350.	U
88-75-5	2-Nitrophenol	350.	U
105-67-9	2,4-Dimethylphenol	350.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U
120-83-2	2,4-Dichlorophenol	350.	U
120-82-1	1,2,4-Trichlorobenzene	350.	U
91-20-3	Naphthalene	350.	U
106-47-8	4-Chloroaniline	350.	U
87-68-3	Hexachlorobutadiene	350.	U
59-50-7	4-Chloro-3-methylphenol	350.	U
91-57-6	2-Methylnaphthalene	350.	U
77-47-4	Hexachlorocyclopentadiene	350.	U
88-06-2	2,4,6-Trichlorophenol	350.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	350.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	350.	U
208-96-8	Acenaphthylene	350.	U
606-20-2	2,6-Dinitrotoluene	350.	U

HPV 1/21/93

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SB1

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4736-E1

Sample wt/vol: 30.78 (g/mL) G Lab File ID: >DA106

Level: (low/med) LOW Date Received: 03/05/92

% Moisture: not dec. 4.08 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.12 Dilution Factor: 1.00000

Number TICs found: 22

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.52	1100.	~~JAB~~
2.		Unknown	4.81	600.	~~JAB~~
3.		Unknown	5.26	170	JN
4.		Unknown	5.30	210.	J
5.		Unknown	5.78	160.	J
6.	112403	Dodecane	8.68	230.	J
7.	6044719	Dodecane, 6-methyl-	8.97	200.	J
8.		Unknown alkane	10.28	560.	J
9.	629505	Tridecane	10.92	700.	J
10.		Unknown alkane	12.80	900.	J
11.	629594	Tetradecane	13.38	1100.	J
12.		Unknown alkane	14.63	140.	J
13.		Unknown alkane	14.98	850.	J
14.	629629	Pentadecane	15.94	800.	J
15.	544763	Hexadecane	18.50	250.	J
16.	126738	Phosphoric acid tributyl est	19.79	3500.	J
17.	57103	Hexadecanoic acid	26.99	190.	J
18.		Unknown	28.32	360.	J
19.		Unknown	34.24	370.	J
20.		Unknown	37.29	390.	J
21.		Unknown alkane	38.33	160.	J
22.		Unknown	40.39	160.	J
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1F

EPA SAMPLE NO.

B01SB2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5150-E1

Sample wt/vol: 30.44 (g/mL) G Lab File ID: >DA109

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec. 5.21 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 8.90 Dilution Factor: 1.00000

Number TICs found: 24

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.52	1200.	~~JAB~~
2.		Unknown	4.83	1500.	~~JAB~~
3.		Unknown	5.27	210.	JN
4.		Unknown	5.30	340.	J
5.		Unknown	7.97	150.	J
6.	112403	Dodecane	8.69	250.	J
7.	6044719	Dodecane, 6-methyl-	8.99	170.	J
8.		Unknown alkane	10.29	430.	J
9.	629505	Tridecane	10.91	590.	J
10.		Unknown	11.57	150.	J
11.		Unknown alkane	12.81	750.	J
12.	629594	Tetradecane	13.39	1000.	J
13.		Unknown alkane	14.63	140.	J
14.		Unknown alkane	14.99	860.	J
15.	629629	Pentadecane	15.96	950.	J
16.	544763	Hexadecane	18.51	370.	J
17.	126738	Phosphoric acid tributyl est	19.97	32000.	J
18.		Unknown alkane	25.78	160.	J
19.	57103	Hexadecanoic acid	27.00	200.	J
20.		Unknown alkane	27.73	250.	J
21.		Unknown alkane	29.38	180.	J
22.		Unknown alkane	34.36	380.	~~JB~~
23.		Unknown alkane	38.35	150.	JN
24.		Unknown alkane	40.41	140.	JN
25.					
26.					
27.					
28.					
29.					
30.					

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB2

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5150-E1

Sample wt/vol: 30.44 (g/mL) G Lab File ID: >DA109

Level: (low/med) LOW Date Received: 03/13/92

% Moisture: not dec.5.21 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH:8.90 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	350.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	350.	U
121-14-2	2,4-Dinitrotoluene	350.	U
84-66-2	Diethylphthalate	33.	J
7005-72-3	4-Chlorophenyl-phenylether	350.	U
86-73-7	Fluorene	350.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	350.	U
101-55-3	4-Bromophenyl-phenylether	350.	U
118-74-1	Hexachlorobenzene	350.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	350.	U
120-12-7	Anthracene	350.	U
84-74-2	Di-n-butylphthalate	350.	U
206-44-0	Fluoranthene	350.	U
129-00-0	Pyrene	350.	U
85-68-7	Butylbenzylphthalate	350.	U
91-94-1	3,3'-Dichlorobenzidine	690.	UJ KPV 1/21/93
56-55-3	Benzo(a)anthracene	350.	U
218-01-9	Chrysene	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate	24.	J
117-84-0	Di-n-octylphthalate	350.	U
205-99-2	Benzo(b)fluoranthene	350.	U
207-08-9	Benzo(k)fluoranthene	350.	U
50-32-8	Benzo(a)pyrene	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U
53-70-3	Dibenz(a,h)anthracene	350.	U
191-24-2	Benzo(g,h,i)perylene	350.	U

(1) - Cannot be separated from Diphenylamine

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4968-E1

Sample wt/vol: 29.45 (g/mL) G Lab File ID: >DA107

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec.3.03 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH:10.33 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1800.	UJ
83-32-9	Acenaphthene	350.	U
51-28-5	2,4-Dinitrophenol	1800.	U
100-02-7	4-Nitrophenol	1800.	U
132-64-9	Dibenzofuran	350.	U
121-14-2	2,4-Dinitrotoluene	350.	U
84-66-2	Diethylphthalate	350.	U
7005-72-3	4-Chlorophenyl-phenylether	350.	U
86-73-7	Fluorene	350.	U
100-01-6	4-Nitroaniline	1800.	U
534-52-1	4,6-Dinitro-2-methylphenol	1800.	U
86-30-6	N-Nitrosodiphenylamine (1)	350.	U
101-55-3	4-Bromophenyl-phenylether	350.	U
118-74-1	Hexachlorobenzene	350.	U
87-86-5	Pentachlorophenol	1800.	U
85-01-8	Phenanthrene	350.	U
120-12-7	Anthracene	350.	U
84-74-2	Di-n-butylphthalate	350.	U
206-44-0	Fluoranthene	350.	U
129-00-0	Pyrene	350.	U
85-68-7	Butylbenzylphthalate	350.	U
91-94-1	3,3'-Dichlorobenzidine	700.	UJ
56-55-3	Benzo(a)anthracene	350.	U
218-01-9	Chrysene	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate	17.	J
117-84-0	Di-n-octylphthalate	15.	J
205-99-2	Benzo(b)fluoranthene	350.	UJ
207-08-9	Benzo(k)fluoranthene	350.	U
50-32-8	Benzo(a)pyrene	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U
53-70-3	Dibenz(a,h)anthracene	350.	U
191-24-2	Benzo(g,h,i)perylene	350.	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4968-E1

Sample wt/vol: 29.45 (g/mL) G Lab File ID: >DA107

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec.3.03 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.33 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	350.	UJ
111-44-4	bis(2-Chloroethyl)Ether	350.	U
95-57-8	2-Chlorophenol	350.	U
541-73-1	1,3-Dichlorobenzene	350.	U
106-46-7	1,4-Dichlorobenzene	350.	U
100-51-6	Benzyl_alcohol	350.	U
95-50-1	1,2-Dichlorobenzene	350.	U
95-48-7	2-Methylphenol	350.	U
39638-32-9	bis(2-chloroisopropyl)ether	350.	U
106-44-5	4-Methylphenol	350.	U
621-64-7	N-Nitroso-Di-n-propylamine	350.	UJ
67-72-1	Hexachloroethane	350.	U
98-95-3	Nitrobenzene	350.	U
78-59-1	Isophorone	350.	U
88-75-5	2-Nitrophenol	350.	U
105-67-9	2,4-Dimethylphenol	350.	U
65-85-0	Benzoic_acid	1800.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U
120-83-2	2,4-Dichlorophenol	350.	U
120-82-1	1,2,4-Trichlorobenzene	350.	U
91-20-3	Naphthalene	350.	U
106-47-8	4-Chloroaniline	350.	U
87-68-3	Hexachlorobutadiene	350.	U
59-50-7	4-Chloro-3-methylphenol	350.	U
91-57-6	2-Methylnaphthalene	350.	U
77-47-4	Hexachlorocyclopentadiene	350.	U
88-06-2	2,4,6-Trichlorophenol	350.	U
95-95-4	2,4,5-Trichlorophenol	1800.	U
91-58-7	2-Chloronaphthalene	350.	U
88-74-4	2-Nitroaniline	1800.	U
131-11-3	Dimethylphthalate	350.	U
208-96-8	Acenaphthylene	350.	U
606-20-2	2,6-Dinitrotoluene	350.	U

APV 1/21/93

APV 1/28/93

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB7

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5102-E1

Sample wt/vol: 30.21 (g/mL) G Lab File ID: >DA108

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec.3.79 dec. -- Date Extracted:13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH:9.75 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	U
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	UJ
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SB3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 4968-E1

Sample wt/vol: 29.45 (g/mL) G Lab File ID: >DA107

Level: (low/med) LOW Date Received: 03/09/92

% Moisture: not dec. 3.03 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 10.33 Dilution Factor: 1.00000

Number TICs found: 7 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.53	1300.	~~JAB~~ R
2.		Unknown	4.80	220.	~~JAB~~ R
3.	126738	Phosphoric acid tributyl est	19.73	170.	JN
4.		Unknown alkane	27.72	220.	J
5.		Unknown alkane	29.38	360.	J
6.		Unknown alkane	30.82	180.	J
7.		Unknown alkane	34.34	340.	~~JB~~ R
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
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30.					

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SB7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5102-E1

Sample wt/vol: 30.21 (g/mL) G Lab File ID: >DA108

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.79 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 9.75 Dilution Factor: 1.00000

Number TICs found: 11

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		Unknown	4.53	1200.	~~JAB~~	R
2.		Unknown	4.82	1000.	~~JAB~~	R
3.		Unknown	5.27	180.	(JN)	
4.		Unknown	5.30	210.	J	
5.		Unknown	7.53	220.	J	
6.	57103	Hexadecanoic acid	27.00	190.	J	KG
7.		Unknown alkane	27.73	230.	J	
8.		Unknown alkane	29.38	300.	J	1/24
9.		Unknown alkane	34.35	420.	~~JB~~	R
10.		Unknown alkane	38.35	190.	JN	
11.		Unknown	40.41	210.	JN	
12.						
13.						
14.						
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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 15

Matrix: (soil/water) SOIL Lab Sample ID: 5102-E1

Sample wt/vol: 30.21 (g/mL) G Lab File ID: >DA108

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 3.79 dec. -- Date Extracted: 13/15/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/01/92

GPC Cleanup: (Y/N) N pH: 9.75 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	14.	J
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	690.	UJ
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	21.	J
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

HDV 1/21/93

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5270-E1

Sample wt/vol: 30.34 (g/mL) G Lab File ID: >DB604

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.4.96 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 8.05 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	
99-09-2	3-Nitroaniline	1700.	U J	BJV 1/22/93
83-32-9	Acenaphthene	350.	U	
51-28-5	2,4-Dinitrophenol	1700.	U	
100-02-7	4-Nitrophenol	1700.	U	
132-64-9	Dibenzofuran	350.	U	
121-14-2	2,4-Dinitrotoluene	350.	U	
84-66-2	Diethylphthalate	350 ~~330.~~	~~JB~~	UJBJV 1/22/93
7005-72-3	4-Chlorophenyl-phenylether	350.	U J	
86-73-7	Fluorene	350.	U	
100-01-6	4-Nitroaniline	1700.	U	
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U	
86-30-6	N-Nitrosodiphenylamine (1)	350.	U	
101-55-3	4-Bromophenyl-phenylether	350.	U	
118-74-1	Hexachlorobenzene	350.	U	
87-86-5	Pentachlorophenol	1700.	U	
85-01-8	Phenanthrene	350.	U	
120-12-7	Anthracene	350.	U	
84-74-2	Di-n-butylphthalate	350.	U	
206-44-0	Fluoranthene	350.	U	
129-00-0	Pyrene	350.	U	
85-68-7	Butylbenzylphthalate	350.	U	
91-94-1	3,3'-Dichlorobenzidine	690.	U	
56-55-3	Benzo(a)anthracene	350.	U	
218-01-9	Chrysene	350.	U	
117-81-7	bis(2-Ethylhexyl)phthalate	46.	J	
117-84-0	Di-n-octylphthalate	29.	J	
205-99-2	Benzo(b)fluoranthene	350.	U J	UJV 1/22/93
207-08-9	Benzo(k)fluoranthene	350.	U	
50-32-8	Benzo(a)pyrene	350.	U	
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U	
53-70-3	Dibenz(a,h)anthracene	350.	U	
191-24-2	Benzo(g,h,i)perylene	350.	U	

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC7

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5270-E1

Sample wt/vol: 30.34 (g/mL) G Lab File ID: >DB604

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.4.96 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:8.05 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	350.	UJ
111-44-4	bis(2-Chloroethyl)Ether	350.	U
95-57-8	2-Chlorophenol	350.	U
541-73-1	1,3-Dichlorobenzene	350.	U
106-46-7	1,4-Dichlorobenzene	350.	U
100-51-6	Benzyl_alcohol	350.	U
95-50-1	1,2-Dichlorobenzene	350.	U
95-48-7	2-Methylphenol	350.	U
39638-32-9	bis(2-chloroisopropyl)ether_	350.	U
106-44-5	4-Methylphenol	350.	U
621-64-7	N-Nitroso-Di-n-propylamine__	350.	U
67-72-1	Hexachloroethane	350.	U
98-95-3	Nitrobenzene	350.	U
78-59-1	Isophorone	350.	U
88-75-5	2-Nitrophenol	350.	U
105-67-9	2,4-Dimethylphenol	350.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane__	350.	U
120-83-2	2,4-Dichlorophenol	350.	U
120-82-1	1,2,4-Trichlorobenzene	350.	U
91-20-3	Naphthalene	350.	U
106-47-8	4-Chloroaniline	350.	U
87-68-3	Hexachlorobutadiene	350.	U
59-50-7	4-Chloro-3-methylphenol	350.	U
91-57-6	2-Methylnaphthalene	350.	U
77-47-4	Hexachlorocyclopentadiene__	350.	U
88-06-2	2,4,6-Trichlorophenol	350.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	350.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	350.	U
208-96-8	Acenaphthylene	350.	U
606-20-2	2,6-Dinitrotoluene	350.	U

KTV 1/22/93

FORM I SV-1 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC9

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5271-E1

Sample wt/vol: 30.85 (g/mL) G Lab File ID: >DB60?

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.2.50 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:9.60 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	330.	UJ
111-44-4	bis(2-Chloroethyl)Ether	330.	U
95-57-8	2-Chlorophenol	330.	U
541-73-1	1,3-Dichlorobenzene	330.	U
106-46-7	1,4-Dichlorobenzene	330.	U
100-51-6	Benzyl_alcohol	330.	U
95-50-1	1,2-Dichlorobenzene	330.	U
95-48-7	2-Methylphenol	330.	U
39638-32-9	bis(2-chloroisopropyl)ether	330.	U
106-44-5	4-Methylphenol	330.	U
621-64-7	N-Nitroso-Di-n-propylamine	330.	U
67-72-1	Hexachloroethane	330.	U
98-95-3	Nitrobenzene	330.	U
78-59-1	Isophorone	330.	U
88-75-5	2-Nitrophenol	330.	U
105-67-9	2,4-Dimethylphenol	330.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	330.	U
120-83-2	2,4-Dichlorophenol	330.	U
120-82-1	1,2,4-Trichlorobenzene	330.	U
91-20-3	Naphthalene	330.	U
106-47-8	4-Chloroaniline	330.	U
87-68-3	Hexachlorobutadiene	330.	U
59-50-7	4-Chloro-3-methylphenol	330.	U
91-57-6	2-Methylnaphthalene	330.	U
77-47-4	Hexachlorocyclopentadiene	330.	U
88-06-2	2,4,6-Trichlorophenol	330.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	330.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	330.	U
208-96-8	Acenaphthylene	330.	U
606-20-2	2,6-Dinitrotoluene	330.	U

HPC 1/22/93

FORM I SV-1 1/87 Rev.

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SC7

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: -------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5270-E1

Sample wt/vol: 30.34 (g/mL) G Lab File ID: >DB604

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.4.96 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:8.05 Dilution Factor: 1.00000

Number TICs found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		Unknown	4.45	930.	~~JAB~~	K
2.		Unknown	4.76	1800.	~~JAB~~	K
3.		Unknown	5.39	180.	JN	1/24
4.		Unknown	5.70	170.	J	
5.		Unknown	5.85	320.	J	
6.		Unknown	5.97	300.	J	
7.		Unknown	7.34	210.	J	
8.	403190	2-FLUORO-4-NITROPHENOL	7.65	410.	J	
9.	112403	Dodecane	8.58	410.	J	
10.		Unknown alkane	8.87	340.	J	
11.	95169	Benzothiazole	9.18	270.	J	
12.		Unknown alkane	10.16	770.	J	
13.	629505	Tridecane	10.79	970.	J	
14.		Unknown alkane	11.21	160.	J	
15.		Unknown	11.73	200.	J	
16.		Unknown alkane	12.66	890.	J	
17.	629594	Tetradecane	13.24	1200.	J	
18.		Unknown alkane	14.83	880.	J	
19.	629629	Pentadecane	15.80	880.	J	
20.	544763	Hexadecane	18.34	330.	J	
21.	126738	Phosphoric acid tributyl est	19.73	11000.	J	
22.	629787	Heptadecane	20.85	150.	J	
23.	99285	Phenol, 2,6-dibromo-4-nitro-	22.92	280.	J	
24.	89197693	DIBUTYL 3-HYDROXYBUTYL PHOSP	23.03	340.	J	
25.		Unknown alkane	23.26	160.	J	
26.		Unknown alkane	25.61	160.	J	
27.	57103	Hexadecanoic acid	26.83	280.	J	
28.	80079	Benzene, 1,1'-sulfonylbis[4-	31.22	300.	~~JB~~	R
29.		Unknown	33.36	190.	JN	
30.	791286	Phosphine oxide, triphenyl-	34.76	920.	~~JB~~	R

FORM I SV-TIC 1/87 Rev.

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SC9

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: -------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5271-E1

Sample wt/vol: 30.85 (g/mL) G Lab File ID: >DB605

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.2.50 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:9.60 Dilution Factor: 1.00000

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.45	800.	~~JAB~~
2.		Unknown	4.74	360.	~~JAB~~
3.	80079	Benzene, 1,1'-sulfonylbis[4-	31.22	220.	~~JB~~
4.	791286	Phosphine oxide, triphenyl-	34.76	930.	~~JB~~
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R KF 1/2

FORM I SV-TIC 1/87 Rev.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC9

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5271-E1

Sample wt/vol: 30.85 (g/mL) G Lab File ID: >DB605

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.2.50 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:9.60 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	330.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	330.	U
121-14-2	2,4-Dinitrotoluene	330.	U
84-66-2	Diethylphthalate	330.	U
7005-72-3	4-Chlorophenyl-phenylether	330.	U
86-73-7	Fluorene	330.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	330.	U
101-55-3	4-Bromophenyl-phenylether	330.	U
118-74-1	Hexachlorobenzene	330.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	330.	U
120-12-7	Anthracene	330.	U
84-74-2	Di-n-butylphthalate	330.	U
206-44-0	Fluoranthene	330.	U
129-00-0	Pyrene	330.	U
85-68-7	Butylbenzylphthalate	330.	U
91-94-1	3,3'-Dichlorobenzidine	660.	U
56-55-3	Benzo(a)anthracene	330.	U
218-01-9	Chrysene	330.	U
117-81-7	bis(2-Ethylhexyl)phthalate	330.	U
117-84-0	Di-n-octylphthalate	330.	U
205-99-2	Benzo(b)fluoranthene	330.	U
207-08-9	Benzo(k)fluoranthene	330.	U
50-32-8	Benzo(a)pyrene	330.	U
193-39-5	Indeno(1,2,3-cd)pyrene	330.	U
53-70-3	Dibenz(a,h)anthracene	330.	U
191-24-2	Benzo(g,h,i)perylene	330.	U

(1) - Cannot be separated from Diphenylamine

BGV 1/22/93

FORM I SV-2 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD7

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5353-E1

Sample wt/vol: 30.92 (g/mL) G Lab File ID: >DB607

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec.1.59 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:9.57 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1600.	U
83-32-9	Acenaphthene	330.	U
51-28-5	2,4-Dinitrophenol	1600.	UJ
100-02-7	4-Nitrophenol	1600.	U
132-64-9	Dibenzofuran	330.	U
121-14-2	2,4-Dinitrotoluene	330.	U
84-66-2	Diethylphthalate	330.	U
7005-72-3	4-Chlorophenyl-phenylether	330.	U
86-73-7	Fluorene	330.	U
100-01-6	4-Nitroaniline	1600.	U
534-52-1	4,6-Dinitro-2-methylphenol	1600.	UJ
86-30-6	N-Nitrosodiphenylamine (1)	330.	U
101-55-3	4-Bromophenyl-phenylether	330.	U
118-74-1	Hexachlorobenzene	330.	U
87-86-5	Pentachlorophenol	1600.	U
85-01-8	Phenanthrene	330.	U
120-12-7	Anthracene	330.	U
84-74-2	Di-n-butylphthalate	330.	U
206-44-0	Fluoranthene	330.	U
129-00-0	Pyrene	330.	U
85-68-7	Butylbenzylphthalate	330.	U
91-94-1	3,3'-Dichlorobenzidine	660.	U
56-55-3	Benzo(a)anthracene	330.	U
218-01-9	Chrysene	330.	U
117-81-7	bis(2-Ethylhexyl)phthalate	330.	U
117-84-0	Di-n-octylphthalate	17.	J
205-99-2	Benzo(b)fluoranthene	330.	U
207-08-9	Benzo(k)fluoranthene	330.	U
50-32-8	Benzo(a)pyrene	330.	U
193-39-5	Indeno(1,2,3-cd)pyrene	330.	U
53-70-3	Dibenz(a,h)anthracene	330.	U
191-24-2	Benzo(g,h,i)perylene	330.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5353-E1

Sample wt/vol: 30.92 (g/mL) G Lab File ID: >DB607

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 1.59 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 9.57 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	330.	U
111-44-4	bis(2-Chloroethyl)Ether	330.	U
95-57-8	2-Chlorophenol	330.	U
541-73-1	1,3-Dichlorobenzene	330.	U
106-46-7	1,4-Dichlorobenzene	330.	U
100-51-6	Benzyl alcohol	330.	U
95-50-1	1,2-Dichlorobenzene	330.	U
95-48-7	2-Methylphenol	330.	U
39638-32-9	bis(2-chloroisopropyl)ether	330.	UJ
106-44-5	4-Methylphenol	330.	U
621-64-7	N-Nitroso-Di-n-propylamine	330.	UJ
67-72-1	Hexachloroethane	330.	U
98-95-3	Nitrobenzene	330.	U
78-59-1	Isophorone	330.	U
88-75-5	2-Nitrophenol	330.	U
105-67-9	2,4-Dimethylphenol	330.	U
65-85-0	Benzoic acid	1600.	U
111-91-1	bis(2-Chloroethoxy)methane	330.	U
120-83-2	2,4-Dichlorophenol	330.	U
120-82-1	1,2,4-Trichlorobenzene	330.	U
91-20-3	Naphthalene	330.	U
106-47-8	4-Chloroaniline	330.	U
87-68-3	Hexachlorobutadiene	330.	U
59-50-7	4-Chloro-3-methylphenol	330.	U
91-57-6	2-Methylnaphthalene	330.	U
77-47-4	Hexachlorocyclopentadiene	330.	U
88-06-2	2,4,6-Trichlorophenol	330.	U
95-95-4	2,4,5-Trichlorophenol	1600.	U
91-58-7	2-Chloronaphthalene	330.	U
88-74-4	2-Nitroaniline	1600.	UJ
131-11-3	Dimethylphthalate	330.	U
208-96-8	Acenaphthylene	330.	U
606-20-2	2,6-Dinitrotoluene	330.	U

UJ V 1/22/93

UJ K 1/22/93

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD9

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5352-E1

Sample wt/vol: 30.15 (g/mL) G Lab File ID: >DB606

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec.2.36 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:10.03 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	U
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	UJ
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	UJ
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	UJ
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

KJV 1/22/93

KJV 1/22/93

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SD7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5353-E1

Sample wt/vol: 30.92 (g/mL) G Lab File ID: >DB607

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 1.59 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 9.57 Dilution Factor: 1.00000

Number TICs found: 14

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.38	140.	J N
2.		Unknown	4.45	880.	~~JAB~~ R
3.		Unknown	4.76	1900.	~~JAB~~ R
4.		Unknown	5.18	200.	(J N)
5.		Unknown	5.22	370.	J
6.		Unknown	5.42	130.	J
7.		Unknown	5.70	240.	J
8.		Unknown	5.83	140.	J
9.		Unknown	5.99	570.	J
10.		Unknown	7.42	140.	J
11.		Unknown	19.58	530.	J
12.	80079	Benzene, 1,1'-sulfonylbis[4-	31.22	160.	~~JB~~ R
13.	791286	Phosphine oxide, triphenyl-	34.75	770.	~~JB~~ R
14.		Unknown	37.16	160.	J N
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FORM I SV-TIC 1/87 Rev.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SD9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------- SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5352-E1

Sample wt/vol: 30.15 (g/mL) G Lab File ID: >DB606

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 2.36 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 10.03 Dilution Factor: 1.00000

Number TICs found: 7 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		Unknown	4.46	880.	~~CAB~~	R
2.		Unknown	4.74	600.	~~JAB~~	R
3.		Unknown	5.19	190.	JN	
4.	126738	Phosphoric acid tributyl est	19.59	590.	JN	
5.	80079	Benzene, 1,1'-sulfonylbis[4-	31.22	180.	~~JB~~	R
6.		Unknown	34.23	150.	JN	
7.	791286	Phosphine oxide, triphenyl-	34.75	860.	~~JB~~	R
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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5352-E1

Sample wt/vol: 30.15 (g/mL) G Lab File ID: >DB606

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec.2.36 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 10.03 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	UJ
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	UJ
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	680.	U
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	340.	U
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5490-E1

Sample wt/vol: 30.361 (g/mL) G Lab File ID: >DB504

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.3.24 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:10.26 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	(UJ)
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	680.	U
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	340.	U
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

SPV 1/22/93

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5490-E1

Sample wt/vol: 30.361 (g/mL) G Lab File ID: >DB504

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.3.24 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:10.26 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	UJ
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

1/22/92

FORM I SV-1 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5491-E1

Sample wt/vol: 30.240 (g/mL) G Lab File ID: >DB505

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.24 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.76 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	UJ
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

BQV 1/22/93

FORM I SV-1 1/87 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SF7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5490-E1

Sample wt/vol: 30.361 (g/mL) G Lab File ID: >DB504

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.3.24 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:10.26 Dilution Factor: 1.00000

Number TICs found: 13 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.47	800.	~~JAB~~ R
2.		Unknown	4.77	1500.	~~JAB~~ R
3.		Unknown	4.86	580.	~~JAB~~ R
4.		Unknown	5.21	200.	J N
5.		Unknown	7.36	440.	J
6.	403190	2-FLUORO-4-NITROPHENOL	7.68	320.	J
7.		Unknown	8.54	140.	J
8.		Unknown	11.53	290.	J
9.		Unknown	19.34	540.	J
10.	126738	Phosphoric acid tributyl est	19.70	3800.	J
11.	99285	Phenol, 2,6-dibromo-4-nitro-	22.95	310.	J
12.	57103	Hexadecanoic acid	26.87	190.	J
13.		Unknown	34.25	190.	J
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15.					
16.					
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FORM I SV-TIC 1/87 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SF9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5491-E1

Sample wt/vol: 30.240 (g/mL) G Lab File ID: >DB505

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.2.24 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:7.76 Dilution Factor: 1.00000

Number TICs found: 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.46	700.	~~JAB~~ R
2.		Unknown	4.75	210.	~~JAB~~ R
3.		Unknown	34.27	150.	JN
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FORM I SV-TIC 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5491-E1

Sample wt/vol: 30.240 (g/mL) G Lab File ID: >DB505

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.2.24 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:7.76 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	680.	U
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	340.	U
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

RDK 1/22/93

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5492-E1

Sample wt/vol: 30.295 (g/mL) G Lab File ID: >DB506

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 4.23 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 8.18 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	690.	U
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	31.	J
117-84-0	Di-n-octylphthalate	340.	UJ
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

KEV 1/22/93

KEV 1/22/93

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5492-E1

Sample wt/vol: 30.295 (g/mL) G Lab File ID: >DB506

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.4.23 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:8.18 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	UJ
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

BJV 1/22/93

FORM I SV-1 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG7

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5633-E1

Sample wt/vol: 30.394 (g/mL) G Lab File ID: >DB507

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec.2.42 dec. -- Date Extracted:04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:7.09 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q.
108-95-2	Phenol	340.	U
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	UJ
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

MJV 1/22/93

FORM I SV-1 1/87 Rev.

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SG3

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5492-E1

Sample wt/vol: 30.295 (g/mL) G Lab File ID: >DB506

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.4.23 dec. -- Date Extracted:04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:8.18 Dilution Factor: 1.00000

Number TICs found: 6

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.47	680.	~~JKB~~ R
2.		Unknown	4.60	400.	JN
3.		Unknown	4.78	1700.	~~JKB~~ R
4.		Unknown	5.26	610.	JN
5.		Unknown	6.01	700.	JN
6.		Unknown	38.24	170.	JN
7.					
8.					
9.					
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AJV 1/22/9

FORM I SV-TIC 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5633-E1

Sample wt/vol: 30.394 (g/mL) G Lab File ID: >DB507

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.42 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.09 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	47.	J
91-94-1	3,3'-Dichlorobenzidine	670.	(UJ) BJV 1/28/93
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	84.	J
117-84-0	Di-n-octylphthalate	48.	J
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SG7

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5633-E1

Sample wt/vol: 30.394 (g/mL) G Lab File ID: >DB507

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec.2.42 dec. -- Date Extracted:04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:7.09 Dilution Factor: 1.00000

Number TICs found: 11 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.47	770.	~~JKB~~ R
2.		Unknown	4.77	2200.	~~JAK~~ R
3.		Unknown	5.21	240.	(JN)
4.		Unknown	5.25	800.	J
5.	104767	1-Hexanol, 2-ethyl-	5.72	470.	J
6.		Unknown	6.00	460.	J
7.		Unknown	7.00	160.	J
8.		Unknown	7.45	160.	J
9.	126738	Phosphoric acid tributyl est	19.76	15000.	J
10.	57103	Hexadecanoic acid	26.88	210.	J
11.		Unknown	34.26	150.	J
12.					
13.					
14.					
15.					
16.					
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R B/L 1/22/

FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5634-E1

Sample wt/vol: 30.180 (g/mL) G Lab File ID: >DB508

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec.2.01 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 6.88 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	U
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	UJ
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

BPV 1/22/93

FORM I SV-1 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG9

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5634-E1

Sample wt/vol: 30.180 (g/mL) G Lab File ID: >DB508

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec.2.01 dec. -- Date Extracted:04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:6.88 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	680.	UJ 6/01/22/93
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	45.	J
117-84-0	Di-n-octylphthalate	11.	J
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SG9

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5634-E1

Sample wt/vol: 30.180 (g/mL) G Lab File ID: >DB508

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec.2.01 dec. -- Date Extracted:04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:6.88 Dilution Factor: 1.00000

Number TICs found: 4 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.47	650.	~~JAB~~ R
2.		Unknown	4.76	340.	~~JAB~~ R
3.	126738	Phosphoric acid tributyl est	19.63	760.	JN
4.		Unknown	37.19	160.	JN
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FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SH3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5690-E1

Sample wt/vol: 30.319 (g/mL) G Lab File ID: >DB509

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.06 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.18 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	U
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	UJ
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

KJV 1/22/93

FORM I SV-1 1/87 Rev.

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SH3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5690-E1

Sample wt/vol: 30.319 (g/mL) G Lab File ID: >DB509

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec.4.06 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:7.18 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	690.	UJ
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	21.	J
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

BJV 1/22/9.

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SH3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5690-E1

Sample wt/vol: 30.319 (g/mL) G Lab File ID: >DB509

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.06 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.18 Dilution Factor: 1.00000

Number TICs found: 11 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.47	930.	~~JAB~~ K 3/11
2.		Unknown	4.78	2700.	~~JAB~~ R 1/22/
3.		Unknown	5.25	340.	J N
4.	57103	Hexadecanoic acid	26.89	250.	J
5.		Unknown	34.72	470.	J
6.		Unknown alcohol	36.38	250.	J
7.		Unknown alkane	38.25	400.	J
8.		Unknown alkane	40.22	150.	J
9.		Unknown	40.29	500.	J
10.	6971400	17-Pentatriacontene	42.96	140.	J
11.		Unknown	43.71	190.	J
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
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1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01S97

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-04734-P-1

Sample wt/vol: 30.25 (g/mL)g Lab File ID: >01214

Level: (low/med) low Date Received: 03/05/92

% Moisture: not dec. 3.27 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 9.17 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.20	UJ
319-85-7	Beta-BHC	8.20	U
319-86-8	Delta-BHC	8.20	U
58-89-9	Gamma-BHC (Lindane)	8.20	U
76-44-8	Heptachlor	8.20	U
309-00-2	Aldrin	8.20	U
1024-57-3	Heptachlor Epoxide	8.20	U
959-98-8	Endosulfan I	8.20	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	82.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	82.00	U
5103-74-2	gamma-Chlordane	82.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	82.00	U
11104-28-2	Aroclor-1221	82.00	U
11141-16-5	Aroclor-1232	82.00	U
53469-21-9	Aroclor-1242	82.00	U
12672-29-6	Aroclor-1248	82.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO: B01S99

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-04735-P-1

Sample wt/vol: 30.96 (g/mL)g Lab File ID: >01215

Level: (low/med) low Date Received: 03/05/92

% Moisture: not dec. 4.05 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 10.1 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	UJ
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

Kg 1/2.

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SB1

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-04736-P-1

Sample wt/vol: 30.78 (g/mL) g Lab File ID: >01216

Level: (low/med) low Date Received: 03/05/92

% Moisture: not dec. 4.08 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 10.1 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	UJ
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO: B01SB2

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-05150-P-1

Sample wt/vol: 30.44 (g/mL)g Lab File ID: >01221

Level: (low/med) low Date Received: 03/11/92

% Moisture: not dec. 5.21 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 8.9 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	U
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

Validated 1/20/93

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NC: B01SB3

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-04968-P-1

Sample wt/vol: 29.45 (g/mL)g Lab File ID: >01217

Level: (low/med) low Date Received: 03/09/92

% Moisture: not dec. 3.03 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 10.3 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.40	UJ
319-85-7	Beta-BHC	8.40	U
319-86-8	Delta-BHC	8.40	U
58-89-9	Gamma-BHC (Lindane)	8.40	U
76-44-8	Heptachlor	8.40	U
309-00-2	Aldrin	8.40	U
1024-57-3	Heptachlor Epoxide	8.40	U
959-98-8	Endosulfan I	8.40	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	84.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	84.00	U
5103-74-2	gamma-Chlordane	84.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	84.00	U
11104-28-2	Aroclor-1221	84.00	U
11141-16-5	Aroclor-1232	84.00	U
53469-21-9	Aroclor-1242	84.00	U
12672-29-6	Aroclor-1248	84.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

B01SB7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 15

Matrix: (soil/water) soil Lab Sample ID: 92-05102-P-1

Sample wt/vol: 30.21 (g/mL) g Lab File ID: >01218

Level: (low/med) low Date Received: 03/11/92

% Moisture: not dec. 3.79 dec. Date Extracted: 03/15/92

Extraction: (SepF/Cont/Sonc) sonc Date Analyzed: 03/20/92

GPC Cleanup: (Y/N) N pH: 9.75 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	U
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

No qual. required

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05270

Sample wt/vol: 30.34 (g/mL)G Lab File ID: >02448

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 4.96 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 8.05 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	U J
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC9

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05271

Sample wt/vol: 30.85 (g/mL)G Lab File ID: >02449

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 2.5 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 9.6 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.00	(UJ)
319-85-7	Beta-BHC	8.00	U
319-86-8	Delta-BHC	8.00	U
58-89-9	Gamma-BHC (Lindane)	8.00	U
76-44-8	Heptachlor	8.00	U
309-00-2	Aldrin	8.00	U
1024-57-3	Heptachlor Epoxide	8.00	U
959-98-8	Endosulfan I	8.00	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	80.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	80.00	U
5103-74-2	gamma-Chlordane	80.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	80.00	U
11104-28-2	Aroclor-1221	80.00	U
11141-16-5	Aroclor-1232	80.00	U
53469-21-9	Aroclor-1242	80.00	U
12672-29-6	Aroclor-1248	80.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD9

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05352

Sample wt/vol: 30.15 (g/mL)G Lab File ID: >02450

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.36 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 10 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.20	U
319-85-7	Beta-BHC	8.20	U
319-86-8	Delta-BHC	8.20	U
58-89-9	Gamma-BHC (Lindane)	8.20	U
76-44-8	Heptachlor	8.20	U
309-00-2	Aldrin	8.20	U
1024-57-3	Heptachlor Epoxide	8.20	U
959-98-8	Endosulfan I	8.20	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	82.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	82.00	U
5103-74-2	gamma-Chlordane	82.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	82.00	U
11104-28-2	Aroclor-1221	82.00	U
11141-16-5	Aroclor-1232	82.00	U
53469-21-9	Aroclor-1242	82.00	U
12672-29-6	Aroclor-1248	82.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05353

Sample wt/vol: 30.92 (g/mL)G Lab File ID: >02455

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 1.59 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 9.57 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	7.90	UJ
319-85-7	Beta-BHC	7.90	U
319-86-8	Delta-BHC	7.90	U
58-89-9	Gamma-BHC (Lindane)	7.90	U
76-44-8	Heptachlor	7.90	U
309-00-2	Aldrin	7.90	U
1024-57-3	Heptachlor Epoxide	7.90	U
959-98-8	Endosulfan I	7.90	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	79.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	79.00	U
5103-74-2	gamma-Chlordane	79.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	79.00	U
11104-28-2	Aroclor-1221	79.00	U
11141-16-5	Aroclor-1232	79.00	U
53469-21-9	Aroclor-1242	79.00	U
12672-29-6	Aroclor-1248	79.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05490

Sample wt/vol: 30.36 (g/mL)G Lab File ID: >02456

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 3.24 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 10.2 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.20	UJ
319-85-7	Beta-BHC	8.20	U
319-86-8	Delta-BHC	8.20	U
58-89-9	Gamma-BHC (Lindane)	8.20	U
76-44-8	Heptachlor	8.20	U
309-00-2	Aldrin	8.20	U
1024-57-3	Heptachlor Epoxide	8.20	U
959-98-8	Endosulfan I	8.20	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	82.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	82.00	U
5103-74-2	gamma-Chlordane	82.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	82.00	U
11104-28-2	Aroclor-1221	82.00	U
11141-16-5	Aroclor-1232	82.00	U
53469-21-9	Aroclor-1242	82.00	U
12672-29-6	Aroclor-1248	82.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF9

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05491

Sample wt/vol: 30.24 (g/mL)G Lab File ID: >02457

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.24 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 7.76 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	U
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG3

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05492

Sample wt/vol: 30.29 (g/mL)G Lab File ID: >02458

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 4.23 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 8.18 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	UJ
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05633

Sample wt/vol: 30.39 (g/mL)G Lab File ID: >02460

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.42 dec. Date Extracted: 04/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 7.09 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	UJ
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

BJV 1/29/93

FORM I PEST 1/89 Rev.

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG9

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05634

Sample wt/vol: 30.18 (g/mL)G Lab File ID: >02461

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.01 dec. Date Extracted: 04/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 6.88 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	(UJ)
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

KDV 1/20/93

FORM I PEST 1/89 Rev.

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SH3

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05690

Sample wt/vol: 30.31 (g/mL)G Lab File ID: >02462

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.06 dec. Date Extracted: 04/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 7.18 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	U
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

KDL 1/29/92

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01S97

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15____

Matrix (soil/water): SOIL_ Lab Sample ID: 92-4734B1_

Level (low/med): LOW__ Date Received: 03/05/92

% Solids: _96.7

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6170			P	J
7440-36-0	Antimony	2.6	U	N	P	U
7440-39-3	Barium	71.4			P	
7440-41-7	Beryllium	0.43	B		P	B
7440-43-9	Cadmium	2.7			P	
7440-70-2	Calcium	7350			P	
7440-47-3	Chromium	8.8		*	P	
7440-48-4	Cobalt	8.1	B		P	B
7440-50-8	Copper	16.1			P	
7439-89-6	Iron	22000		*	P	J
7439-95-4	Magnesium	3860			P	
7439-96-5	Manganese	289		*	P	
7440-02-0	Nickel	6.6	B		P	B
7440-09-7	Potassium	624	B		P	BJ
7440-23-5	Sodium	996			P	B
7440-62-2	Vanadium	60.5		*	P	
7440-66-6	Zinc	42.3			P	

2/17/93

Color Before: _____ Clarity Before: _____ Texture: ____

Color After: _____ Clarity After: _____ Artifacts: ____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 19 MAY 92

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01S99

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15____

Matrix (soil/water): SOIL_ Lab Sample ID: 92-4735B1_

Level (low/med): LOW__ Date Received: 03/05/92

% Solids: _96.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	10200			P	J
7440-36-0	Antimony	2.8	U	N	P	U
7440-39-3	Barium	73.0			P	
7440-41-7	Beryllium	0.44	B		P	B
7440-43-9	Cadmium	1.7			P	
7440-70-2	Calcium	9220			P	
7440-47-3	Chromium	8.6		*	P	
7440-48-4	Cobalt	13.0			P	
7440-50-8	Copper	20.4			P	
7439-89-6	Iron	36200		*	P	J
7439-95-4	Magnesium	5100			P	
7439-96-5	Manganese	464		*	P	
7440-02-0	Nickel	37.7			P	
7440-09-7	Potassium	1020			P	BJ
7440-23-5	Sodium	7520			P	
7440-62-2	Vanadium	99.8		*	P	
7440-66-6	Zinc	59.9			P	

MWR 1/17/92

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 19 MAY 92

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SB1

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15____

Matrix (soil/water): SOIL_ Lab Sample ID: 92-4736B1_

Level (low/med): LOW__ Date Received: 03/05/92

% Solids: _95.9

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	10400			P	J
7440-36-0	Antimony	3.0	U	N	P	U
7440-39-3	Barium	75.2			P	
7440-41-7	Beryllium	0.47	B		P	B
7440-43-9	Cadmium	1.7			P	
7440-70-2	Calcium	9300			P	
7440-47-3	Chromium	10.5		*	P	
7440-48-4	Cobalt	13.4			P	
7440-50-8	Copper	18.9			P	
7439-89-6	Iron	37900		*	P	J
7439-95-4	Magnesium	5220			P	
7439-96-5	Manganese	489		*	P	
7440-02-0	Nickel	45.0			P	
7440-09-7	Potassium	1050			P	BJ
7440-23-5	Sodium	7880			P	
7440-62-2	Vanadium	101		*	P	
7440-66-6	Zinc	61.7			P	

11/17/93

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL__SOIL_SAMPLE,_ACID_LEACHED

DATE_ANALYZED:_19_MAY_92

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SB2

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05150-B

Level (low/med): LOW__ Date Received: 03/13/92

% Solids: _94.8

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	15800		*	P	J
7440-36-0	Antimony	3.2	U		P	U
7440-39-3	Barium	91.2			P	
7440-41-7	Beryllium	0.28	B		P	B
7440-43-9	Cadmium	1.1		N*	P	
7440-70-2	Calcium	8450		*	P	
7440-47-3	Chromium	12.1		*	P	
7440-48-4	Cobalt	8.4	B		P	B
7440-50-8	Copper	19.7		*	P	
7439-89-6	Iron	22500		*	P	J
7439-95-4	Magnesium	4340		*	P	
7439-96-5	Manganese	294		N*	P	
7440-02-0	Nickel	30.7			P	
7440-09-7	Potassium	875	B		P	BJ
7440-23-5	Sodium	8700			P	
7440-62-2	Vanadium	66.7		*	P	
7440-66-6	Zinc	42.3		*	P	

3/13/92

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL_--_SOIL_SAMPLE,_ACID_LEACHED

DATE_ANALYZED:_20_MAY_1992

TASK_2_&_4_SDG#_15

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SB3

Lab Name: BATTELLE_PNL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15

Matrix (soil/water): SOIL Lab Sample ID: 92-4968B1

Level (low/med): LOW Date Received: 03/09/92

% Solids: 97.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	7220			P	J
7440-36-0	Antimony	2.8	U	N	P	U
7440-39-3	Barium	61.9			P	
7440-41-7	Beryllium	0.42	B		P	B
7440-43-9	Cadmium	1.5			P	
7440-70-2	Calcium	9460			P	
7440-47-3	Chromium	12.6		*	P	
7440-48-4	Cobalt	5.7	B		P	B
7440-50-8	Copper	13.0			P	
7439-89-6	Iron	17200		*	P	J
7439-95-4	Magnesium	5190			P	
7439-96-5	Manganese	282		*	P	
7440-02-0	Nickel	11.3			P	
7440-09-7	Potassium	1060			P	BJ
7440-23-5	Sodium	2700			P	
7440-62-2	Vanadium	37.0		*	P	
7440-66-6	Zinc	37.7			P	

11/17/94

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 19 MAY 92

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0ISB7

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15____

Matrix (soil/water): SOIL_ Lab Sample ID: 92-5102B1_

Level (low/med): LOW__ Date Received: 03/11/92

% Solids: _96.2

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6240			P	J
7440-36-0	Antimony	2.8	U	N	P	U
7440-39-3	Barium	64.9			P	
7440-41-7	Beryllium	0.39	B		P	B
7440-43-9	Cadmium	1.3			P	
7440-70-2	Calcium	7730			P	
7440-47-3	Chromium	9.6		*	P	
7440-48-4	Cobalt	6.6	B		P	B
7440-50-8	Copper	13.6			P	
7439-89-6	Iron	17100		*	P	J
7439-95-4	Magnesium	4430			P	
7439-96-5	Manganese	281		*	P	
7440-02-0	Nickel	9.0			P	
7440-09-7	Potassium	911	B		P	BJ
7440-23-5	Sodium	270	B		P	B
7440-62-2	Vanadium	39.5		*	P	
7440-66-6	Zinc	37.6			P	

11/17/93

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 19 MAY 92

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SC7

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05270-B

Level (low/med): LOW__ Date Received: 03/19/92

% Solids: _95.1

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5540		J *	P	BJV 1/25/93
7440-36-0	Antimony	3.2	U		P	
7440-39-3	Barium	60.2			P	
7440-41-7	Beryllium	0.23	B		P	
7440-43-9	Cadmium	1.1		J N*	P	BJV 1/25/93
7440-70-2	Calcium	6820		J *	P	
7440-47-3	Chromium	10.1		J *	P	
7440-48-4	Cobalt	9.3	B		P	
7440-50-8	Copper	18.3		J *	P	
7439-89-6	Iron	21500		J *	P	
7439-95-4	Magnesium	4270		J *	P	
7439-96-5	Manganese	256		J N*	P	
7440-02-0	Nickel	251			P	
7440-09-7	Potassium	575	B	J	P	BJV 1/25/93
7440-23-5	Sodium	1460			P	
7440-62-2	Vanadium	47.1		J *	P	
7440-66-6	Zinc	38.2		J *	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

FORM I - IN 3/90

C10-008

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SC9

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05271-8

Level (low/med): LOW__ Date Received: 03/19/92

% Solids: _97.5

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6460		J*	P	BJV 1/25/93
7440-36-0	Antimony	2.7	U		P	
7440-39-3	Barium	64.9			P	
7440-41-7	Beryllium	0.26	B		P	
7440-43-9	Cadmium	1.4		U N* J	P	BJV 1/25/93
7440-70-2	Calcium	10300		J*	P	
7440-47-3	Chromium	9.7		J*	P	
7440-48-4	Cobalt	8.0	B		P	
7440-50-8	Copper	15.2		J*	P	
7439-89-6	Iron	21100		J*	P	
7439-95-4	Magnesium	5300		J*	P	
7439-96-5	Manganese	329		J N*	P	
7440-02-0	Nickel	10.8		J	P	
7440-09-7	Potassium	729	B	U J	P	BJV 1/25/93
7440-23-5	Sodium	679	B		P	
7440-62-2	Vanadium	39.7		J*	P	
7440-66-6	Zinc	41.9		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

FORM I - IN

3/90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SD7

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05353-B

Level (low/med): LOW__ Date Received: 03/24/92

% Solids: _98.4

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5850		J*	P	BJV 11/25/93
7440-36-0	Antimony	2.4	U		P	
7440-39-3	Barium	57.9			P	
7440-41-7	Beryllium	0.25	B		P	
7440-43-9	Cadmium	3.9		UN*J	P	BJV 11/25/93
7440-70-2	Calcium	6090		J*	P	
7440-47-3	Chromium	11.1		J*	P	
7440-48-4	Cobalt	7.2	B		P	
7440-50-8	Copper	16.5		J*	P	
7439-89-6	Iron	19700		J*	P	
7439-95-4	Magnesium	4310		J*	P	
7439-96-5	Manganese	271		JN*	P	
7440-02-0	Nickel	11.1			P	
7440-09-7	Potassium	595	B	U	P	BJV 11/25/93
7440-23-5	Sodium	1210			P	
7440-62-2	Vanadium	51.3		J*	P	
7440-66-6	Zinc	40.2		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

FORM I - IN

3/90

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SD9

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05352-B

Level (low/med): LOW__ Date Received: 03/24/92

% Solids: _97.6

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6460		J*	P	KPV 1/25/93
7440-36-0	Antimony	2.7	U		P	
7440-39-3	Barium	64.8			P	
7440-41-7	Beryllium	0.29	B		P	
7440-43-9	Cadmium	0.69	B	UN*J	P	KPV 1/25/93
7440-70-2	Calcium	8180		J*	P	
7440-47-3	Chromium	9.7		J*	P	
7440-48-4	Cobalt	5.4	B	U	P	KPV 1/25/93
7440-50-8	Copper	14.4		J*	P	
7439-89-6	Iron	16300		J*	P	
7439-95-4	Magnesium	4700		J*	P	
7439-96-5	Manganese	260		JN*	P	
7440-02-0	Nickel	8.8			P	
7440-09-7	Potassium	839	B	U	P	KPV 1/25/93
7440-23-5	Sodium	2070			P	
7440-62-2	Vanadium	34.8		J*	P	
7440-66-6	Zinc	34.7		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

FORM I - IN

3/90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SF9

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05491-B

Level (low/med): LOW__ Data Received: 03/27/92

% Solids: _97.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6140		J*	P
7440-36-0	Antimony	2.4	U		P
7440-39-3	Barium	62.1			P
7440-41-7	Beryllium	0.26	B		P
7440-43-9	Cadmium	0.55	B	U N* J	P
7440-70-2	Calcium	7320		J*	P
7440-47-3	Chromium	10.6		J*	P
7440-48-4	Cobalt	6.3	B		P
7440-50-8	Copper	12.4		J*	P
7439-89-6	Iron	17500		J*	P
7439-95-4	Magnesium	4390		J*	P
7439-96-5	Manganese	293		J N*	P
7440-02-0	Nickel	7.6			P
7440-09-7	Potassium	863		U	P
7440-23-5	Sodium	947			P
7440-62-2	Vanadium	41.9		J*	P
7440-66-6	Zinc	37.1		J*	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

FORM I - IN

3/90

C10-014

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SG3

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05492-B

Level (low/med): LOW__ Date Received: 03/27/92

% Solids: _95.8

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	8050		J*	P	KDW 2/5/93
7440-36-0	Antimony	3.2	U		P	
7440-39-3	Barium	80.1			P	
7440-41-7	Beryllium	0.38	B		P	
7440-43-9	Cadmium	0.49	B	U N* J	P	KDW 1/25/93
7440-70-2	Calcium	9680		J*	P	
7440-47-3	Chromium	10.0		J*	P	
7440-48-4	Cobalt	9.2	B		P	
7440-50-8	Copper	16.0		J*	P	
7439-89-6	Iron	24400		J*	P	
7439-95-4	Magnesium	5470		J*	P	
7439-96-5	Manganese	361		J N*	P	KDW 1/25/93
7440-02-0	Nickel	7.4	B		P	
7440-09-7	Potassium	1250			P	
7440-23-5	Sodium	327	B		P	
7440-62-2	Vanadium	59.7		J*	P	
7440-66-6	Zinc	45.2		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

FORM I - IN

3/90

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SF7

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05490-B

Level (low/med): LOW__ Date Received: 03/27/92

% Solids: _96.8

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	7430		J*	P	HDV 1/25/93
7440-36-0	Antimony	2.5	U		P	
7440-39-3	Barium	55.8			P	
7440-41-7	Beryllium	0.31	B		P	
7440-43-9	Cadmium	0.87		U N* J	P	HDV 1/25/93
7440-70-2	Calcium	7900		J*	P	
7440-47-3	Chromium	13.5		J*	P	
7440-48-4	Cobalt	7.1	B		P	
7440-50-8	Copper	12.8		J*	P	
7439-89-6	Iron	17900		J*	P	
7439-95-4	Magnesium	5200		J*	P	
7439-96-5	Manganese	303		J N*	P	
7440-02-0	Nickel	74.1			P	
7440-09-7	Potassium	1130		U	P	HDV 1/25/93
7440-23-5	Sodium	1210			P	
7440-62-2	Vanadium	36.9		J*	P	
7440-66-6	Zinc	39.9		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL_SAMPLE, _ACID_LEACHED

DATE_ANALYZED: _20_MAY_1992

TASK_2_&_4_SDG#_16

FORM I - IN

3/90

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SG7

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05633-B

Level (low/med): LOW__ Date Received: 03/31/92

% Solids: _97.6

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	8010		J*	P	KPV 1/25/93
7440-36-0	Antimony	2.9	U		P	
7440-39-3	Barium	78.9			P	
7440-41-7	Beryllium	0.25	B		P	
7440-43-9	Cadmium	3.4		U N* J	P	KPV 1/25/93
7440-70-2	Calcium	8370		J*	P	
7440-47-3	Chromium	10.4		J*	P	
7440-48-4	Cobalt	9.1	B		P	
7440-50-8	Copper	17.8		J*	P	
7439-89-6	Iron	25900		J*	P	
7439-95-4	Magnesium	4670		J*	P	
7439-96-5	Manganese	325		J N*	P	
7440-02-0	Nickel	8.4			P	
7440-09-7	Potassium	767	B		P	KPV 1/25/9
7440-23-5	Sodium	1620			P	
7440-62-2	Vanadium	68.2		J*	P	
7440-66-6	Zinc	52.5		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

FORM I - IN 3/90

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SG9

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05634-B

Level (low/med): LOW__ Date Received: 03/31/92

% Solids: _98.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6430		J*	P	
7440-36-0	Antimony	2.6	U		P	
7440-39-3	Barium	64.1			P	
7440-41-7	Beryllium	0.25	B		P	
7440-43-9	Cadmium	0.44	B	U N* J	P	
7440-70-2	Calcium	7850		J*	P	
7440-47-3	Chromium	10.7		J*	P	
7440-48-4	Cobalt	5.4	B	U	P	
7440-50-8	Copper	11.6		J*	P	
7439-89-6	Iron	16900		J*	P	
7439-95-4	Magnesium	4710		J*	P	
7439-96-5	Manganese	266		J N*	P	
7440-02-0	Nickel	7.1			P	
7440-09-7	Potassium	981		U	P	
7440-23-5	Sodium	3270			P	
7440-62-2	Vanadium	38.3		J*	P	
7440-66-6	Zinc	33.3		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

FORM I - IN 3/90

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SH3

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05690-E

Level (low/med): LOW__ Date Received: 04/01/92

% Solids: _95.9

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	8210		J*	P	BPV 1/25/9
7440-36-0	Antimony	2.9	U		P	
7440-39-3	Barium	86.3			P	
7440-41-7	Beryllium	0.36	B		P	
7440-43-9	Cadmium	0.45	B	U N* J	P	BPV 1/25/9
7440-70-2	Calcium	7310		J*	P	
7440-47-3	Chromium	9.8		J*	P	
7440-48-4	Cobalt	8.4	B		P	
7440-50-8	Copper	17.0		J*	P	
7439-89-6	Iron	23300		J*	P	
7439-95-4	Magnesium	4650		J*	P	
7439-96-5	Manganese	344		J N*	P	BPV 1/25/97
7440-02-0	Nickel	7.8			P	
7440-09-7	Potassium	1530			P	
7440-23-5	Sodium	319	B		P	
7440-62-2	Vanadium	56.4		J*	P	
7440-66-6	Zinc	45.8		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

TABLE 7a: GRAPHITE FURNACE AA ANALYSIS DATA FOR TASKS 2 & 4 -- SDG #15

			B1			B2					B5			B3		B6 (a) B4		
Analyte	Sample ID#	PNL Log#	Sample mg/Kg	Post Spike Rec	Flags C	Q	Dupl. mg/Kg	Post Spike Rec	C	Q	B1&B2 RPD	Blank mg/Kg	Post Spike Rec	C	Sample+ Spike mg/Kg	Digest Spike Rec	LCS mg/Kg	LCS Rec	Post Spike Rec
Ag	B01SB7	92-05102	0.14U	95%	U		0.13U	95%	U		N/A	0.14	97%	U			22.48	101%	85%
As	B01SB7	92-05102	2.15	104%			3.05	88%			35%	0.19	105%	U			946.66	103%	95%
Bi	B01SB7	92-05102	0.29UA	96%	U		0.28U	95%	U		N/A	0.29	99%	U			1936.0	97%	(b)
Pb	B01SB7	92-05102	5.51J	93%		*	4.35J	93%		*	24%	0.11	97%	B			(c)304.66	129%	96%
Se	B01SB7	92-05102	1.29UJ	67%	U	W	1.20UJ	71%	U	W	N/A	0.13	98%	U			33.73	86%	92%
Tl	B01SB7	92-05102	0.11B	104%	B		0.11B	108%	B		0%	0.07	101%	U			45.98	118%	99%
Ag	B01S97	92-04734	0.13U	94%	U										11.74	114%			
As	B01S97	92-04734	1.31B	102%	B										441.73	108%			
Bi	B01S97	92-04734	0.27U	94%	U										2107.0	103%			
Pb	B01S97	92-04734	2.93UJ	92%		*									101.47	97%			
Se	B01S97	92-04734	1.17UJ	66%	U	W									394.84	97%			
Tl	B01S97	92-04734	0.07B	109%	B										417.78	102%			
Ag	B01S99	92-04735	0.14U	95%	U														
As	B01S99	92-04735	0.87B	113%	B														
Bi	B01S99	92-04735	5.01	92%															
Pb	B01S99	92-04735	5.73J	92%		*													
Se	B01S99	92-04735	1.30UJ	57%	U	W													
Tl	B01S99	92-04735	0.07U	111%	B														

The CRDL (IDL) in ug/L: for AA5100 PE (05/18/92) Ag=10 (0.69), As=10 (0.93), Bi=60 (0.1.44), Pb=3 (0.45), Se=5 (0.63), Tl=10 (0.33)
The CRDL (IDL) in mg/Kg @200X: Ag=2.0 (0.14), As=2.0 (0.18), Bi=12 (0.30), Pb=0.6 (0.09), Se=1.0 (0.13), Tl=2.0 (0.07)
The analytical spike levels in ug/L is 20 for As, Bi, Pb, Tl and 10 for Ag, Se.
LCS standard: Ag, As, Pb, Se, Tl -- ICF 0287; Bi -- Inorganic Ventures G-BI0119
ICV/CCV used during analyses: Ag, Pb, Tl -- ICF ICV4(1290); As, Se -- ICF ICV2(1290); Bi--IV G-BI0119.

Pre-digestion spike (ug/L): Ag=50, As=2000, Bi=10000, Pb=500, Se=2000, Tl=2000. Note that these spike levels are for those required by ICP (not GFAA); no redigestions for GFAA levels were performed.

(a) The spiked blank (B6) is used for the Bi control standard; spike is at 10,000 ug/L (equivalent to 2000 mg/Kg).
(b) No analytical spike performed on these samples.
(c) Pb bias slightly high by measureable CCB; value corrected for CCB within limits (284.6 mg/Kg).
(d) Analysis dates: Ag (6/4/92), As (5/27/92), Bi (6/3/92), Pb (6/10/92), Se (5/29 & 6/2/92), Tl (6/3/92).

CLP Flags: U = [Analyte] < IDL B = IDL <= [Analyte] < CRDL
N = Pre-digestion Spike Recovery not within control limits.
W = Post-digestion spike recovery not within control limits; sample absorbance < 50% of spike absorbance.
* = RPD not within control limits

TABLE 7b: GRAPHITE FURNACE AA ANALYSIS DATA FOR TASKS 2 & 4 -- SDG #15

Analyte	Sample ID#	PNL Log#	Bi (a) Sample mg/Kg	Bi Post Spike Rec	Flags C	Flags Q
Ag	B01SB1	92-04736	0.13 U	96%	U	
As	B01SB1	92-04736	1.36 B	104%	B	
Bi	B01SB1	92-04736	4.65	86%		
Pb	B01SB1	92-04736	6.82 J	88%		*
Se	B01SB1	92-04736	1.16 UJ	58%	U	W
Tl	B01SB1	92-04736	0.09 B	112%	B	
Ag	B01SB3	92-04968	0.11 U	97%	U	
As	B01SB3	92-04968	2.60	108%		
Bi	B01SB3	92-04968	0.28 B	102%	B	
Pb	B01SB3	92-04968	4.05 J	94%		*
Se	B01SB3	92-04968	0.91 UJ	69%	U	W
Tl	B01SB3	92-04968	0.10 B	114%	B	
Ag	B01SB2	92-05150	0.13 U	96%	U	
As	B01SB2	92-05150	2.70	(b)		
Bi	B01SB2	92-05150	4.30	91%		
Pb	B01SB2	92-05150	12.40 J	95%		*
Se	B01SB2	92-05150	1.30 UJ	73%	U	W
Tl	B01SB2	92-05150	0.12 B	110%	B	

The CRDL (IDL) in ug/L: for AA5100 PE (05/18/92) Ag=10 (0.69), As=10 (0.93), Bi=60 (0.1.44), Pb=3 (0.45), Se=5 (0.63), Tl=10 (0.33)

The CRDL (IDL) in mg/Kg @200X: Ag=2.0 (0.14), As=2.0 (0.18), Bi=12 (0.30), Pb=0.6 (0.09), Se=1.0 (0.13), Tl=2.0 (0.07)
The analytical spike levels in ug/L is 20 for As, Bi, Pb, Tl and 10 for Ag, Se.

(a) Supporting QC (e.g., LCS, duplicates, pre-digestion spikes) shown in Table 7a.
(b) No analytical spike performed on these samples; see narrative.
(c) Analysis dates: Ag (6/4/92), As (5/27/92), Bi (6/3/92), Pb (6/10/92), Se (5/29 & 6/2/92), Tl (6/3/92).

CLP Flags: U = [Analyte] < IDL B = IDL <= [Analyte] < CRDL
W = Post-digestion spike recovery not within control limits; sample absorbance < 50% of spike absorbance.
* = RPD for batch duplicate not within control limits.

TABLE 7a: GRAPHITE FURNACE AA ANALYSIS DATA FOR TASKS 2 & 4 -- SDG #16

Analyte	Sample ID#	PNL Log#	B1 Sample mg/Kg	B1 Post Spike Rec	B1 Flags C	B1 Flags Q	B2 Dupl. mg/Kg	B2 Post Spike Rec	B2 C	B2 Q	B1&B2 RPD	B5 Blank mg/Kg	B5 Post Spike Rec	B5 C	B3 Sample+ Spike mg/Kg	B3 Digest Spike Rec	B6 (a) B4 LCS mg/Kg	B4 LCS Rec	B4 Post Spike Rec
Ag	B01SG7	92-05633	0.14	95%	U		0.12	96%	U		N/A	0.14	95%	U	9.82	101%	8.46	38%	94%
As	B01SG7	92-05633	2.93	112%			3.55	110%			19%	0.19	102%	U	413.87	106%	890.49	97%	102%
Bi	B01SG7	92-05633	0.30 U	100%	U		0.24	97%	U		N/A	0.29	98%	U	1940.9	100%	1927.6	96%	(b)
Pb	B01SG7	92-05633	3.89 J	97%		*	6.03 J	92%		*	43%	0.13	98%	B	98.55	95%	239.30	101%	98%
Se	B01SG7	92-05633	1.29 UJ	71%		W	1.07 UJ	68%		W	N/A	0.13	98%	U	382.66	99%	29.88	76%	94%
Tl	B01SG7	92-05633	0.10	105%		J	0.08	106%	B		22%	0.07	101%	U	393.71	102%	43.73	112%	98%
Ag	B01SC7	92-05270	0.12 UJ	95%	U														
As	B01SC7	92-05270	2.67	110%															
Bi	B01SC7	92-05270	36.55	99%															
Pb	B01SC7	92-05270	24.32 J	95%		*													
Se	B01SC7	92-05270	1.10 UJ	71%		W													
Tl	B01SC7	92-05270	0.12	105%		J													
Ag	B01SC9	92-05271	0.13 UJ	98%	U														
As	B01SC9	92-05271	3.85	106%															
Bi	B01SC9	92-05271	0.28 U	98%	U														
Pb	B01SC9	92-05271	3.67 J	96%		*													
Se	B01SC9	92-05271	1.21 UJ	77%		W													
Tl	B01SC9	92-05271	0.09	107%		J													

2/15/93

The CRDL (IDL) in ug/L: for AA5100 PE (05/18/92) Ag=10 (0.69), As=10 (0.93), Bi=60 (0.1.44), Pb=3 (0.45), Se=5 (0.63), Tl=10 (0.33)
The CRDL (IDL) in mg/Kg @200X: Ag=2.0 (0.14), As=2.0 (0.18), Bi=12 (0.30), Pb=0.6 (0.09), Se=1.0 (0.13), Tl=2.0 (0.07)
The analytical spike levels in ug/L is 20 for As, Bi, Pb, Tl and 10 for Ag, Se.
LCS standard: Ag, As, Pb, Se, Tl -- ICF 0287; Bi -- Inorganic Ventures G-BI0119

ICV/CCV used during analyses: Ag, Pb, Tl -- ICF ICV4(1290); As, Se -- ICF ICV2(1290); Bi--IV G-BI0119.
Pre-digestion spike (ug/L): Ag=50, As=2000, Bi=10000, Pb=500, Se=2000, Tl=2000. Note that these spike levels are for those required by ICP (not GFAA); no redigestions for GFAA levels were performed.

(a) The spiked blank (B6) is used for the Bi control standard; spike is at 10,000 ug/L (equivalent to 2000 mg/Kg).
(b) No analytical spike performed on these samples.
(c) Analysis dates: Ag (6/15/92), As (6/11/92), Bi (6/19 & 6/24/92), Pb (6/22 &6/25/92), Se (6/17 & 6/18/92), Tl (6/12 & 6/18/92).

CLP Flags: U = [Analyte] < IDL B = IDL <= [Analyte] < CRDL
N = Pre-digestion Spike Recovery not within control limits.
W = Post-digestion spike recovery not within control limits; sample absorbance < 50% of spike absorbance.
* = RPD not within control limits.

TABLE 7b: GRAPHITE FURNACE AA ANALYSIS DATA FOR TASKS 2 & 4 -- SDG #16

Analyte	Sample ID#	PNL Log#	Bl (a) Sample mg/Kg	Bl Post Spike Rec	Flags C	Flags Q
Ag	B01SD9	92-05352	0.12 UJ	99%	U	
As	B01SD9	92-05352	5.08	108%		
Bi	B01SD9	92-05352	0.24 U	95%	U	
Pb	B01SD9	92-05352	3.97 J	93%		*
Se	B01SD9	92-05352	1.06 J	80%		W
Tl	B01SD9	92-05352	0.08 B	108%	B	J
Ag	B01SD7	92-05353	0.10 UJ	97%	U	
As	B01SD7	92-05353	2.57	106%		
Bi	B01SD7	92-05353	0.20 U	100%	U	
Pb	B01SD7	92-05353	3.52 J	81%		*
Se	B01SD7	92-05353	0.89 UJ	68%		W
Tl	B01SD7	92-05353	0.07 B	107%	B	J
Ag	B01SF7	92-05490	0.13 UJ	94%	U	
As	B01SF7	92-05490	2.62	103%		
Bi	B01SF7	92-05490	3.40 B	88%		
Pb	B01SF7	92-05490	7.54 J	89%		*
Se	B01SF7	92-05490	1.16 UJ	84%	U	W
Tl	B01SF7	92-05490	0.11 B	103%	B	J
Ag	B01SF9	92-05491	0.12 UJ	95%	U	
As	B01SF9	92-05491	2.98	99%		
Bi	B01SF9	92-05491	0.24 U	92%	U	
Pb	B01SF9	92-05491	3.62 J	96%		*
Se	B01SF9	92-05491	1.09 UJ	81%	U	W
Tl	B01SF9	92-05491	0.10 B	103%	B	J

Analyte	Sample ID#	PNL Log#	Bl (a) Sample mg/Kg	Bl Post Spike Rec	Flags C	Flags Q
Ag	B01SG3	92-05492	0.13 UJ	95%	U	
As	B01SG3	92-05492	3.62	100%		
Bi	B01SG3	92-05492	0.28 U	92%	U	
Pb	B01SG3	92-05492	4.50 J	99%		*
Se	B01SG3	92-05492	1.21 J	76%	U	W
Tl	B01SG3	92-05492	0.16 B	101%	B	J
Ag	B01SG9	92-05634	0.12 UJ	98%	U	
As	B01SG9	92-05634	2.70	97%		
Bi	B01SG9	92-05634	0.24 U	95%	B	
Pb	B01SG9	92-05634	3.95 J	100%		*
Se	B01SG9	92-05634	1.07 J	81%	U	W
Tl	B01SG9	92-05634	0.12 B	102%	B	J
Ag	B01SH3	92-05690	0.14 UJ	98%	U	
As	B01SH3	92-05690	3.53	106%		
Bi	B01SH3	92-05690	0.29 U	95%	U	
Pb	B01SH3	92-05690	6.19 J	96%		*
Se	B01SH3	92-05690	1.25 J	81%	U	W
Tl	B01SH3	92-05690	0.10 B	102%	B	J

2/15/93

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The CRDL (IDL) in ug/L: for AA5100 PE (05/18/92) Ag=10 (0.69), As=10 (0.93), Bi=60 (0.1.44), Pb=3 (0.45), Se=5 (0.63), Tl=10 (0.33)
The CRDL (IDL) in mg/Kg @200X: Ag=2.0 (0.14), As=2.0 (0.18), Bi=12 (0.30), Pb=0.6 (0.09), Se=1.0 (0.13), Tl=2.0 (0.07) → 1.3
The analytical spike levels in ug/L is 20 for As, Bi, Pb, Tl and 10 for Ag, Se.

(a) Supporting QC (e.g., LCS, duplicates, pre-digestion spikes) shown in Table 7a.
(b) Analysis dates: Ag (6/15/92), As (6/11/92), Bi (6/19 & 6/24/92), Pb (6/22 &6/25/92), Se (6/17 & 6/18/92), Tl (6/12 & 6/18/92).

CLP Flags: U = [Analyte] < IDL B = IDL <= [Analyte] < CRDL
W = Post-digestion spike recovery not within control limits; sample absorbance < 50% of spike absorbance.
* = RPD for batch duplicate not within control limits.

TABLE 6: Hg COLD VAPOR AA ANALYSIS DATA
SDG #15

SOLID SAMPLES

		B1			B2			B5		B3 (a)		B4 (b)	
Sample ID#	PHL Log#	Sample mg/Kg	Flags C	Q	Dupl. mg/Kg	C	B1&B2 %RPD	Blank ug/L	C	Sample +Spike mg/Kg	Digest Spike %rec	LCS mg/Kg	LCS %rec
B01S97	92-04734	0.04J		H	0.03		10%	0.004	U	0.24	100%	13.65	108%
B01S99	92-04735	0.39J		H									
B01SB1	92-04736	0.31J		H									
B01SB3	92-04968	0.10J		H									
B01SB7	92-05102	0.01J	B	H									
B01SB2	92-05150	0.34J		H									

2/15/94

(a) B3 Predigestion Spike Level = 0.05 ug Hg in 25 mL aliquot.
(b) LCS 0287 Hg certified at 12.7 mg/Kg (Range 8.5 to 17.0 mg/Kg)
(c) If analyzed, NIST SRM2704 certified at 1.47 ug/g Hg
(d) RPD only calculated if both sample and duplicate are >IDL
(e) IDL = 0.04 ug/L [or 0.004 mg/kg -- (.04ug/L * 0.1L) / 1g]
(f) CRDL = 0.2 ug/L [or 0.02 mg/kg -- (0.2ug/L * 0.1L) / 1g]
(g) Calibration standards NIST SRM3133, ICV/CCV standard Johnson-Matthey 14395

CLP Flags
U: [Analyte] < IDL
H: Hold time not met
B: IDL ≤ [Analyte] < CRDL

TABLE 8: Hg COLD VAPOR AA ANALYSIS DATA

SOLID SAMPLES

		B1			B2			B5		B3 (a)		B4 (b)	
Sample ID#	PNL Log#	Sample mg/Kg	Flags C	Q	Dupl. mg/Kg	C	B1&B2 %RPD	Blank ug/L	C	Sample +Spike mg/Kg	Digest Spike %rec	LCS mg/Kg	LCS %rec
B01SC9	92-05271	0.19 J		N	0.16		18%	0.004	U	0.35	74%	10.3	81%
B01SC7	92-05270	0.31 J		N									
B01SD9	92-05352	0.09 J		N									
B01SD7	92-05353	0.08 J		N									
B01SF7	92-05490	0.38 J		N									
B01SF9	92-05491	0.15 J		N									
B01SG3	92-05492	0.00 J	U	N									
B01SG7	92-05633	0.02 J		N									
B01SG9	92-05634	0.14 J		N									
B01SH3	92-05690	0.00 J	U	N									
	SRM 2704											1.49	101%

7/15/93

(a) B3 Predigestion Spike = 0.05 ug Hg in 25 mL aliquot. (Analysis aliquot: sample 25mL, spike 10mL)
(b) LCS 0287 Hg certified at 12.7 mg/Kg (Range 8.5 to 17.0 mg/Kg)
(c) If analyzed, NIST SRM2704 certified at 1.47 ug/g Hg
(d) RPD only calculated if both sample and duplicate are >IDL
(e) IDL = 0.04 ug/L [or 0.004 mg/kg -- (0.04ug/L * 0.1L) / 1g]
(f) CRDL = 0.2 ug/L [or 0.02 mg/kg -- (0.2ug/L * 0.1L) / 1g]
(g) Calibration standards NIST SRM3133, ICV/CCV standard Johnson-Matthey 14395

CLP Flags
N: Spike recovery not within control limits
U: [Analyte] < IDL

TABLE 3A: ANION IC ANALYSIS DATA
NITRITE (NO2-N)
TASK 2 & 4 SDG 15

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B015R5	92-03236+	12.2					0.8	U							93%	
B015S1	92-03300+	0.8	U			0%			119	128	119	128	93%	93%		
B01S75	92-03738+	28.6														
B01S77	92-03901+	7.3														
B01S89	92-03902+	1.6														
B01S97	92-04734	0.9	BJ	0.9	BJ											
B01S99	92-04735	39.5	J													
B01SB1	92-04736	38.1	J													
B01SB3	92-04968	27.2	J			2%			147	128	145	128	94%	92%		
B01SB7	92-05102	0.8	UJ													
B01SB2	92-05150	3.1	J	2.9	J	7%										

[illegible] 2/15/93

NOTES:

1. + Not samples in this SDG but reported for QC purposes.
2. 42 ppm X anal. dil. factor / frac. solids spike in sample; see run narrative.
3. RPD values have been calculated using sample duplicates OR the two % spike recovery values.
4. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
5. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
6. Estimated IDL = 0.8 mg/Kg.
7. CRDL= 1.0 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3A: ANION IC ANALYSIS DATA TASK 2 & 4 SDG 16
NITRITE (NO2-N)

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B01SC7	92-05270	17.6	J				0.8	U							89%	
B01SC9	92-05271	0.8	UJ	0.8	UJ											
B01SD9	92-05352	2.1	J													
B01SD7	92-05353	0.8	UJ													
B01SF7	92-05490	13.7	J													
B01SF9	92-05491	0.8	UJ													
B01SG3	92-05492	0.8	UJ			0%			14.2	15.9	14.2	15.9	89%	89%		
B01SG7	92-05633	0.8	UJ													
B01SG9	92-05634	6.0	J													
B01SH3	92-05690	0.8	UJ													

2/15/93

NOTES:

1. 5 ppm NO2 spike in extract OR 5 ppm X dil. factor / frac. solids spike in sample; see run narrative.
2. RPD values have been calculated using sample duplicates OR the two sample plus spike values.
3. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
4. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
5. Estimated IDL = 0.8 mg/Kg.
6. CRDL= 1.0 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3B: ANION IC ANALYSIS DATA
NITRATE (NO3-N)
TASK 2 & 4 SDG I5

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B01SR5	92-03238+	359					0.8	U							95%	
B01SS1	92-03300+	92				2%			222	135	224	135	96%	98%		
B01S75	92-03738+	379														
B01S77	92-03901+	59.4														
B01S89	92-03902+	151														
B01S97	92-04734	92	J	83	J	10%										
B01S99	92-04735	681	J													
B01SB1	92-04736	651	J													
B01SB3	92-04968	151	J			5%			298	136	291	136	108%	103%		
B01SB7	92-05102	5.9	J													
B01SB2	92-05150	292	J	283	J	3%										

11/15/93

NOTES:

1. + Not samples in this SDG but reported for QC purposes.
2. 60 ppm X anal. dil. factor / frac. solids spike in sample; see run narrative.
3. RPD values have been calculated using sample duplicates OR the two % spike recovery values.
4. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
5. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
6. Estimated IDL = 0.8 mg/Kg.
7. CRDL = 1.0 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3B: ANION IC ANALYSIS DATA TASK 2 & 4 SOG 16
NITRATE (NO3-N)

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	%RECOVERY C3 SMPL SPIKE	%RECOVERY C6 DUP SPIKE	%RECOVERY C4 CNTRL STD.	Q
B01SC7	92-05270	318	J				0.8	U							101%	
B01SC9	92-05271	20.7	J	24.0	J	15%										
B01SD9	92-05352	289	J													
B01SD7	92-05353	80.6	J													
B01SF7	92-05490	568	J													
B01SF9	92-05491	4.5	J													
B01SG3	92-05492	14.3	J			9%			28.8	11.8	26.3	11.8	123%	102%		
B01SG7	92-05633	316	J													
B01SG9	92-05634	860	J													
B01SH3	92-05690	33.9	J													

2/15/93

NOTES:

1. 5 ppm NO3 spike in extract OR 5 ppm X dil. factor / frac. solids spike in sample; see run narrative.
2. RPD values have been calculated using sample duplicates OR the two sample plus spike values.
3. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
4. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
5. Estimated IDL = 0.8 mg/Kg.
6. CRDL = 1.0 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3C: ANION IC ANALYSIS DATA
PHOSPHATE (PO4-P)
TASK 2 & 4 SDG 15

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B01SR5	92-03236+	20					1.7	U							94%	
B01SS1	92-03300+	1.7	U			1%			153	160	151	160	96%	94%		
B01S75	92-03738+	14.4														
B01S77	92-03901+	22.9														
B01S89	92-03902+	10.4														
B01S97	92-04734	1.7	UJ	1.7	UJ											
B01S99	92-04735	14	J													
B01SB1	92-04736	14.1	J													
B01SB3	92-04968	32	J			1%			165	161	163	160	83%	82%		
B01SB7	92-05102	1.7	UJ													
B01SB2	92-05150	8.9	J	8.1	J	9%										

2/15/95

NOTES:

1. + Not samples in this SDG but reported for QC purposes.
2. 49 ppm X anal. dil. factor / frac. solids spike in sample; see run narrative.
3. RPD values have been calculated using sample duplicates OR the two % spike recovery values.
4. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
5. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
6. Estimated IDL = 1.7 mg/Kg.
7. CRDL= 5 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3C: ANION IC ANALYSIS DATA TASK 2 & 4 SDG 16
PHOSPHATE (PO4-P)

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B01SC7	92-05270	3.2	BJ				1.7	U							98%	
B01SC9	92-05271	4.1	BJ	4.3	BJ	5%										
B01SD9	92-05352	40.9	J													
B01SD7	92-05353	18.9	J													
B01SF7	92-05490	5.3	J													
B01SF9	92-05491	4.8	BJ													
B01SG3	92-05492	1.7	UJ			1%			13.9	17	14	17	82%	82%		
B01SG7	92-05633	2.9	BJ													
B01SG9	92-05634	73.3	J													
B01SH3	92-05690	1.8	BJ													

NOTES:

1. 5 ppm PO4 spike in extract OR 5 ppm X dil. factor / frac. solids spike in sample; see run narrative.
2. RPD values have been calculated using sample duplicates OR the two sample plus spike values.
3. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
4. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
5. Estimated IDL = 1.7 mg/Kg.
6. CRDL= 5 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3D: ANION IC ANALYSIS DATA
SULFATE (SO4)
TASK 2 & 4 SDG 15

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	%R C3 SMPL SPIKE	%R C6 DUP SPIKE	%R C4 CNTRL STD.	Q
B01SR5	92-03236+	165					4	U							95%	
B01SS1	92-03300+	44.1				0%			523	500	524	500	96%	96%		
B01S75	92-03738+	344														
B01S77	92-03901+	68.6														
B01S89	92-03902+	91.9														
B01S97	92-04734	51.7	J	48.2J		7%										
B01S99	92-04735	291	J													
B01SB1	92-04736	280	J													
B01SB3	92-04968	86.6	J			1%			572	500	567	500	97%	86%		
B01SB7	92-05102	8.7	BJ													
B01SB2	92-05150	276	J	266.4J		4%										

4/15/94

NOTES:

1. + Not samples in this SDG but reported for QC purposes.
2. 50 ppm X anal. dil. factor / frac. solids spike in sample; see run narrative.
3. RPD values have been calculated using sample duplicates OR the two % spike recovery values.
4. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
5. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
6. Estimated IDL= 4 mg/Kg.
7. CRDL= 20 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3D: ANION IC ANALYSIS DATA TASK 2 & 4 SDG 16
SULFATE (SO4)

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B01SC7	92-05270	177	J				4	U							98%	
B01SC9	92-05271	13.7	BJ	15.6	BJ	13%										
B01SD9	02-05352	116	J													
B01SD7	92-05353	136	J													
B01SF7	92-05490	99.3	J													
B01SF9	92-05491	5.1	BJ													
B01SG3	92-05492	23.9	J			4%			76.4	52.2	73.3	52.2	101%	95%		
B01SG7	92-05633	268	J													
B01SG9	92-05634	287	J													
B01SH3	92-05690	52.1	J													

11/15/93

NOTES:

1. 5 ppm SO4 spike in extract OR 5 ppm X dil. factor / frac. solids spike in sample; see run narrative.
2. RPD values have been calulated using sample duplicates OR the two sample plus spike values.
3. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
4. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
5. Estimated IDL= 4 mg/Kg.
6. CRDL= 20 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte]. < CRDL
U: [Analyte] < IDL

TABLE 16: TOTAL ORGANIC CARBON DATA FOR TASKS 2 & 4
SDG #15

Soil Samples

WHC Sample	PNL ALO #	Sample Type	Sample wt. g	ug C Results	ug C in Sample	mgC/Kg Sample	RPD Dups	% rec.* standard	Date Received	Date Analyzed
B01S97	92-04734-1	Sample	0.10484	67.41	50.81	480	3.1		3-05-92	3-18-92
B01S97	92-04734-2	Duplicate	0.14796	90.54	73.94	495			3-05-92	3-18-92
B01S99	92-04735-1	Sample	0.10344	63.21	46.61	446	12.9		3-05-92	3-18-92
B01S99	92-04735-2	Duplicate	0.12258	65.13	48.53	392			3-05-92	3-18-92
B01SB1	92-04736-1	Sample	0.09134	50.51	33.91	368	8.9		3-05-92	3-18-92
B01SB1	92-04736-2	Duplicate	0.10530	59.33	42.73	402			3-05-92	3-18-92
B01SB1	92-04736-3	Standard	0.00469	2037	2021		3.4	103		3-18-92
B01SB1	92-04736-3	Std Dup	0.00468	1878	1862			99.5		3-18-92
B01SB1	92-04736-4	Blank		16.60						3-18-92
B01SB3	92-04968-1	Sample	0.13416	54.39	34.59	261	3.8		3-09-92	3-19-92
B01SB3	92-04968-2	Duplicate	0.13012	54.62	34.82	271			3-09-92	3-19-92
B01SB7	92-05102-1	Sample	0.13091	92.39	72.59	561	10.0		3-11-92	3-19-92
B01SB7	92-05102-2	Duplicate	0.09216	76.23	56.43	820			3-11-92	3-19-92
B01SB2	92-05150-1	Sample	0.12800	50.66	30.86	244	2.9		3-13-92	3-19-92
B01SB2	92-05150-2	Duplicate	0.13810	52.15	32.35	237			3-13-92	3-19-92
B01SB2	92-05150-3	Standard	0.00503	2019	1999		1.3	99.4		3-19-92
B01SB2	92-05150-3	Std Dup	0.00349	1389	1369			98.1		3-19-92
B01SB2	92-05150-4	Blank		19.80						3-19-92

* Based on standard carbon content of 40.0% by weight.

Total Organic Carbon by Procedure PNL-ALO-380, on Instrument WA92040, 325 Bldg:, rm 701. Data reported from LRB 52821, pp 80-89.

TABLE 16: TOTAL ORGANIC CARBON DATA FOR TASKS 2 & 4 SDG #16

Soil Samples

WHC Sample	PNL ALO #	Sample Type	Sample wt. g	ug C Results	ug C in Sample	mgC/Kg Sample	RPD Dups	% rec.* standard	Date Received	Date Analyzed
B01SC7	92-05270-1	Sample	0.05445	42.68	36.68	681	11.5		3-19-92	3-30-92
B01SC7	92-05270-2	Duplicate	0.07187	49.15	43.15	607			3-19-92	3-30-92
B01SC9	92-05271-1	Sample	0.09127	14.58	8.58	95.0	5.1		3-19-92	3-30-92
B01SC9	92-05271-2	Duplicate	0.10951	16.86	10.86	100			3-19-92	3-30-92
B01SD9	92-05352-1	Sample	0.10930	21.49	15.49	143	10.0		3-24-92	3-30-92
B01SD9	92-05352-2	Duplicate	0.12196	25.04	19.04	158			3-24-92	3-30-92
B01SD7	92-05353-1	Sample	0.07005	30.20	24.20	349	17.3		3-24-92	3-30-92
B01SD7	92-05353-2	Duplicate	0.07142	35.32	29.32	415			3-24-92	3-30-92
B01SD7	92-05353-3	Standard	0.00487	1945.54	1939.54		1.4	99.6		3-30-92
B01SD7	92-05353-3	Std Dup	0.00720	2832.98	2826.98			98.2		
B01SD7	92-05353-4	Blank		6.00						3-30-92
B01SF7	92-05490-1	Sample	0.12256	41.89	27.79	227	6.4		3-27-92	4-02-92
B01SF7	92-05490-2	Duplicate	0.11161	41.17	27.07	242			3-27-92	4-02-92
B01SF9	92-05491-1	Sample	0.10018	21.86	7.76	77.5	2.9		3-27-92	4-02-92
B01SF9	92-05491-2	Duplicate	0.10612	22.09	7.99	75.3			3-27-92	4-02-92
B01SG3	92-05492-1	Sample	0.04879	63.92	49.82	1020	17.8		3-27-92	4-02-92
B01SG3	92-05492-2	Duplicate	0.05833	85.34	71.24	1220			3-27-92	4-02-92
B01SG3	92-05492-3	Standard	0.00514	2078.94	2064.84		0.8	100		4-02-92
B01SG3	92-05492-3	Std Dup	0.00575	2303.96	2289.86			99.6		
B01SG3	92-05492-4	Blank		14.10						4-02-92
B01SG7	92-05633-1	Sample	0.05462	55.25	45.55	834	21.0		3-31-92	4-09-92
B01SG7	92-05633-2	Duplicate	0.05577	66.96	57.26	1030			3-31-92	4-09-92
B01SG9	92-05634-1	Sample	0.07824	29.08	19.38	248	12.1		3-31-92	4-09-92
B01SG9	92-05634-2	Duplicate	0.08390	33.24	23.54	280			3-31-92	4-09-92
B01SH3	92-05690-1	Sample	0.02653	50.95	41.25	1550	12.1		4-01-92	4-09-92
B01SH3	92-05690-2	Duplicate	0.02821	59.15	49.45	1750			4-01-92	4-09-92
B01SH3	92-05690-3	Standard	0.00516	2068.14	2058.44		1.3	99.7		4-09-92
B01SH3	92-05690-3	Std Dup	0.00498	2029.49	2019.79			101		4-09-92
B01SH3	92-05690-4	Blank		9.70						4-09-92
		Standard 2	0.00521	1917.12	1907.42			91.5		4-09-92
		Standard 3	0.00664	2680.29	2670.59			100		4-09-92

Key: Standard 2: 1st post-sample std Standard 3: 2nd post-sample std * Based on std C content of 40.0% by wt.
Total Organic Carbon by Procedure PNL-ALO-380, on Instrument WA92040.
325 Bldg., rm 701. Data reported from LRB 52821, pp 90-[illegible]

TABLE 2: TOTAL CYANIDE ANALYSIS DATA FOR TASK 7
SDG #15

WATERS Sample ID	PML Log#	Sample G1 (µg/L)	C	Sample Dup G2 (µg/L)	C	RPD	Blank G5 (µg/L)	C	Spike added (µg)	Sample+ Spike G3 (µg/L)	ICV G4 (mg/L)	%Recoveries Smpl+ Spk G3	ICV G4	Q	Footnote#
B01R10	92-06291	93.3		90.1		3.5%	2.0	U	49	307.7	10.4	109%	111%		1-5
B01QZ8	92-06292	533.9													2,3,5
											Mean	109%	111%		
											Std Dev	N/A	N/A		

Footnotes
1. Stock ICV-G=9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for water = 10 µg/L.
3. IDL for liquids is 2 µg/L based on 500 mL sample; Sample IDL adjusted for volume distilled.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 3: FREE CYANIDE ANALYSIS
Task 7 SDG #15

Sample ID#	PNL Log#	Sample J1 ug/L	C	Sample dup. J2 ug/L	C	RPD	J5 Matrix Blank ug/L	C	J3 Sample+ Spike ug/L	J3 Spike Added ug/L	J6 Dup. + Spike ug/L	J6 Spike Added ug/L	J4 Control Std. ug/L	J4 Standard Added ug/L	% Recovery J3 Spike Rec.	% Recovery J6 Dup. + Spike Rec.	% Recovery J4 Control Std. Rec.	Q Flags
B01R10	92-06291	.7	U	3	U		5	U	48	40	49	40	52	50	103	106	104	H,E
B01QZ8	92-06292	26		24		4												H,E

Concentration Flags [C]

U : Analyzed but not detected (less than IDL)
B : Result is greater than or equal to IDL but less than CRDL

Quality Flags [Q]

H: Hold time not met
E: Estimated Value
N: Spike recovery not within control limits
* : Duplicate Analysis not within control limits

CRDL = 10 ug/L
Estimated IDL = 5 ug/L

NOTES:

1. + This sample is not part of this SDG but included for QC and documentation purposes.
2. 100% spike level is expected to be 40 ug/L.
3. J4: The spiked blank, at 50 ug/L, is used as the control for these samples.
4. J5: The method blank value has been used in this column.
5. RPD value based on duplicate results.
6. Samples analyzed on 5/14/92.

TABLE 4: COMPLEX CYANIDE DETERMINATION
FOR TASK 7 SDG #15

Sample ID#	PNL Log#	Total CN mg/Kg	Free CN mg/Kg	Complex CN mg/Kg (1)
B01R10	92-06291	93	7	86
B01QZ8	92-06292	534	26	508

(1) Results calculated by subtracting the Free cyanide results from the total cyanide results.

TABLE 4a: TOTAL CYANIDE ANALYSIS DATA TASK 2&4
SDG #15

SOILS-SEDIMENTS Sample ID	PNL Log#	Sample G1 (mg/kg)	C	Sample Dup G2 (mg/kg)	C	RPD	Blank G5 (µg/L)	C	Spike added (µg)	Sample + Spike G3 (mg/kg)	ICV G4 (mg/L)	%Recoveries Sampl + Spk G3	ICV G4	Q	Notes
B01S92	92-04661	0.2	U	0.2	U	N/A	2.0	U	48.3	10.3	9.4	100%	100%		1-5
B01S94	92-04662	0.2	U												
B01S96	92-04963	0.5	B	0.4	B	14%	2.0	U	48.3	10.1	9.6	97%	102%		1-5
B01S97	92-04734	0.4	B												2,3,5
B01S99	92-04735	1.6		1.7		4%	2.0	U	48.6	11.4	9.3	100%	99%		1-5
B01SB1	92-04736	1.6													2,3,5
B01SB7	92-05102	0.2	U	0.2	U	N/A	2.0	U	48.6	10.1	10.0	100%	106%		1-5
B01SB3	92-04968	0.5	B												2,3,5
B01SB6	92-05103	0.2	U	0.2	U	N/A	2.0	U	48.6	10.2	9.5	101%	101%		1-5
B01SC0	92-05104	0.2	U												2,3,5
B01SC2	92-05151	0.2	U	0.2	U	N/A	2.0	U	48.8	10.3	10.0	101%	106%		1-5
B01SC4	92-05152	0.2	U												2,3,5
B01SC6	92-05153	0.2	U	0.2	U	N/A	2.0	U	49.1	9.4	9.4	92%	100%		1-5
B01S82	92-05150	1.6													2,3,5
											Mean	99%	102%		
											Std Dev	3%	3%		

Footnotes
1. Stock ICV-G-9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for soil-sediment = 1.0 mg/kg.
3. IDL for solids is 0.2 mg/kg based on 5 g sample; Sample IDL adjusted for weight used.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 4b: TOTAL CYANIDE ANALYSIS DATA TASK 2&4
SDG #15

WATERS Sample ID	PNL Log#	Sample 61 (µg/L)	C	Sample Dup 62 (µg/L)	C	RPD	Blank 65 (µg/L)	C	Spike added (µg)	Sample+ Spike 63 (µg/L)	ICV 64 (mg/L)	%Recoveries Sampl+ Spk 63	%Recoveries ICV 64	Q	Footnote#
B01S70	92-05105	4.0	U	4.0	U	N/A	2.0	U	48.8	98.3	9.3	101%	99%		1-5
B01S72	92-05106	4.0	U												2,3,5
											Mean	101%	99%		
											Std Dev	N/A	N/A		

98.3 → 19664

2/15/97

Footnotes
1. Stock ICV-6-9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for water = 10 µg/L.
3. IDL for liquids is 2 µg/L based on 500 mL sample; Sample IDL adjusted for volume distilled.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 4a: TOTAL CYANIDE ANALYSIS DATA TASK 2&4
SDG #16

SOILS-SEDIMENTS Sample ID	PNL Log#	Sample G1 (mg/kg)	C	Sample Dup G2 (mg/kg)	C	RPD	Blank G5 (µg/L)	C	Spike added (µg)	Sample + Spike G3 (mg/kg)	ICV G4 (mg/L)	%Recoveries Sampl + Spk G3	ICV G4	Q	Notes
B01SD2	92-05337	0.2 U	U	0.2	U	N/A	2.0	U	49.1	10.0	9.7	98%	104%		1-5
B01SC9	92-05271	1.6													
B01SD4	92-05338*	0.2 U	U	0.2	U	N/A	2.0	U	49.1	10.1	9.7	100%	103%		1-5
B01SC7	92-05270	66.8													2,3,5
B01SD4	92-05238*	0.2 U	U	0.2	U	N/A	2.0	U	49.1	10.6	10.0	105%	106%		1-5
B01SD9	92-05352	0.9 U	B												2,3,5
B01SD6	92-05339	0.2 U	U	0.2	U	N/A	2.0	U	49.1	10.8	9.5	106%	101%		1-5
B01SD7	92-05353	3.3													2,3,5
B01SF2	92-05367	0.2 U	B	0.3	B	12%	2.0	U	48.8	9.6	9.2	94%	96%		1-5
B01SF4	92-05368	0.3 U	B												2,3,5
B01SF6	92-05369	0.2 U	U	0.2	U	88%	2.0	U	48.8	9.7	9.7	91%	103%		1-5
B01SF7	92-05490	59.0													2,3,5

* Note: B01SD4 (92-05338) analyzed four times.

Mean	99%	103%
Std Dev	5%	2%

Footnotes
1. Stock ICV-G=9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for soil-sediment = 1.0 mg/kg.
3. IDL for solids is 0.2 mg/kg based on 5 g sample; Sample IDL adjusted for weight used.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 4b: TOTAL CYANIDE ANALYSIS DATA TASK 2&4
SDG #16

SOILS-SEDIMENTS Sample ID	PNL Log#	Sample G1 (mg/kg)	C	Sample Dup G2 (mg/kg)	C	RPD	Blank G5 (µg/L)	C	Spike added (µg)	Sample + Spike G3 (mg/kg)	ICV G4 (mg/L)	%Recoveries Smpl + Spk G3	%Recoveries ICV G4	Q	Notes
B01SG3	92-05492	0.2 µ	U	0.2	U	N/A	2.0	U	48.8	10.3	9.6	100%	102%		1-5
B01SF9	92-05491	1.1 µ													
B01SG2	92-05493	0.2 µ	U	0.2	U	N/A	2.0	U	48.8	10.2	9.7	100%	103%		1-5
B01SG6	92-05494	0.2 µ	U												2,3,5
B01SH3	92-05690	0.2 µ	U	0.2	U	N/A	2.0	U	48.8	10.3	9.8	102%	105%		1-5
B01SG7	92-05633	7.8													2,3,5
B01SH2	92-05691	0.2 µ	U	0.2	U	N/A	2.0	U	48.8	10.6	10.6	105%	112%		1-5
B01SG9	92-05634	5.9													2,3,5
B01SH6	92-05692	0.2 µ	U	0.2	U	N/A	2.0	U	48.8	10.2	10.2	100%	108%		1-5
B01SH7	92-05877*	104.4													2,3,5
											Mean	101%	106%		
											Std Dev	2%	4%		
											SDG 16 Mean	100%	104%		
											Std Dev	4%	4%		

* Note: B01SH7 (92-5877) not part of SDG 16.

Footnotes
1. Stock ICV-6=9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for soil-sediment = 1.0 mg/kg.
3. IDL for solids is 0.2 mg/kg based on 5 g sample; Sample IDL adjusted for weight used.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 4c: TOTAL CYANIDE ANALYSIS DATA TASK 2&4
SDG #16

WATERS Sample ID	PNL Log#	Sample G1 (µg/L)	C	Sample Dup G2 (µg/L)	C	RPD	Blank G5 (µg/L)	C	Spike added (µg)	Sample+ Spike G3 (µg/L)	ICV G4 (mg/L)	%Recoveries Smpl+ Spk G3	%Recoveries ICV G4	Q	Footnote#
B01S74	92-05693	4.0	U	4.0	U	N/A	2.0	U	48.8	101.5	10.3	103%	109%		1-5
B01S90	92-05694	4.3	B												2,3,5
											Mean	103%	109%		
											Std Dev	N/A	N/A		

Footnotes
1. Stock ICV-6=9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for water = 10 µg/L.
3. IDL for liquids is 2 µg/L based on 500 mL sample; Sample IDL adjusted for volume distilled.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 5: FREE CYANIDE ANALYSIS FOR TASKS 2 & 4
SDG # 16

Sample ID#	PNL Log#	Sample J1 mg/kg	C	Sample dup. J2 mg/kg	C	RPD	J5 Matrix Blank ug/L	C	J3 Sample+ Spike mg/kg	J3 Spike Added mg/kg	J4 Control Std. mg/kg	J4 Standard Added mg/kg	J6 Dup. + Spike mg/kg	J6 Spike Added mg/kg	% Recovery J3 Spike Rec.	% Recovery J6 Dup. + Spike Rec.	% Recovery J4 Control Std. Rec.	Q Flags
B01SC7	92-05270	0.9	B	1.2		29%	5	U			5.1	5.0					102%	E
B01SD7	92-05353	0.7	B						5.8	5.1			5.9	5.1	100%	102%		
B01SF7	92-05490	1.1					5	U			4.4	5.0					88%	H
B01SG2 +	92-05493	2.0		1.3		42%												
B01SG7	92-05633	2.5																
B01SG9	92-05634	2.7							6.9	5.0			7.0	5.1	84%	84%		

Concentration Flags [C]

U : [ANALYTE] < IDL
B : IDL <= [ANALYTE] < CRDL

Quality Flags [Q]

H: Hold time not met
E: Estimated Value
N: Spike recovery not within control limits
* : Duplicate Analysis not within control limits

CRDL = 1.0 mg/kg
Estimated IDL = 5 ug/L , 0.5 mg/kg

NOTES:

1. + This sample is included for QC and documentation purposes.
2. 100% spike level is expected to be 50 ug/L in the extract and 5 mg/kg in a 0.2 gm sample containing no moisture.
3. 100 % extraction efficiency is assumed in defining the extraction dilution as (diluent vol / sample wt) x 1.00 gm/ml .
4. J4: The spiked blank is the control for these samples. J5: The method blank value has been used in this column.
5. Samples 92-05270 and 92-05353 were analyzed on 3/31/92; the rest were analyzed on 4/10/92.

TABLE 6: COMPLEX CYANIDE DETERMINATION
FOR TASKS 2 & 4 SDG #16

Sample ID#	PNL Log#	Total CN mg/Kg	Free CN mg/Kg	Complex CN mg/Kg (1)
B01SC7	92-05270	66.8	0.9	65.9
B01SD7	92-05353	3.3	0.7	2.6
B01SF7	92-05490	59.0	1.1	57.9
B01SG7	92-05633	7.8	2.5	5.3
B01SG9	92-05634	5.9	2.7	3.2

(1) Results calculated by subtracting the free cyanide results from the total cyanide results.

Table 10: Gamma Energy Analysis of Soils

Transcription er
APV 1/19/93

Diode L

(Radionuclide activity in pCi/g[a])

WHC Sample ID	Sample ID	Collection Date	Weight (g)	Co-60	Ru-106	Cs-137
B01S97	92-04734-L-1	3/2/92 10:12	16.433	1.11 ± 0.09	<34	(8.52 ± 0.09) X 10^4
B01S99	92-04735-L-1	3/3/92 10:15	1.0717	~~<25~~ <60	<4000	(3.34 ± 0.06) X 10^6
B01SB1	92-04736-L-1	3/3/92 10:15	12.074	<350	<3000	(2.88 ± 0.03) X 10^6
B01SB1	92-04736-L-2	3/3/92 10:15	1.0962	<40	<3300	(2.75 ± 0.01) X 10^6
B01SB3	92-04968-L-1	3/5/92 10:40	15.846	<3	<210	(1.66 ± 0.02) X 10^5
B01SB7	92-05102-L-1	3/10/92 08:33	15.275	<0.14	<0.47	<0.20
B01SB2	92-05150-L-1	3/11/92 08:50	1.2004	<480	<2500	(4.50 ± 0.05) X 10^6
B01SC7	92-05270-L-1*	3/13/92 08:55	1.0658	<830	<15000	(1.29 ± 0.01) X 10^7
B01SC7	92-05271-L-1*	3/16/92 14:00	14.838	<3	<190	(4.12 ± 0.04) X 10^5
B01SD9	92-05352-L-1*	3/19/92 14:32	15.179	0.70 ± 0.20	<16	(9.12 ± 0.28 X 10^2
B01SD9	92-05352-L-2*	3/19/92 14:32	16.621	0.596 ± 0.006	<2	(9.47 ± 0.09) X 10^2
B01SD7	92-05353-L-1*	3/19/92 10:20	14.404	<2	<140	(5.44 ± 0.03) X 10^4
B01SF7	92-05490-L-1*	3/23/92 14:16	14.144	<210	<14000	(2.35 ± 0.02) X 10^6
B01SF7	92-05490-L-2*	3/23/92/14:16	0.9269	<90	<5300	(1.84 ± 0.02) X 10^6
B01SF9	92-05491-L-1*	3/25/92 09:04	14.794	<0.2	<9	(3.02 ± 0.03) X 10^3
B01SG3	92-05492-L-1*	3/25/92 13:26	14.464	<0.3	<3	2.50 ± 0.36
B01SG9	92-05634-L-1*	3/30/92 10:02	13.680	3.1 ± 0.1	<30	(5.64 ± 0.06) X 10^3
B01SH3	92-05690-L-1*	3/31/92 09:03	13.214	<0.3	<3.5	4.39 ± 0.40
B01SG7	92-05633-L-1*	3/26/92 10:45	16.738	1.81 ± 0.17	<44	(1.25 ± 0.01) X 10^4
B01SH7	92-05877-L-1*	4/1/92 10:21	1.0683	62 ± 10	<2700	(4.41 ± 0.04) X 10^6
B01SB4	92-05953-L-1*	4/8/92 08:34	1.2256	<90	<5600	(2.88 ± 0.03) X 10^6

Table 10: Gamma Energy Analysis of Soils Continued

801SC8	92-05954-L-1*	4/8/92 10:21	15.268	50 ± 2	<690	(1.37 ± 0.01) X 10^6
801SC8	92-05954-L-2*	4/8/92 10:21	0.8959	64 ± 7	<2200	(1.60 ± 0.03) X 10^6
801SC8	92-05954-L-5*	4/8/92 10:21	14.7	<0.19	<1.9	<0.14

Footnotes

[a] The one sigma uncertainties are based on counting statistics. All "<" values are detection limits associated with each "not detected" analysis. The detection limits are calculated as if the isotope was present at a level that is 2.5 times the square root of twice the average background.

* Sample not in this SDG but reported for QC and analytical batch purposes.

TABLE 11: TOTAL ALPHA ANALYSIS DATA
TASKS 2 & 4 SDG #15

Parameters of Interest									
WHC Sample ID	Sample #	Sample Type	Alpha (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.
First Batch									
B01S97	92-04734-A-1a	Soil	69.4	8.7	<20				
B01S99	92-04735-A-1a	Soil	1870	250	<600				
B01SB1	92-04736-A-1a	Soil	2200	280	<600				
B01SB1	92-04736-A-2a	Duplicate	2390	300	<700	8			
B01SB3	92-04968-A-1a	Soil	187	16	<20				
B01SB2	92-05150-A-1a	Soil	2380	230	<400				
	92-04736-A-3a	Matrix Spike	11680	860	<600		9430	200	100
	92-04736-A-4a	Blank Spike	25.1	1.6	<0.7		23.84	0.13	106
	92-04736-A-5a	Method Blank	<0.7						
Second Batch									
B01S87	92-05102-A-1a	Soil	1.94	0.40	<0.1				
B01SF9	92-05491-A-1a +	Soil	8.30	0.93	<0.2				
B01SF9	92-05491-A-2a +	Duplicate	6.59	0.89	<0.1	23			
	92-05491-A-3a +	Matrix Spike	89.7	7.1	<0.5		99.64	0.56	83
	92-05491-A-4a +	Blank Spike	133	11	<0.6		119.77	0.64	111
	92-05491-A-5a +	Method Blank	<0.6						

*One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

**Blank value normalized to sample size analyzed. See narrative for details.

+ Sample not a part of this SDG.

TABLE 11: TOTAL ALPHA ANALYSIS DATA
SDG #16

Parameters of Interest									
WHC Sample ID	Sample #	Sample Type	Alpha (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.
First Batch									
B01SF9	92-05491-A-1a	Soil	8.30	0.93	<0.2				
B01SF9	92-05491-A-2a	Duplicate	6.59	0.89	<0.1	23			
B01SG3	92-05492-A-1a	Soil	1.93	0.44	<0.2				
B01SH3	92-05690-A-1a	Soil	2.58	0.47	<0.2				
	92-05491-A-3a	Matrix Spike	89.7	7.1	<0.5		99.64	0.56	83
	92-05491-A-4a	Blank Spike	133	11	<0.6		119.77	0.64	111
	92-05491-A-5a	Method Blank	<0.6						
Second Batch									
B01SC7	92-05270-A-1a	Soil	5995	462	<223				
B01SC9	92-05271-A-1a	Soil	123	11	<3				
B01SD9	92-05352-A-1a	Soil	33.8	4.3	<3				
B01SD9	92-05352-A-2a	Duplicate	43.7	4.8	<3	26			
B01SD7	92-05353-A-1a	Soil	89.3	9.3	<3				
B01SF7	92-05490-A-1a	Soil	1092	86	<13				
B01SG7	92-05633-A-1a	Soil	14.5	2.0	<0.7				
B01SG9	92-05634-A-1a	Soil	83.7	7.8	<2				
	92-05352-A-3a	Matrix Spike	147	16	<7		139.9	4.1	78
	92-05352-A-4a	Blank Spike	20.6	1.4	<0.6		23.81	0.13	87
	92-05352-A-5a	Method Blank	<0.6						

*One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

**Blank value normalized to sample size analyzed. See narrative for details.

TABLE 12: TOTAL BETA ANALYSIS DATA
TASKS 2 & 4 SDG #15

Parameters of Interest									
WHC Sample ID	Sample #	Sample Type	Beta (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.
First Batch									
B01S97	92-04734-A-1a	Soil	2.25E+05	5.8E+03	4.3E+03				
B01S99	92-04735-A-1a	Soil	8.67E+06	3.2E+05	5.4E+05				
B01SB1	92-04736-A-1a	Soil	8.56E+06	3.2E+05	5.4E+05				
B01SB1	92-04736-A-2a	Duplicate	8.88E+06	3.3E+05	5.6E+05	4			
B01SB3	92-04968-A-1a	Soil	3.40E+05	1.3E+04	2.4E+04				
B01SB2	92-05150-A-1a	Soil	1.11E+07	4.4E+05	9.0E+05				
	92-04736-A-3a	Matrix Spike	1.80E+07	6.1E+05	5.4E+05		9.48E+06	5.4E+05	100
	92-04736-A-4a	Blank Spike	46.3	1.9	13.7		47.9	2.4	97
	92-04736-A-5a	Method Blank	13.7	1.7					
Second Batch									
B01SB7	92-05102-A-1a	Soil	2.79	0.42	<0.43				
B01SF9	92-05491-A-1a+	Soil	1680	92	<0.43				
B01SF9	92-05491-A-2a+	Duplicate	1580	88	<0.43	6			
	92-05491-A-3a+	Matrix Spike	1044	56	<0.57		75.7	3.8	(a)
		MS Replate	1772	98	<0.57		75.7	3.8	(a)
	92-05491-A-4a+	Blank Spike	249	14	<1.7		240	12	104
	92-05491-A-5a+	Method Blank	<1.7						

*One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

**Blank value normalized to sample size analyzed. See narrative for details.

a) See narrative for discussion of matrix spike.

+ Samples not a part of this SDG.

TABLE 12: TOTAL BETA ANALYSIS DATA
TASKS 2 & 4 SDG #16

WHC Sample ID	Parameters of Interest: Sample #	Sample Type	Beta (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.
Batch One									
B01SF9	92-05491-A-1a	Soil	1680	92	<0.43				
B01SF9	92-05491-A-2a	Duplicate	1580	88	<0.43	6			
	92-05491-A-3a	Matrix Spike	1044	56	<0.57		75.7	3.8	(a)
		MS Recount	1772	98	<0.57		75.7	3.8	(a)
	92-05491-A-4a	Blank Spike	249	14	<1.7		240	12	104
	92-05491-A-5a	Method Blank	<1.7						
B01SG3	92-05492-A-1a	Soil	6.62	0.70	<0.43				
B01SH3	92-05690-A-1a	Soil	9.40	0.88	<0.43				
Batch Two									
B01SC7	92-05270-A-1a	Soil	2.97E+07	1.2E+06	9.3E+05				
B01SC9	92-05271-A-1a	Soil	4.64E+05	1.8E+04	2.2E+04				
B01SD9	92-05352-A-1a	Soil	1.87E+04	5.2E+02	4.4E+02				
B01SD9	92-05352-A-2a	Duplicate	1.60E+04	4.5E+02	4.1E+02	16			
B01SD7	92-05353-A-1a	Soil	1.51E+06	8.2E+04	4.4E+04				
B01SG7	92-05633-A-1a	Soil	1.45E+05	5.4E+03	5.7E+03				
B01SG9	92-05634-A-1a	Soil	6.24E+05	2.1E+04	3.8E+03				
B01SF7	92-05490-A-1a	Soil	1.28E+07	4.8E+05	5.4E+05				
	92-05352-A-3a	Matrix Spike	1.83E+04	5.4E+02	5.9E+02		2.84E+03	1.63E+02	(a)
	92-05352-A-4a	Blank Spike	90.0	2.5	4.9		95.1	4.7	95
	92-05352-A-5a	Method Blank	4.9	1.2	4.9				

* One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

** Blank value normalized to sample size analyzed. See narrative for details.

a) See narrative for discussion of the matrix spike.

calculation of by Factor of 5
BJV 1/19/93

TABLE 13: PLUTONIUM ANALYSIS DATA FOR TASKS 2 & 4
SDG #15

Client Sample ID	Program Sample ID	Sample Type	Pu-239+240 pCi/g	+/- 1 sigma*	Pu-239+240 RPD	Pu-239+240 Normalized Blank**	Pu-238 pCi/g	+/- 1 sigma*	Pu-238 RPD	Pu-238 Normalized Blank**	Pu-239 Spike pCi/sample	+/- 1 sigma	% Recovery
Batch One													
B01S97	92-04734-A-1c	Soil	3.41E+01	1.25E+00		< 7 E-02	5.19E-01	5.28E-02		< 5 E-02			
B01S99	92-04735-A-1c	Soil	1.12E+03	4.08E+01		< 2 E+00	5.03E+01	3.12E+00		< 2 E+00			
B01SB1	92-04736-A-1c	Soil	1.32E+03	5.00E+01		< 4 E+00	5.29E+01	4.23E+00		< 3 E+00			
B01SB1	92-04736-A-2c	Duplicate	1.53E+03	5.79E+01	15	< 4 E+00	6.43E+01	4.98E+00	19	< 3 E+00			
B01SB3	92-04968-A-1c	Soil	9.42E+01	3.33E+00		< 7 E-02	4.63E+00	2.16E-01		< 6 E-02			
B01SB2	92-05150-A-1c	Soil	1.97E+3 ~~9.93E+03~~	3.82E+02		< 7 E+00	~~4.09E+02~~ 4.09E+1	3.50E+01		< 6 E+00			
	92-04736-A-5c	Blank	< 2 E-02				< 2 E-02						
	92-04736-A-4c	Blank Spike	1.02E+01	3.30E-01			< 1 E-02				1.22E+01	2.20E-01	84
Batch Two													
B01SB7	92-05102-A-1c	Soil	< 2 E-03			1 E-03	< 3 E-03			< 7 E-04			
B01SF9	92-05491-A-1c	Soil +	7.32E-02	1.03E-02		1 E-03	< 8 E-03			< 7 E-04			
B01SF9	92-05491-A-2c	Duplicate +	8.59E-02	5.41E-03	11	1 E-03	4.05E-03	1.60E-03	na	< 7 E-04			
	92-05491-A-5c	Blank +	2.06E-03	9.24E-04			< 2 E-03						
	92-05491-A-4c	Blank Spike +	1.08E+01	2.99E-01			< 3 E-03				1.19E+01	1.10E-01	91

* Propogated error based on combination of counting, pipetting, and volume uncertainties.
** Blank value when normalized to actual sample size analyzed, in pCi/g.
\+ Samples included for QC purposes--these were the batch duplicates.

All sample analyses are based on received sample weight, i.e. no correction for weight percent solids.

TABLE 13: PLUTONIUM ANALYSIS DATA FOR TASKS 2&4
SDG #16

Batch One of Two

Client Sample ID	Program Sample ID	Sample Type	Pu-239+240 pCi/g	+/- 1 sigma	Pu-239+240 RPD	Pu-239+240 Normalized Blank**	Pu-238 pCi/g	+/- 1 sigma	Pu-238 RPD	Pu-238 Normalized Blank**	Pu-239 Spike pCi/sample	+/- 1 sigma	% Recovery
B01SF9	92-05491-A-1c	Soil	7.32E-02	1.03E-02		<1 E-03	<8 E-03			<7 E-04			
B01SF9	92-05491-A-2c	Duplicate	6.59E-02	5.41E-03	11	<1 E-03	4.05E-03	1.60E-03	NA	<7 E-04			
	92-05491-A-5c	Blank*	2.06E-03	9.24E-04			<2 E-03						
	92-05491-A-4c	Blank Spike*	1.08E+01	2.99E-01			<3 E-03				1.19E+01	1.10E-01	91
B01SG3	92-05492-A-1c	Soil	<2 E-03			<1 E-03	<2 E-03			<7 E-04			
B01SH3	92-05690-A-1c	Soil	<3 E-03			<1 E-03	<3 E-03			<7 E-04			

* Reported in pCi/sample
** Blank value when normalized to actual sample size analyzed, in pCi/g.

Using a 1 gram sample size results in a detection limit of approximately 2 E-3 pCi/g for Pu-239+240 and 3 E-3 pCi/g for Pu-238.

One sigma uncertainties are the propagated error of individual measurements.

All sample analyses are based on received sample weight, i.e., no correction for weight percent solids.

TABLE 13: PLUTONIUM ANALYSIS DATA FOR TASKS 284
SDG #16 (continued)

Batch Two of Two

Client Sample ID	Program Sample ID	Sample Type	Pu-239+240 pCi/g	+/- 1 sigma	Pu-239+240 RPD	Pu-239+240 Normalized Blank**	Pu-238 pCi/g	+/- 1 sigma	Pu-238 RPD	Pu-238 Normalized Blank**	Pu-239 Spike pCi/sample	+/- 1 sigma	% Recovery
B01SC7	92-05270-A-1c	Soil	1.30E+01	5.04E-01		<4 E-02	5.63E-01	4.74E-02		<5 E-02			
B01SC9	92-05271-A-1c	Soil	5.47E+01	2.03E+00		<6 E-02	2.60E+00	1.52E-01		<8 E-02			
B01SD9	92-05352-A-1c	Soil	4.26E-01	3.87E-02		<6 E-02	3.75E-02	1.23E-02		<8 E-02			
B01SD9	92-05352-A-2c	Duplicate	4.87E-01	3.60E-02	13	<6 E-02	4.09E-02	1.01E-02	9	<7 E-02			
	92-05352-A-5c	Blank*	<2 E-02				<3 E-02						
	92-05352-A-4c	Blank Spike*	1.05E+01	3.42E-01			<1 E-02				1.18E+01	9.09E-02	89
B01SD7	92-05353-A-1c	Soil	3.02E+01	1.15E+00		<6 E-02	1.78E+00	1.18E-01		<8 E-02			
B01SF7	92-05490-A-1c	Soil	6.71E+02	2.49E+01		<1 E+00	3.31E+01	2.09E+00		<1 E+00			
B01SG7	92-05633-A-1c	Soil	5.54E+00	2.24E-01		<1 E-02	3.55E-01	2.67E-02		<2 E-02			
B01SG9	92-05634-A-1c	Soil	4.67E+00	2.07E-01		<4 E-02	3.36E-01	3.67E-02		<5 E-02			

* Reported in pCi/sample
** Blank value when normalized to actual sample size analyzed, in pCi/g.

Using a 1 gram sample size results in a detection limit of approximately 2 E-2 pCi/g for Pu-239+240 and 3 E-2 pCi/g for Pu-238.

One sigma uncertainties are the propagated error of individual measurements.

All sample analyses are based on received sample weight, i.e., no correction for weight percent solids.

TABLE 14: STRONTIUM-90 ANALYSIS DATA
TASKS 2 & 4 SDG #15

	Parameters of Interest									
WHC Sample ID	Sample #	Sample Type	Strontium (pCi/g)	+/- 1 sigma*	Normalized Blank***	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.	Normalized % Yield**
First Batch										
B01S97	92-04734-A-1b	Soil	5.89E+04	4.67E+03	8.9E+02					
B01S99	92-04735-A-1b	Soil	2.98E+06	2.71E+05	1.4E+05					
B01SB1	92-04736-A-1b	Soil	2.90E+06	2.58E+05	1.4E+05					
B01SB1	92-04736-A-2b	Duplicate	3.32E+06	2.92E+05	1.5E+05	13.5				
B01SB3	92-04968-A-1b	Soil	9.89E+04	8.29E+03	2.5E+03					
B01SB2	92-05150-A-1b	Soil	3.53E+06	2.97E+05	9.3E+04					
	92-04736-A-3b	Matrix Spike	431	32.9	1.4		414	21	104	
	92-04736-A-3b	Yield Spike	Used to determine Batch yield							95
	92-04736-A-4b	Blank Spike	53.5	4.7	1.4		48.3	2.4	111	
	92-04736-A-5b	Method Blank	1.41	0.44						
Second Batch										
B01SB7	92-05102-A-1b	Soil	0.65	0.20	<0.3					
B01SF9	92-05491-A-1b +	Soil	40.8	3.2	<0.2					
B01SF9	92-05491-A-2b +	Duplicate	36.0	2.9	<0.2	12.7				
	92-05491-A-3b +	Matrix Spike	294	22	<0.4		274	14	93	
	92-05491-A-3b +	Yield Spike	Used to determine Batch yield							96
	92-05491-A-4b +	Blank Spike	46.0	4.1	<0.6		47.4	2.4	97	
	92-05491-A-5b +	Method Blank	<0.61							

* One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

** All Sr-90 analyses are calculated on the basis of their ratio to the matrix spike recovery which has been normalized to 100% chemical recovery.

*** Blank value when normalized to actual sample mass analyzed.

\+ Sample not a part of this SDG.

TABLE 14: STRONTIUM-90 ANALYSIS DATA FOR TASKS 2 & 4
SDG #16

	Parameters of Interest									
WHC Sample ID	Sample #	Sample Type	Strontium (pCi/g)	+/- 1 sigma*	Normalized Blank***	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.	Normalized % Yield**
First Batch										
B01SC7	92-05270-A-1b	Soil	1.07E+07	8.50E+05	<7E+03					
B01SC9	92-05271-A-1b	Soil	7.37E+04	6.07E+03	<3E+02					
B01SD9	92-05352-A-1b	Soil	8.96E+03	7.07E+02	<3E+01					
B01SD9	92-05352-A-2b	Duplicate	7.67E+03	6.11E+02	<3E+01	15.5				
B01SJ7	92-05353-A-1b	Soil	7.12E+05	5.89E+04	<3E+03					
B01SG7	92-05633-A-1b	Soil	7.23E+04	6.12E+03	<1E+03					
B01SG9	92-05634-A-1b	Soil	2.99E+05	2.38E+04	<3E+02					
B01SF7	92-05490-A-1b	Soil	5.41E+06	4.67E+05	<3E+04					
	92-05352-A-3b	Matrix Spike	8.93E+03	7.17E+02	<31		1422	81		
	92-05352-A-3b	Yield Spike	Used to determine Batch yield							100
	92-05352-A-4b	Blank Spike	115	9.1	0.62		118	6	97	
	92-05352-A-5b	Method Blank	<0.6							
Second Batch										
B01SG3	92-05492-A-1b	Soil	<0.3		<0.3					
B01SH3	92-05690-A-1b	Soil	<0.3		<0.3					
B01SF9	92-05491-A-1b	Soil	40.8	3.2	<0.2					
B01SF9	92-05491-A-2b	Duplicate	36.0	2.9	<0.2	12.7				
	92-05491-A-3b	Matrix Spike	294	22	<0.4		274	14	93	
	92-05491-A-3b	Yield Spike	Used to determine Batch yield							96
	92-05491-A-4b	Blank Spike	46.0	4.1	<0.6		47.4	2.4	97	
	92-05491-A-5b	Method Blank	<0.6							

* One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

** All Sr-90 analyses are calculated on the basis of their ratio to the matrix spike recovery which has been normalized to 100% chemical recovery.

*** Blank value when normalized to actual sample mass analyzed.

TABLE 15: TRITIUM ANALYSIS DATA
TASKS 2 & 4 SDG #15

KPV 1/20/93

Parameters of Interest

WHC Sample ID	Sample #	Sample Type	Tritium (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.	RCF Fs***
B01S97	92-04734-K-1	Soil	20.7 J	1.6	<3					
B01S99	92-04735-K-1	Soil	65.7 J	3.5	<4					
B01S81	92-04736-K-1	Soil	41.3 J	2.5	<4					
B01S83	92-04968-K-1	Soil	42.3 J	2.1	<4					
B01S83	92-04968-K-2	Duplicate	38.6 J	2.0	<4	9				
B01S87	92-05102-K-1	Soil	<4.7 UJ		na					
B01S82	92-05150-K-1	Soil	37.5 J	2.3	<4					
	92-03901-K-4	Matrix Spike	663 J	21	<4		772	13	80.7	
	92-03300-K-4	Blank Spike	3608 J	116	<21		4225	49	85.4	
	92-03901-K-5	Method Blank	<21 UJ							
	92-03901-K-4	Yield spike to determine Fs								85.1

* One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.
** Blank value normalized to sample size analyzed (pCi/g). Refer to narrative for details.
*** Recovery Correction Factor, Fs.
nd: not detected
na: not applicable

TABLE 15: TRITIUM ANALYSIS DATA FOR TASKS 2 & 4
SDG #16

WHC Sample ID	Sample #	Sample Type	Tritium (pCi/g)	+/- 1 sigma*	RPD	Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.	RCF Fs**
B01SC7	92-05270-K-1	Soil	15.5	1.9					
B01SC9	92-05271-K-1	Soil	14.7	1.6					
B01SC9	92-05271-K-2	Duplicate	14.2	1.6	3				
B01SD9	92-05352-K-1	Soil	10.4	1.3					
B01SD7	92-05353-K-1	Soil	35.4	1.8					
B01SF7	92-05490-K-1	Soil	16.2	1.8					
B01SF9	92-05491-K-1	Soil	43.8	1.8					
B01SG3	92-05492-K-1	Soil	7.2	1.8					
B01SG7	92-05633-K-1	Soil	<5						
B01SG9	92-05634-K-1	Soil	30.5	2.0					
B01SH3	92-05690-K-1	Soil	44.0	1.9					
	92-05271-K-4	Matrix Spike	632	13		700	12	88	
	92-05271-K-	Blank Spike	4470	86		4177	73	107	
	92-05271-K-5	Method Blank	<4						
	92-05271-K-4	Yield spike to determine Fs							81.5

*One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.
**Recovery Correction Factor, Fs.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05271

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC9

Sample wt/vol: 5.100 (g/mL) G Lab File ID: >OB910

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 2.5 Data Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-,	31.33	140.	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05270

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC7

Sample wt/vol: 5.655 (g/mL) G Lab File ID: >OB912

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 4.9 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	9.	U
74-83-9	Bromomethane	9.	U
75-01-4	Vinyl Chloride	9.	U
75-00-3	Chloroethane	9.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~5.~~	~~JB~~ U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~2.~~	~~JB~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	9.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	9.	U
591-78-6	2-Hexanone	9.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1-15-93 cwk

1-15-93 cwk

FORM I VOA 1/89 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05270

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC7

Sample wt/vol: 5.655 (g/mL) G Lab File ID: >OB912

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 4.9 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-,	31.33	200.	J
2.					
3.					
4.					
5.					
6.					
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9.					
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FORM I VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-05491

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF9

Sample wt/vol: 5.540 (g/mL) G Lab File ID: >PA204

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.2 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	9.	~~U~~ R
74-83-9	Bromomethane	9.	~~U~~
75-01-4	Vinyl Chloride	9.	U
75-00-3	Chloroethane	9.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	JB
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	8.	JB
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	9.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	9.	U
591-78-6	2-Hexanone	9.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

WH 1-23-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05491

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF9

Sample wt/vol: 5.540 (g/mL) G Lab File ID: >PA204

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.2 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
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FORM I VOA-TIC 1/87 Rev.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05492

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG3

Sample wt/vol: 5.330 (g/mL) G Lab File ID: >PA208

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 4.2 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	B
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	6.	B
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropane	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

CWK 1-23-97

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

92-05492

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG3

Sample wt/vol: 5.330 (g/mL) G Lab File ID: >PA208

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 4.2 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-05633

Lab Name:BATTELLE-PNL Contract:------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG7

Sample wt/vol: 5.240 (g/mL) G Lab File ID: >PA210

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec.2.4 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	B
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	8.	B
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	9.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

R
CWK 1-23-93

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

92-05633

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG7

Sample wt/vol: 5.240 (g/mL) G Lab File ID: >PA210

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec.2.4 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.07	46.	J
2.					
3.					
4.					
5.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05634

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG9

Sample wt/vol: 5.153 (g/mL) G Lab File ID: >PA212

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.0 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	R
74-83-9	Bromomethane	10.	
75-01-4	Vinyl Chloride	10.	
75-00-3	Chloroethane	10.	
75-09-2	Methylene Chloride	5.	
67-64-1	Acetone	8.	B
75-15-0	Carbon Disulfide	5.	
75-35-4	1,1-Dichloroethene	5.	
75-34-3	1,1-Dichloroethane	5.	
540-59-0	1,2-Dichloroethene (total)	5.	
67-66-3	Chloroform	5.	
107-02-2	1,2-Dichloroethane	5.	
78-93-3	2-Butanone	7.	B
71-55-6	1,1,1-Trichloroethane	5.	
56-23-5	Carbon Tetrachloride	5.	
108-05-4	Vinyl Acetate	10.	
75-27-4	Bromodichloromethane	5.	
78-87-5	1,2-Dichloropropane	5.	
10061-01-5	cis-1,3-Dichloropropene	5.	
79-01-6	Trichloroethene	5.	
124-48-1	Dibromochloromethane	5.	
79-00-5	1,1,2-Trichloroethane	5.	
71-43-2	Benzene	5.	
10061-02-6	trans-1,3-Dichloropropene	5.	
75-25-2	Bromoform	5.	
108-10-1	4-Methyl-2-pentanone	10.	
591-78-6	2-Hexanone	10.	
127-18-4	Tetrachloroethene	5.	
79-34-5	1,1,2,2-Tetrachloroethane	5.	
108-88-3	Toluene	5.	
108-90-7	Chlorobenzene	5.	
100-41-4	Ethylbenzene	5.	
100-42-5	Styrene	5.	
133-02-7	Xylene (total)	5.	

CWK 1-23-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05634

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG9

Sample wt/vol: 5.153 (g/mL) G Lab File ID: >PA212

Level: (low/med) LOW Data Received: 03/31/92

% Moisture: not dec. 2.0 Data Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05690

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SH3

Sample wt/vol: 5.418 (g/mL) G Lab File ID: >PA214

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.1 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	13.	B
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	6.	JB
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

R 1-23-93 cwl

FORM I VOA 1/89 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05690

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SH3

Sample wt/vol: 5.418 (g/mL) G Lab File ID: >PA214

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.1 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05352

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD9

Sample wt/vol: 5.140 (g/mL) G Lab File ID: >OD104

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 2.4 Data Analyzed: 3/31/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10	~~B~~ UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10	~~B~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1-18-93

1-18-93

FORM I VOA 1/89 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05352

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD9

Sample wt/vol: 5.140 (g/mL) G Lab File ID: >OD104

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 2.4 Date Analyzed: 3/31/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05353

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD7

Sample wt/vol: 5.455 (g/mL) G Lab File ID: >OD108

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec.1.6 Date Analyzed: 3/31/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	9.	U
74-83-9	Bromomethane	9.	U
75-01-4	Vinyl Chloride	9.	U
75-00-3	Chloroethane	9.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~3~~.	~~JB~~ UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~3~~.	~~JB~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	9.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	9.	U
591-78-6	2-Hexanone	9.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

UJ 1-18-93

U 1-18-93

FORM I VOA 1/89 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05353

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD7

Sample wt/vol: 5.455 (g/mL) G Lab File ID: >OD108

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 1.6 Date Analyzed: 3/31/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.03	6.	J
2.	74381401	Propanoic acid, 2-methyl-, 1	31.28	90.	J
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05490

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF7

Sample wt/vol: 5.121 (g/mL) G Lab File ID: >OD110

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 3.2 Date Analyzed: 3/31/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 5.	~~JB~~ UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 4.	~~JB~~ U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

FORM I VOA 1/89 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05490

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF7

Sample wt/vol: 5.121 (g/mL) G Lab File ID: >OD110

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 3.2 Date Analyzed: 3/31/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-, 1	31.33	12.	J
2.					
3.					
4.					
5.					
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9.					
10.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05271 DU

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC9 DUPE

Sample wt/vol: 5.034 (g/mL) G Lab File ID: >OB911

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 2.5 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~5.~~	~~U~~ JB U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~5.~~	~~U~~ JB U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethane	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1-15-93 CWK

1-15-93 CWK

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05271 DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC9 DUPE

Sample wt/vol: 5.034 (g/mL) G Lab File ID: >OB911

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 2.5 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-, 1	31.33	170.	J
2.					
3.					
4.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05270 DU

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC7 DUPE

Sample wt/vol: 5.472 (g/mL) G Lab File ID: >OB913

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 4.9 Date Analyzed: 3/19/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	28 U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	28 U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1-15-93 CW

1-15-93 CW

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05270 DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SC7 DUPE

Sample wt/vol: 5.472 (g/mL) G Lab File ID: >OB913

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 4.9 Date Analyzed: 3/19/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-,	31.33	34.	J
2.					
3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05491DUP

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF9DUPE

Sample wt/vol: 5.320 (g/mL) G Lab File ID: >PA205

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.2 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	JB
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	5.	JB
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

CVK 1-23-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05491DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF9DUPE

Sample wt/vol: 5.320 (g/mL) G Lab File ID: >PA205

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.2 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

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

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05492DUP

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG3DUPE

Sample wt/vol: 5.234 (g/mL) G Lab File ID: >PA209

Level: (low/med) LOW Data Received: 03/27/92

% Moisture: not dec. 4.2 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	JB
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	4.	JB
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

R

AWK 1-23-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05492DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: BO1SG3DUPE

Sample wt/vol: 5.234 (g/mL) G Lab File ID: >PA209

Level: (low/mad) LOW Date Received: 03/27/92

% Moisture: not dec. 4.2 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05633DUP

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG7DUPE

Sample wt/vol: 5.458 (g/mL) G Lab File ID: >PA211

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.4 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	9.	U
74-83-9	Bromomethane	9.	U
75-01-4	Vinyl Chloride	9.	U
75-00-3	Chloroethane	9.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	JB
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	7.	JB
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acatate	9.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	9.	U
591-78-6	2-Hexanone	9.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	4.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

R CWL 1-23-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05633DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG7DUPE

Sample wt/vol: 5.458 (g/mL) G Lab File ID: >PA211

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.4 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.07	44.	J
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3.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-05634DUP

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG9DUPE

Sample wt/vol: 5.218 (g/mL) G Lab File ID: >PA213

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.0 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U R
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	5.	JB
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	7.	JB
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1-23-93 CMK

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05634DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SG9DUPE

Sample wt/vol: 5.218 (g/mL) G Lab File ID: >PA213

Level: (low/med) LOW Data Received: 03/31/92

% Moisture: not dec. 2.0 Data Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0

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

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

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

92-05690DUP

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SH3DUPE

Sample wt/vol: 5.142 (g/mL) G Lab File ID: >PA215

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.1 Date Analyzed: 4/02/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	R
74-83-9	Bromomethane	10.	
75-01-4	Vinyl Chloride	10.	
75-00-3	Chloroethane	10.	
75-09-2	Methylene Chloride	5.	
67-64-1	Acetone	11.	B
75-15-0	Carbon Disulfide	5.	
75-35-4	1,1-Dichloroethene	5.	
75-34-3	1,1-Dichloroethane	5.	
540-59-0	1,2-Dichloroethene (total)	5.	
67-66-3	Chloroform	5.	
107-02-2	1,2-Dichloroethane	5.	
78-93-3	2-Butanone	3.	B
71-55-6	1,1,1-Trichloroethane	5.	
56-23-5	Carbon Tetrachloride	5.	
108-05-4	Vinyl Acetate	10.	
75-27-4	Bromodichloromethane	5.	
78-87-5	1,2-Dichloropropane	5.	
10061-01-5	cis-1,3-Dichloropropene	5.	
79-01-6	Trichloroethene	5.	
124-48-1	Dibromochloromethane	5.	
79-00-5	1,1,2-Trichloroethane	5.	
71-43-2	Benzene	5.	
10061-02-6	trans-1,3-Dichloropropene	5.	
75-25-2	Bromoform	5.	
108-10-1	4-Methyl-2-pentanone	10.	
591-78-6	2-Hexanone	10.	
127-18-4	Tetrachloroethene	5.	
79-34-5	1,1,2,2-Tetrachloroethane	5.	
108-88-3	Toluene	5.	
108-90-7	Chlorobenzene	5.	
100-41-4	Ethylbenzene	5.	
100-42-5	Styrene	5.	
133-02-7	Xylene (total)	5.	

1-23-93 CLK

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05690DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SH3DUPE

Sample wt/vol: 5.142 (g/mL) G Lab File ID: >PA215

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.1 Date Analyzed: 4/02/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-05352DUP

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD9DUPE

Sample wt/vol: 5.160 (g/mL) G Lab File ID: >OD105

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 2.4 Date Analyzed: 3/31/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10	JB UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10	JB U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1-28-93

1-28-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05352DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD9DUPE

Sample wt/vol: 5.160 (g/mL) G Lab File ID: >OD105

Level: (low/med) LOW Data Received: 03/24/92

% Moisture: not dec. 2.4 Date Analyzed: 3/31/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-05353DUP

Lab Name:BATTELLE-PNL Contract:------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD7DUPE

Sample wt/vol: 5.118 (g/mL) G Lab File ID: >OD109

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec.1.6 Date Analyzed: 3/31/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	JB UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	JB U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1-18-93 dm

1-18-93 dm

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

92-05353DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SD7DUPE

Sample wt/vol: 5.118 (g/mL) G Lab File ID: >OD109

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 1.6 Date Analyzed: 3/31/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104767	1-Hexanol, 2-ethyl-	30.03	5.	J
2.	74381401	Propanoic acid, 2-methyl-, 1	31.28	66.	J
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
92-05490DUP

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF7DUPE

Sample wt/vol: 5.133 (g/mL) G Lab File ID: >OD111

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 3.2 Date Analyzed: 3/31/92

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10 ~~8.~~	~~J~~ UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10 ~~4.~~	~~J~~ U
71-55-6	1,1,1-Trichloroethane	2.	J
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1-18-93

1-18-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

92-05490DUPE

Lab Name: BATTELLE-PNL Contract: ------

Lab Code: ------ Case No.: ----- SAS No.: ----- SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: B01SF7DUPE

Sample wt/vol: 5.133 (g/mL) G Lab File ID: >OD111

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 3.2 Date Analyzed: 3/31/92

Column: CAP Dilution Factor: 1.00000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	74381401	Propanoic acid, 2-methyl-, 1	31.33	10.	J
2.					
3.					
4.					
5.					
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SEMI-VOLATILE ORGANIC DATA VALIDATION CHECKLIST - FORM A-2

PROJECT: 200 BP1 Site Investigation	REVIEWER: PNL	DATE: 1/22/93
LABORATORY: Battelle PNL	CASE: B015C7	SDG: 16
SAMPLES/MATRIX:		
B015C7, B015C9, B015D9, B015D7, B015F7		
B015F9, B015G3, B015G7, B015G9, + B015H3.		

1. DATA PACKAGE COMPLETENESS

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

Data Package Item	Present?:	Yes	No	N/A
Case Narrative		✓	—	—
Data Summary		✓	—	—
Chain-of-Custody		✓	—	—
QC Summary				
Surrogate report		✓	—	—
MS/MSD report		✓	—	—
Blank summary report		✓	—	—
GC/MS tuning report		✓	—	—
Internal standard summary report		✓	—	—
Sample Data				
Sample reports		✓	—	—
TIC reports for each sample		✓	—	—
RIC reports for all samples		✓	—	—
Raw and corrected spectra for all detected results		✓	—	—
Raw and corrected library search data for all reported TIC		✓	—	—
Quantitation and calculation data for all TIC		✓	—	—
Standards Data				
Initial calibration report		✓	— (1)	—
RIC and quantitation reports for initial calibration		—	✓	—
Continuing calibration reports		✓	—	—
RIC and quantitation reports for cont. calibrations		✓	—	—
Internal standard summary report		✓	—	—
Raw QC Data				
Tuning report, spectra and mass lists		✓	—	—
Blank analysis reports		✓	—	—
TIC reports for all blanks		✓	—	—
RIC and quantitation reports for blanks		✓	—	—
Raw and corrected spectra for all detected results in blanks		✓	—	—
Raw and corrected library search data for all reported TIC		✓	—	—
Quantitation and calculation data for all TIC		✓	—	—
MS/MSD report forms		✓	—	—

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

2. HOLDING TIMES

see form B-1

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

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

3. INSTRUMENT CALIBRATION, TUNING AND PERFORMANCE CHECKS

3.1 GC/MS TUNING AND PERFORMANCE CHECKS

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

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

3.2 INITIAL CALIBRATION

Is an initial calibration report provided for all instruments?	(Yes)	No	N/A
Are all RSD values ≤30% (2/88 SOW)?	(Yes)(1)	No	N/A
Are all RRF values ≥0.05 (2/88 SOW)?	(Yes)(1)	No	N/A
Are all applicable RSD values ≤20.5% (3/90 SOW)?	Yes	No	(N/A)
Are all applicable RSD values ≤40% (3/90 SOW)?	Yes	No	(N/A)

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

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

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

3.3. CONTINUING CALIBRATION

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

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

Are all %D values ≤25% (2/88 or 3/90 SOW)? RPV 1/22/93 (Yes) (No) N/A — (1) See Form B-2

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

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

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

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

4. BLANKS

4.1 LABORATORY BLANKS

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

Are compounds reported in the laboratory blanks? see Form B-3 (Yes) No N/A

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

4.2. FIELD BLANKS

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

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

5. ACCURACY

5.1 SURROGATE RECOVERY/SYSTEM MONITORING COMPOUND RECOVERY

Are any surrogate recoveries out of specification? (Yes) (2) No N/A

Are any surrogate recoveries < 10%? (Yes) (2) No N/A

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

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

5.2 MATRIX SPIKE RECOVERY

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

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

Are there any calculation errors? Yes (No) N/A

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

5.3 PERFORMANCE AUDIT SAMPLES

BJH 1/22/93

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

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

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATES

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

Are there any calculation errors? Yes (No) N/A

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

6.2 FIELD DUPLICATE SAMPLES

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

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

6.3 FIELD SPLIT SAMPLES

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

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

7. SYSTEM PERFORMANCE

7.1 INTERNAL STANDARDS PERFORMANCE

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

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

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

8. COMPOUND IDENTIFICATION AND QUANTITATION

8.1 COMPOUND IDENTIFICATION

Are detected compounds within ±0.06 relative retention time units of the associated calibration standard?	(Yes)	No	N/A
Are all ions at a relative intensity of ≥10% in the standard spectra present in the sample spectra?	(Yes)	No	N/A
Do the relative intensities between the standard and sample spectra agree within 20%?	(Yes)	No	N/A
Have all ions >10% in the sample spectra that are not present in the standard spectra been reviewed for possible background contamination?	(Yes)	No	N/A
Are molecular ions in the reference spectrum present in the sample spectrum?	(Yes)	No	N/A

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

8.2 REPORTED RESULTS AND QUANTITATION LIMITS

Has the laboratory used the correct RRF values and internal standards for quantitation?	(Yes)	No	N/A
Are results and quantitation limits calculated properly?	(Yes)	No	N/A
Has the laboratory reported the sample quantitation limits within 5xCRQL values?	(Yes)	No	N/A

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

8.3 TENTATIVELY IDENTIFIED COMPOUNDS

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

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

9. OVERALL ASSESSMENT AND SUMMARY

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

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

COMMENTS (attach additional sheets as necessary):

(1) The initial calibration raw data was not supplied. Therefore, the reported RRFs could not be validated.

(2) The laboratory reported that the reason tribromophenol was not recovered in sample B0LEF7 was that the surrogate was nitrated. Therefore the 0% recovery is acceptable and the results for the affected sample are acceptable, and qualified as estimated because of the nitrating conditions in the sample extract.

HOLDING TIME SUMMARY - FORM B-1

SDG: 16	REVIEWER: BJC	DATE: 1/22/93	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
B01SC7	Semi VOA	3/13/92	3/26/92	4/16/92	13	21	UJ/J
B01SC9	"	3/16/92	"	"	10	"	UJ/J
B01SD9	"	3/19/92	"	"	7	"	None
B01SD7	"	3/19/92	"	"	7	"	None
B01SF7	"	3/23/92	4/2/92	4/15/92	10	13	UJ/J
B01SF9	"	3/25/92	4/2/92	"	8	"	"
B01SG3	"	3/25/92	4/2/92	"	8	"	"
B01SG7	"	3/26/92	4/2/92	"	7	"	None
B01SG9	"	3/30/92	"	"	3	"	"
B01SH3	"	3/31/92	"	"	2	"	"

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 16	REVIEWER: [illegible]	DATE: 1/22/92	PAGE 1 OF 1		
COMMENTS:					
CALIB. TYPE: INITIAL CONTINUING		INSTRUMENT:			
CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
4/15/92	bis(2-chloroisopropyl) ether		30.9	B015F7, B015F9	UJ
"	"		"	B015G3, B015G7,	"
"	"		"	B015G9, & B015H3	"
4/15/92	3,3'-Dichlorobenzidine		76.5	same as above	UJ
4/16/92	bis(2-Chloroisopropyl) ether		75.8	B015C7, B015C9,	UJ
"	N-Nitroso-di-n-propylamine		26.5	B015D9, & B015D7	"
"	2-Nitroaniline		29.2	"	"
"	2,4-Dinitrophenol		28.2	"	"
"	4,6-Dinitro-2-methylphenol		28.2	"	"

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 16	REVIEWER: BJV			DATE: 1/22/93				PAGE 1 OF 1	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
SBLK87	Diethylphthalate	12Φ	J		ug/kg		1200	B015C7	33Φ U
"	Di-n-butylphthalate	16	J		"		16Φ	None	—

ACCURACY DATA SUMMARY - FORM B-4

SDG: 16	REVIEWER: KJV	DATE: 1/22/93	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B0157F7	2,4,6-Tribromophenol	0	B0157F7	Above ⊘ KJV 1/22/93
				J ⊘

PRECISION DATA SUMMARY - FORM B-5

SDG: 16	REVIEWER VGV	DATE: 1/22/93	PAGE 1 OF 1
COMMENTS: Precision data acceptable			

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER

CALCULATION SUMMARY - FORM B-6

SDG: 16	REVIEWER: [illegible]	DATE: 1/22/93	PAGE 1 OF ___
COMMENTS:			

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 16	REVIEWER: MJV	DATE: 1/22/93	PAGE 1 OF __
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	UJ / J	B01SC7, B01SC9,	Holding time
〃	〃	B01SF7, B01SF9,	violations for
〃	〃	B01SG3	extraction
Bis(2-chloroisopropyl)ether	UJ	B01SG7, B01SG9,	%D = 30.9 in
〃	〃	& B01SH3	cont. Cal.
3,3'-Dichlorobenzidene	UJ	B01SG7, B01SG9,	%D = 26.5 in
〃	〃	& B01SH3	cont. Cal.
Bis(2-chloroisopropyl)ether	UJ	B01SD9, B01SD7	%D = 75.6 in CC
4-Nitroaniline	UJ	〃 〃	%D = 26.5
2-Nitroaniline	UJ	〃 〃	%D = 29.2
2,4-Dinitrophenol	UJ	〃 〃	%D = 28.2
4,6-Dinitro-2-methylphenol	UJ	〃 〃	%D = 28.2
Diethylphthalate	350 U	B01SC7	Blank contamination
TICs in Blanks	R	All	Blank Contamination
Other TICs	N	All	Presumptive
〃	〃	〃	Evidence of
〃	〃	〃	Presence.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5270-E1

Sample wt/vol: 30.34 (g/mL) G Lab File ID: >DB604

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 4.96 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 8.05 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	350.	UJ
111-44-4	bis(2-Chloroethyl)Ether	350.	U
95-57-8	2-Chlorophenol	350.	U
541-73-1	1,3-Dichlorobenzene	350.	U
106-46-7	1,4-Dichlorobenzene	350.	U
100-51-6	Benzyl_alcohol	350.	U
95-50-1	1,2-Dichlorobenzene	350.	U
95-48-7	2-Methylphenol	350.	U
39638-32-9	bis(2-chloroisopropyl)ether	350.	U
106-44-5	4-Methylphenol	350.	U
621-64-7	N-Nitroso-Di-n-propylamine	350.	U
67-72-1	Hexachloroethane	350.	U
98-95-3	Nitrobenzene	350.	U
78-59-1	Isophorone	350.	U
88-75-5	2-Nitrophenol	350.	U
105-67-9	2,4-Dimethylphenol	350.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U
120-83-2	2,4-Dichlorophenol	350.	U
120-82-1	1,2,4-Trichlorobenzene	350.	U
91-20-3	Naphthalene	350.	U
106-47-8	4-Chloroaniline	350.	U
87-68-3	Hexachlorobutadiene	350.	U
59-50-7	4-Chloro-3-methylphenol	350.	U
91-57-6	2-Methylnaphthalene	350.	U
77-47-4	Hexachlorocyclopentadiene	350.	U
88-06-2	2,4,6-Trichlorophenol	350.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	350.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	350.	U
208-96-8	Acenaphthylene	350.	U
606-20-2	2,6-Dinitrotoluene	350.	U

KJV 1/22/93

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC7

Lab Name:BATTELLE-PNL Contract:-------

Lab Code:------- Case No.: ------- SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5270-E1

Sample wt/vol: 30.34 (g/mL) G Lab File ID: >DB604

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.4.96 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:8.05 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	350.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	350.	U
121-14-2	2,4-Dinitrotoluene	350.	U
84-66-2	Diethylphthalate	35¢ ~~230.~~	~~JB~~ UJ
7005-72-3	4-Chlorophenyl-phenylether	350.	UJ
86-73-7	Fluorene	350.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	350.	U
101-55-3	4-Bromophenyl-phenylether	350.	U
118-74-1	Hexachlorobenzene	350.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	350.	U
120-12-7	Anthracene	350.	U
84-74-2	Di-n-butylphthalate	350.	U
206-44-0	Fluoranthene	350.	U
129-00-0	Pyrene	350.	U
85-68-7	Butylbenzylphthalate	350.	U
91-94-1	3,3'-Dichlorobenzidine	690.	U
56-55-3	Benzo(a)anthracene	350.	U
218-01-9	Chrysene	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate	46.	J
117-84-0	Di-n-octylphthalate	29.	J
205-99-2	Benzo(b)fluoranthene	350.	UJ
207-08-9	Benzo(k)fluoranthene	350.	U
50-32-8	Benzo(a)pyrene	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U
53-70-3	Dibenz(a,h)anthracene	350.	U
191-24-2	Benzo(g,h,i)perylene	350.	U

(1) - Cannot be separated from Diphenylamine

BPU 1/22/93

UJ BPU 1/22/93

UJ BPU 1/22/93

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5271-E1

Sample wt/vol: 30.85 (g/mL) G Lab File ID: >DB605

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.2.50 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:9.60 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	330.	UJ
111-44-4	bis(2-Chloroethyl)Ether	330.	U
95-57-8	2-Chlorophenol	330.	U
541-73-1	1,3-Dichlorobenzene	330.	U
106-46-7	1,4-Dichlorobenzene	330.	U
100-51-6	Benzyl_alcohol	330.	U
95-50-1	1,2-Dichlorobenzene	330.	U
95-48-7	2-Methylphenol	330.	U
39638-32-9	bis(2-chloroisopropyl)ether	330.	U
106-44-5	4-Methylphenol	330.	U
621-64-7	N-Nitroso-Di-n-propylamine	330.	U
67-72-1	Hexachloroethane	330.	U
98-95-3	Nitrobenzene	330.	U
78-59-1	Isophorone	330.	U
88-75-5	2-Nitrophenol	330.	U
105-67-9	2,4-Dimethylphenol	330.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	330.	U
120-83-2	2,4-Dichlorophenol	330.	U
120-82-1	1,2,4-Trichlorobenzene	330.	U
91-20-3	Naphthalene	330.	U
106-47-8	4-Chloroaniline	330.	U
87-68-3	Hexachlorobutadiene	330.	U
59-50-7	4-Chloro-3-methylphenol	330.	U
91-57-6	2-Methylnaphthalene	330.	U
77-47-4	Hexachlorocyclopentadiene	330.	U
88-06-2	2,4,6-Trichlorophenol	330.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	330.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	330.	U
208-96-8	Acenaphthylene	330.	U
606-20-2	2,6-Dinitrotoluene	330.	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5271-E1

Sample wt/vol: 30.85 (g/mL) G Lab File ID: >DB605

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.2.50 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:9.60 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	330.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	330.	U
121-14-2	2,4-Dinitrotoluene	330.	U
84-66-2	Diethylphthalate	330.	U
7005-72-3	4-Chlorophenyl-phenylether	330.	U
86-73-7	Fluorene	330.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	330.	U
101-55-3	4-Bromophenyl-phenylether	330.	U
118-74-1	Hexachlorobenzene	330.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	330.	U
120-12-7	Anthracene	330.	U
84-74-2	Di-n-butylphthalate	330.	U
206-44-0	Fluoranthene	330.	U
129-00-0	Pyrene	330.	U
85-68-7	Butylbenzylphthalate	330.	U
91-94-1	3,3'-Dichlorobenzidine	660.	U
56-55-3	Benzo(a)anthracene	330.	U
218-01-9	Chrysene	330.	U
117-81-7	bis(2-Ethylhexyl)phthalate	330.	U
117-84-0	Di-n-octylphthalate	330.	U
205-99-2	Benzo(b)fluoranthene	330.	U
207-08-9	Benzo(k)fluoranthene	330.	U
50-32-8	Benzo(a)pyrene	330.	U
193-39-5	Indeno(1,2,3-cd)pyrene	330.	U
53-70-3	Dibenz(a,h)anthracene	330.	U
191-24-2	Benzo(g,h,i)perylene	330.	U

bpv 1/22/93

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5352-E1

Sample wt/vol: 30.15 (g/mL) G Lab File ID: >DB606

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 2.36 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 10.03 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	U
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	UJ
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	UJ
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	UJ
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

HGW 1/22/93

HGW 1/22/93

FORM I SV-1 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5352-E1

Sample wt/vol: 30.15 (g/mL) G Lab File ID: >DB606

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec.2.36 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 10.03 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	UJ
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	UJ
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	680.	U
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	340.	U
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5353-E1

Sample wt/vol: 30.92 (g/mL) G Lab File ID: >DB607

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec.1.59 dec. -- Date Extractad: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:9.57 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	330.	U
111-44-4	bis(2-Chloroethyl)Ether	330.	U
95-57-8	2-Chlorophenol	330.	U
541-73-1	1,3-Dichlorobenzene	330.	U
106-46-7	1,4-Dichlorobenzene	330.	U
100-51-6	Benzyl alcohol	330.	U
95-50-1	1,2-Dichlorobenzene	330.	U
95-48-7	2-Methylphenol	330.	U
39638-32-9	bis(2-chloroisopropyl)ether	330.	(UJ)
106-44-5	4-Methylphenol	330.	U
621-64-7	N-Nitroso-Di-n-propylamine	330.	(UJ)
67-72-1	Hexachloroethane	330.	U
98-95-3	Nitrobenzene	330.	U
78-59-1	Isophorone	330.	U
88-75-5	2-Nitrophenol	330.	U
105-67-9	2,4-Dimethylphenol	330.	U
65-85-0	Benzoic acid	1600.	U
111-91-1	bis(2-Chloroethoxy)methane	330.	U
120-83-2	2,4-Dichlorophenol	330.	U
120-82-1	1,2,4-Trichlorobenzene	330.	U
91-20-3	Naphthalene	330.	U
106-47-8	4-Chloroaniline	330.	U
87-68-3	Hexachlorobutadiene	330.	U
59-50-7	4-Chloro-3-methylphenol	330.	U
91-57-6	2-Methylnaphthalene	330.	U
77-47-4	Hexachlorocyclopentadiene	330.	U
88-06-2	2,4,6-Trichlorophenol	330.	U
95-95-4	2,4,5-Trichlorophenol	1600.	U
91-58-7	2-Chloronaphthalene	330.	U
88-74-4	2-Nitroaniline	1600.	(UJ)
131-11-3	Dimethylphthalate	330.	U
208-96-8	Acenaphthylene	330.	U
606-20-2	2,6-Dinitrotoluene	330.	U

1/22/93

1/22/93

FORM I SV-1 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5353-E1

Sample wt/vol: 30.92 (g/mL) G Lab File ID: >DB607

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 1.59 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 9.57 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1600.	U
83-32-9	Acenaphthene	330.	U
51-28-5	2,4-Dinitrophenol	1600.	UJ
100-02-7	4-Nitrophenol	1600.	U
132-64-9	Dibenzofuran	330.	U
121-14-2	2,4-Dinitrotoluene	330.	U
84-66-2	Diethylphthalate	330.	U
7005-72-3	4-Chlorophenyl-phenylether	330.	U
86-73-7	Fluorene	330.	U
100-01-6	4-Nitroaniline	1600.	U
534-52-1	4,6-Dinitro-2-methylphenol	1600.	UJ
86-30-6	N-Nitrosodiphenylamine (1)	330.	U
101-55-3	4-Bromophenyl-phenylether	330.	U
118-74-1	Hexachlorobenzene	330.	U
87-86-5	Pentachlorophenol	1600.	U
85-01-8	Phenanthrene	330.	U
120-12-7	Anthracene	330.	U
84-74-2	Di-n-butylphthalate	330.	U
206-44-0	Fluoranthene	330.	U
129-00-0	Pyrene	330.	U
85-68-7	Butylbenzylphthalate	330.	U
91-94-1	3,3'-Dichlorobenzidine	660.	U
56-55-3	Benzo(a)anthracene	330.	U
218-01-9	Chrysene	330.	U
117-81-7	bis(2-Ethylhexyl)phthalate	330.	U
117-84-0	Di-n-octylphthalate	17.	J
205-99-2	Benzo(b)fluoranthene	330.	U
207-08-9	Benzo(k)fluoranthene	330.	U
50-32-8	Benzo(a)pyrene	330.	U
193-39-5	Indeno(1,2,3-cd)pyrene	330.	U
53-70-3	Dibenz(a,h)anthracene	330.	U
191-24-2	Benzo(g,h,i)perylene	330.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5490-E1

Sample wt/vol: 30.361 (g/mL) G Lab File ID: >DB504

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 3.24 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 10.26 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	UJ
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

VGP 1/22/93

FORM I SV-1 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF7

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5490-E1

Sample wt/vol: 30.361 (g/mL) G Lab File ID: >DB504

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.3.24 dec. -- Date Extracted:04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:10.26 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	680.	U
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	340.	U
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

BAV 1/22/93

FORM I SV-2 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5491-E1

Sample wt/vol: 30.240 (g/mL) G Lab File ID: >DB505

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.24 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.76 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	UJ
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

HQV 1/22/93

FORM I SV-1 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5491-E1

Sample wt/vol: 30.240 (g/mL) G Lab File ID: >DB505

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.24 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.76 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	UJ
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	680.	U
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	340.	U
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

BOK 1/22/93

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG3

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5492-E1

Sample wt/vol: 30.295 (g/mL) G Lab File ID: >DB506

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec.4.23 dec. -- Date Extracted:04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:8.18 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	(UJ)
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	U
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

RPV 1/22/93

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5492-E1

Sample wt/vol: 30.295 (g/mL) G Lab File ID: >DB506

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 4.23 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 8.18 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U J
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	690.	U
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	31.	J
117-84-0	Di-n-octylphthalate	340.	U J
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

VGV 1/22/93

VGV 1/22/93

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5633-E1

Sample wt/vol: 30.394 (g/mL) G Lab File ID: >DB507

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.42 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.09 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	U
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	UJ
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

BJV 1/22/

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5633-E1

Sample wt/vol: 30.394 (g/mL) G Lab File ID: >DB507

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.42 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.09 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	47.	J
91-94-1	3,3'-Dichlorobenzidine	670.	UJ
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	84.	J
117-84-0	Di-n-octylphthalate	48.	J
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

BJV 1/22/93

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5634-E1

Sample wt/vol: 30.180 (g/mL) G Lab File ID: >DB508

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.01 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 6.88 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	U
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl_alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	UJ
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic_acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

BGV 1/22/93

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5634-E1

Sample wt/vol: 30.180 (g/mL) G Lab File ID: >DB508

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec.2.01 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 6.88 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	680.	(UJ) KPN 11/22/93
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	45.	J
117-84-0	Di-n-octylphthalate	11.	J
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SH3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: -------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5690-E1

Sample wt/vol: 30.319 (g/mL) G Lab File ID: >DB509

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.06 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.18 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340.	U
111-44-4	bis(2-Chloroethyl)Ether	340.	U
95-57-8	2-Chlorophenol	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U
100-51-6	Benzyl alcohol	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U
95-48-7	2-Methylphenol	340.	U
39638-32-9	bis(2-chloroisopropyl)ether	340.	UJ
106-44-5	4-Methylphenol	340.	U
621-64-7	N-Nitroso-Di-n-propylamine	340.	U
67-72-1	Hexachloroethane	340.	U
98-95-3	Nitrobenzene	340.	U
78-59-1	Isophorone	340.	U
88-75-5	2-Nitrophenol	340.	U
105-67-9	2,4-Dimethylphenol	340.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U
120-83-2	2,4-Dichlorophenol	340.	U
120-82-1	1,2,4-Trichlorobenzene	340.	U
91-20-3	Naphthalene	340.	U
106-47-8	4-Chloroaniline	340.	U
87-68-3	Hexachlorobutadiene	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U
91-57-6	2-Methylnaphthalene	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U
88-06-2	2,4,6-Trichlorophenol	340.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	340.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	340.	U
208-96-8	Acenaphthylene	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U

KPV 1/22/93

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SH3

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5690-E1

Sample wt/vol: 30.319 (g/mL) G Lab File ID: >DB509

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec.4.06 dec. -- Date Extracted:04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:7.18 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	340.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	340.	U
121-14-2	2,4-Dinitrotoluene	340.	U
84-66-2	Diethylphthalate	340.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U
86-73-7	Fluorene	340.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	340.	U
101-55-3	4-Bromophenyl-phenylether	340.	U
118-74-1	Hexachlorobenzene	340.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	340.	U
120-12-7	Anthracene	340.	U
84-74-2	Di-n-butylphthalate	340.	U
206-44-0	Fluoranthene	340.	U
129-00-0	Pyrene	340.	U
85-68-7	Butylbenzylphthalate	340.	U
91-94-1	3,3'-Dichlorobenzidine	690.	(UJ)
56-55-3	Benzo(a)anthracene	340.	U
218-01-9	Chrysene	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate	21.	J
117-84-0	Di-n-octylphthalate	340.	U
205-99-2	Benzo(b)fluoranthene	340.	U
207-08-9	Benzo(k)fluoranthene	340.	U
50-32-8	Benzo(a)pyrene	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U
53-70-3	Dibenz(a,h)anthracene	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U

(1) - Cannot be separated from Diphenylamine

BJV 1/22/93

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SH3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5690-E1

Sample wt/vol: 30.319 (g/mL) G Lab File ID: >DB509

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.06 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.18 Dilution Factor: 1.00000

Number TICs found: 11

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.47	930.	~~JAB~~ K
2.		Unknown	4.78	2700.	~~JAB~~ R
3.		Unknown	5.25	340.	J N
4.	57103	Hexadecanoic acid	26.89	250.	J
5.		Unknown	34.72	470.	J
6.		Unknown alcohol	36.38	250.	J
7.		Unknown alkane	38.25	400.	J
8.		Unknown alkane	40.22	150.	J
9.		Unknown	40.29	500.	J
10.	6971400	17-Pentatriacontene	42.96	140.	J
11.		Unknown	43.71	190.	J
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
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24.					
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27.					
28.					
29.					
30.					

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1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SG9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5634-E1

Sample wt/vol: 30.180 (g/mL) G Lab File ID: >DB508

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec.2.01 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 6.88 Dilution Factor: 1.00000

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	4.47	650.	~~JAB~~ R
2.	Unknown	4.76	340.	~~JAB~~ R
3. 126738	Phosphoric acid tributyl est	19.63	760.	JN
4.	Unknown	37.19	160.	JN
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1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SG7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5633-E1

Sample wt/vol: 30.394 (g/mL) G Lab File ID: >DB507

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec.2.42 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH:7.09 Dilution Factor: 1.00000

Number TICs found: 11

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	4.47	770.	~~JAB~~ R
2.	Unknown	4.77	2200.	~~JAB~~ R
3.	Unknown	5.21	240.	JN
4.	Unknown	5.25	800.	J
5. 104767	1-Hexanol, 2-ethyl-	5.72	470.	J
6.	Unknown	6.00	460.	J
7.	Unknown	7.00	160.	J
8.	Unknown	7.45	160.	J
9. 126738	Phosphoric acid tributyl est	19.76	15000.	J
10. 57103	Hexadecanoic acid	26.88	210.	J
11.	Unknown	34.26	150.	J
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FORM I SV-TIC 1/87 Rev.

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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SG3

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5492-E1

Sample wt/vol: 30.295 (g/mL) G Lab File ID: >DB506

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 4.23 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 8.18 Dilution Factor: 1.00000

Number TICs found: 6

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.47	680.	~~JAB~~ R
2.		Unknown	4.60	400.	JN
3.		Unknown	4.78	1700.	~~JAB~~ R
4.		Unknown	5.26	610.	JN
5.		Unknown	6.01	700.	JN
6.		Unknown	38.24	170.	JN
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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SF9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5491-E1

Sample wt/vol: 30.240 (g/mL) G Lab File ID: >DB505

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.24 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 7.76 Dilution Factor: 1.00000

Number TICs found: 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.46	700.	~~JAB~~ R
2.		Unknown	4.75	210.	~~JAB~~ R
3.		Unknown	34.27	150.	JN
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SF7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5490-E1

Sample wt/vol: 30.361 (g/mL) G Lab File ID: >DB504

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 3.24 dec. -- Date Extracted: 04/02/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/15/92

GPC Cleanup: (Y/N) N pH: 10.26 Dilution Factor: 1.00000

Number TICs found: 13 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		Unknown	4.47	800.	~~JAB~~	R
2.		Unknown	4.77	1500.	~~JAB~~	R
3.		Unknown	4.86	580.	~~JA~~	R
4.		Unknown	5.21	200.	J N	
5.		Unknown	7.36	440.	J	
6.	403190	2-FLUORO-4-NITROPHENOL	7.68	320.	J	
7.		Unknown	8.54	140.	J	
8.		Unknown	11.53	290.	J	
9.		Unknown	19.34	540.	J	
10.	126738	Phosphoric acid tributyl est	19.70	3800.	J	
11.	99285	Phenol, 2,6-dibromo-4-nitro-	22.95	310.	J	
12.	57103	Hexadecanoic acid	26.87	190.	J	
13.		Unknown	34.25	190.	J	
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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SD7

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5353-E1

Sample wt/vol: 30.92 (g/mL) G Lab File ID: >DB607

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 1.59 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 9.57 Dilution Factor: 1.00000

Number TICs found: 14

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.38	140.	JN
2.		Unknown	4.45	880.	~~JAB~~ R
3.		Unknown	4.76	1900.	~~JAB~~ R
4.		Unknown	5.18	200.	(JN)
5.		Unknown	5.22	370.	J
6.		Unknown	5.42	130.	J
7.		Unknown	5.70	240.	J
8.		Unknown	5.83	140.	J
9.		Unknown	5.99	570.	J
10.		Unknown	7.42	140.	J
11.		Unknown	19.58	530.	J
12.	80079	Benzene, 1,1'-sulfonylbis[4-	31.22	160.	~~JB~~ R
13.	791286	Phosphine oxide, triphenyl-	34.75	770.	~~JB~~ R
14.		Unknown	37.16	160.	JN
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B01SD9

Lab Name: BATTELLE-PNL Contract: -------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5352-E1

Sample wt/vol: 30.15 (g/mL) G Lab File ID: >DB606

Level: (low/med) LOW Date Received: 03/24/92

% Moisture: not dec. 2.36 dec. -- Date Extracted: 03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH: 10.03 Dilution Factor: 1.00000

Number TICs found: 7 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		Unknown	4.46	880.	~~JAB~~	R
2.		Unknown	4.74	600.	~~JAB~~	R
3.		Unknown	5.19	190.	JN	
4.	126738	Phosphoric acid tributyl est	19.59	590.	JN	
5.	80079	Benzene, 1,1'-sulfonylbis[4-	31.22	180.	~~JB~~	R
6.		Unknown	34.23	150.	JN	
7.	791286	Phosphine oxide, triphenyl-	34.75	860.	~~JB~~	R
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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SC9

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5271-E1

Sample wt/vol: 30.85 (g/mL) G Lab File ID: >DB605

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.2.50 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:9.60 Dilution Factor: 1.00000

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.45	800.	~~JAB~~
2.		Unknown	4.74	360.	~~JAB~~
3.	80079	Benzene, 1,1'-sulfonylbis[4-	31.22	220.	~~JB~~
4.	791286	Phosphine oxide, triphenyl-	34.76	930.	~~JB~~
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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01SC7

Lab Name:BATTELLE-PNL Contract:-------

Lab Code: ------- Case No.: ------ SAS No.: ------ SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 5270-E1

Sample wt/vol: 30.34 (g/mL) G Lab File ID: >DB604

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec.4.96 dec. -- Date Extracted:03/26/92

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 4/16/92

GPC Cleanup: (Y/N) N pH:8.05 Dilution Factor: 1.00000

Number TICs found: 30

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		Unknown	4.45	930.	~~JAB~~	K
2.		Unknown	4.76	1800.	~~JAB~~	K
3.		Unknown	5.39	180.	JN	
4.		Unknown	5.70	170.	J	
5.		Unknown	5.85	320.	J	
6.		Unknown	5.97	300.	J	
7.		Unknown	7.34	210.	J	
8.	403190	2-FLUORO-4-NITROPHENOL	7.65	410.	J	
9.	112403	Dodecane	8.58	410.	J	
10.		Unknown alkane	8.87	340.	J	
11.	95169	Benzothiazole	9.18	270.	J	
12.		Unknown alkane	10.16	770.	J	
13.	629505	Tridecane	10.79	970.	J	
14.		Unknown alkane	11.21	160.	J	
15.		Unknown	11.73	200.	J	
16.		Unknown alkane	12.66	890.	J	
17.	629594	Tetradecane	13.24	1200.	J	
18.		Unknown alkane	14.83	880.	J	
19.	629629	Pentadecane	15.80	880.	J	
20.	544763	Hexadecane	18.34	330.	J	
21.	126738	Phosphoric acid tributyl est	19.73	11000.	J	
22.	629787	Heptadecane	20.85	150.	J	
23.	99285	Phenol, 2,6-dibromo-4-nitro-	22.92	280.	J	
24.	89197693	DIBUTYL 3-HYDROXYBUTYL PHOSP	23.03	340.	J	
25.		Unknown alkane	23.26	160.	J	
26.		Unknown alkane	25.61	160.	J	
27.	57103	Hexadecanoic acid	26.83	280.	J	
28.	80079	Benzene, 1,1'-sulfonylbis[4-	31.22	300.	~~JB~~	R
29.		Unknown	33.36	190.	JN	
30.	791286	Phosphine oxide, triphenyl-	34.76	920.	~~JB~~	R

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FORM I SV-TIC 1/87 Rev.

PESTICIDE/PCB DATA VALIDATION CHECKLIST - FORM A-3

PROJECT: 200BP1 Site Investigation	REVIEWER: [illegible]	DATE: 1/20/93
LABORATORY: Battelle - PNL	CASE: B01SC7-PNL-064	SDG: 16
SAMPLES/MATRIX:		
B01SC7, B01SC9, B01SD9, B01SD7, B01SF7, B01SF9,		
B01SG3, B01SG7, B01SG9, and B01SH3 Soil		

1. DATA PACKAGE COMPLETENESS

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

Data Package Item	Present?: Yes	No	N/A
Case Narrative	✓		
Data Summary	✓		
Chain-of-Custody			
QC Summary			
Surrogate report	✓		
MS/MSD report	✓		
Blank summary report	✓		
Sample Data			
Sample reports	✓		
Chromatograms		✓ (1)	
GC integration reports	✓		
Worksheets		✓ (2)	
UV traces from GPC			✓
GC/MS confirmation spectra			✓
Standards Data			
Pesticides Evaluation Standards Summary			✓
Pesticides/PCB Standards Summary	✓		
Pesticides/PCB identification	✓		
Pesticides standard chromatograms	✓		
Raw QC Data			
Blank analysis report forms and chromatograms	✓		
MS/MSD report forms and chromatograms	✓		

Data Package Item	Present?:	Yes	No	N/A
Additional Data				
Moisture/% solids data sheets		✓		—
Reduction formulae		—	✓(3)	—
Instrument time logs		✓	—	—
Chemist notebook pages		—	✓(3)	—
Sample preparation sheets		—	✓(2)	—

2. HOLDING TIMES

see form B-1

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

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

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

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

3.1 INSTRUMENT PERFORMANCE (2/88 SOW)

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

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

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

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

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

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

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

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

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

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

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

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

3.2 CALIBRATIONS (2/88 SOW)

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

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

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

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

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

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

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

Are %D values for initial and subsequent standards ≤15% for quantitation standards and ≤20% for confirmation standards? Yes (No) N/A see Form B-

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

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

Is peak resolution acceptable? Yes No (N/A)

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

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

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

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

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

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

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

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

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

3.4 CALIBRATION VERIFICATION (3/90 SOW)

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

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

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

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

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

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

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

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

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

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

4. BLANKS

4.1 LABORATORY BLANKS

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

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

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

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

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

4.2 FIELD BLANKS

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

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

5. ACCURACY

5.1 SURROGATE RECOVERY

see Form B-4

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

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

5.2 MATRIX SPIKE RECOVERY

Has the laboratory analyzed a MS/MSD per matrix for the the sample group?	(Yes)	No	N/A
Are MS/MSD recoveries within specification?	Yes	(No)	N/A (see Form B-5 and B-4)
Are there any calculation or transcription errors?	Yes	No	(N/A) (2)

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

5.3 PERFORMANCE AUDIT SAMPLES

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

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

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES

See forms B-4-4B-1

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

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

6.2 FIELD DUPLICATE SAMPLES

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

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

6.3 FIELD SPLIT SAMPLES

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

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

7. COMPOUND IDENTIFICATION AND QUANTITATION

7.1 COMPOUND IDENTIFICATION

Do positive results meet the retention time window criteria? Yes No (N/A) (4)

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

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

Do retention times and relative peak height ratios match the expected patterns for multipeak compounds (PCB, toxaphene or chlordane)? (Yes) (4) No N/A

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

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

7.2 REPORTED RESULTS AND QUANTITATION LIMITS

(2) (4)

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

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

8. OVERALL ASSESSMENT AND SUMMARY

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

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

COMMENTS (attach additional sheets as necessary):

(1) PBLK93 raw data for confirmation column not supplied. Lab reported that file could not be retrieved from archive.

(2) Laboratory did not provide adequate sample preparation information. Therefore sample result calculations could not be verified. The reported results are considered acceptable except where noted in this report.

(3) Reduction formulae for sample concentrations in ALO-346 could not be duplicated because ~~sample~~ prep. results for ~~a~~ preparation sheet not provided.

BJV 1/20/93

(4) There was a possible positive hit for AR-1248 in sample B015F9, however, the actual result could not be calculated because the lab did not provide sample preparation info. The amount is estimated to be 100 ug/kg for this sample.

HOLDING TIME SUMMARY - FORM B-1

SDG: 16	REVIEWER: [illegible]	DATE: 1/24/93	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
B01SC7	Pest/PCB	3/13/92	3/26/92	4/25/92	13	30	~~J~~/UJ
B01SC9	"	3/16/92	"	"	10	"	UJ
B01SD9	"	3/19/92	"	"	7	"	None
B01SD7	"	3/19/92	"	"	7	"	None
B01SF7	"	3/23/92	3/31/92	4/25/92	8	26	UJ
B01SF9	"	3/25/92	"	4/25/92	6	"	None
B01SG3	"	3/25/92	"	4/25/92	6	"	"
B01SG7	"	3/26/92	"	4/25/92	5	"	"
B01SG9	"	3/30/92	"	4/25/92	1	"	"
B01SH3	"	3/31/92	"	4/25/92	0	"	"

no detects in sample 1/24/93

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 16	REVIEWER: [illegible]	DATE: 1/20/93		PAGE 1 OF ___	
COMMENTS:					
CALIB. TYPE:	INITIAL CONTINUING	INSTRUMENT: WB60701 -GC/ECD			
CALIB. DATE	COMPOUND	~~RF~~ CF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
4/25/92	4,4'-DDD	2821.81	21.0	SDG 16	J ~~J. none~~
"	Methoxychlor	1198.47	22.4	"	J ~~None~~
"	α-BHC	7815.70	16.8	"	None
"	β-BHC	3764.25	17.0	"	"
"	δ-BHC	6271.38	17.6	"	"
"	γ-BHC	7006.30	16.6	"	"
"	Heptachlor	6460	20.9	"	J
"	Heptachlor epoxide	5471	15.2	"	None
"	Endosulfan I	4838	16.9	"	"
"	4,4'-DDE	4079	23.4	"	J
"	Endrin	3435.49	16.8	"	None
"	4,4'-DDD	2894	24.2	"	J
"	4,4'-DDT	2884	21.4	"	J
"	Methoxychlor	1217	24.3	"	J

BDK Cont. col. ~~only~~ 1/20/92

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 16	REVIEWER: KPV	DATE: 1/20/93	PAGE 1 OF 1
COMMENTS: No compounds detected in blanks			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER

ACCURACY DATA SUMMARY - FORM B-4

SDG: 16	REVIEWER: KGV	DATE: 1/20/93	PAGE 1 OF 1	
COMMENTS: Surrogates for MS are not critical				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
Matrix Spike	DBC	152	only MSD	None
All MS compounds	in MSD of B015H3	> limit	~~only MSD~~ KGV 1/20/93	
			All in SB616	UJ

PRECISION DATA SUMMARY - FORM B-5

SDG: 16	REVIEWER KPV	DATE: 1/20/93	PAGE 1 OF 1

COMMENTS: Spike may have been added twice to MSD

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
All spike compounds	B01SH3 MSD	B01SH3MS	Limit	All in SB16	UJ

CALCULATION SUMMARY - FORM B-6

SDG: 16	REVIEWER: [illegible]	DATE: 1/20/93	PAGE 1 OF 1

COMMENTS: Calculations for sample concentrations could not be reproduced since the extract volume, and injection volume were not provided by the laboratory. Therefore, results are considered possibly suspect, however, since no detects were reported, no action was taken.

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 16	REVIEWER: [illegible]	DATE: 1/29/93	PAGE 1 OF 1
COMMENTS: All results qualified UJ			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05270

Sample wt/vol: 30.34 (g/mL)G Lab File ID: >02448

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 4.96 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 8.05 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	UJ
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SC9

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05271

Sample wt/vol: 30.85 (g/mL)G Lab File ID: >02449

Level: (low/med) LOW Date Received: 03/19/92

% Moisture: not dec. 2.5 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 9.6 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.00	UJ
319-85-7	Beta-BHC	8.00	U
319-86-8	Delta-BHC	8.00	U
58-89-9	Gamma-BHC (Lindane)	8.00	U
76-44-8	Heptachlor	8.00	U
309-00-2	Aldrin	8.00	U
1024-57-3	Heptachlor Epoxide	8.00	U
959-98-8	Endosulfan I	8.00	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	80.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	80.00	U
5103-74-2	gamma-Chlordane	80.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	80.00	U
11104-28-2	Aroclor-1221	80.00	U
11141-16-5	Aroclor-1232	80.00	U
53469-21-9	Aroclor-1242	80.00	U
12672-29-6	Aroclor-1248	80.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD9

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05352

Sample wt/vol: 30.15 (g/mL) G Lab File ID: >02450

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.36 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 10 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.20	U J
319-85-7	Beta-BHC	8.20	U
319-86-8	Delta-BHC	8.20	U
58-89-9	Gamma-BHC (Lindane)	8.20	U
76-44-8	Heptachlor	8.20	U
309-00-2	Aldrin	8.20	U
1024-57-3	Heptachlor Epoxide	8.20	U
959-98-8	Endosulfan I	8.20	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	82.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	82.00	U
5103-74-2	gamma-Chlordane	82.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	82.00	U
11104-28-2	Aroclor-1221	82.00	U
11141-16-5	Aroclor-1232	82.00	U
53469-21-9	Aroclor-1242	82.00	U
12672-29-6	Aroclor-1248	82.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SD7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05353

Sample wt/vol: 30.92 (g/mL)G Lab File ID: >02455

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 1.59 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 9.57 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	7.90	UJ
319-85-7	Beta-BHC	7.90	U
319-86-8	Delta-BHC	7.90	U
58-89-9	Gamma-BHC (Lindane)	7.90	U
76-44-8	Heptachlor	7.90	U
309-00-2	Aldrin	7.90	U
1024-57-3	Heptachlor Epoxide	7.90	U
959-98-8	Endosulfan I	7.90	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	79.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	79.00	U
5103-74-2	gamma-Chlordane	79.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	79.00	U
11104-28-2	Aroclor-1221	79.00	U
11141-16-5	Aroclor-1232	79.00	U
53469-21-9	Aroclor-1242	79.00	U
12672-29-6	Aroclor-1248	79.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05490

Sample wt/vol: 30.36 (g/mL)G Lab File ID: >02456

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 3.24 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 10.2 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.20	UJ
319-85-7	Beta-BHC	8.20	U
319-86-8	Delta-BHC	8.20	U
58-89-9	Gamma-BHC (Lindane)	8.20	U
76-44-8	Heptachlor	8.20	U
309-00-2	Aldrin	8.20	U
1024-57-3	Heptachlor Epoxide	8.20	U
959-98-8	Endosulfan I	8.20	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	82.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	82.00	U
5103-74-2	gamma-Chlordane	82.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	82.00	U
11104-28-2	Aroclor-1221	82.00	U
11141-16-5	Aroclor-1232	82.00	U
53469-21-9	Aroclor-1242	82.00	U
12672-29-6	Aroclor-1248	82.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SF9

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05491

Sample wt/vol: 30.24 (g/mL)G Lab File ID: >02457

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 2.24 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 7.76 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	U
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG3

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05492

Sample wt/vol: 30.29 (g/mL) G Lab File ID: >02458

Level: (low/med) LOW Date Received: 03/27/92

% Moisture: not dec. 4.23 dec. Date Extracted: 03/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 8.18 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	(UJ)
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

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1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG7

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05633

Sample wt/vol: 30.39 (g/mL)G Lab File ID: >02460

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.42 dec. Date Extracted: 04/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 7.09 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	UJ
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

BDV 1/29/93

FORM I PEST 1/89 Rev.

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SG9

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05634

Sample wt/vol: 30.18 (g/mL)G Lab File ID: >02461

Level: (low/med) LOW Date Received: 03/31/92

% Moisture: not dec. 2.01 dec. Date Extracted: 04/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 6.88 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.10	(UJ)
319-85-7	Beta-BHC	8.10	U
319-86-8	Delta-BHC	8.10	U
58-89-9	Gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor Epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1013-07-8	Endosulfan Sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin Ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

KDV 1/20/9

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01SH3

Lab Name: Battelle PNL Contract:

Lab Code: PNL Case No.: SAS No.: SDG No.: 16

Matrix: (soil/water) SOIL Lab Sample ID: 92-05690

Sample wt/vol: 30.31 (g/mL)G Lab File ID: >02462

Level: (low/med) LOW Date Received: 04/01/92

% Moisture: not dec. 4.06 dec. Date Extracted: 04/02/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/25/92

GPC Cleanup: (Y/N) N pH: 7.18 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	Alpha-BHC	8.30	U
319-85-7	Beta-BHC	8.30	U
319-86-8	Delta-BHC	8.30	U
58-89-9	Gamma-BHC (Lindane)	8.30	U
76-44-8	Heptachlor	8.30	U
309-00-2	Aldrin	8.30	U
1024-57-3	Heptachlor Epoxide	8.30	U
959-98-8	Endosulfan I	8.30	U
60-57-1	Dieldrin	17.00	U
72-55-9	4,4'-DDE	17.00	U
72-20-8	Endrin	17.00	U
33213-65-9	Endosulfan II	17.00	U
72-54-8	4,4'-DDD	17.00	U
1013-07-8	Endosulfan Sulfate	17.00	U
50-29-3	4,4'-DDT	17.00	U
72-43-5	Methoxychlor	83.00	U
53494-70-5	Endrin Ketone	17.00	U
5103-71-9	alpha-Chlordane	83.00	U
5103-74-2	gamma-Chlordane	83.00	U
8001-35-2	Toxaphene	170.00	U
12674-11-2	Aroclor-1016	83.00	U
11104-28-2	Aroclor-1221	83.00	U
11141-16-5	Aroclor-1232	83.00	U
53469-21-9	Aroclor-1242	83.00	U
12672-29-6	Aroclor-1248	83.00	U
11097-69-1	Aroclor-1254	170.00	U
11096-82-5	Aroclor-1260	170.00	U

KDL 1/20/93

FORM I PEST 1/89 Rev.

ICP data only

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST - FORM A-6

PROJECT: 200BP-1 Site Investigation	REVIEWER: KJW	DATE: 1/25/93
LABORATORY: Battelle PNL	CASE: B015C7-MB04	SDG: 16
SAMPLES/MATRIX:		
B015C7, B015C9, B015D9, B015D7, B015F7, B015F9, B015G3,		
B015G7, B015G9, and B015H3. Soils		

1. COMPLETENESS AND CONTRACT COMPLIANCE

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

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

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

2. HOLDING TIMES

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

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

3. INITIAL CALIBRATIONS

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

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

Was a midrange cyanide standard distilled? Yes No (N/A)

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

4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

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

Are there calculation errors? Yes (No) N/A

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

5. ICP INTERFERENCE CHECK SAMPLE

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

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

Are there calculation errors? Yes (No) N/A

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

6. LABORATORY BLANKS

See Form B-3

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

ACTION: Qualify all associated sample results for any analyte <5 times the amount in any laboratory blank as nondetected (U). If analyte concentrations in the blank are >CRDL or below the negative CRDL, verify the laboratory has redigested and reanalyzed associated samples with analyte concentrations <10 times the blank concentration. If the laboratory has not redigested and reanalyzed the samples, note in the validation narrative.

7. FIELD BLANKS

ABV 11/27/93

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

ACTION: Qualify all sample results for any analyte <5 times the amount in any valid field blank as nondetected (U).

8. MATRIX SPIKE SAMPLE ANALYSIS

See Form B-4

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

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

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

9. LABORATORY CONTROL SAMPLE

See Form B-4

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

Are there calculation errors? Yes (No) N/A

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

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

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

10. PERFORMANCE AUDIT ANALYSES

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

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

11. DUPLICATE SAMPLE ANALYSIS

See Form 13-5

Are RPD values acceptable? Yes (No) N/A

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

12. ICP SERIAL DILUTION

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

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

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

13. FIELD DUPLICATE SAMPLES

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

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

14. FIELD SPLIT SAMPLES

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

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

1516. FURNACE ATOMIC ABSORPTION QUALITY CONTROL

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

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

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

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

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

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

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

17. ANALYTE QUANTITATION AND DETECTION LIMITS

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

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

18. OVERALL ASSESSMENT AND SUMMARY

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

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

COMMENTS (attach additional sheets as necessary):

Please see the attached forms for the qualifiers added.

HOLDING TIME SUMMARY - FORM B-1

SDG: 16	REVIEWER: [illegible]	DATE: 1/25/93	PAGE 1 OF 1
COMMENTS: All ICP holding times met.			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 16	REVIEWER: [illegible]	DATE: 1/25/93	PAGE 1 OF 1
COMMENTS: ICAL & CCALs acceptable			
CALIB. TYPE: INITIAL CONTINUING		INSTRUMENT:	

CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 16	REVIEWER: [illegible]	DATE: 1/25/93	PAGE 1 OF 2

COMMENTS:

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
Blank	[illegible] 1/25/93				mg/kg				
~~Cobalt~~	Cobalt	1.2			~~mg/kg~~	6.0		B015D9	5.4 U
Blank	"	"			mg/kg	"		B015G9	5.4 U
Blank	Potassium	250			~~mg/kg~~	1250		B015C7	575 U
								B015C9	729 U
								B015D7	595 U
								B015D9	839 U
								B015F7	1130 U
								B015F9	863 U
								B015G7	767 U
								B015G9	981 U
Blank	Cadmium	4.3			mg/kg	21.5		B015C7	1.1 U
								B015C9	1.4 U
								B015D7	3.9 U
								B015D9	0.67 U
								B015F7	0.87 U
								B015F9	0.55 U
								B015G3	0.49 U

11/25/93

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: #16	REVIEWER:	DATE: 11.25.93	PAGE 2 OF 4
COMMENTS:			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
Blank	Calcium	4.3			mg/kg	21.5		B0156F	3.4U
1	1	1			1	1		B0156G	0.44U
1	1	1			1	1		B0156H	0.454

ACCURACY DATA SUMMARY - FORM B-4

SDG: 16	REVIEWER: KPV	DATE: 1/25/93	PAGE 1 OF 1	
COMMENTS:	KPV 1/25/93			
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
Cadmium	B0156-7 spike	70%	SDG 16	UJ
Manganese	B0156-7 spike	56%	SDG 16	J
Aluminum	LCS	53.6	"	J
Barium	LCS	129	"	J

KPV 1/25/93

PRECISION DATA SUMMARY - FORM B-5

SDG: 16	REVIEWER BJV	DATE: 1/25/93	PAGE 1 OF 1

COMMENTS:

COMPOUND	SAMPLE ID: B015G7	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
Aluminum	~~LCS~~ 1/25/93	B015G7D	31.0	SDG 16	J
Cadmium	B015G7	B015G7D	47.3	"	UJ
Calcium	"	"	32.3	"	J
Chromium	"	"	27.2	"	J
Copper	"	"	37.0	"	J
Iron	"	"	40.8	"	J
Magnesium	"	"	35.5	"	J
Manganese	"	"	37.1	"	J
Vanadium	"	"	38.4	"	J
Zinc ~~LCS~~ 1/25/93	"	"	41.6	"	J

CALCULATION SUMMARY - FORM B-6

SDG: 16	REVIEWER: [illegible]	DATE: 1/25/93	PAGE 1 OF 1
COMMENTS: All calculations checked were acceptable.			

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 16	REVIEWER: KJV	DATE: 1/25/93	PAGE 1 OF 1
COMMENTS: See Forms B-3, B-4, and B-5 for qualifiers added			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SC7

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05270-B

Level (low/med): LOW__ Date Received: 03/19/92

% Solids: _95.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5540		J*	P
7440-36-0	Antimony	3.2	U		P
7440-39-3	Barium	60.2			P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	1.1		UJN*	P
7440-70-2	Calcium	6820		J*	P
7440-47-3	Chromium	10.1		J*	P
7440-48-4	Cobalt	9.3	B		P
7440-50-8	Copper	18.3		J*	P
7439-89-6	Iron	21500		J*	P
7439-95-4	Magnesium	4270		J*	P
7439-96-5	Manganese	256		J N*	P
7440-02-0	Nickel	251			P
7440-09-7	Potassium	575	B	U	P
7440-23-5	Sodium	1460			P
7440-62-2	Vanadium	47.1		J*	P
7440-66-6	Zinc	38.2		J*	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SC9

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05271-B

Level (low/med): LOW__ Date Received: 03/19/92

% Solids: _97.5

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6460		J*	P	BDV 1/25/93
7440-36-0	Antimony	2.7	U		P	
7440-39-3	Barium	64.9			P	
7440-41-7	Beryllium	0.26	B		P	
7440-43-9	Cadmium	1.4		UN*J	P	BDV 1/25/93
7440-70-2	Calcium	10300		J*	P	
7440-47-3	Chromium	9.7		J*	P	
7440-48-4	Cobalt	8.0	B		P	
7440-50-8	Copper	15.2		J*	P	
7439-89-6	Iron	21100		J*	P	
7439-95-4	Magnesium	5300		J*	P	
7439-96-5	Manganese	329		JN*	P	
7440-02-0	Nickel	10.8			P	
7440-09-7	Potassium	729	B	UJ	P	BDV 1/25/93
7440-23-5	Sodium	679	B		P	
7440-62-2	Vanadium	39.7		J*	P	
7440-66-6	Zinc	41.9		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL_--_SOIL_SAMPLE,_ACID_LEACHED

DATE_ANALYZED:_20_MAY_1992

TASK_2_&_4_SDG#_16

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SD7

Lab Name: BATTELLE_PNL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL Lab Sample ID: 92-05353-B

Level (low/med): LOW Date Received: 03/24/92

% Solids: 98.4

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5850		J*	P	BJV 11/25/93
7440-36-0	Antimony	2.4	U		P	
7440-39-3	Barium	57.9			P	
7440-41-7	Beryllium	0.25	B		P	
7440-43-9	Cadmium	3.9		UN*J	P	BJV 11/25/93
7440-70-2	Calcium	6090		J*	P	
7440-47-3	Chromium	11.1		J*	P	
7440-48-4	Cobalt	7.2	B		P	
7440-50-8	Copper	16.5		J*	P	
7439-89-6	Iron	19700		J*	P	
7439-95-4	Magnesium	4310		J*	P	
7439-96-5	Manganese	271		JN*	P	
7440-02-0	Nickel	11.1			P	
7440-09-7	Potassium	595	B	U	P	BJV 11/25/93
7440-23-5	Sodium	1210			P	
7440-62-2	Vanadium	51.3		J*	P	
7440-66-6	Zinc	40.2		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SD9

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05352-B

Level (low/med): LOW__ Date Received: 03/24/92

% Solids: _97.6

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6460		J *	P	HPV 1/25/93
7440-36-0	Antimony	2.7	U		P	
7440-39-3	Barium	64.8			P	
7440-41-7	Beryllium	0.29	B		P	
7440-43-9	Cadmium	0.69	B	U N* J	P	HPV 1/25/93
7440-70-2	Calcium	8180		J *	P	
7440-47-3	Chromium	9.7		J *	P	
7440-48-4	Cobalt	5.4	B	U	P	HPV 1/25/93
7440-50-8	Copper	14.4		J *	P	
7439-89-6	Iron	16300		J *	P	
7439-95-4	Magnesium	4700		J *	P	
7439-96-5	Manganese	260		J N*	P	
7440-02-0	Nickel	8.8			P	
7440-09-7	Potassium	839	B	U	P	HPV 1/25/93
7440-23-5	Sodium	2070			P	
7440-62-2	Vanadium	34.8		J *	P	
7440-66-6	Zinc	34.7		J *	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

FORM I - IN

3/90

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SF7

Lab Name: BATTELLE_PNL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05490-B

Level (low/med): LOW__ Date Received: 03/27/92

% Solids: _96.8

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	7430		J*	P	KJV 1/25/93
7440-36-0	Antimony	2.5	U		P	
7440-39-3	Barium	55.8			P	
7440-41-7	Beryllium	0.31	B		P	
7440-43-9	Cadmium	0.87		U N* J	P	KJV 1/25/93
7440-70-2	Calcium	7900		J*	P	
7440-47-3	Chromium	13.5		J*	P	
7440-48-4	Cobalt	7.1	B		P	
7440-50-8	Copper	12.8		J*	P	
7439-89-6	Iron	17900		J*	P	
7439-95-4	Magnesium	5200		J*	P	
7439-96-5	Manganese	303		J N*	P	
7440-02-0	Nickel	74.1			P	
7440-09-7	Potassium	1130		U	P	KJV 1/25/93
7440-23-5	Sodium	1210			P	
7440-62-2	Vanadium	36.9		J*	P	
7440-66-6	Zinc	39.9		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SF9

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05491-B

Level (low/med): LOW__ Date Received: 03/27/92

% Solids: _97.8

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6140		J*	P	KDY 1/25/93
7440-36-0	Antimony	2.4	U		P	
7440-39-3	Barium	62.1			P	
7440-41-7	Beryllium	0.26	B		P	
7440-43-9	Cadmium	0.55	B	U N* J	P	KDY 1/25/93
7440-70-2	Calcium	7320		J*	P	
7440-47-3	Chromium	10.6		J*	P	
7440-48-4	Cobalt	6.3	B		P	
7440-50-8	Copper	12.4		J*	P	
7439-89-6	Iron	17500		J*	P	
7439-95-4	Magnesium	4390		J*	P	
7439-96-5	Manganese	293		J N*	P	
7440-02-0	Nickel	7.6			P	
7440-09-7	Potassium	863		U	P	KDY 1/25/93
7440-23-5	Sodium	947			P	
7440-62-2	Vanadium	41.9		J*	P	
7440-66-6	Zinc	37.1		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL_SAMPLE,_ACID_LEACHED

DATE_ANALYZED:_20_MAY_1992

TASK_2_&_4_SDG#_16

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SG3

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05492-B

Level (low/med): LOW__ Date Received: 03/27/92

% Solids: _95.8

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	8050		J*	P	KDV 1/25/93
7440-36-0	Antimony	3.2	U		P	
7440-39-3	Barium	80.1			P	
7440-41-7	Beryllium	0.38	B		P	
7440-43-9	Cadmium	0.49	B	J N* J	P	KDV 1/25/93
7440-70-2	Calcium	9680		J*	P	
7440-47-3	Chromium	10.0		J*	P	
7440-48-4	Cobalt	9.2	B		P	
7440-50-8	Copper	16.0		J*	P	
7439-89-6	Iron	24400		J*	P	
7439-95-4	Magnesium	5470		J*	P	
7439-96-5	Manganese	361		J N*	P	KDV 1/25/93
7440-02-0	Nickel	7.4	B		P	
7440-09-7	Potassium	1250			P	
7440-23-5	Sodium	327	B		P	
7440-62-2	Vanadium	59.7		J*	P	
7440-66-6	Zinc	45.2		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SG7

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05633-B

Level (low/med): LOW__ Date Received: 03/31/92

% Solids: _97.6

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	8010		J*	P	KPV 1/25/93
7440-36-0	Antimony	2.9	U		P	
7440-39-3	Barium	78.9			P	
7440-41-7	Beryllium	0.25	B		P	
7440-43-9	Cadmium	3.4		U N* J	P	KPV 1/25/93
7440-70-2	Calcium	8370		J*	P	
7440-47-3	Chromium	10.4		J*	P	
7440-48-4	Cobalt	9.1	B		P	
7440-50-8	Copper	17.8		J*	P	
7439-89-6	Iron	25900		J*	P	
7439-95-4	Magnesium	4670		J*	P	
7439-96-5	Manganese	325		J N*	P	
7440-02-0	Nickel	8.4			P	
7440-09-7	Potassium	767	B	U	P	KPV 1/25/93
7440-23-5	Sodium	1620			P	
7440-62-2	Vanadium	68.2		J*	P	
7440-66-6	Zinc	52.5		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL_--_SOIL_SAMPLE,_ACID_LEACHED

DATE_ANALYZED:_20_MAY_1992

TASK_2_&_4_SDG#_16

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SG9

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05634-B

Level (low/med): LOW__ Date Received: 03/31/92

% Solids: _98.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6430		J*	P	
7440-36-0	Antimony	2.6	U		P	
7440-39-3	Barium	64.1			P	
7440-41-7	Beryllium	0.25	B		P	
7440-43-9	Cadmium	0.44	B	U N* J	P	
7440-70-2	Calcium	7850		J*	P	
7440-47-3	Chromium	10.7		J*	P	
7440-48-4	Cobalt	5.4	B	U	P	
7440-50-8	Copper	11.6		J*	P	
7439-89-6	Iron	16900		J*	P	
7439-95-4	Magnesium	4710		J*	P	
7439-96-5	Manganese	266		J N*	P	
7440-02-0	Nickel	7.1			P	
7440-09-7	Potassium	981		U	P	
7440-23-5	Sodium	3270			P	
7440-62-2	Vanadium	38.3		J*	P	
7440-66-6	Zinc	33.3		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL_--_SOIL_SAMPLE,_ACID_LEACHED

DATE_ANALYZED:_20_MAY_1992

TASK_2_&_4_SDG#_16

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B01SH3

Lab Name: BATTELLE_PNL_____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 15--17

Matrix (soil/water): SOIL_ Lab Sample ID: 92-05690-B

Level (low/med): LOW__ Date Received: 04/01/92

% Solids: _95.9

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	8210		J*	P	BPV 1/25/93
7440-36-0	Antimony	2.9	U		P	
7440-39-3	Barium	86.3			P	
7440-41-7	Beryllium	0.36	B		P	
7440-43-9	Cadmium	0.45	B	U N* J	P	BPV 1/25/93
7440-70-2	Calcium	7310		J*	P	
7440-47-3	Chromium	9.8		J*	P	
7440-48-4	Cobalt	8.4	B		P	
7440-50-8	Copper	17.0		J*	P	
7439-89-6	Iron	23300		J*	P	
7439-95-4	Magnesium	4650		J*	P	
7439-96-5	Manganese	344		J N*	P	BPV 1/25/93
7440-02-0	Nickel	7.8			P	
7440-09-7	Potassium	1530			P	
7440-23-5	Sodium	319	B		P	
7440-62-2	Vanadium	56.4		J*	P	
7440-66-6	Zinc	45.8		J*	P	

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

ORIGINAL -- SOIL SAMPLE, ACID LEACHED

DATE ANALYZED: 20 MAY 1992

TASK 2 & 4 SDG# 16

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INORGANIC ANALYSIS DATA VALIDATION CHECKLIST - FORM A-6

PROJECT: 200-BP-1 Site Investigation	REVIEWER: R. Brown	DATE: 4/20 - 4/28/93
LABORATORY: Pacific Northwest Laboratory	CASE:	SDG: 16
SAMPLES/MATRIX: Full suite (all soil): B01SC7, B01SC9, B01SD9, B01SD7, B01SF7, B01SF9, B01SG3, B01SG7, B01SG9, B01SH3		
CLP suite only (soil unless otherwise noted): B01SD2, B01SD4, B01SD6, B01SF2, B01SF4, B01SF6, B01SG2, B01SG6, B01SH2, B01SH4, B01S74 (water), B01S90 (water)		

Note: ICP data checked by B. VandenBleo

1. COMPLETENESS AND CONTRACT COMPLIANCE

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

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

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

2. HOLDING TIMES

Have all samples been analyzed within holding times? See Holding Time Summary – Form B-1 Yes (No) N/A

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

3. INITIAL CALIBRATIONS

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

Are the correlation coefficients ≥0.995? See Calibration Data Summary – Form B-2 Yes (No) N/A

Was a midrange cyanide standard distilled? (Yes) No N/A

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

4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

Are ICV and CCV percent recoveries within control? See Calibration Data Summary – Form B-2 Yes (No) N/A

Are there calculation errors? Yes (No) N/A

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

5. ICP INTERFERENCE CHECK SAMPLE

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

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

Are there calculation errors? Yes No (N/A)

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

6. LABORATORY BLANKS

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

ACTION: Qualify all associated sample results for any analyte <5 times the amount in any laboratory blank as nondetected (U). If analyte concentrations in the blank are >CRDL or below the negative CRDL, verify the laboratory has redigested and reanalyzed associated samples with analyte concentrations <10 times the blank concentration. If the laboratory has not redigested and reanalyzed the samples, note in the validation narrative.

7. FIELD BLANKS

Are target analytes present in the field blanks? See Blank and Sample Data Summary - Form B3 (Yes) No N/A

ACTION: Qualify all sample results for any analyte <5 times the amount in any valid field blank as nondetected (U).

8. MATRIX SPIKE SAMPLE ANALYSIS

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

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

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

9. LABORATORY CONTROL SAMPLE

Are percent recoveries within the acceptance limits? See Accuracy Data Summary - Form B-4 Yes (No) N/A

Are there calculation errors? Yes (No) N/A

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

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

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

10. PERFORMANCE AUDIT ANALYSES

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

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

11. DUPLICATE SAMPLE ANALYSIS

Are RPD values acceptable? See Precision Data Summary - Form B-5 Yes (No) N/A

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

12. ICP SERIAL DILUTION

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

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

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

13. FIELD DUPLICATE SAMPLES

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

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

14. FIELD SPLIT SAMPLES

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

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

1516. FURNACE ATOMIC ABSORPTION QUALITY CONTROL

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

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

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

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

Were analytical spike recoveries within the control limits? Yes No (N/A) MB 12/5/93

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

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

17. ANALYTE QUANTITTATION AND DETECTION LIMITS

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

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

18. OVERALL ASSESSMENT AND SUMMARY

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

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

COMMENTS (attach additional sheets as necessary):

HOLDING TIME SUMMARY - FORM B-1

SDG: 16	REVIEWER: R. Brauer	DATE: 1/20 - 1/25/93	PAGE 1 OF 2

COMMENTS:

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED				DATE ANALYZED				PREP. HOLDING TIME, DAYS				ANALYSIS HOLDING TIME, DAYS				QUALIFIER			
			CN	Hg	GFAA #	ICP	CN	Hg	GFAA #	ICP	CN	Hg	GFAA #	ICP	CN	Hg	GFAA	ICP	CN	Hg	GFAA	ICP
B01SC7	Full suite	3/13/92	3/25	4/23	6/92		3/27	4/24	6/92		12	41	←		2	1	3MO		-	J	-	
B01SC9	Full suite	3/14/92	3/23	4/23	4/92		3/23	4/24	6/92		7	38	-		0	1	3MO		-	J	-	
B01SD2	CN suite	3/18/92	3/23	/	/		3/23	/	/		5	/	/		0	/	/		-	/	/	
B01SD4	CN suite	3/18/92	3/25	/	/		3/27	/	/		7	/	/		2	/	/		-	/	/	
B01SD6	CN suite	3/18/92	3/27	/	/		3/30	/	/		9	/	/		3	/	/		-	/	/	
B01SD9	Full suite	3/19/92	3/26	4/23	6/92		3/30	4/24	6/92		7	35	-		4	1	3MO		-	J	-	
B01SD7	Full suite	3/19/92	3/27	4/23	6/92		3/30	4/24	6/92		8	35	-		3	1	3MO		-	J	-	
B01SF2	CN suite	3/20/92	4/2	/	/		4/3	/	/		13	/	/		1	/	/		-	/	/	
B01SF4	CN suite	3/20/92	4/2	/	/		4/3	/	/		13	/	/		1	/	/		-	/	/	
B01SF6	CN suite	3/20/92	4/3	/	/		4/3	/	/		14	/	/		0	/	/		-	/	/	
B01SF7	Full suite	3/23/92	4/3	4/23	6/92		4/3	4/24	6/92		11	31	-		0	1	3MO		-	J	-	
B01SF9	Full suite	3/25/92	4/6	4/23	6/92		4/7	4/24	6/92		12	29	-		1	1	3MO		-	J	-	
B01SG3	Full suite	3/25/92	4/6	4/23	6/92		4/7	4/24	6/92		12	29	-		1	1	3MO		-	J	-	
B01SG2	CN suite	3/25/92	4/7	/	/		4/7	/	/		13	/	/		0	/	/		-	/	/	
B01SG6	CN suite	3/25/92	4/7	/	/		4/7	/	/		13	/	/		0	/	/		-	/	/	
B01SG7	Full suite	3/26/92	4/8	4/23	6/92		4/9	4/24	6/92		13	/	/		1	/	/		-	/	/	

HOLDING TIME SUMMARY - FORM B-1

SDG: 160	REVIEWER: R. Brown	DATE: 1/20 - 1/26/93	PAGE 2 OF 2

COMMENTS:

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED				DATE ANALYZED				PREP. HOLDING TIME, DAYS				ANALYSIS HOLDING TIME, DAYS				QUALIFIER			
			CN	Hg	GFAA*	ICP	CN	Hg	GFAA*	ICP	CN	Hg	GFAA*	ICP	CN	Hg	GFAA*	ICP	CN	Hg	GFAA*	ICP
B01SG9	Full suite	3/30/92	4/9	4/03	6/92		4/9	4/04	4/92		10	24	–		0	1	3mo		–	–	–	
B01SH3	Full suite	3/31/92	4/8	4/03	6/92		4/9	4/01	6/92		8	23	–		1	1	3mo		–	–	—	
B01SH2	CN suite	3/31/92	4/9	/	/		4/9	/	/		9	/	/		0	/	/		–	/	/	
B01SH6	CN suite	3/31/92	4/9	/	/		4/13	/	/		9	/	/		4	/	/		–	/	/	
B01S74	CN suite	3/31/92	4/10	/	/		4/10	/	/		10	/	/		0	/	/		–	/	/	
B01S90	CN suite	3/31/92	4/10	/	/		4/10	/	/		10	/	/		0	/	/		–	/	/	

*Graphite Furnace AA Analysis Dates: Ag (6/15/92), As (6/11/92), Bi (6/19 + 6/24/92), Pb (6/22 + 6/25/92), Se (6/17 + 6/18/92), Tl (6/12 + 6/18/92).

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 16	REVIEWER: R. Brown	DATE: 1/25/93	PAGE 1 OF 1		
COMMENTS:					
CALIB. TYPE: (INITIAL) (CONTINUING)		INSTRUMENT: Cold Vapor Hg Analysis / GFAA			
CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
4/24/92	Mercury	0.993	~~0.993~~	All	J
6/92	Thallium		112.9%	BXS43	J

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 16	REVIEWER: R. Brown	DATE: 1/25/93	PAGE 1 OF 1

COMMENTS:

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
B01590	Cyanide	4.3 µg/l			µg/l	21.5	43.0	B01502, B01584, B01589, B01506, B01592, B01594, B01503, B01506, B01562, B01564, B01563, B01562, B01566	<U

ACCURACY DATA SUMMARY - FORM B-4

SDG: 16	REVIEWER: R. Brown	DATE: 1/25/93	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	**COMPOUND**	**% RECOVERY**	**SAMPLE(S) AFFECTED**	**QUALIFIER REQUIRED**
BLCS	Selenium	76%	All Selenium	UJ

PRECISION DATA SUMMARY - FORM B-5

SDG: 16	REVIEWER R. Brown	DATE: 1/25/93	PAGE 1 OF 1

COMMENTS:

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
Lead	B015G7	B015G7 Dup	43%	All lead	J

CALCULATION SUMMARY - FORM B-6

SDG: 16	REVIEWER: R. Brown	DATE: 1/25/93	PAGE 1 OF 1
COMMENTS:			

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 16	REVIEWER: R. Brown	DATE: 1/20 –	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Cyanide (Total)	U	B01SF2, B01SF4, B01SF6, B01SG3, B01SF9, B01SG3, B01SG4, B01SF7, B01S#2, B01S#6	CN detected in equip. blank
Cyanide (Total)	U	B01S02, B01S04, B01S09, B01SD6, B01SF2, B01SF4, B01SF6, B01SG3, B01SG2, B01SG4, B01S13, B01SH2, B01SH6, B01S74	CN Color. < IDL
Cyanide (Total)	B	B01S90	CN Conc. > IDL, < CRQL
Cyanide (Free)	B	B01SC7, B01SD7	CN Conc > IDL, < CRQL
Mercury	J	B01SC7, B01SD4, B01SD7, B01SD9, B01SF7, B01SF9, B01SG3	Holding time exceeded
Mercury	J	All	Calibration correlation < 0.995
Selenium	J	All	LCS < control limits
Selenium	J	All	A.S. RPD < 85%
Selenium	U	All	Conc. ≤ IDL.
Thallium	J	B01SH3	CCV outside control limits
Silver	UJ	All	LCS %R < control limits
Beamuth	U	B01SD9, B01SD7, B01SF9, B01SG3, B01SG8, B01SH3, B01SG7, B01SC9	Conc. ≤ IDL
Beamuth	B	B01SF7	Conc. > IDL, < CRQL
Silver	U	All	Conc. ≤ IDL
Thallium	B	All	Conc > IDL, < CRQL
Lead	J	All	Lab duplicate outside RPD control limits
Lead	J	B01SD7	Analytical spike recovery RPD < 85%, Conc > IDL

TABLE 4a: TOTAL CYANIDE ANALYSIS DATA TASK 2&4
SDG #16

SOILS-SEDIMENTS Sample ID	PNL Log#	Sample G1 (mg/kg)	C	Sample Dup G2 (mg/kg)	C	RPD	Blank G5 (µg/L)	C	Spike added (µg)	Sample + Spike G3 (mg/kg)	ICV G4 (mg/L)	%Recoveries Smpl + Spk G3	%Recoveries ICV G4	Q	Notes
B01SD2	92-05337	0.2 U	U	0.2	U	N/A	2.0	U	49.1	10.0	9.7	98%	104%		1-5
B01SC9	92-05271	1.6													
B01SD4	92-05338*	0.2 U	U	0.2	U	N/A	2.0	U	49.1	10.1	9.7	100%	103%		1-5
B01SC7	92-05270	66.8													2,3,5
B01SD4	92-05338*	0.2 U	U	0.2	U	N/A	2.0	U	49.1	10.6	10.0	105%	106%		1-5
B01SD9	92-05352	0.9 U	B												2,3,5
B01SD6	92-05339	0.2 U	U	0.2	U	N/A	2.0	U	49.1	10.8	9.5	106%	101%		1-5
B01SD7	92-05353	3.3													2,3,5
B01SF2	92-05367	0.2 U	B	0.3	B	12%	2.0	U	48.8	9.6	9.2	94%	98%		1-5
B01SF4	92-05368	0.3 U	B												2,3,5
B01SF6	92-05369	0.2 U	U	0.2	U	88%	2.0	U	48.8	9.7	9.7	91%	103%		1-5
B01SF7	92-05490	59.0													2,3,5

* Note: B01SD4 (92-05338) analyzed four times.

Mean	99%	103%
Std Dev	5%	2%

Footnotes
1. Stock ICV-6=9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for soil-sediment = 1.0 mg/kg.
3. IDL for solids is 0.2 mg/kg based on 5 g sample; Sample IDL adjusted for weight used.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 4b: TOTAL CYANIDE ANALYSIS DATA TASK 2&4
SDG #16

SOILS-SEDIMENTS		Sample G1		Sample Dup G2			Blank G5		Spike added	Sample + Spike G3	ICV G4	%Recoveries Smpl + Spk G3	ICV G4		
Sample ID	PNL Log#	(mg/kg)	C	(mg/kg)	C	RPD	(µg/L)	C	(µg)	(mg/kg)	(mg/L)			Q	Notes
B01SG3	92-05492	0.2	U	0.2	U	N/A	2.0	U	48.8	10.3	9.6	100%	102%		1-5
B01SF9	92-05491	1.1													
B01SG2	92-05493	0.2	U	0.2	U	N/A	2.0	U	48.8	10.2	9.7	100%	103%		1-5
B01SG6	92-05494	0.2	U												2,3,5
B01SH3	92-05690	0.2	U	0.2	U	N/A	2.0	U	48.8	10.3	9.8	102%	105%		1-5
B01SG7	92-05633	7.8													2,3,5
B01SH2	92-05691	0.2	U	0.2	U	N/A	2.0	U	48.8	10.6	10.6	105%	112%		1-5
B01SG9	92-05634	5.9													2,3,5
B01SH6	92-05692	0.2	U	0.2	U	N/A	2.0	U	48.8	10.2	10.2	100%	108%		1-5
B01SH7	92-05877*	104.4													2,3,5
											Mean	101%	106%		
											Std Dev	2%	4%		
											SDG 16 Mean	100%	104%		
											Std Dev	4%	4%		

* Note: B01SH7 (92-5877) not part of SDG 16.

Footnotes
1. Stock ICV-6=9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for soil-sediment = 1.0 mg/kg.
3. IDL for solids is 0.2 mg/kg based on 5 g sample; Sample IDL adjusted for weight used.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 4c: TOTAL CYANIDE ANALYSIS DATA TASK 2&4
SDG #16

WATERS Sample ID	PNL Log#	Sample G1 (µg/L)	C	Sample Dup G2 (µg/L)	C	RPD	Blank G5 (µg/L)	C	Spike added (µg)	Sample+ Spike G3 (µg/L)	ICV G4 (mg/L)	%Recoveries Smpl+ Spk G3	ICV G4	Q	Footnote#
B01S74	92-05693	4.0 U	U	4.0	U	N/A	2.0	U	48.8	101.5	10.3	103%	109%		1-5
B01S90	92-05694	4.3 B	B												2,3,5
											Mean	103%	109%		
											Std Dev	N/A	N/A		

Footnotes
1. Stock ICV-6=9.4 mg/L; 2 mL (18.8 µg CN) added to distillation flask & recovered in 250 mL NaOH.
2. Contract required detection limit for water = 10 µg/L.
3. IDL for liquids is 2 µg/L based on 500 mL sample; Sample IDL adjusted for volume distilled.
4. RPD must be within one CRDL when either sample or duplicate are below 5X CRDL.
5. C Flags: U= <IDL, B= <CRDL but =>IDL; Q Flags: N= Spike Recovery Failed, *= RPD failed.

TABLE 5: FREE CYANIDE ANALYSIS FOR TASKS 2 & 4
SDG # 16

Sample ID#	PNL Log#	Sample J1 mg/kg	C	Sample dup. J2 mg/kg	C	RPD	--J5-- Matrix Blank ug/L	C	--J3-- Sample+ Spike mg/kg	Spike Added mg/kg	--J4-- Control Std. mg/kg	Standard Added mg/kg	--J6-- Dup. + Spike mg/kg	Spike Added mg/kg	% Recovery --J3-- Spike Rec.	% Recovery --J6-- Dup. + Spike Rec.	% Recovery --J4-- Control Std. Rec.	Q Flags
B01SC7	92-05270	0.9	B	1.2		29%	5	U			5.1	5.0					102%	E
B01SD7	92-05353	0.7	B						5.8	5.1			5.9	5.1	100%	102%		
B01SF7	92-05490	1.1					5	U			4.4	5.0					88%	H
B01SG2 +	92-05493	2.0		1.3		42%												
B01SG7	92-05633	2.5																
B01SG9	92-05634	2.7							6.9	5.0			7.0	5.1	84%	84%		

3/15/93

Concentration Flags [C]

U : [ANALYTE] < IDL
B : IDL <= [ANALYTE] < CRDL

Quality Flags [Q]

H: Hold time not met
E: Estimated Value
N: Spike recovery not within control limits
* : Duplicate Analysis not within control limits

CRDL = 1.0 mg/kg
Estimated IDL = 5 ug/L , 0.5 mg/kg

NOTES:

1. + This sample is included for QC and documentation purposes.
2. 100% spike level is expected to be 50 ug/L in the extract and 5 mg/kg in a 0.2 gm sample containing no moisture.
3. 100 % extraction efficiency is assumed in defining the extraction dilution as (diluent vol / sample wt) x 1.00 gm/ml .
4. J4: The spiked blank is the control for these samples. J5: The method blank value has been used in this column.
5. Samples 92-05270 and 92-05353 were analyzed on 3/31/92; the rest were analyzed on 4/10/92.

TABLE 6: COMPLEX CYANIDE DETERMINATION
FOR TASKS 2 & 4 SDG #16

Sample ID#	PNL Log#	Total CN mg/Kg	Free CN mg/Kg	Complex CN mg/Kg (1)
B01SC7	92-05270	66.8	0.9	65.9
B01SD7	92-05353	3.3	0.7	2.6
B01SF7	92-05490	59.0	1.1	57.9
B01SG7	92-05633	7.8	2.5	5.3
B01SG9	92-05634	5.9	2.7	3.2

(1) Results calculated by subtracting the free cyanide results from the total cyanide results.

TABLE 7a: GRAPHITE FURNACE AA ANALYSIS DATA FOR TASKS 2 & 4 -- SDG #16

			B1				B2					B5			B3		B6 (a) B4		
Analyte	Sample ID#	PHL Log#	Sample mg/Kg	Post Spike Rec	C	Q	Dupl. mg/Kg	Post Spike Rec	C	Q	B1&B2 RPD	Blank mg/Kg	Post Spike Rec	C	Sample+ Spike mg/Kg	Digest Spike Rec	LCS mg/Kg	LCS Rec	Post Spike Rec
Ag	B01SG7	92-05633	0.14 UJ	95%	U		0.12	96%	U		N/A	0.14	95%	U	9.82	101%	8.46	38%	94%
As	B01SG7	92-05633	2.93	112%			3.55	110%			19%	0.19	102%	U	413.87	106%	890.49	97%	102%
Bi	B01SG7	92-05633	0.30 U	100%	U		0.24	97%	U		N/A	0.29	98%	U	1940.9	100%	1927.6	96%	(b)
Pb	B01SG7	92-05633	3.89 J	97%		*	6.03 J	92%		*	43%	0.13	98%	B	98.55	95%	239.30	101%	98%
Se	B01SG7	92-05633	1.29 UJ	71%		W	1.07 UJ	68%		W	N/A	0.13	98%	U	382.66	99%	29.88	76%	94%
Tl	B01SG7	92-05633	0.10 B	105%	B	J	0.08 B	106%	B		22%	0.07	101%	U	393.71	102%	43.73	112%	98%
Ag	B01SC7	92-05270	0.12 UJ	95%	U														
As	B01SC7	92-05270	2.67	110%															
Bi	B01SC7	92-05270	36.55	99%															
Pb	B01SC7	92-05270	24.32 J	95%		*													
Se	B01SC7	92-05270	1.10 UJ	71%		W													
Tl	B01SC7	92-05270	0.12 B	105%	B	J													
Ag	B01SC9	92-05271	0.13 UJ	98%	U														
As	B01SC9	92-05271	3.85	106%															
Bi	B01SC9	92-05271	0.28 U	98%	U														
Pb	B01SC9	92-05271	3.67 J	96%		*													
Se	B01SC9	92-05271	1.21 UJ	77%		W													
Tl	B01SC9	92-05271	0.09 B	107%	B	J													

2/15/93

The CRDL (IDL) in ug/L: for AA5100 PE (05/18/92) Ag=10 (0.69), As=10 (0.93), Bi=60 (0.1.44), Pb=3 (0.45), Se=5 (0.63), Tl=10 (0.33)
The CRDL (IDL) in mg/Kg @200X: Ag=2.0 (0.14), As=2.0 (0.18), Bi=12 (0.30), Pb=0.6 (0.09), Se=1.0 (0.13), Tl=2.0 (0.07)
The analytical spike levels in ug/L is 20 for As, Bi, Pb, Tl and 10 for Ag, Se.
LCS standard: Ag, As, Pb, Se, Tl -- ICF 0287; Bi -- Inorganic Ventures G-BI0119

ICV/CCV used during analyses: Ag, Pb, Tl -- ICF ICV4(1290); As, Se -- ICF ICV2(1290); Bi--IV G-BI0119.
Pre-digestion spike (ug/L): Ag=50, As=2000, Bi=10000, Pb=500, Se=2000, Tl=2000. Note that these spike levels are for those required by ICP (not GFAA); no redigestions for GFAA levels were performed.

(a) The spiked blank (B6) is used for the Bi control standard; spike is at 10,000 ug/L (equivalent to 2000 mg/Kg).
(b) No analytical spike performed on these samples.
(c) Analysis dates: Ag (6/15/92), As (6/11/92), Bi (6/19 & 6/24/92), Pb (6/22 &6/25/92), Se (6/17 & 6/18/92), Tl (6/12 & 6/18/92).

CLP Flags: U = [Analyte] < IDL B = IDL <= [Analyte] < CRDL
N = Pre-digestion Spike Recovery not within control limits.
W = Post-digestion spike recovery not within control limits; sample absorbance < 50% of spike absorbance.
* = RPD not within control limits.

TABLE 7b: GRAPHITE FURNACE AA ANALYSIS DATA FOR TASKS 2 & 4 -- SDG #16

Analyte	Sample ID#	PNL Log#	B1 (a) Sample mg/Kg	B1 Post Spike Rec	Flags C	Flags Q
Ag	B01SD9	92-05352	0.12 UJ	99%	U	
As	B01SD9	92-05352	5.08	108%		
Bi	B01SD9	92-05352	0.24 U	95%	U	
Pb	B01SD9	92-05352	3.97 J	93%		*
Se	B01SD9	92-05352	1.06 JU	80%	W	W
Tl	B01SD9	92-05352	0.08 B	108%	B	J
Ag	B01SD7	92-05353	0.10 UJ	97%	U	
As	B01SD7	92-05353	2.57	106%		
Bi	B01SD7	92-05353	0.20 U	100%	U	
Pb	B01SD7	92-05353	3.52 J	81%		*
Se	B01SD7	92-05353	0.89 UJ	68%	W	W
Tl	B01SD7	92-05353	0.07 B	107%	B	J
Ag	B01SF7	92-05490	0.13 UJ	94%	U	
As	B01SF7	92-05490	2.62	103%		
Bi	B01SF7	92-05490	3.40 B	88%		
Pb	B01SF7	92-05490	7.54 J	89%		*
Se	B01SF7	92-05490	1.16 UJ	84%	U	W
Tl	B01SF7	92-05490	0.11 B	103%	B	J
Ag	B01SF9	92-05491	0.12 UJ	95%	U	
As	B01SF9	92-05491	2.98	99%		
Bi	B01SF9	92-05491	0.24 U	92%	U	
Pb	B01SF9	92-05491	3.62 J	98%		*
Se	B01SF9	92-05491	1.09 UJ	81%	U	W
Tl	B01SF9	92-05491	0.10 B	103%	B	J

Analyte	Sample ID#	PNL Log#	B1 (a) Sample mg/Kg	B1 Post Spike Rec	Flags C	Flags Q
Ag	B01SG3	92-05492	0.13 UJ	95%	U	
As	B01SG3	92-05492	3.62	100%		
Bi	B01SG3	92-05492	0.28 U	92%	U	
Pb	B01SG3	92-05492	4.50 J	99%		*
Se	B01SG3	92-05492	1.21 JU	78%	U	W
Tl	B01SG3	92-05492	0.16 B	101%	B	J
Ag	B01SG9	92-05634	0.12 UJ	98%	U	
As	B01SG9	92-05634	2.70	97%		
Bi	B01SG9	92-05634	0.24 U	95%	B	
Pb	B01SG9	92-05634	3.95 J	100%		*
Se	B01SG9	92-05634	1.07 JU	81%	U	W
Tl	B01SG9	92-05634	0.12 B	102%	B	J
Ag	B01SH3	92-05690	0.14 UJ	98%	U	
As	B01SH3	92-05690	3.53	106%		
Bi	B01SH3	92-05690	0.29 U	95%	U	
Pb	B01SH3	92-05690	6.19 J	96%		*
Se	B01SH3	92-05690	1.25 JU	81%	U	W
Tl	B01SH3	92-05690	0.10 B	102%	B	J

2/15/93

2/15/93

The CRDL (IDL) in ug/L: for AA5100 PE (05/18/92) Ag=10 (0.69), As=10 (0.93), Bi=60 (1.44), Pb=3 (0.45), Se=5 (0.63), Tl=10 (0.33)
The CRDL (IDL) in mg/Kg @200X: Ag=2.0 (0.14), As=2.0 (0.18), Bi=12 (0.30), Pb=0.6 (0.09), Se=1.0 (0.13) → 1.3, Tl=2.0 (0.07)
The analytical spike levels in ug/L is 20 for As, Bi, Pb, Tl and 10 for Ag, Se.

(a) Supporting QC (e.g., LCS, duplicates, pre-digestion spikes) shown in Table 7a.
(b) Analysis dates: Ag (6/15/92), As (6/11/92), Bi (6/19 & 6/24/92), Pb (6/22 &6/25/92), Se (6/17 & 6/18/92), Tl (6/12 & 6/18/92).

CLP Flags: U = [Analyte] < IDL B = IDL <= [Analyte] < CRDL
W = Post-digestion spike recovery not within control limits; sample absorbance < 50% of spike absorbance.
* = RPD for batch duplicate not within control limits.

TABLE 8: Hg COLD VAPOR AA ANALYSIS DATA

SOLID SAMPLES

		B1			B2			B5		B3 (a)		B4 (b)	
Sample ID#	PNL Log#	Sample mg/Kg	Flags C	Q	Dupl. mg/Kg	C	B1&B2 %RPD	Blank ug/L	C	Sample +Spike mg/Kg	Digest Spike %rec	LCS mg/Kg	LCS %rec
B01SC9	92-05271	0.19	J	N	0.16		18%	0.004	U	0.35	74%	10.3	81%
B01SC7	92-05270	0.31	J	N									
B01SD9	92-05352	0.09	J	N									
B01SD7	92-05353	0.08	J	N									
B01SF7	92-05490	0.38	J	N									
B01SF9	92-05491	0.15	J	N									
B01SG3	92-05492	0.00	J U	N									
B01SG7	92-05633	0.02	J	N									
B01SG9	92-05634	0.14	J	N									
B01SH3	92-05690	0.00	J U	N									
	SRM 2704											1.49	101%

2/15/94

(a) B3 Predigestion Spike = 0.05 ug Hg in 25 mL aliquot. (Analysis aliquot: sample 25mL, spike 10mL)
(b) LCS 0287 Hg certified at 12.7 mg/Kg (Range 8.5 to 17.0 mg/Kg)
(c) If analyzed, NIST SRM2704 certified at 1.47 ug/g Hg
(d) RPD only calculated if both sample and duplicate are >IDL
(e) IDL = 0.04 ug/L [or 0.004 mg/kg -- (0.04ug/L * 0.1L) / 1g]
(f) CRDL = 0.2 ug/L [or 0.02 mg/kg -- (0.2ug/L * 0.1L) / 1g]
(g) Calibration standards NIST SRM3133, ICV/CCV standard Johnson-Matthey 14395

CLP Flags
N: Spike recovery not within control limits
U: [Analyte] < IDL

WET CHEMISTRY DATA VALIDATION CHECKLIST - FORM A-7

PROJECT: 200 - BP 1 Site Investigation	REVIEWER: R. Brown	DATE: 1/20/93
LABORATORY: Pacific Northwest Laboratory	CASE:	SDG: 16
SAMPLES/MATRIX: Soil: B01SC7, B01SC9, B01SD9, B01SD7, B01SF7, B01SF9, B01SG3, B01SG7, B01SG9, B01SH3		

1. DATA PACKAGE COMPLETENESS

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

Data Package Item	Present?:	Yes	No	N/A
Case Narrative		✓	—	—
Cover Page		✓	—	—
Traffic Reports/Chain-of-Custody		✓	—	—
Sample Analysis Data Report Forms		✓	—	—
Standards Data		✓	—	—
QC Summary				
Blanks Summary Report Forms		✓	—	—
Spike Sample Recovery Report Forms		✓	—	—
Duplicate Sample Analysis Report Forms		✓	—	—
Laboratory Control Sample Report Forms		✓	—	—
Raw Data				
Ion Chromatograph Chromatograms		✓	—	—
TOC and TOX Instrument Printouts		✓	—	—
Laboratory Bench Sheets		✓	—	—
Additional Data				
Laboratory Sample Preparation Logs		✓	—	—
Instrument Run Logs		✓	—	—
Internal Laboratory Chain-of-Custory		✓	—	—
Percent Solids Analysis Records		✓	—	—
Reduction Formulae		✓	—	—
Chemist Notebook Pages		✓	—	—

2. HOLDING TIMES

Were all samples analyzed within holding times? See Holding Time Summary - Form B-1 **Yes** (No) **N/A**

Action: If any holding times were exceeded qualify all affected results as estimated (J for detects and UJ for nondetects).

3. INITIAL CALIBRATIONS

Were all instruments calibrated daily, each set-up time and were the proper number of standards used?	(Yes)	No	N/A
Are the correlation coefficients ≥0.995?	(Yes)	No	N/A
Was a balance check conducted prior to the TDS analysis?	Yes	No	(N/A)
Was the titrant normality checked?	Yes	No	(N/A)

ACTION: Qualify all data as unusable (R) if reported from an analysis in which the above criteria were not met.

4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

Have ICV and CCV been analyzed at the proper frequency?	(Yes)	No	N/A
Are ICV and CCV percent recoveries within control?	(Yes)	No	N/A
Are there calculation errors?	Yes	(No)	N/A

ACTION: Qualify all affected data in accordance with the validation requirements.

5. LABORATORY BLANKS

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

ACTION: Qualify all associated sample results for any analyte <5 times the amount in any laboratory blank as nondetected (U) and list the affected samples and analytes below.

6. FIELD BLANKS

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

ACTION: Qualify all sample results for any analyte <5 times the amount in any valid field blank as nondetected (U).

7. MATRIX SPIKE SAMPLE ANALYSIS

Are spike recoveries within the acceptance limits?	(Yes)	No	N/A

ACTION: If the sample concentration exceeds the spike concentration by a factor of 4 or more, and spike recoveries are outside the acceptance limits, no qualification is necessary. If spike recovery is outside the control limits and the sample results are >CRQL, qualify the data as estimated (J). If the spike recovery is <30% and the sample results are less then the IDL qualify the data as unusable (R).

8. LABORATORY CONTROL SAMPLE

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

Are there calculation errors? Yes (No) N/A

ACTION: Qualify the affected results according to the following requirements:

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

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

9. PERFORMANCE AUDIT ANALYSES

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

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

10. DUPLICATE SAMPLE ANALYSIS

Are RPD values within the acceptance limits? (Yes) No N/A

Action: Qualify the results for all associated samples of the same matrix as estimated (J) if the RPD falls outside the acceptance limits.

11. FIELD DUPLICATE SAMPLES

Do RPD values exceed the acceptance limits? Yes No (N/A)

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

12. FIELD SPLIT SAMPLES

Do RPD values exceed the acceptance limits? Yes No (N/A)

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

13. ANALYTE QUANTITATION AND DETECTION LIMITS

Have results been reported and calculated correctly?	(Yes)	No	N/A
Are instrument detection limits below the CRDL?	(Yes)	No	N/A

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

14. OVERALL ASSESSMENT AND SUMMARY

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

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

COMMENTS (attach additional sheets as necessary):

HOLDING TIME SUMMARY - FORM B-1

SDG: 16	REVIEWER: R. Brown	DATE: 1-20-93	PAGE 1 OF 2
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B01SC7	NO_2, NO_3, PO_4, SO_4	3/13/92	5/29/92	6/2/92	82	4	J
B01SC9	↓	3/16/92	↓	↓	79	4	J
B01SD9		3/19/92			76	4	J
B01SD7		3/19/92			76	4	UJ
B01SF7		3/23/92			72	4	J
B01SF9		3/25/92			70	4	UJ
B01SG3		3/25/92			70	4	UJ
B01SG7		3/26/92			69	4	UJ
B01SG9		3/30/92			65	4	J
B01SH3		3/31/92			64	4	UJ
B01SC7	TOC	3/13/92	N/A	3/30/92	17	N/A	—
B01SC9	↓	3/16/92	N/A	3/30/92	14	N/A	—
B01SD9		3/19/92	N/A	3/30/92	11	N/A	—
B01SD7		3/19/92	N/A	3/30/92	11	N/A	—
B01SF7		3/23/92	N/A	4/2/92	10	N/A	—

HOLDING TIME SUMMARY - FORM B-1

SDG: 16	REVIEWER: R. Brown			DATE: 1-20-93			PAGE 2 OF 2
COMMENTS:							
FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B01SF9	TOC	3/25/93	N/A	4/2/93	8	N/A	—
B01SG3	↓	3/25/93	N/A	4/2/93	8	N/A	—
B01SG7		3/26/93	N/A	4/8/93	14	N/A	—
B01SG9		3/30/93	N/A	4/9/93	10	N/A	—
B01SH3		3/31/93	N/A	4/9/93	10	N/A	—

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 16	REVIEWER: R. Brower	DATE: 1/20/93	PAGE 1 OF 1
COMMENTS: All calibrations (initial, initial verification, & continuing verification) within control limits.			
CALIB. TYPE: INITIAL CONTINUING		INSTRUMENT:	

CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 16	REVIEWER: R. Brown	DATE: 1/20/93	PAGE 1 OF 1
COMMENTS: No target analytes detected in blank samples.			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER

ACCURACY DATA SUMMARY - FORM B-4

SDG: 16	REVIEWER: R. Brown	DATE: 1/20/93	PAGE 1 OF 1	
COMMENTS: Matrix spike recoveries & LCS recoveries within control limits.				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED

PRECISION DATA SUMMARY - FORM B-5

SDG: 16	REVIEWER R. Brown	DATE: 1/30/93	PAGE 1 OF 1
COMMENTS: All lab duplicate RPDs within acceptable limits.			

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER

CALCULATION SUMMARY - FORM B-6

SDG: 16	REVIEWER: R. Brown	DATE: 1/20/93	PAGE 1 OF 1
COMMENTS: All calculations reviewed & are correct.			

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 16	REVIEWER: R. Brown	DATE: 1/20 -	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
NO_2, NO_3, PO_4, SO_4	J	All	Holding time exceeded
NO_2	U	B01SC9, B01SD7, B01SF9, B01SG3, B01SG7, B01SN3	Conc. < CRDL
PO_4	U	B01SG3	Conc. < CRDL
PO_4	B	B01SC7, B01SC9, B01SF9, B01SG7, B01SN3	Conc. > IDL, < CRQL
SO_4	B	B01SC9, B01SF9	Conc. > IDL, < CRQL

TABLE 3A: ANION IC ANALYSIS DATA TASK 2 & 4 SDG 16
NITRITE (NO2-N)

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B01SC7	92-05270	17.6	J				0.8	U							89%	
B01SC9	92-05271	0.8	UJ	0.8	UJ											
B01SD9	92-05352	2.1	J													
B01SD7	92-05353	0.8	UJ													
B01SF7	92-05490	13.7	J													
B01SF9	92-05491	0.8	UJ													
B01SG3	92-05492	0.8	UJ			0%			14.2	15.9	14.2	15.9	89%	89%		
B01SG7	92-05633	0.8	UJ													
B01SG9	92-05634	6.0	J													
B01SH3	92-05690	0.8	UJ													

2/15/94

NOTES:

1. 5 ppm NO2 spike in extract OR 5 ppm X dil. factor / frac. solids spike in sample; see run narrative.
2. RPD values have been calculated using sample duplicates OR the two sample plus spike values.
3. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
4. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
5. Estimated IDL = 0.8 mg/Kg.
6. CRDL= 1.0 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3B: ANION IC ANALYSIS DATA TASK 2 & 4 SDG 16
NITRATE (NO3-N)

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B01SC7	92-05270	318	J				0.8	U							101%	
B01SC9	92-05271	20.7	J	24.0	J	15%										
B01SD9	92-05352	289	J													
B01SD7	92-05353	80.6	J													
B01SF7	92-05490	568	J													
B01SF9	92-05491	4.5	J													
B01SG3	92-05492	14.3	J			9%			28.8	11.8	26.3	11.8	123%	102%		
B01SG7	92-05633	316	J													
B01SG9	92-05634	860	J													
B01SH3	92-05690	33.9	J													

2/15/93

NOTES:

1. 5 ppm NO3 spike in extract OR 5 ppm X dil. factor / frac. solids spike in sample; see run narrative.
2. RPD values have been calculated using sample duplicates OR the two sample plus spike values.
3. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
4. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
5. Estimated IDL = 0.8 mg/Kg.
6. CRDL = 1.0 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3C: ANION IC ANALYSIS DATA TASK 2 & 4 SDG 16
PHOSPHATE (PO4-P)

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	% RECOVERY C3 SMPL SPIKE	% RECOVERY C6 DUP SPIKE	% RECOVERY C4 CNTRL STD.	Q
B01SC7	92-05270	3.2	BJ				1.7	U							98%	
B01SC9	92-05271	4.1	BJ	4.3	BJ	5%										
B01SD9	92-05352	40.9	J													
B01SD7	92-05353	18.9	J													
B01SF7	92-05490	5.3	J													
B01SF9	92-05491	4.8	BJ													
B01SG3	92-05492	1.7	UJ			1%			13.9	17	14	17	82%	82%		
B01SG7	92-05633	2.9	BJ													
B01SG9	92-05634	73.3	J													
B01SH3	92-05690	1.8	BJ													

2/15/93

NOTES:

1. 5 ppm PO4 spike in extract OR 5 ppm X dil. factor / frac. solids spike in sample; see run narrative.
2. RPD values have been calculated using sample duplicates OR the two sample plus spike values.
3. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
4. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
5. Estimated IDL = 1.7 mg/Kg.
6. CRDL= 5 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte] < CRDL
U: [Analyte] < IDL

TABLE 3D: ANION IC ANALYSIS DATA TASK 2 & 4 SDG 16
SULFATE (SO4)

CUST ID	ALO #	C1 SAMPLE (mg/Kg)	C	C2 DUP (mg/Kg)	C	RPD	C5 BLANK (mg/Kg)	C	C3 SMPL+ SPIKE (mg/Kg)	C3 SPIKE (mg/Kg)	C6 DUP+ SPIKE (mg/Kg)	C6 SPIKE (mg/Kg)	%RECOVERY C3 SMPL SPIKE	%RECOVERY C6 DUP SPIKE	%RECOVERY C4 CNTRL STD.	Q
B01SC7	92-05270	177	J				4	U							98%	
B01SC9	92-05271	13.7	BJ	15.6	BJ	13%										
B01SD9	02-05352	116	J													
B01SD7	92-05353	136	J													
B01SF7	92-05490	99.3	J													
B01SF9	92-05491	5.1	BJ													
B01SG3	92-05492	23.9	J			4%			76.4	52.2	73.3	52.2	101%	95%		
B01SG7	92-05633	268	J													
B01SG9	92-05634	287	J													
B01SH3	92-05690	52.1	J													

2/15/93

NOTES:

1. 5 ppm SO4 spike in extract OR 5 ppm X dil. factor / frac. solids spike in sample; see run narrative.
2. RPD values have been calulated using sample duplicates OR the two sample plus spike values.
3. 100% extraction efficiency assumed in defining dil. factor as (diluent vol / sample wt) X 1.00 gm/ml.
4. C5: Method Blank ; C4: Spiked Blank; nominal sample wt=2.00gm.
5. Estimated IDL= 4 mg/Kg.
6. CRDL= 20 mg/Kg.

Quality Flags [Q]

E: Estimated value, interference present
N: Spike recovery not within control limits
*: Duplicate analysis not within control limits

Concentration Flags [C]

B: IDL <= [Analyte].< CRDL
U: [Analyte] < IDL

TABLE 16: TOTAL ORGANIC CARBON DATA FOR TASKS 2 & 4 SDG #16

Soil Samples

WHC Sample	PNL ALO #	Sample Type	Sample wt. g	ug C Results	ug C in Sample	mgC/Kg Sample	RPD Dups	% rec.* standard	Date Received	Date Analyzed
B01SC7	92-05270-1	Sample	0.05445	42.68	36.68	681	11.5		3-19-92	3-30-92
B01SC7	92-05270-2	Duplicate	0.07187	49.15	43.15	607			3-19-92	3-30-92
B01SC9	92-05271-1	Sample	0.09127	14.58	8.58	95.0	5.1		3-19-92	3-30-92
B01SC9	92-05271-2	Duplicate	0.10951	16.86	10.86	100			3-19-92	3-30-92
B01SD9	92-05352-1	Sample	0.10930	21.49	15.49	143	10.0		3-24-92	3-30-92
B01SD9	92-05352-2	Duplicate	0.12196	25.04	19.04	158			3-24-92	3-30-92
B01SD7	92-05353-1	Sample	0.07005	30.20	24.20	349	17.3		3-24-92	3-30-92
B01SD7	92-05353-2	Duplicate	0.07142	35.32	29.32	415			3-24-92	3-30-92
B01SD7	92-05353-3	Standard	0.00487	1945.54	1939.54		1.4	99.6		3-30-92
B01SD7	92-05353-3	Std Dup	0.00720	2832.98	2826.98			98.2		
B01SD7	92-05353-4	Blank		6.00						3-30-92
B01SF7	92-05490-1	Sample	0.12256	41.89	27.79	227	6.4		3-27-92	4-02-92
B01SF7	92-05490-2	Duplicate	0.11161	41.17	27.07	242			3-27-92	4-02-92
B01SF9	92-05491-1	Sample	0.10018	21.86	7.76	77.5	2.9		3-27-92	4-02-92
B01SF9	92-05491-2	Duplicate	0.10612	22.09	7.99	75.3			3-27-92	4-02-92
B01SG3	92-05492-1	Sample	0.04879	63.92	49.82	1020	17.8		3-27-92	4-02-92
B01SG3	92-05492-2	Duplicate	0.05833	85.34	71.24	1220			3-27-92	4-02-92
B01SG3	92-05492-3	Standard	0.00514	2078.94	2064.84		0.8	100		4-02-92
B01SG3	92-05492-3	Std Dup	0.00575	2303.96	2289.86			99.6		
B01SG3	92-05492-4	Blank		14.10						4-02-92
B01SG7	92-05633-1	Sample	0.05462	55.25	45.55	834	21.0		3-31-92	4-09-92
B01SG7	92-05633-2	Duplicate	0.05577	66.96	57.26	1030			3-31-92	4-09-92
B01SG9	92-05634-1	Sample	0.07824	29.08	19.38	248	12.1		3-31-92	4-09-92
B01SG9	92-05634-2	Duplicate	0.08390	33.24	23.54	280			3-31-92	4-09-92
B01SH3	92-05690-1	Sample	0.02653	50.95	41.25	1550	12.1		4-01-92	4-09-92
B01SH3	92-05690-2	Duplicate	0.02821	59.15	49.45	1750			4-01-92	4-09-92
B01SH3	92-05690-3	Standard	0.00516	2068.14	2058.44		1.3	99.7		4-09-92
B01SH3	92-05690-3	Std Dup	0.00498	2029.49	2019.79			101		4-09-92
B01SH3	92-05690-4	Blank		9.70						4-09-92
		Standard 2	0.00521	1917.12	1907.42			91.5		4-09-92
		Standard 3	0.00664	2680.29	2670.59			100		4-09-92

Key: Standard 2: 1st post-sample std Standard 3: 2nd post-sample std * Based on std C content of 40.0% by wt.
Total Organic Carbon by Procedure PNL-ALO-380, on Instrument WA92040.
325 Bldg., rm 701. Data reported from LRB 52821, pp 90

2/15/93

RADIOCHEMISTRY DATA VALIDATION CHECKLIST

Data Package ID: B015C7 - PNL - 064 Laboratory: Battelle PNL

Data Validator: [signature] Date: 1/18/93

Analysis/Sample Identification/Matrix: B015C7, B015C9, B015D9, B015D7, B015F7, B015F9, B015G3, B015G7, B015G9, & B015H3. Soil

1. Completeness

1.1 Completeness Checklist (Complete the appropriate checklist for each analysis type and attach).

2. Calibration

2.1 Initial Calibration

Was instrument calibrated within specified time period or annually? (Y/N/NA) Yes

If NO, qualify all associated data as unusable (R).

Was each detector used for the associated data calibrated? (Y/N/NA) Yes

If NO, qualify all associated data as unusable (R).

Are calibration standards NIST traceable or equivalent? (Y/N/NA) Yes

If NO, qualify all associated data as unusable (R).

Were calibration standards expired? (Y/N/NA) No

If YES, qualify all associated data as unusable (R).

Comments/Qualified Results:

2.2 Continuing Calibration

Is check source identified by activity and radionuclides? (Y/N/NA) Yes

If NO, qualify all associated data as estimated (J).

Has check source been counted daily? (Y/N/NA) Yes

If NO, qualify all associated data as unusable (R).

Are check source counts within ±3S control limits? (Y/N/NA) Yes

If NO, qualify all associated data as unusable (R).

Have background counts been performed at least weekly and before and after all field and QC samples associated with the SDG? (Y/N/NA) Yes

If NO, qualify all associated results as unusable (R).

Are background counts within ±3S control limits? (Y/N/NA) Yes

If NO, qualify all associated results as unusable (R).

Comments/Qualified Results:

3. Blanks

Have reagent/method/field blanks been analyzed with the SDG? (Y/N/NA) Yes

If NO, qualify all results >LLD as estimated (J).

Are positive results reported in the reagent/method/field blanks? (Y/N/NA) Yes ①

If YES, qualify positive results less than the MDA as nondetects (U). Qualify sample results <10X the blank value but greater than the MDA as estimated (J).

Can blank results be verified/calculated properly? (Y/N/NA): Yes ②

Comments/Notes/Qualified Results: ① the positive results reported in blanks did not have any affect on the reported sample results.

② Blank results for tritium not verified because of spreadsheet error.

4. Detection Limits and Sample Results

Can LLDs and MDAs be verified? (Y/N/NA) Yes

If NO, qualify all results as estimated detects (J) or estimated nondetects (UJ).

Do reported results meet the detection limit requirements? (Y/N/NA) Yes

Note discrepancies in the validation report narrative under representativeness.

Can reported results be verified? (Y/N/NA) Yes - see spreadsheet

If NO, note missing data in the validation report. Correct results on the photocopied report forms and include in the validation report.

Comments/Notes/Qualified Results:

5. Radiometric and Gravimetric Yields

Were spikes/tracers/chemical yields analyzed in each SDG and/or sample as appropriate for the analytical method? (Y/N/NA) Yes

If NO or if inappropriate tracers were used qualify associated results as unusable (R).

Was a field blank used for the spike/tracer/chemical yield analysis? (Y/N/NA) No

If YES, note in the validation narrative.

Is spike/tracer/chemical yield recovery within the limits of 30-105% for sample results <4X the spike activity? (Y/N/NA) Yes

Verify the spike recoveries and qualify associated results as follows:

%R:	<30%	30-105%	>105%	>115%
<LLD	R	acceptable	UJ	R
>LLD	R	acceptable	J	R

Comments/Notes/Qualified Results: ✓

6. Duplicate Samples and Analyses

Has at least one duplicate analysis been performed for every 10 samples in the SDG? (Y/N/NA) Yes

If NO, qualify all associated results as estimated (J).

Has the field blank been used for duplicate or MS/MSD analysis? (Y/N/NA) No

Are RPD valus ≤35% for results >5X the LLD and within ±2X the LLD for results <5X the LLD? (Y/N/NA) Yes

If NO, qualify associated results <LLD as estimated nondetects (UJ) and all associated results >LLD as estimated detects (J).

Comments/Notes/Qualified Results: Duplicate analyses acceptable.

7. Laboratory Control Samples

Are LCS results within the control limits of 80-120% (Y/N/NA): Yes

If NO, qualify results as follows:

%R:	<50%	50-79%	>120%
Results < LLD:	R	UJ	R
Results > LLD:	R	J	R

Has at least one LCS been analyzed with the SDG? (Y/N/NA): Yes

If NO, qualify all associated results as estimated (J).

Comments/Notes/Qualified Results:

8. Holding Times

Have all samples/analyses been completed within 5 half-lives or 180 days, whichever comes first? (Y/N/NA): Yes

If NO, qualify all associated results >LLD as estimated detects (J) and all associated results <LLD as estimated non-detects (UJ). For gross exceedances (>2X criteria) qualify all associated results as unusable (R).

Comments/Notes/Qualified Results:

9. Method Specific and Other Quality Control

9.1 Gas Proportional Counters

Are field and QC sample preparations outside the range of the self absorption curves? (Y/N/NA): No

If YES, qualify all associated data as estimated (J).

Are initial detector efficiencies <20%? (Y/N/NA): No

If YES, qualify all associated data as unusable (R).

Have statistical tests been performed routinely (at least weekly)? (Y/N/NA): Yes

If NO, qualify all associated data as estimated (J).

Have stability verifications been performed after each gas change? (Y/N/NA): NA

If NO, qualify all associated data as estimated (J).

Comments/Notes/Qualified Results: Gas changes not recorded

9.2 Alpha Spectroscopy

Has detector system been calibrated across the energy range of interest? (Y/N/NA): Yes

If NO, qualify all results as unusable (R).

Is detector resolution adequate to identify each peak centroid? (Y/N/NA): Yes

If NO or if resolution cannot be determined, qualify all results as unusable (R).

Is resolution at least 20 keV FWHM? (Y/N/NA): Yes

If NO, qualify all results as estimated (J).

Do check source efficiencies agree within 5% of initial calibration efficiencies or are they within the control limits or ±3S of the mean? (Y/N/NA): Yes

If NO, qualify all associated results as unusable (R).

Was each sample spiked with a tracer? (Y/N/NA): Yes

If NO, qualify all associated results as unusable (R).

Are tracer recoveries within the control limits of 30 to 105%? (Y/N/NA): Yes

If NO, qualify all results as follows:

%R:	<30%	30-105%	>105%	>115%
Results <LLD:	R	acceptable	UJ	R
Results >LLD:	R	acceptable	J	R

Comments/Notes/Qualified Results: Pu reported results O.K. Some blank activity, but acceptable because of the related sample activities.

9.3 Gamma Spectroscopy

Does efficiency calibration approximate a smooth semi-log curve? (Y/N/NA): Yes

If NO, qualify all results as unusable (R).

Have geometry or matrix factors been accounted for in all analyses? (Y/N/NA): Yes

If NO, qualify all associated results as unusable (R).

Does the detector calibration cover the energy range of interest and at least 0 to 2 MeV? (Y/N/NA): Yes

If NO, qualify all results outside the energy range as unusable (R).

Is resolution of the detector system adequate and less than 5 FWHM? (Y/N/NA): Yes

If NO, qualify all results as estimated (J).

Comments/Notes/Qualified Results:

9.4 Alpha Emitting Radium Isotopes NA 1/15/93

Have single radium isotopes (Ra-223, Ra-224, Ra-226) been reported? (Y/N/NA):_____

If YES, qualify all results attributed to a single radium isotope as estimated (J) if the contribution to the total from individual isotopes is unknown.

Can time from sample precipitation to counting be verified? (Y/N/NA):_____

If NO, qualify all associated results >MDA as estimated (J).

Have barium interferences been identified and accounted for? (Y/N/NA):_____

If NO, qualify all associated results with elevated barium levels as estimated (J).

Has counting efficiency for Ra-226 been determined for each SDG? (Y/N/NA):_____

If NO, qualify all associated results as unusable (R).

Have blanks been analyzed with each group to check for possible radium contamination in the reagents? (Y/N/NA):_____

If NO, qualify all associated results as estimated (J).

Are LCS recoveries with the control limits listed below? (Y/N/NA):_____

If no, qualify sample results as follows:

%R:	<50%	50-69%	70-130%	>130%
Results <MDA	R	UJ	Acceptable	R
Results >MDA	R	J	Acceptable	R

If sample was preserved at collection has analysis been completed within 180 days or 5 half-lives? (Y/N/NA):_____

If NO, qualify results >LLD as estimated detects (J) and results < LLD as estimated non-detects (UJ).

If samples were not preserved, were samples received within 5 days of sampling? (Y/N/NA):_____

- Were samples preserved at the laboratory upon receipt? (Y/N/NA):_____
- Were samples held after preservation for at least 16 days? (Y/N/NA):_____

If NO, to any of the above, qualify associated sample results as estimated (J).

Comments/Notes/Qualified Results:_____

9.5 Radium 226 Analysis using Scintillation (Lucas) Cell Counting N/A HPV 1/18/93

Is calibration data present and can it be associated with the samples? (Y/N/NA):_____

If NO, qualify associated sample results as unusable (R).

Was the counting system calibrated each day that samples were analyzed? (Y/N/NA):_____

If NO, qualify associated results as estimated (J).

Was the counting system calibrated after replacing the scintillation cell? (Y/N/NA):_____

If NO, qualify associated results as estimated (J) if the cell has a previously determined calibration constant and unusable (R) if no constant is available for the replacement cell.

Were blanks analyzed with each sample group to check for radium contamination in reagents? (Y/N/NA):_____

If NO, qualify associated results as estimated (J).

If sample was preserved at collection has analysis been completed within 180 days or 5 half-lives? (Y/N/NA):_____

If NO, qualify results >LLD as estimated detects (J) and results < LLD as estimated non-detects (UJ).

If samples were not preserved, were samples received within 5 days of sampling? (Y/N/NA):_____

- Were samples preserved at the laboratory upon receipt? (Y/N/NA):_____
- Were samples held after preservation for at least 16 days? (Y/N/NA):_____

If NO, to any of the above, qualify associated sample results as estimated (J).

Comments/Notes/Qualified Results:_____

9.6 Tritium Analysis by Liquid Scintillation Counting HQV 11/8/93

Do calibration standard matrices match the sample matrices? (Y/N/NA): Yes

If NO, qualify associated results as estimated (J).

Has at least one calibration standard been processed with the samples (Y/N/NA): Yes

If NO, qualify results associated with runs lacking calibration standards as unusable (R).

Have results for counting efficiency determination been provided? (Y/N/NA): Yes

If NO, qualify all associated results as unusable (R).

Do tritium levels in the blanks exceed the MDA? (Y/N/NA): No

If YES, qualify associated results less than 10X the background tritium level (blanks) as estimated (J).

Have blanks been analyzed with each sample run to check for potential contamination in the chemical reagents? (Y/N/NA): Yes

If NO, qualify associated results as estimated (J).

Comments/Notes/Qualified Results: Tritium results acceptable.

9.7 Fluorometric Analysis of Uranium N/A 11/16/93

Has the laboratory provided evidence that cation and anion interferences are negligible for the matrix or that matrix interferences have been accounted for? (Y/N/NA):_____

If NO, qualify associated results as estimated (J).

Has the laboratory provided a description of the method of fusion standardization or provided data supporting fusion standardization? (Y/N/NA):_____

If NO, qualify associated results as estimated (J).

Was calibration performed immediately prior to sample analysis? (Y/N/NA):_____

If NO, qualify associated results as estimated (J).

Comments/Notes/Qualified Results:_____

Comments/Notes/Qualified Results: No real data were qualified because of problems - All calculations checked were correct.

GAS PROPORTIONAL COUNTERS
LOW BACKGROUND BETA COUNTERS

Data Package ID: B01SC7 -PNL- 464

Analysis: Total α - Gross β

A.0 Completeness Checklist

Analysis Results

- ✓ Results Report for Sample Analyses and Reanalyses
- ✓ Raw Data (Counting Logs, Printouts, Notebook Pages)
- ✓ Calculation Sheets
- ✓ Sample Identifications
- ✓ Detector Identification
- ✓ Analysis Date and Initials of Analyst
- ✓ Amounts of Samples Prepared or Counted
- ✓ Weights of Solids Counted

Initial and Continuing Calibration

- ✓ Detector Identification
- ✓ Calibration Date(s) and Initials of Analyst
- ✓ Identification of Calibration and Check Standards including Radionuclide, Certification, Expiration Date, and Activity
- ✓ Amount of Check Standard Used
- ✓ Raw Data including Counts and Count Duration for Standards
- ✓ Weights of Preparations
- ✓ Efficiencies
- NA Weights of Carriers Added, If Applicable
- ✓ Results of Statistical Tests Used to Evaluate Instrument Reliability and Efficiency Checks
- ✓ Raw Data of Background Counts and Count Duration
- ✓ Results of Statistical Test Used to Evaluate Instrument Background
- ✓ Control Limits fo Check Source and Background Counts

Blanks

- ✓ Detector Identification
- ✓ Date of Analysis
- ✓ MDA of Method
- ✓ Amounts of Reagents Used in Blank

Radiometric and Gravimetric Yields

- ✓ Amounts (Volumes, Concentrations, Activity) of Spikes, Tracers, or Carriers Used
- ✓ Weights of Precipitates or Solids Counted
- ✓ Calculated Recoveries

Duplicates

- ✓ Detector Identification
- ✓ Date of Analysis
- ✓ Aliquots of Samples
- ✓ Weights of Solids Counted
- ✓ Count Durations
- ✓ Sample Identifications
- ✓ Calculated Precision

Laboratory Control Samples

- ✓ Detector Identification
- ✓ Date of Analysis
- ✓ Calculation of Recoveries
- ✓ Results of Analyses

Comments/Qualified Results: α + β analyses acceptable.

ALPHA SPECTROSCOPY

Data Package ID: B01SC7-PNL-064

Analysis: Total α / Pu

B.0 Completeness Checklist

Analysis Results

- ✓ Results Report for Sample Analyses and Reanalyses
- ✓ Raw Data (Spectra, Printouts, Notebook Pages)
- ✓ Calculation Sheets
- ✓ Sample Identifications
- ✓ Detector Identification
- ✓ Analysis Date and Initials of Analyst
- ✓ Amounts of Samples Counted (Precipitated or Deposited)

Initial and Contiuing Calibration

- ✓ Detector Identification
- ✓ Calibration Date(s) and Initials of Analyst
- ✓ Identification of Calibration and Check Standards including Radionuclide, Certification, Expiration Date, and Activity
- ✓ Amount of (Check) Standard Used
- ✓ Raw Data including Spectra or Counts per Channel
- ✓ Kev/channel
- ✓ Count Duration for Standards
- ✓ Efficiencies
- ✓ Raw Data of Background Counts, Dates Counted, and Duration of Counts

Blanks

- ✓ Detector Identification
- ✓ Date of Analysis
- ✓ MDA of Method
- ✓ Amounts of Reagents Used in Blank

Duplicates

- ✓ Detector Identification
- ✓ Date of Analysis
- ✓ Amounts of Samples Counted
- ✓ Count Durations
- ✓ Sample Identifications
- ✓ Calculated Precision

Radiometric and Gravimetric Yields

- ✓ Amounts (Volumes, Concentrations, Activity) or Spikes, Tracers, or Carriers Used
- ✓ NIST Traceability of Spikes, Tracers or Carriers
- ✓ Weights of Precipitates or Solids Counted
- ✓ Calculated Recoveries

Laboratory Control Samples

✓ Detector Identification
✓ Date of Analysis
✓ Calculation of Recoveries
✓ Results of Analyses

Comments/Qualified Results: Total α-results are higher than Pu-alpha results ∴ there must be another α-emitting isotope in the soil

GAMMA SPECTROSCOPY

Data Package ID: _____

C.0 Completeness Checklist

Analysis Results

- ✓ Results Report for Sample Analyses and Reanalyses
- ✓ Raw Data (Spectra, Printouts of Counts per Channel, Notebook Pages)
- ✓ Calculation Sheets
- ✓ Sample Identifications
- ✓ Detector Identification and Counting Position
- ✓ Analysis Date and Initials of Analyst
- ✓ Amounts of Samples Counted

Initial and Continuing Calibration

- ✓ Detector Identification
- ✓ Calibration Date(s) and Initials of Analyst
- ✓ Identification of Calibration and Check Standards including Radionuclides, Certification, Expiration Date, and Activity
- ✓ Amount of (Check) Standard Used
- ✓ Raw Data including Counts and Count Duration for Standards
- ✓ Efficiencies and/or Geometry and Matrix Factors
- ✓ Raw Data of Background Counts, Count Dates, and Duration of Counts
- ✓ KeV/Channel
- ✓ FWHM

Blanks

- ✓ Detector Identification
- ✓ Date of Analysis
- ✓ MDA of Method
- ✓ Amounts of Reagents Used in Blank
- ✓ Raw Data

Duplicates

- ✓ Detector Identification
- ✓ Date of Analysis
- ✓ Amounts of Samples
- ✓ Count Durations
- ✓ Sample Identifications
- ✓ Results of Analyses and Calculated Precision
- ✓ Raw Data

Radiometric and Gravimetric Yields

- ✓ Amounts (Volumes, Concentrations, Activity) of Spikes, Tracers or Carriers Used
- ✓ Weights of Precipitates or Solids Counted
- ✓ Calculated Recoveries

Laboratory Control Samples

✓ Detector Identification
✓ Date of Analysis
✓ Calculation of Recoveries
✓ Results of Analyses

Comments/Qualified Results:

γ - energy analysis appeared o.k., specific % Recoveries for LCS were not given, however, Counts/minute were given and looked acceptable.

Sample B015G9 was mislabeled in the raw data as B015J9. The sample was correctly referred to as ALO #92-05634 throughout the raw and reported data. The reported data correctly reported the results for B015G9.

TRITIUM ANALYSIS USING
LIQUID SCINTILLATION COUNTING

Data Package ID: 60157Z-PNL-064

F.0 Completeness Checklist

Analysis Results

- ✓ Results Report for Sample Analyses and Reanalyses
- ✓ Raw Data (Gross Counts, Count Duration, Background Count, and Background Count Duration)
- ✓ Calculation Sheets
- ✓ Sample Identifications
- ✓ Instrument Identification
- ✓ Analysis Date and Analyst Initials
- ✓ Sample Weight

Initial and Continuing Instrument Calibration

- ✓ Instrument Identification
- ✓ Identification of Calibration Standards including Radionuclides, Certification, Issue or Expiration Date and Activity
- ✓ Raw Data (Gross Counts, Count Duration, Background Count, and Background Count Duration)
- ✓ Counting Efficiency Determination Method and Results
- ✓ Quench Correction Method

Blanks

- ✓ Instrument Identification
- ✓ Date of Analysis
- ✓ MDA of Method
- ✓ Amounts of Reagents Used
- ✓ Lot Numbers of Reagents Used
- ✓ Raw Data (Gross Counts, Count Duration, Background Count, Background Count Duration)
- ✓ Tritium Levels in Background Water

Duplicates

- ✓ Instrument Identification
- ✓ Date of Analysis
- ✓ Amounts of Samples
- ✓ Amount of Spike for Spiked Duplicates
- ✓ Raw Data (Gross Counts, Count Duration, Background Counts, and Background Count Duration)

Radiometric Yields

✓ Amount of Tritium Standard Used for Radiometric Yield Determination
✓ Radiometric Yield Calculations and Results

Laboratory Control Samples

✓ Sample Identification
✓ Instrument Identification
✓ Date of Analysis
✓ Calculated Recoveries
✓ Results of Analyses

Comments/Qualified Results: yields were low - but higher than most recent - low yields acceptable because spike recovery was good.

Table 10: Gamma Energy Analysis of Soils

Diode L

(Radionuclide activity in pCi/g[a])

WHC Sample ID	Sample ID	Collection Date	Weight (g)	Co-60	Ru-106	Cs-137
B01S97	92-04734-L-1*	3/2/92 10:12	16.433	1.11 ± 0.09	<34	(8.52 ± 0.09)
B01S99	92-04735-L-1*	3/3/92 10:15	1.0717	<70	<4000	(3.34 ± 0.06)
B01SB1	92-04736-L-1*	3/3/92 10:15	12.074	<350	<3000	(2.88 ± 0.03)
B01SB1	92-04736-L-2*	3/3/92 10:15	1.0962	<40	<3300	(2.75 ± 0.01)
B01SB3	92-04968-L-1*	3/5/92 10:40	15.846	<3	<210	(1.66 ± 0.02)
B01SB7	92-05102-L-1*	3/10/92 08:33	15.275	<0.14	<0.47	<0.20
B01SB2	92-05150-L-1*	3/11/92 08:50	1.2004	<480	<2500	(4.50 ± 0.05)
B01SC7 1.2658	92-05270-L-1	3/13/92 08:55	1.0658	<830	<15000	(1.29 ± 0.01)
B01SC9 14.838	92-05271-L-1	3/16/92 14:00	14.838	<3	<190	(4.12 ± 0.04)
B01SD9 15.179	92-05352-L-1	3/19/92 14:32	15.179	0.70 ± 0.20	<16	(9.12 ± 0.28
B01SD9 16.621	92-05352-L-2	3/19/92 14:32	16.621	0.596 ± 0.006	<2	(9.47 ± 0.09)
B01SD7 14.404	92-05353-L-1	3/19/92 10:20	14.404	<2	<140	(5.44 ± 0.03)
B01SF7 14.144	92-05490-L-1	3/23/92 14:16	14.144	<210	<14000	(2.35 ± 0.02)
B01SF7 0.9269	92-05490-L-2	3/23/92/14:16	0.9269	<90	<5300	(1.84 ± 0.02)
B01SF9 14.794	92-05491-L-1	3/25/92 09:04	14.794	<0.2	<9	(3.02 ± 0.03)
B01SG3 14.464	92-05492-L-1	3/25/92 13:26	14.464	<0.3	<3	2.50 ± 0.36
B01SG9 13.680	92-05634-L-1	3/30/92 10:02	13.680	3.1 ± 0.1	<30	(5.64 ± 0.06)
B01SH3 13.214	92-05690-L-1	3/31/92 09:03	13.214	<0.3	<3.5	4.39 ± 0.40
B01SG7 16.738	92-05633-L-1	3/26/92 10:45	16.738	1.81 ± 0.17	<44	(1.25 ± 0.01)
B01SH7	92-05877-L-1*	4/1/92 10:21	1.0683	62 ± 10	<2700	(4.41 ± 0.04)
B01SB4	92-05953-L-1*	4/8/92 08:34	1.2256	<90	<5600	(2.88 ± 0.03)

Table 10: Gamma Energy Analysis of Soils

Diode L

(Radionuclide activity in pCi/g[a])

WHC Sample ID	Sample ID	Collection Date	Weight (g)	Co-60	Ru-106	Cs-137
B01S97	92-04734-L-1*	3/2/92 10:12	16.433	1.11 ± 0.09	<34	(8.52 ± 0.09) X 10
B01S99	92-04735-L-1*	3/3/92 10:15	1.0717	<70	<4000	(3.34 ± 0.06) X 10
B01SB1	92-04736-L-1*	3/3/92 10:15	12.074	<350	<3000	(2.88 ± 0.03) X 10
B01SB1	92-04736-L-2*	3/3/92 10:15	1.0962	<40	<3300	(2.75 ± 0.01) X 10
B01SB3	92-04968-L-1*	3/5/92 10:40	15.846	<3	<210	(1.66 ± 0.02) X 10
B01SB7	92-05102-L-1*	3/10/92 08:33	15.275	<0.14	<0.47	<0.20
B01SB2	92-05150-L-1*	3/11/92 08:50	1.2004	<480	<2500	(4.50 ± 0.05) X 10
B01SC7	92-05270-L-1	3/13/92 08:55	1.0658	<830	<15000	(1.29 ± 0.01) X 10
B01SC9	92-05271-L-1	3/16/92 14:00	14.838	<3	<190	(4.12 ± 0.04) X 10
B01SD9	92-05352-L-1	3/19/92 14:32	15.179	0.70 ± 0.20	<16	(9.12 ± 0.28 X 10^2
B01SD9	92-05352-L-2	3/19/92 14:32	16.621	0.596 ± 0.006	<2	(9.47 ± 0.09) X 10
B01SD7	92-05353-L-1	3/19/92 10:20	14.404	<2	<140	(5.44 ± 0.03) X 10
B01SF7	92-05490-L-1	3/23/92 14:16	14.144	<210	<14000	(2.35 ± 0.02) X 10
B01SF7	92-05490-L-2	3/23/92/14:16	0.9269	<90	<5300	(1.84 ± 0.02) X 10
B01SF9	92-05491-L-1	3/25/92 09:04	14.794	<0.2	<9	(3.02 ± 0.03) X 10
B01SG3	92-05492-L-1	3/25/92 13:26	14.464	<0.3	<3	2.50 ± 0.36
B01SG9	92-05634-L-1	3/30/92 10:02	13.680	3.1 ± 0.1	<30	(5.64 ± 0.06) X 10
B01SH3	92-05690-L-1	3/31/92 09:03	13.214	<0.3	<3.5	4.39 ± 0.40
B01SG7	92-05633-L-1	3/26/92 10:45	16.738	1.81 ± 0.17	<44	(1.25 ± 0.01) X 10
B01SH7	92-05877-L-1*	4/1/92 10:21	1.0683	62 ± 10	<2700	(4.41 ± 0.04) X 10
B01SB4	92-05953-L-1*	4/8/92 08:34	1.2256	<90	<5600	(2.88 ± 0.03) X 10

Table 10: Gamma Energy Analysis of Soils

Diode L

(Radionuclide activity in pCi/g[a])

WHC Sample ID	Sample ID	Collection Date	Weight (g)	Co-60	Ru-106	Cs-137
B01SC8	92-05954-L-1*	4/8/92 10:21	15.268	50 ± 2	<690	(1.37 ± 0.01) X
B01SC8	92-05954-L-2*	4/8/92 10:21	0.8959	64 ± 7	<2200	(1.60 ± 0.03) X
B01SC8	92-05954-L-5*	4/8/92 10:21	14.7	<0.19	<1.9	<0.14

[a] The one sigma uncertainties are based on counting statistics. All "<" values are detection limits associated with each "not detected" analysis. The detection limits are calculated as if the isotope was present at a level that is 2.5 times the square root of twice the average background.

* Sample not in this SDG but reported for QC and analytical batch purposes.

TABLE 11: TOTAL ALPHA ANALYSIS DATA
SDG #16

Parameters of Interest									
WHC Sample ID	Sample #	Sample Type	Alpha (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.
First Batch									
B01SF9	92-05491-A-1a	Soil	8.30	0.93	<0.2				
B01SF9	92-05491-A-2a	Duplicate	6.59	0.89	<0.1	23			
B01SG3	92-05492-A-1a	Soil	1.93	0.44	<0.2				
B01SH3	92-05690-A-1a	Soil	2.58	0.47	<0.2				
	92-05491-A-3a	Matrix Spike	89.7	7.1	<0.5		99.64	0.56	83
	92-05491-A-4a	Blank Spike	133	11	<0.6		119.77	0.64	111
	92-05491-A-5a	Method Blank	<0.6						
Second Batch									
B01SC7	92-05270-A-1a	Soil	5995	462	<223				
B01SC9	92-05271-A-1a	Soil	123	11	<3				
B01SD9	92-05352-A-1a	Soil	33.8	4.3	<3				
B01SD9	92-05352-A-2a	Duplicate	43.7	4.8	<3	26			
B01SD7	92-05353-A-1a	Soil	89.3	9.3	<3				
B01SF7	92-05490-A-1a	Soil	1092	86	<13				
B01SG7	92-05633-A-1a	Soil	14.5	2.0	<0.7				
B01SG9	92-05634-A-1a	Soil	83.7	7.8	<2				
	92-05352-A-3a	Matrix Spike	147	16	<7		139.9	4.1	78
	92-05352-A-4a	Blank Spike	20.6	1.4	<0.6		23.81	0.13	87
	92-05352-A-5a	Method Blank	<0.6						

*One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

**Blank value normalized to sample size analyzed. See narrative for details.

TABLE 12: TOTAL BETA ANALYSIS DATA
TASKS 2 & 4 SDG #16

WHC Sample ID	Parameters of Interest: Sample #	Sample Type	Beta (pCi/g)	+/- 1 sigma*	Normalized Blank**	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.
Batch One									
B01SF9	92-05491-A-1a	Soil	1680	92	<0.43				
B01SF9	92-05491-A-2a	Duplicate	1580	88	<0.43	6			
	92-05491-A-3a	Matrix Spike	1044	56	<0.57		75.7	3.8	(a)
		MS Recount	1772	98	<0.57		75.7	3.8	(a)
	92-05491-A-4a	Blank Spike	249	14	<1.7		240	12	104
	92-05491-A-5a	Method Blank	<1.7						
B01SG3	92-05492-A-1a	Soil	6.62	0.70	<0.43				
B01SH3	92-05690-A-1a	Soil	9.40	0.88	<0.43				
Batch Two									
B01SC7	92-05270-A-1a	Soil	2.97E+07	1.2E+06	9.3E+05				
B01SC9	92-05271-A-1a	Soil	4.64E+05	1.8E+04	2.2E+04				
B01SD9	92-05352-A-1a	Soil	1.87E+04	5.2E+02	4.4E+02				
B01SD9	92-05352-A-2a	Duplicate	1.60E+04	4.5E+02	4.1E+02	16			
B01SD7	92-05353-A-1a	Soil	1.51E+06	8.2E+04	4.4E+04				
B01SG7	92-05633-A-1a	Soil	1.45E+05	5.4E+03	5.7E+03				
B01SG9	92-05634-A-1a	Soil	6.24E+05	2.1E+04	3.8E+03				
B01SF7	92-05490-A-1a	Soil	1.28E+07	4.8E+05	5.4E+05				
	92-05352-A-3a	Matrix Spike	1.83E+04	5.4E+02	5.9E+02		2.84E+03	1.63E+02	(a)
	92-05352-A-4a	Blank Spike	90.0	2.5	4.9		95.1	4.7	95
	92-05352-A-5a	Method Blank	4.9	1.2	4.9				

* One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

** Blank value normalized to sample size analyzed. See narrative for details.

a) See narrative for discussion of the matrix spike.

TABLE 13: PLUTONIUM ANALYSIS DATA FOR TASKS 2&4
SOG #16

Batch One of Two

Client Sample ID	Program Sample ID	Sample Type	Pu-239+240 pCi/g	+/- 1 sigma	Pu-239+240 RPD	Pu-239+240 Normalized Blank**	Pu-238 pCi/g	+/- 1 sigma	Pu-238 RPD	Pu-238 Normalized Blank**	Pu-239 Spike pCi/sample	+/- 1 sigma	% Recovery
B01SF9	92-05491-A-1c	Soil	7.32E-02	1.03E-02		<1 E-03	<8 E-03			<7 E-04			
B01SF9	92-05491-A-2c	Duplicate	6.59E-02	5.41E-03	11	<1 E-03	4.05E-03	1.60E-03	NA	<7 E-04			
	92-05491-A-5c	Blank*	2.06E-03	9.24E-04			<2 E-03						
	92-05491-A-4c	Blank Spike*	1.08E+01	2.99E-01			<3 E-03				1.19E+01	1.10E-01	91
B01SG3	92-05492-A-1c	Soil	<2 E-03			<1 E-03	<2 E-03			<7 E-04			
B01SH3	92-05690-A-1c	Soil	<3 E-03			<1 E-03	<3 E-03			<7 E-04			

* Reported in pCi/sample
** Blank value when normalized to actual sample size analyzed, in pCi/g.

Using a 1 gram sample size results in a detection limit of approximately 2 E-3 pCi/g for Pu-239+240 and 3 E-3 pCi/g for Pu-238.

One sigma uncertainties are the propagated error of individual measurements.

All sample analyses are based on received sample weight, i.e., no correction for weight percent solids.

TABLE 13: PLUTONIUM ANALYSIS DATA FOR TASKS 2&4
SDG #16 (continued)

Batch Two of Two

Client Sample ID	Program Sample ID	Sample Type	Pu-239+240 pCi/g	+/- 1 sigma	Pu-239+240 RPD	Pu-239+240 Normalized Blank**	Pu-238 pCi/g	+/- 1 sigma	Pu-238 RPD	Pu-238 Normalized Blank**	Pu-239 Spike pCi/sample	+/- 1 sigma	% Recovery
B01SC7	92-05270-A-1c	Soil	1.30E+01	5.04E-01		<4 E-02	5.63E-01	4.74E-02		<5 E-02			
B01SC9	92-05271-A-1c	Soil	5.47E+01	2.03E+00		<6 E-02	2.60E+00	1.52E-01		<8 E-02			
B01SD9	92-05352-A-1c	Soil	4.26E-01	3.87E-02		<6 E-02	3.75E-02	1.23E-02		<8 E-02			
B01SD9	92-05352-A-2c	Duplicate	4.87E-01	3.60E-02	13	<6 E-02	4.09E-02	1.01E-02	9	<7 E-02			
	92-05352-A-5c	Blank*	<2 E-02				<3 E-02						
	92-05352-A-4c	Blank Spike*	1.05E+01	3.42E-01			<1 E-02				1.18E+01	9.09E-02	89
B01SD7	92-05353-A-1c	Soil	3.02E+01	1.15E+00		<6 E-02	1.78E+00	1.18E-01		<8 E-02			
B01SF7	92-05490-A-1c	Soil	6.71E+02	2.49E+01		<1 E+00	3.31E+01	2.09E+00		<1 E+00			
B01SG7	92-05633-A-1c	Soil	5.54E+00	2.24E-01		<1 E-02	3.55E-01	2.67E-02		<2 E-02			
B01SG9	92-05634-A-1c	Soil	4.67E+00	2.07E-01		<4 E-02	3.36E-01	3.67E-02		<5 E-02			

* Reported in pCi/sample
** Blank value when normalized to actual sample size analyzed, in pCi/g.

Using a 1 gram sample size results in a detection limit of approximately 2 E-2 pCi/g for Pu-239+240 and 3 E-2 pCi/g for Pu-238.

One sigma uncertainties are the propagated error of individual measurements.

All sample analyses are based on received sample weight, i.e., no correction for weight percent solids.

TABLE 15: TRITIUM ANALYSIS DATA FOR TASKS 2 & 4
SDG #16

WHC Sample ID	Sample #	Sample Type	Tritium (pCi/g)	+/- 1 sigma*	RPD	Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.	RCF Fs**
B01SC7	92-05270-K-1	Soil	15.5	1.9					
B01SC9	92-05271-K-1	Soil	14.7	1.6					
B01SC9	92-05271-K-2	Duplicate	14.2	1.6	3				
B01SD9	92-05352-K-1	Soil	10.4	1.3					
B01SD7	92-05353-K-1	Soil	35.4	1.8					
B01SF7	92-05490-K-1	Soil	16.2	1.8					
B01SF9	92-05491-K-1	Soil	43.8	1.8					
B01SG3	92-05492-K-1	Soil	7.2	1.8					
B01SG7	92-05633-K-1	Soil	<5						
B01SG9	92-05634-K-1	Soil	30.5	2.0					
B01SH3	92-05690-K-1	Soil	44.0	1.9					
	92-05271-K-4	Matrix Spike	632	13		700	12	88	
	92-05271-K-	Blank Spike	4470	86		4177	73	107	
	92-05271-K-5	Method Blank	<4						
	92-05271-K-4	Yield spike to determine Fs							81.5

*One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.
**Recovery Correction Factor, Fs.

TABLE 14: STRONTIUM-90 ANALYSIS DATA FOR TASKS 2 & 4
SDG #16

WHC Sample ID	Parameters of Interest: Sample #	Sample Type	Strontium (pCi/g)	+/- 1 sigma*	Normalized Blank***	RPD	Spike Conc. (pCi/g)	+/- 1 sigma*	Spike % Rec.	Normalized % Yield**
First Batch										
B01SC7	92-05270-A-1b	Soil	1.07E+07	8.50E+05	<7E+03					
B01SC9	92-05271-A-1b	Soil	7.37E+04	6.07E+03	<3E+02					
B01SD9	92-05352-A-1b	Soil	8.96E+03	7.07E+02	<3E+01					
B01SD9	92-05352-A-2b	Duplicate	7.67E+03	6.11E+02	<3E+01	15.5				
B0S1J7	92-05353-A-1b	Soil	7.12E+05	5.89E+04	<3E+03					
B01SG7	92-05633-A-1b	Soil	7.23E+04	6.12E+03	<1E+03					
B01SG9	92-05634-A-1b	Soil	2.99E+05	2.38E+04	<3E+02					
B01SF7	92-05490-A-1b	Soil	5.41E+06	4.67E+05	<3E+04					
	92-05352-A-3b	Matrix Spike	8.93E+03	7.17E+02	<31		1422	81		
	92-05352-A-3b	Yield Spike	Used to determine Batch yield							100
	92-05352-A-4b	Blank Spike	115	9.1	0.62		118	6	97	
	92-05352-A-5b	Method Blank	<0.6							
Second Batch										
B01SG3	92-05492-A-1b	Soil	<0.3		<0.3					
B01SH3	92-05690-A-1b	Soil	<0.3		<0.3					
B01SF9	92-05491-A-1b	Soil	40.8	3.2	<0.2					
B01SF9	92-05491-A-2b	Duplicate	36.0	2.9	<0.2	12.7				
	92-05491-A-3b	Matrix Spike	294	22	<0.4		274	14	93	
	92-05491-A-3b	Yield Spike	Used to determine Batch yield							96
	92-05491-A-4b	Blank Spike	46.0	4.1	<0.6		47.4	2.4	97	
	92-05491-A-5b	Method Blank	<0.6							

* One sigma uncertainties are based on propagation of mass, volume, and counting uncertainties.

** All Sr-90 analyses are calculated on the basis of their ratio to the matrix spike recovery which has been normalized to 100% chemical recovery.

*** Blank value when normalized to actual sample mass analyzed.

LABORATORY: BATTELLE-PACIFIC NORTHWEST LABORATORIES
SDG NO. 16
TOTAL ALPHA RESULT VERIFICATION

SAMPLE ID	DETECT EFF	COUNT EFF	CALC. RESULT	RPTD RESULT	CALC. MDA	RPTD MDA	
BO1SF9	10.34	1	8.30	8.3	0.50		NR
BO1SF9	15.601	1	6.59	6.59	0.67		NR
BO1SG3	12.428	1	1.93	1.93	0.52		NR
BO1SH3	11.426	1	2.58	2.58	0.39		NA
BO1SF9	6.2149	1	89.73	89.7	0.81		NA
BO1SF9	3.2606	1	133.17	133	0.60		NR
BO1SF9	3.2726	1	0.02	<0.6	0.58		NR
BO1SC7	3.0042	1	5994.75	5995	62.70		NA
BO1SC9	3.3208	1	122.50	123	2.46		NA
BO1SD9	3.466	1	33.77	33.8	3.07		NR
BO1SD9	3.3811	1	43.67	43.7	1.88		NR
BO1SD7	3.4053	1	89.25	89.3	5.01		NA
BO1SF7	3.065	1	1092.07	1092	5.34		NA
BO1SG7	4.2907	1	14.51	14.5	1.67		NA
BO1SG9	3.6245	1	83.73	83.7	1.13		NR
BO1SD9	3.111	1	147.43	147	9.68		NA
BO1SD9	3.8029	1	20.56	20.6	0.19		NR
BO1SD9	3.3811	1	0.09	<0.6	0.57		NR

TOTAL BETA RESULT VERIFICATION

SAMPLE ID	DETECT EFF	COUNT EFF	CALC. RESULT	RPTD RESULT	CALC. MDA	RPTD MDA	
BO1SF9	2.5371	1	1.68E+03	1.68E+03	7.04		NR
BO1SF9	2.6502	1	1.58E+03	1.58E+03	5.90		NR
BO1SG3	2.6801	1	6.62E+00	6.62E+00	0.59		NR
BO1SH3	2.6337	1	9.40E+00	9.40E+00	NA		NA
BO1SF9	2.3068	1	1.04E+03	1.04E+03	NA		NA
BO1SF9	1.9553	1	2.49E+02	2.49E+02	7.65		NR
BO1SF9	1.9376	1	1.17E+00	:<1.7	1.74		NR
BO1SC7	1.8904	1	2.97E+07	2.97E+07	660763.20		NR
BO1SC9	1.8911	1	4.64E+05	4.64E+05	NA		NA
BO1SD9	1.9048	1	1.87E+04	1.87E+04	NA		NA
BO1SD9	1.9026	1	1.60E+04	1.60E+04	191.82		NR
BO1SD7	1.8904	1	1.51E+06	1.51E+06	20260.49		NR
BO1SF7	1.8911	1	1.28E+07	1.28E+07	264727.50		NR
BO1SG7	1.8904	1	1.45E+05	1.45E+05	NA		NA
BO1SG9	1.8918	1	6.25E+05	6.25E+05	NA		NA
BO1SD9	1.8969	1	1.83E+04	1.83E+04	272.01		5
BO1SD9	2.0052	1	9.00E+01	9.00E+01	3.73		NR
BO1SD9	1.9312	1	4.89E+00	4.90E+00	2.63		NR

PLUTONIUM-239/240 RESULT VERIFICATION

SAMPLE ID	PU-242 COUNTS	PU-239 COUNTS	PU-239 BKGD	PU-238 COUNTS	PU-238 BKGD	PU-239 CALC	PU-239 RPT	PU-238 CALC
BO1SF9	3247	53	0	4	4	7.32E-02	7.32E-02	0.00E+00
BO1SF9	9634	174	2	14	3	6.60E-02	6.59E-02	4.22E-03
BO1SG3	6088	1	0	2	1	8.09E-04	<2 E-03	8.09E-04
BO1SH3	4620	6	1	1	1	4.71E-03	<3 E-3	0.00E+00
BO1SF9	18578	20917	3	5	2	1.08E+01	1.08E+01	1.55E-03
BO1SF9	23268	5	0	4	2	2.06E-03	2.06E-03	8.25E-04
BO1SC7	5522	4000	0	174	1	1.30E+01	1.30E+01	5.62E-01
BO1SC9	4991	9827	1	468	1	5.47E+01	5.47E+01	2.60E+00
BO1SD9	9711	146	2	15	2	4.25E-01	4.26E-01	3.83E-02
BO1SD9	12703	232	0	21	2	4.87E-01	4.87E-01	3.99E-02
BO1SD7	5078	5517	1	326	1	3.04E+01	3.02E+01	1.79E+00
BO1SF7	5742	7452	1	369	1	6.71E+02	6.71E+02	3.31E+01
BO1SG7	3607	3642	0	234	1	5.54E+00	5.54E+00	3.54E-01
BO1SG9	5782	1396	0	104	3	4.67E+00	4.67E+00	3.38E-01
BO1SD9	4916	5422	0	5	3	1.05E+01	1.05E+01	3.88E-03
BO1SD9	5500	1	1	1	1	0.00E+00	<2 E-2	0.00E+00

STRONTIUM-90 RESULT VERIFICATION

SAMPLE ID	NET CPM	D/C	SAMPLE AMOUNT	CALC SR-90	RPTD SR-90	CALC MDA	RPTD MDA	TIME	
BO1SF9	67.833	2.796	2.613	4.08E+01	4.08E+01	-4.18E-01		NR	30.000
BO1SF9	61.5	2.773	2.743	3.60E+01	3.60E+01	-4.03E-01		NR	30.000
BO1SG3	0.384	2.775	2.255	2.73E-01	<0.3	-8.75E-01		NR	30.000
BO1SH3	0.2013	2.775	2.352	1.37E-01	<0.3	-9.33E-01		NR	30.000
BO1SF9	339.9	2.84	1.755	2.94E+02	2.94E+02	-4.60E-01		NR	10.000
BO1SF9	28.567	2.761	1	4.59E+01	4.60E+01	-1.89E+00		NR	30.000
BO1SF9	0.3783	2.778	1	5.98E-01	<0.6	-2.50E+00		NR	30.000
BO1SC7	749.1	2.865	0.0001	1.07E+07	1.07E+07	-5.22E+03		NR	10.000
BO1SC9	114.7	2.837	0.00226	7.37E+04	7.37E+04	-4.58E+02		NR	20.000
BO1SD9	132.1	2.79	0.0222	8.96E+03	8.96E+03	-4.95E+01		NR	20.000
BO1SD9	127.95	2.849	0.0239	7.68E+03	7.67E+03	-4.76E+01		NR	20.000
BO1SD7	115.45	2.885	0.000225	7.12E+05	7.12E+05	-5.44E+03		NR	20.000
BO1SF7	66.35	2.817	0.0000179	5.41E+06	5.14E+06	-1.04E+05		NR	20.000
BO1SG7	132.2	2.865	0.00257	7.23E+04	7.23E+04	-4.86E+02		NR	20.000
BO1SG9	809.8	2.844	0.00392	2.99E+05	2.99E+05	-1.41E+02		NR	10.000
BO1SD9	97.1	2.746	0.0169	8.93E+03	8.93E+03	-9.61E+01		NR	20.000
BO1SD9	78.9	2.828	1	1.15E+02	1.15E+02	-1.50E+00		NR	20.000
BO1SD9	0.143	2.828	1	2.09E-01	< 0.6	-2.37E+00		NR	30.000

TRITIUM RESULT VERIFICATION

SAMPLE ID	RECOV. FACTOR	SAMPLE WEIGHT	CALC H3	RPTD H3	CALC MDA	RPTD MDA	FLASK BEFORE	FLASK AFTER
BO1SC7	0.815	4.713	1.55E+01	15.5	6.23E+00	17.952	142.833	95.235
BO1SC9	0.815	5.026	1.47E+01	14.7	5.26E+00	19.302	137.342	94.785
BO1SC9	0.815	5.095	1.42E+01	14.2	5.88E+02	420	138.367	93.953
BO1SD9	0.815	5.839	1.04E+01	10.4	5.88E+02	420	123.167	82.844
BO1SD7	0.815	5.789	3.54E+01	35.4	5.88E+02	420	132.281	84.113
BO1SF7	0.815	4.441	1.62E+01	16.2	5.95E+00	17.952	127.927	85.178
BO1SF9	0.815	5.544	4.37E+01	43.8	4.56E+00	19.302	125.355	84.514
BO1SG3	0.815	4.102	7.19E+00	7.2	5.88E+02	420	127.613	84.888
BO1SG7	0.815	5.235	3.48E-01	<5	5.88E+02	420	133.324	86.471
BO1SG9	0.815	4.01	3.05E+01	30.5	5.88E+02	420	124.911	85.297
BO1SH3	0.815	5.442	4.39E+01	44	5.07E+00	17.952	138.974	94.874
BO1SC9	0.815	5.968	6.32E+02	632	3.94E+00	19.302	120.328	82.019
BO1SC9	0.815	1	4.47E+03	4470	5.88E+02	420	144.233	89.03
BO1SC9	0.815	10	-6.77E-01	<4	5.88E+02	420	123.278	85.464