334

R-002-206.4

CERTIFICATE OF ANALYSES

05/04/90

WMCO:R(RRA):90-062
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INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

334

CERTIFICATE OF ANALYSIS

C/O ASI Inc.
11030 Hamilton Cleves Road
Ross, OH 45061
Attn: Cindy Capannari

Date: March 26,1990

Page 1 of 5

Job Number: ADV 35794

P.O Number: Accounts Payable

This is the Certificate of Analysis for the following:

Client Project ID:	FMPC RI/FS
Date Received by Lab:	01/25/90
Number of Samples:	Eleven (11)
Sample Type:	Sludge

I. INTRODUCTION

On January 25, 1990, eleven (11) sludge samples were received at ITAS-Oak Ridge Lab from Advanced Sciences Inc., Ross, Ohio. The list of analytical tests performed, as well as date of receipt and analysis can be found in the attached report.

Blanks are identified with client sample ID's starting with either "QX..B" or "QX...B.". Data are reported with the qualifier "U" if the compound was analyzed for but not detected. Lists with concentration unit code and lab and client suffix code definitions are attached.

II. ANALYTICAL RESULTS/METHODOLOGY

The analytical results for this report are presented by analytical tests. Each set of data will include sample identification information, the analytical results, and the appropriate detection limits.

Reviewed and Approved

Snell A. Mills III

Snell A. Mills III
Laboratory Manager

SAM/sca

American Council of Independent Laboratories
International Association of Environmental Testing Laboratories
American Association for Laboratory Accreditation

IT Analytical Services, 1550 Bear Creek Road, Oak Ridge, TN 37830

681-1-89

II. ANALYTICAL RESULTS/METHODOLOGY (Continued)

The samples were analyzed for Appendix IX semivolatiles at ITAS Knoxville, Knoxville, TN. and will be submitted separately.

The samples were analyzed for Appendix IX dioxins/furans at ITAS TDL Knoxville, Knoxville, TN. and will be submitted separately.

The samples were analyzed for Appendix IX organophosphorus pesticides and herbicides at ITAS San Jose Laboratory, San Jose, California and will be submitted separately.

The samples were analyzed for Appendix IX volatiles using the USEPA CLP Statement of Work, Method 624, 7/87 revision.

The samples were analyzed for Appendix IX pesticide/PCB compounds using the USEPA CLP Statement of Work, Method 608, 7/87 revision.

The samples were analyzed for Appendix IX herbicides using the USEPA SW846, Method 8150 ,3rd revision.

The samples were analyzed for Appendix IX metals and cyanide using the USEPA CLP statement of Work, 7/87 revision.

The samples were analyzed for sulfide using Method 9030, USEPA SW-84, 3rd edition, 1986.

III. QUALITY CONTROL

The matrix spike (MS) and matrix spike duplicate (MSD) analyses for the organic parameters were performed on sample 00350.

The samples were analyzed for volatile organics 02/06/90 - 02/08/90. The sample run proceeded well. All surrogates and internal standards were within QC required limits. All % recoveries for the matrix spike and matrix spike duplicate were within QC required limits. All RPD % recoveries were within QC limits. There were no problems, QC or otherwise, seen in the final data review.

The pesticide and aroclor analyses were performed on 02/06/90 and 02/07/90. All samples and blank were prepared as low-level soils and analyzed by CLP protocol EPA method 608. Fourteen (14) out of eighteen (18) soil pesticide surrogate recoveries were outside the QC required limits,this was due to co-eluding peak with dibutylchlorendate . One (1) out of twelve (12) soil matrix spike recoveries was outside the QC required limits. All matrix spike duplicate recoveries were within QC required limits.

III. QUALITY CONTROL (Cont.)

Organic data was reported with qualifiers as follows:

U - Compound analyzed for but not detected.
E - Compound exceeded calibration range of instrument.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below the contract required quantitation limit. The value given was an estimate.
B - Compound was found in the method blank.
A - Compound Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.

The duplicate and spike analyses for the inorganics were performed on sample 00350.

The samples were prepared for ICP analysis on 01/19/90, and analyzed on 02/13/90. The ICP serial dilution was outside of QC limits for zinc.

The samples were prepared for GFAA analysis on 02/13/90 and analyzed during the period 02/21/90 - 03/07/90. The matrix spike % recoveries were outside the QC required limits for arsenic, lead, selenium, and thallium. The furnace analytical spike was <40% for selenium. The furnace analytical spike recovery was outside the ± 15% window for thallium client number 00350.

The samples were prepared and analyzed for Mercury on 02/07/90.

The samples were prepared for Potassium analysis on 02/13/90 and analyzed on 02/21/90.

The samples were prepared for cyanide analysis on 01/29/90 and 02/02/90. The samples were analyzed for cyanide on 01/31/90 and 02/05/90, respectively.

Inorganic data was reported with the following qualifiers:

N - Matrix spike outside QC limits.
* - Duplicate values outside QC limits.
E - Furnace anal. spike <40%; ICP serial dilution outside QC limits.
W - Furnace anal. spike recovery outside + or - 15% window.
S - Method of standard used (MSA)
+ - Correlation coefficient for MSA <0.995

SAMPLE SUMARY TABLE

Field #	ITAS #	Matrix	Conc.	Analysis
00350	MM2671	SLUDGE	LOW	VOA
	MM2658	SLUDGE	LOW	PEST/PCB
	MM2619	SLUDGE	LOW	METALS
	MM2606	SLUDGE	LOW	CYANIDE
	MM2606	SLUDGE	LOW	SULFIDE
00350MS	MM2672	SLUDGE	LOW	QC/MS/VOA
	MM2659	SLUDGE	LOW	QC/MS/PEST/PCB
	MM2620	SLUDGE	LOW	QC/MS/METALS
	MM2607	SLUDGE	LOW	QC/MS/CYANIDE
	MM2607	SLUDGE	LOW	QC/MS/SULFIDE
00350MSD	MM2673	SLUDGE	LOW	QC/MSD/VOA
	MM2660	SLUDGE	LOW	QC/MSD/PEST/PCB
	MM2608	SLUDGE	LOW	QC/MSD/SULFIDE
00350DUP	MM2621	SLUDGE	LOW	QC/DUP/METALS
	MM2608	SLUDGE	LOW	QC/DUP/CYANIDE
00351	MM2674	SLUDGE	LOW	VOA
	MM2661	SLUDGE	LOW	PEST/PCB
	MM2622	SLUDGE	LOW	METALS
	MM2609	SLUDGE	LOW	CYANIDE
	MM2609	SLUDGE	LOW	SULFIDE
00352	MM2675	SLUDGE	LOW	VOA
	MM2662	SLUDGE	LOW	PEST/PCB
	MM2623	SLUDGE	LOW	METALS
	MM2610	SLUDGE	LOW	CYANIDE
	MM2610	SLUDGE	LOW	SULFIDE
00353	MM2676	SLUDGE	LOW	VOA
	MM2663	SLUDGE	LOW	PEST/PCB
	MM2624	SLUDGE	LOW	METALS
	MM2611	SLUDGE	LOW	CYANIDE
	MM2611	SLUDGE	LOW	SULFIDE
00354	MM2677	SLUDGE	LOW	VOA
	MM2664	SLUDGE	LOW	PEST/PCB
	MM2625	SLUDGE	LOW	METALS
	MM2612	SLUDGE	LOW	CYANIDE
	MM2612	SLUDGE	LOW	SULFIDE

SAMPLE SUMARY TABLE CONT

Field #	ITAS #	Matrix	Conc.	Analysis
00355	MM2678	SLUDGE	LOW	VOA
	MM2665	SLUDGE	LOW	PEST/PCB
	MM2626	SLUDGE	LOW	METALS
	MM2613	SLUDGE	LOW	CYANIDE
	MM2613	SLUDGE	LOW	SULFIDE
00356	MM2679	SLUDGE	LOW	VOA
	MM2666	SLUDGE	LOW	PEST/PCB
	MM2627	SLUDGE	LOW	METALS
	MM2614	SLUDGE	LOW	CYANIDE
	MM2614	SLUDGE	LOW	SULFIDE
00357	MM2680	SLUDGE	LOW	VOA
	MM2667	SLUDGE	LOW	PEST/PCB
	MM2628	SLUDGE	LOW	METALS
	MM2615	SLUDGE	LOW	CYANIDE
	MM2615	SLUDGE	LOW	SULFIDE
00358	MM2681	SLUDGE	LOW	VOA
	MM2668	SLUDGE	LOW	PEST/PCB
	MM2629	SLUDGE	LOW	METALS
	MM2616	SLUDGE	LOW	CYANIDE
	MM2616	SLUDGE	LOW	SULFIDE
00359	MM2682	SLUDGE	LOW	VOA
	MM2669	SLUDGE	LOW	PEST/PCB
	MM2630	SLUDGE	LOW	METALS
	MM2617	SLUDGE	LOW	CYANIDE
	MM2617	SLUDGE	LOW	SULFIDE
00360	MM2683	SLUDGE	LOW	VOA
	MM2670	SLUDGE	LOW	PEST/PCB
	MM2631	SLUDGE	LOW	METALS
	MM2618	SLUDGE	LOW	CYANIDE
	MM2618	SLUDGE	LOW	SULFIDE

Abbreviations:

VOA - VOLATILES
PEST - PESTICIDES
PCB - POLYCHLORINATED BIPHENYLS
MS - MATRIX SPIKE
MSD - MATRIX SPIKE DUPLICATE

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 031

00350

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2671

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2671R

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 13 Date Analyzed: 02/08/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	B
67-64-1	Acetone	29	B
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	21	B
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	1	J
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	5	J
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
	Total Xylenes	1	J

6

WDS 02/23/90

00012
SAMPLE NO.

1X
ORGANICS ANALYSIS DATA SHEET

00350

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2671

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2671R

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 13 dec. ____ Date Extracted: ____

Extraction: (SepF/Cont/Sonc) ____ Date Analyzed: 02/08/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	1100	U
107-02-8	Acrolein	11	U
107-13-1	Acrylonitrile	11	U
126-99-8	2-Chloro-1,3-Butadiene	6	U
107-05-1	3-Chloropropene	6	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
106-93-4	1,2-Dibromoethane	6	U
74-95-3	Dibromomethane	11	U
110-57-6	trans-1,4-Dichloro-2-butene	110	U
75-71-8	Dichlorodifluoromethane	230	U
123-91-1	1,4-Dioxane	5700	U
107-12-0	Ethyl Cyanide	110	U
97-63-2	Ethyl Methacrylate	11	U
74-88-4	Iodomethane	6	U
78-83-1	Isobutyl Alcohol	43	JB
126-98-7	Methacrylonitrile	11	U
80-62-6	Methyl Methacrylate	11	U
110-86-1	Pyridine	54	JB
630-20-6	1,1,1,2-Tetrachloroethane	6	U
75-69-4	Trichlorofluoromethane	6	U
96-16-4	1,2,3-Trichloropropane	6	U

WDS 02/23/90

00039

EPA SAMPLE NO.

00351

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2674

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2674R

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 39 Date Analyzed: 02/08/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	16	U
74-83-9	Bromomethane	16	U
75-01-4	Vinyl Chloride	16	U
75-00-3	Chloroethane	16	U
75-09-2	Methylene Chloride	18	B
67-64-1	Acetone	34	B
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	63	B
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	16	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	5	J
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	16	U
591-78-6	2-Hexanone	16	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
	Total Xylenes	8	U

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WS 02/23/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00351

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2674

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2674R

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 39 dec. ____ Date Extracted: ____

Extraction: (SepF/Cont/Sonc) ____ Date Analyzed: 02/08/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	1600	U
107-02-8	Acrolein	16	U
107-13-1	Acrylonitrile	16	U
126-99-8	2-Chloro-1,3-Butadiene	8	U
107-05-1	3-Chloropropene	8	U
96-12-8	1,2-Dibromo-3-chloropropane	16	U
106-93-4	1,2-Dibromoethane	8	U
74-95-3	Dibromomethane	16	U
110-57-6	trans-1,4-Dichloro-2-butene	160	U
75-71-8	Dichlorodifluoromethane	330	U
123-91-1	1,4-Dioxane	8200	U
107-12-0	Ethyl Cyanide	160	U
97-63-2	Ethyl Methacrylate	16	U
74-88-4	Iodomethane	8	U
78-83-1	Isobutyl Alcohol	15	JB
126-98-7	Methacrylonitrile	16	U
80-62-6	Methyl Methacrylate	16	U
110-86-1	Pyridine	8200	U
630-20-6	1,1,1,2-Tetrachloroethane	8	U
75-69-4	Trichlorofluoromethane	140	
96-16-4	1,2,3-Trichloropropane	8	U

WS 8/23/90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00352

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2675

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2675

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 57 Date Analyzed: 02/06/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	23	U
74-83-9	Bromomethane	23	U
75-01-4	Vinyl Chloride	23	U
75-00-3	Chloroethane	23	U
75-09-2	Methylene Chloride	50	B
67-64-1	Acetone	23	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	97	B
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
108-05-4	Vinyl Acetate	23	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	7	J
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	Trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	16	J
591-78-6	2-Hexanone	23	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
	Total Xylenes	12	U

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MDS
02/23/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00352

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2675

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2675

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 57 dec. ____ Date Extracted: ____

Extraction: (SepF/Cont/Sonc) ____ Date Analyzed: 02/06/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	2300	U
107-02-8	Acrolein	23	U
107-13-1	Acrylonitrile	23	U
126-99-8	2-Chloro-1,3-Butadiene	12	U
107-05-1	3-Chloropropene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	23	U
106-93-4	1,2-Dibromoethane	4	J
74-95-3	Dibromomethane	23	U
110-57-6	trans-1,4-Dichloro-2-butene	230	U
75-71-8	Dichlorodifluoromethane	470	U
123-91-1	1,4-Dioxane	12000	U
107-12-0	Ethyl Cyanide	230	U
97-63-2	Ethyl Methacrylate	23	U
74-88-4	Iodomethane	12	U
78-83-1	Isobutyl Alcohol	10	JB
126-98-7	Methacrylonitrile	23	U
80-62-6	Methyl Methacrylate	23	U
110-86-1	Pyridine	12000	U
630-20-6	1,1,1,2-Tetrachloroethane	12	U
75-69-4	Trichlorofluoromethane	210	
96-16-4	1,2,3-Trichloropropane	12	U

MOS 02/23/90

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00353

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2676

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2676R

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 51 Date Analyzed: 02/08/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	20	U
74-83-9	Bromomethane	20	U
75-01-4	Vinyl Chloride	20	U
75-00-3	Chloroethane	20	U
75-09-2	Methylene Chloride	28	B
67-64-1	Acetone	82	B
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	4	J
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	87	B
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
108-05-4	Vinyl Acetate	20	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	12	J
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	3	J
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
	Total Xylenes	10	U

12

WDS 02/23/90

00090

SAMPLE NO.

00353

1X
ORGANICS ANALYSIS DATA SHEET

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2676

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2676R

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 51 dec. ____ Date Extracted: _____

Extraction: (SepF/Cont/Sonc) ____ Date Analyzed: 02/08/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	2000	U
107-02-8	Acrolein	20	U
107-13-1	Acrylonitrile	20	U
126-99-8	2-Chloro-1,3-Butadiene	10	U
107-05-1	3-Chloropropene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	20	U
106-93-4	1,2-Dibromoethane	10	U
74-95-3	Dibromomethane	20	U
110-57-6	trans-1,4-Dichloro-2-butene	200	U
75-71-8	Dichlorodifluoromethane	410	U
123-91-1	1,4-Dioxane	10000	U
107-12-0	Ethyl Cyanide	200	U
97-63-2	Ethyl Methacrylate	20	U
74-88-4	Iodomethane	10	U
78-83-1	Isobutyl Alcohol	35	JB
126-98-7	Methacrylonitrile	20	U
80-62-6	Methyl Methacrylate	20	U
110-86-1	Pyridine	27	JB
630-20-6	1,1,1,2-Tetrachloroethane	10	U
75-69-4	Trichlorofluoromethane	78	
96-16-4	1,2,3-Trichloropropane	10	U

MAS 02/23/90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00354

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2677

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2677

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 58 Date Analyzed: 02/07/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	24	U
74-83-9	Bromomethane	24	U
75-01-4	Vinyl Chloride	24	U
75-00-3	Chloroethane	24	U
75-09-2	Methylene Chloride	67	B
67-64-1	Acetone	24	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	110	B
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
108-05-4	Vinyl Acetate	24	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	7	J
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	Trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	24	U
591-78-6	2-Hexanone	24	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
	Total Xylenes	12	U

14

MDS 02/23/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: 00354

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2677

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2677

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 58 dec. ____ Date Extracted: ____

Extraction: (SepF/Cont/Sonc) ____ Date Analyzed: 02/07/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	2400	U
107-02-8	Acrolein	24	U
107-13-1	Acrylonitrile	24	U
126-99-8	2-Chloro-1,3-Butadiene	12	U
107-05-1	3-Chloropropene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	24	U
106-93-4	1,2-Dibromoethane	3	J
74-95-3	Dibromomethane	24	U
110-57-6	trans-1,4-Dichloro-2-butene	240	U
75-71-8	Dichlorodifluoromethane	480	U
123-91-1	1,4-Dioxane	12000	U
107-12-0	Ethyl Cyanide	240	U
97-63-2	Ethyl Methacrylate	24	U
74-88-4	Iodomethane	12	U
78-83-1	Isobutyl Alcohol	7100	U
126-98-7	Methacrylonitrile	24	U
80-62-6	Methyl Methacrylate	24	U
110-86-1	Pyridine	12000	U
630-20-6	1,1,1,2-Tetrachloroethane	12	U
75-69-4	Trichlorofluoromethane	200	
96-16-4	1,2,3-Trichloropropane	12	U

MDS 02/23/90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00355

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2678

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2678

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 33 Date Analyzed: 02/07/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	Methylene Chloride	31	B
67-64-1	Acetone	12	J
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	8	BJ
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	15	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	15	
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
	Total Xylenes	7	U

16

WOS 02/23/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
00355

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2678

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2678

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 33 dec. ____ Date Extracted: _____

Extraction: (SepF/Cont/Sonc) ____ Date Analyzed: 02/07/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	1500	U
107-02-8	Acrolein	15	U
107-13-1	Acrylonitrile	15	U
126-99-8	2-Chloro-1,3-Butadiene	7	U
107-05-1	3-Chloropropene	7	U
96-12-8	1,2-Dibromo-3-chloropropane	15	U
106-93-4	1,2-Dibromoethane	7	U
74-95-3	Dibromomethane	15	U
110-57-6	trans-1,4-Dichloro-2-butene	150	U
75-71-8	Dichlorodifluoromethane	300	U
123-91-1	1,4-Dioxane	7500	U
107-12-0	Ethyl Cyanide	150	U
97-63-2	Ethyl Methacrylate	15	U
74-88-4	Iodomethane	7	U
78-83-1	Isobutyl Alcohol	9	JB
126-98-7	Methacrylonitrile	15	U
80-62-6	Methyl Methacrylate	15	U
110-86-1	Pyridine	7500	U
630-20-6	1,1,1,2-Tetrachloroethane	7	U
75-69-4	Trichlorofluoromethane	7	U
96-16-4	1,2,3-Trichloropropane	7	U

MDS 02/23/90

00171

EPA SAMPLE NO.

00356

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2679

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2679

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 45 Date Analyzed: 02/06/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	18	U
74-83-9	Bromomethane	18	U
75-01-4	Vinyl Chloride	18	U
75-00-3	Chloroethane	18	U
75-09-2	Methylene Chloride	24	B
67-64-1	Acetone	18	U
75-15-0	Carbon Disulfide	9	U
75-35-4	1,1-Dichloroethene	9	U
75-34-3	1,1-Dichloroethane	9	U
540-59-0	1,2-Dichloroethene (total)	9	U
67-66-3	Chloroform	2	J
107-06-2	1,2-Dichloroethane	9	U
78-93-3	2-Butanone	110	B
71-55-6	1,1,1-Trichloroethane	9	U
56-23-5	Carbon Tetrachloride	9	U
108-05-4	Vinyl Acetate	18	U
75-27-4	Bromodichloromethane	9	U
78-87-5	1,2-Dichloropropane	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
79-01-6	Trichloroethene	9	U
124-48-1	Dibromochloromethane	9	U
79-00-5	1,1,2-Trichloroethane	9	U
71-43-2	Benzene	9	U
10061-02-6	Trans-1,3-Dichloropropene	9	U
75-25-2	Bromoform	9	U
108-10-1	4-Methyl-2-Pentanone	18	U
591-78-6	2-Hexanone	18	U
127-18-4	Tetrachloroethene	9	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-88-3	Toluene	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U
100-42-5	Styrene	9	U
	Total Xylenes	9	U

18

WS 02/23/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
00356

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2679

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2679

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 45 dec. ____ Date Extracted: _____

Extraction: (SepF/Cont/Sonc) ____ Date Analyzed: 02/06/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	1800	U
107-02-8	Acrolein	18	U
107-13-1	Acrylonitrile	18	U
126-99-8	2-Chloro-1,3-Butadiene	9	U
107-05-1	3-Chloropropene	9	U
96-12-8	1,2-Dibromo-3-chloropropane	18	U
106-93-4	1,2-Dibromoethane	9	U
74-95-3	Dibromomethane	18	U
110-57-6	trans-1,4-Dichloro-2-butene	180	U
75-71-8	Dichlorodifluoromethane	360	U
123-91-1	1,4-Dioxane	9100	U
107-12-0	Ethyl Cyanide	180	U
97-63-2	Ethyl Methacrylate	18	U
74-88-4	Iodomethane	9	U
78-83-1	Isobutyl Alcohol	12	JB
126-98-7	Methacrylonitrile	18	U
80-62-6	Methyl Methacrylate	18	U
110-86-1	Pyridine	19	JB
630-20-6	1,1,1,2-Tetrachloroethane	9	U
75-69-4	Trichlorofluoromethane	9	U
96-16-4	1,2,3-Trichloropropane	9	U

MOS 02/23/90

334 00193

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00357

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2680

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2680

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 57 Date Analyzed: 02/07/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	23	U
74-83-9	Bromomethane	23	U
75-01-4	Vinyl Chloride	23	U
75-00-3	Chloroethane	23	U
75-09-2	Methylene Chloride	8	BJ
67-64-1	Acetone	170	
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	72	B
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
108-05-4	Vinyl Acetate	23	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	Trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	23	U
591-78-6	2-Hexanone	23	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	3	J
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
	Total Xylenes	3	J

20

MDS 02/13/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00357

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

ab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2680

ample wt/vol: 5.0 (g/mL) G Lab File ID: MM2680

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 57 dec. ____ Date Extracted: ____

Extraction: (SepF/Cont/Sonc) ____ Date Analyzed: 02/07/90

PC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	2300	U
107-02-8	Acrolein	23	U
107-13-1	Acrylonitrile	23	U
126-99-8	2-Chloro-1,3-Butadiene	12	U
107-05-1	3-Chloropropene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	23	U
106-93-4	1,2-Dibromoethane	12	U
74-95-3	Dibromomethane	23	U
110-57-6	trans-1,4-Dichloro-2-butene	230	U
75-71-8	Dichlorodifluoromethane	470	U
123-91-1	1,4-Dioxane	12000	U
107-12-0	Ethyl Cyanide	230	U
97-63-2	Ethyl Methacrylate	23	U
74-88-4	Iodomethane	12	U
78-83-1	Isobutyl Alcohol	34	J8
126-98-7	Methacrylonitrile	23	U
80-62-6	Methyl Methacrylate	23	U
110-86-1	Pyridine	45	J8
630-20-6	1,1,1,2-Tetrachloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
96-16-4	1,2,3-Trichloropropane	12	U

MDS 02/23/90

334 00221

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00358

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2681

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2681R

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 41 Date Analyzed: 02/08/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	17	U
74-83-9	Bromomethane	17	U
75-01-4	Vinyl Chloride	17	U
75-00-3	Chloroethane	17	U
75-09-2	Methylene Chloride	62	B
67-64-1	Acetone	27	B
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	10	BJ
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	17	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	9	J
591-78-6	2-Hexanone	17	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
	Total Xylenes	8	U

22

WDS 0423410

1X
ORGANICS ANALYSIS DATA SHEET

334 SAMPLE NO. 00222

00358

ab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

atrix: (soil/water) SOIL Lab Sample ID: MM2681

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2681R

evel: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 41 dec. ____ Date Extracted: ____

xtraction: (SepF/Cont/Sonc): ____ Date Analyzed: 02/08/90

PC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	1700	U
107-02-8	Acrolein	17	U
107-13-1	Acrylonitrile	17	U
126-99-8	2-Chloro-1,3-Butadiene	8	U
107-05-1	3-Chloropropene	8	U
96-12-8	1,2-Dibromo-3-chloropropane	17	U
106-93-4	1,2-Dibromoethane	8	U
74-95-3	Dibromomethane	17	U
110-57-6	trans-1,4-Dichloro-2-butene	170	U
75-71-8	Dichlorodifluoromethane	340	U
123-91-1	1,4-Dioxane	8500	U
107-12-0	Ethyl Cyanide	170	U
97-63-2	Ethyl Methacrylate	17	U
74-88-4	Iodomethane	8	U
78-83-1	Isobutyl Alcohol	18	JB
126-98-7	Methacrylonitrile	17	U
80-62-6	Methyl Methacrylate	17	U
110-86-1	Pyridine	8500	U
630-20-6	1,1,1,2-Tetrachloroethane	8	U
75-69-4	Trichlorofluoromethane	8	U
96-16-4	1,2,3-Trichloropropane	8	U

WDS 02/23/90

FORM I X-1 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00359

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2682

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2682

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 58 Date Analyzed: 02/07/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	24	U
74-83-9	Bromomethane	24	U
75-01-4	Vinyl Chloride	24	U
75-00-3	Chloroethane	24	U
75-09-2	Methylene Chloride	47	B
67-64-1	Acetone	24	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	180	B
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
108-05-4	Vinyl Acetate	24	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	7	J
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	Trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	6	J
591-78-6	2-Hexanone	5	J
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
	Total Xylenes	12	U

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MDS 02/23/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00359

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2682

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2682

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 58 dec. ____ Date Extracted: _____

Extraction: (SepF/Cont/Sonc) ____ Date Analyzed: 02/07/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	2400	U
107-02-8	Acrolein	24	U
107-13-1	Acrylonitrile	24	U
126-99-8	2-Chloro-1,3-Butadiene	12	U
107-05-1	3-Chloropropene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	24	U
106-93-4	1,2-Dibromoethane	3	J
74-95-3	Dibromomethane	24	U
110-57-6	trans-1,4-Dichloro-2-butene	240	U
75-71-8	Dichlorodifluoromethane	480	U
123-91-1	1,4-Dioxane	12000	U
107-12-0	Ethyl Cyanide	240	U
97-63-2	Ethyl Methacrylate	24	U
74-88-4	Iodomethane	12	U
78-83-1	Isobutyl Alcohol	22	JB
126-98-7	Methacrylonitrile	24	U
80-62-6	Methyl Methacrylate	24	U
110-86-1	Pyridine	12000	U
630-20-6	1,1,1,2-Tetrachloroethane	12	U
75-69-4	Trichlorofluoromethane	160	
96-16-4	1,2,3-Trichloropropane	12	U

MDS 02/23/90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00360

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2683

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2683

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 41 Date Analyzed: 02/07/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	17	U
74-83-9	Bromomethane	17	U
75-01-4	Vinyl Chloride	17	U
75-00-3	Chloroethane	17	U
75-09-2	Methylene Chloride	56	B
67-64-1	Acetone	17	U
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	130	B
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	17	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	4	J
591-78-6	2-Hexanone	17	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
	Total Xylenes	8	U

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1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00360

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2683

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2683

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 41 dec. ____ Date Extracted: ____

Extraction: (SepF/Cont/Sonc) ____ Date Analyzed: 02/07/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	1700	U
107-02-8	Acrolein	17	U
107-13-1	Acrylonitrile	17	U
126-99-8	2-Chloro-1,3-Butadiene	8	U
107-05-1	3-Chloropropene	8	U
96-12-8	1,2-Dibromo-3-chloropropane	17	U
106-93-4	1,2-Dibromoethane	8	U
74-95-3	Dibromomethane	17	U
110-57-6	trans-1,4-Dichloro-2-butene	170	U
75-71-8	Dichlorodifluoromethane	340	U
123-91-1	1,4-Dioxane	8500	U
107-12-0	Ethyl Cyanide	170	U
97-63-2	Ethyl Methacrylate	17	U
74-88-4	Iodomethane	8	U
78-83-1	Isobutyl Alcohol	19	JB
126-98-7	Methacrylonitrile	17	U
80-62-6	Methyl Methacrylate	17	U
110-86-1	Pyridine	30	JB
630-20-6	1,1,1,2-Tetrachloroethane	8	U
75-69-4	Trichlorofluoromethane	8	U
96-16-4	1,2,3-Trichloropropane	8	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00350

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2658-2

Sample wt/vol: 29.3 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 13 dec. Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/06/90

GPC Cleanup: (Y/N) N pH: 10.0 Dilution Factor: 2.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19	U
319-85-7	beta-BHC	19	U
319-86-8	delta-BHC	19	U
58-89-9	gamma-BHC (Lindane)	19	U
76-44-8	Heptachlor	19	U
309-00-2	Aldrin	19	U
1024-57-3	Heptachlor epoxide	19	U
959-98-8	Endosulfan I	19	U
60-57-1	Dieldrin	38	U
72-55-9	4,4'-DDE	38	U
72-20-8	Endrin	38	U
33213-65-9	Endosulfan II	38	U
72-54-8	4,4'-DDD	38	U
1031-07-8	Endosulfan sulfate	38	U
50-29-3	4,4'-DDT	38	U
72-43-5	Methoxychlor	190	U
53494-70-5	Endrin ketone	38	U
5103-71-9	alpha-Chlordane	190	U
5103-74-2	gamma-Chlordane	190	U
8001-35-2	Toxaphene	380	U
12674-11-2	Aroclor-1016	190	U
11104-28-2	Aroclor-1221	190	U
11141-16-5	Aroclor-1232	190	U
53469-21-9	Aroclor-1242	190	U
12672-29-6	Aroclor-1248	190	U
11097-69-1	Aroclor-1254	380	U
11096-82-5	Aroclor-1260	380	U
465-73-6	ISODRIN	19	U
143-50-0	KEPONE	38	U
510-15-6	CHLOROBENZILATE	38	U

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EPA SAMPLE NO.

00350DL

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2658-5

Sample wt/vol: 29.3 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 13 dec. Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/06/90

GPC Cleanup: (Y/N) N pH: 10.0 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	47	U
319-85-7	beta-BHC	47	U
319-86-8	delta-BHC	47	U
58-89-9	gamma-BHC (Lindane)	47	U
76-44-8	Heptachlor	47	U
309-00-2	Aldrin	47	U
1024-57-3	Heptachlor epoxide	47	U
959-98-8	Endosulfan I	47	U
60-57-1	Dieldrin	94	U
72-55-9	4,4'-DDE	94	U
72-20-8	Endrin	94	U
33213-65-9	Endosulfan II	94	U
72-54-8	4,4'-DDD	94	U
1031-07-8	Endosulfan sulfate	94	U
50-29-3	4,4'-DDT	94	U
72-43-5	Methoxychlor	470	U
53494-70-5	Endrin ketone	94	U
5103-71-9	alpha-Chlordane	470	U
5103-74-2	gamma-Chlordane	470	U
8001-35-2	Toxaphene	940	U
12674-11-2	Aroclor-1016	470	U
11104-28-2	Aroclor-1221	470	U
11141-16-5	Aroclor-1232	470	U
53469-21-9	Aroclor-1242	470	U
12672-29-6	Aroclor-1248	470	U
11097-69-1	Aroclor-1254	940	U
11096-82-5	Aroclor-1260	940	U
465-73-6	ISODRIN	47	U
143-50-0	KEPONE	94	U
510-15-6	CHLOROBENZILATE	94	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

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EPA SAMPLE NO.

00351

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2661-5

Sample wt/vol: 29.2 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 40 dec. Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/06/90

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	69	U
319-85-7	beta-BHC	69	U
319-86-8	delta-BHC	69	U
58-89-9	gamma-BHC (Lindane)	69	U
76-44-8	Heptachlor	69	U
309-00-2	Aldrin	69	U
1024-57-3	Heptachlor epoxide	69	U
959-98-8	Endosulfan I	69	U
60-57-1	Dieldrin	140	U
72-55-9	4,4'-DDE	440	F
72-20-8	Endrin	140	U
33213-65-9	Endosulfan II	140	U
72-54-8	4,4'-DDD	140	U
1031-07-8	Endosulfan sulfate	140	U
50-29-3	4,4'-DDT	140	U
72-43-5	Methoxychlor	690	U
53494-70-5	Endrin ketone	140	U
5103-71-9	alpha-Chlordane	690	U
5103-74-2	gamma-Chlordane	690	U
8001-35-2	Toxaphene	1400	U
12674-11-2	Aroclor-1016	690	U
11104-28-2	Aroclor-1221	690	U
11141-16-5	Aroclor-1232	690	U
53469-21-9	Aroclor-1242	690	U
12672-29-6	Aroclor-1248	690	U
11097-69-1	Aroclor-1254	1400	U
11096-82-5	Aroclor-1260	1400	U
465-73-6	ISODRIN	69	U
143-50-0	KEPONE	140	U
510-15-6	CHLOROBENZILATE	140	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

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EPA SAMPLE NO.

00351DL

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2661-15

Sample wt/vol: 29.2 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 40 dec. Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/07/90

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 15

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	210	U
319-85-7	beta-BHC	210	U
319-86-8	delta-BHC	210	U
58-89-9	gamma-BHC (Lindane)	210	U
76-44-8	Heptachlor	210	U
309-00-2	Aldrin	210	U
1024-57-3	Heptachlor epoxide	210	U
959-98-8	Endosulfan I	210	U
60-57-1	Dieldrin	410	U
72-55-9	4,4'-DDE	420	D
72-20-8	Endrin	410	U
33213-65-9	Endosulfan II	410	U
72-54-8	4,4'-DDD	410	U
1031-07-8	Endosulfan sulfate	410	U
50-29-3	4,4'-DDT	410	U
72-43-5	Methoxychlor	2100	U
53494-70-5	Endrin ketone	410	U
5103-71-9	alpha-Chlordane	2100	U
5103-74-2	gamma-Chlordane	2100	U
8001-35-2	Toxaphene	4100	U
12674-11-2	Aroclor-1016	2100	U
11104-28-2	Aroclor-1221	2100	U
11141-16-5	Aroclor-1232	2100	U
53469-21-9	Aroclor-1242	2100	U
12672-29-6	Aroclor-1248	2100	U
11097-69-1	Aroclor-1254	4100	U
11096-82-5	Aroclor-1260	4100	U
465-73-6	ISODRIN	210	U
143-50-0	KEPONE	410	U
510-15-6	CHLOROBENZILATE	410	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

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EPA SAMPLE NO.

00352

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

ab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2662

ample wt/vol: 29.2 (g/mL) G Lab File ID:

evel: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 57 dec. Date Extracted: 02/01/90

xtraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/06/90

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19	U
319-85-7	beta-BHC	19	U
319-86-8	delta-BHC	19	U
58-89-9	gamma-BHC (Lindane)	19	U
76-44-8	Heptachlor	19	U
309-00-2	Aldrin	19	U
1024-57-3	Heptachlor epoxide	19	U
959-98-8	Endosulfan I	19	U
60-57-1	Dieldrin	38	U
72-55-9	4,4'-DDE	38	U
72-20-8	Endrin	38	U
33213-65-9	Endosulfan II	38	U
72-54-8	4,4'-DDD	38	U
1031-07-8	Endosulfan sulfate	38	U
50-29-3	4,4'-DDT	38	U
72-43-5	Methoxychlor	190	U
53494-70-5	Endrin ketone	38	U
5103-71-9	alpha-Chlordane	190	U
5103-74-2	gamma-Chlordane	190	U
8001-35-2	Toxaphene	380	U
12674-11-2	Aroclor-1016	190	U
11104-28-2	Aroclor-1221	190	U
11141-16-5	Aroclor-1232	190	U
53469-21-9	Aroclor-1242	190	U
12672-29-6	Aroclor-1248	190	U
11097-69-1	Aroclor-1254	380	U
11096-82-5	Aroclor-1260	380	U
465-73-6	ISODRIN	19	U
143-50-0	KEPONE	38	U
510-15-6	CHLOROBENZILATE	38	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET 334

EPA SAMPLE NO.

00352DL

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2662-5

Sample wt/vol: 29.2 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 57 dec. Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/06/90

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	96	U
319-85-7	beta-BHC	96	U
319-86-8	delta-BHC	96	U
58-89-9	gamma-BHC (Lindane)	96	U
76-44-8	Heptachlor	96	U
309-00-2	Aldrin	96	U
1024-57-3	Heptachlor epoxide	96	U
959-98-8	Endosulfan I	96	U
60-57-1	Dieldrin	190	U
72-55-9	4,4'-DDE	190	U
72-20-8	Endrin	190	U
33213-65-9	Endosulfan II	190	U
72-54-8	4,4'-DDD	190	U
1031-07-8	Endosulfan sulfate	190	U
50-29-3	4,4'-DDT	190	U
72-43-5	Methoxychlor	960	U
53494-70-5	Endrin ketone	190	U
5103-71-9	alpha-Chlordane	960	U
5103-74-2	gamma-Chlordane	960	U
8001-35-2	Toxaphene	1900	U
12674-11-2	Aroclor-1016	960	U
11104-28-2	Aroclor-1221	960	U
11141-16-5	Aroclor-1232	960	U
53469-21-9	Aroclor-1242	960	U
12672-29-6	Aroclor-1248	960	U
11097-69-1	Aroclor-1254	1900	U
11096-82-5	Aroclor-1260	1900	U
465-73-6	ISODRIN	96	U
143-50-0	KEPONE	190	U
510-15-6	CHLOROBENZILATE	190	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00353

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2663-5

Sample wt/vol: 29.5 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 51 dec. Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/07/90

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	83	U
319-85-7	beta-BHC	83	U
319-86-8	delta-BHC	83	U
58-89-9	gamma-BHC (Lindane)	83	U
76-44-8	Heptachlor	83	U
309-00-2	Aldrin	83	U
1024-57-3	Heptachlor epoxide	83	U
959-98-8	Endosulfan I	83	U
60-57-1	Dieldrin	170	U
72-55-9	4,4'-DDE	270	F
72-20-8	Endrin	170	U
33213-65-9	Endosulfan II	170	U
72-54-8	4,4'-DDD	170	U
1031-07-8	Endosulfan sulfate	170	U
50-29-3	4,4'-DDT	170	U
72-43-5	Methoxychlor	830	U
53494-70-5	Endrin ketone	170	U
5103-71-9	alpha-Chlordane	830	U
5103-74-2	gamma-Chlordane	830	U
8001-35-2	Toxaphene	1700	U
12674-11-2	Aroclor-1016	830	U
11104-28-2	Aroclor-1221	830	U
11141-16-5	Aroclor-1232	830	U
53469-21-9	Aroclor-1242	830	U
12672-29-6	Aroclor-1248	830	U
11097-69-1	Aroclor-1254	1700	U
11096-82-5	Aroclor-1260	1700	U
465-73-6	ISODRIN	83	U
02/08/90 NW ~~510~~ 143-50-0	KEPONE	170	U
510-15-6	CHLOROBENZILATE	170	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET 334

EPA SAMPLE NO.

00353DL

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2663-10

Sample wt/vol: 29.5 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 51 dec. Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/07/90

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	170	U
319-85-7	beta-BHC	170	U
319-86-8	delta-BHC	170	U
58-89-9	gamma-BHC (Lindane)	170	U
76-44-8	Heptachlor	170	U
309-00-2	Aldrin	170	U
1024-57-3	Heptachlor epoxide	170	U
959-98-8	Endosulfan I	170	U
60-57-1	Dieldrin	330	U
72-55-9	4,4'-DDE	250	DJ
72-20-8	Endrin	330	U
33213-65-9	Endosulfan II	330	U
72-54-8	4,4'-DDD	330	U
1031-07-8	Endosulfan sulfate	330	U
50-29-3	4,4'-DDT	330	U
72-43-5	Methoxychlor	1700	U
53494-70-5	Endrin ketone	330	U
5103-71-9	alpha-Chlordane	1700	U
5103-74-2	gamma-Chlordane	1700	U
8001-35-2	Toxaphene	3300	U
12674-11-2	Aroclor-1016	1700	U
11104-28-2	Aroclor-1221	1700	U
11141-16-5	Aroclor-1232	1700	U
53469-21-9	Aroclor-1242	1700	U
12672-29-6	Aroclor-1248	1700	U
11097-69-1	Aroclor-1254	3300	U
11096-82-5	Aroclor-1260	3300	U
465-73-6	ISODRIN	170	U
143-50-0	KEPONE	330	U
510-15-6	CHLOROBENZILATE	330	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET 334

EPA SAMPLE NO.

00354

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2664

Sample wt/vol: 29.6 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 58 dec. Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/07/90

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19	U
319-85-7	beta-BHC	19	U
319-86-8	delta-BHC	19	U
58-89-9	gamma-BHC (Lindane)	19	U
76-44-8	Heptachlor	19	U
309-00-2	Aldrin	19	U
1024-57-3	Heptachlor epoxide	19	U
959-98-8	Endosulfan I	19	U
60-57-1	Dieldrin	38	U
72-55-9	4,4'-DDE	38	U
72-20-8	Endrin	38	U
33213-65-9	Endosulfan II	38	U
72-54-8	4,4'-DDD	38	U
1031-07-8	Endosulfan sulfate	38	U
50-29-3	4,4'-DDT	38	U
72-43-5	Methoxychlor	190	U
53494-70-5	Endrin ketone	38	U
5103-71-9	alpha-Chlordane	190	U
5103-74-2	gamma-Chlordane	190	U
8001-35-2	Toxaphene	380	U
12674-11-2	Aroclor-1016	190	U
11104-28-2	Aroclor-1221	190	U
11141-16-5	Aroclor-1232	190	U
53469-21-9	Aroclor-1242	190	U
12672-29-6	Aroclor-1248	190	U
11097-69-1	Aroclor-1254	380	U
11096-82-5	Aroclor-1260	380	U
465-73-6	ISODRIN	19	U
143-50-0	KEPONE	38	U
510-15-6	CHLOROBENZILATE	38	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

334

EPA SAMPLE NO.

00355

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2665

Sample wt/vol: 29.3 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 34 dec. Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/07/90

GPC Cleanup: (Y/N) N pH: 10.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	12	U
319-85-7	beta-BHC	12	U
319-86-8	delta-BHC	12	U
58-89-9	gamma-BHC (Lindane)	12	U
76-44-8	Heptachlor	12	U
309-00-2	Aldrin	12	U
1024-57-3	Heptachlor epoxide	12	U
959-98-8	Endosulfan I	12	U
60-57-1	Dieldrin	25	U
72-55-9	4,4'-DDE	25	U
72-20-8	Endrin	25	U
33213-65-9	Endosulfan II	25	U
72-54-8	4,4'-DDD	25	U
1031-07-8	Endosulfan sulfate	25	U
50-29-3	4,4'-DDT	25	U
72-43-5	Methoxychlor	120	U
53494-70-5	Endrin ketone	25	U
5103-71-9	alpha-Chlordane	120	U
5103-74-2	gamma-Chlordane	120	U
8001-35-2	Toxaphene	250	U
12674-11-2	Aroclor-1016	120	U
11104-28-2	Aroclor-1221	120	U
11141-16-5	Aroclor-1232	120	U
53469-21-9	Aroclor-1242	120	U
12672-29-6	Aroclor-1248	120	U
11097-69-1	Aroclor-1254	250	U
11096-82-5	Aroclor-1260	250	U
465-73-6	ISODRIN	12	U
143-50-0	KEPONE	25	U
510-15-6	CHLOROBENZILATE	25	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

334

EPA SAMPLE NO.

00356

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2666

Sample wt/vol: 29.5 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 46 dec. Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/06/90

GPC Cleanup: (Y/N) N pH: 11.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	15	U
319-85-7	beta-BHC	15	U
319-86-8	delta-BHC	15	U
58-89-9	gamma-BHC (Lindane)	15	U
76-44-8	Heptachlor	15	U
309-00-2	Aldrin	15	U
1024-57-3	Heptachlor epoxide	15	U
959-98-8	Endosulfan I	15	U
60-57-1	Dieldrin	30	U
72-55-9	4,4'-DDE	30	U
72-20-8	Endrin	30	U
33213-65-9	Endosulfan II	30	U
72-54-8	4,4'-DDD	30	U
1031-07-8	Endosulfan sulfate	30	U
50-29-3	4,4'-DDT	30	U
72-43-5	Methoxychlor	150	U
53494-70-5	Endrin ketone	30	U
5103-71-9	alpha-Chlordane	150	U
5103-74-2	gamma-Chlordane	150	U
8001-35-2	Toxaphene	300	U
12674-11-2	Aroclor-1016	150	U
11104-28-2	Aroclor-1221	150	U
11141-16-5	Aroclor-1232	150	U
53469-21-9	Aroclor-1242	150	U
12672-29-6	Aroclor-1248	150	U
11097-69-1	Aroclor-1254	300	U
11096-82-5	Aroclor-1260	300	U
465-73-6	ISODRIN	15	U
143-50-0	KEPONE	30	U
510-15-6	CHLOROBENZILATE	30	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET 334

EPA SAMPLE NO.
00357

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2667

Sample wt/vol: 29.2 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 58 dec. Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/06/90

GPC Cleanup: (Y/N) N pH: 10.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	20	U
319-85-7	beta-BHC	20	U
319-86-8	delta-BHC	20	U
58-89-9	gamma-BHC (Lindane)	20	U
76-44-8	Heptachlor	20	U
309-00-2	Aldrin	20	U
1024-57-3	Heptachlor epoxide	20	U
959-98-8	Endosulfan I	20	U
60-57-1	Dieldrin	39	U
72-55-9	4,4'-DDE	39	U
72-20-8	Endrin	39	U
33213-65-9	Endosulfan II	39	U
72-54-8	4,4'-DDD	39	U
1031-07-8	Endosulfan sulfate	39	U
50-29-3	4,4'-DDT	39	U
72-43-5	Methoxychlor	200	U
53494-70-5	Endrin ketone	39	U
5103-71-9	alpha-Chlordane	200	U
5103-74-2	gamma-Chlordane	200	U
8001-35-2	Toxaphene	390	U
12674-11-2	Aroclor-1016	200	U
11104-28-2	Aroclor-1221	200	U
11141-16-5	Aroclor-1232	200	U
53469-21-9	Aroclor-1242	200	U
12672-29-6	Aroclor-1248	200	U
11097-69-1	Aroclor-1254	390	U
11096-82-5	Aroclor-1260	390	U
465-73-6	ISODRIN	20	U
143-50-0	KEPONE	39	U
510-15-6	CHLOROBENZILATE	39	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET 334

EPA SAMPLE NO.

00358

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2668

Sample wt/vol: 29.5 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 41 dec. Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/06/90

GPC Cleanup: (Y/N) N pH: 12.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	14	U
319-85-7	beta-BHC	14	U
319-86-8	delta-BHC	14	U
58-89-9	gamma-BHC (Lindane)	14	U
76-44-8	Heptachlor	14	U
309-00-2	Aldrin	14	U
1024-57-3	Heptachlor epoxide	14	U
959-98-8	Endosulfan I	14	U
60-57-1	Dieldrin	28	U
72-55-9	4,4'-DDE	28	U
72-20-8	Endrin	28	U
33213-65-9	Endosulfan II	28	U
72-54-8	4,4'-DDD	28	U
1031-07-8	Endosulfan sulfate	28	U
50-29-3	4,4'-DDT	28	U
72-43-5	Methoxychlor	140	U
53494-70-5	Endrin ketone	28	U
5103-71-9	alpha-Chlordane	140	U
5103-74-2	gamma-Chlordane	140	U
8001-35-2	Toxaphene	280	U
12674-11-2	Aroclor-1016	140	U
11104-28-2	Aroclor-1221	140	U
11141-16-5	Aroclor-1232	140	U
53469-21-9	Aroclor-1242	140	U
12672-29-6	Aroclor-1248	140	U
11097-69-1	Aroclor-1254	280	U
11096-82-5	Aroclor-1260	280	U
465-73-6	ISODRIN	14	U
143-50-0	KEPONE	28	U
510-15-6	CHLOROBENZILATE	28	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

334

EPA SAMPLE NO.

00359

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2669

Sample wt/vol: 29.2 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 58 dec. Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/07/90

GPC Cleanup: (Y/N) N pH: 10.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	20	U
319-85-7	beta-BHC	20	U
319-86-8	delta-BHC	20	U
58-89-9	gamma-BHC (Lindane)	20	U
76-44-8	Heptachlor	20	U
309-00-2	Aldrin	20	U
1024-57-3	Heptachlor epoxide	20	U
959-98-8	Endosulfan I	20	U
60-57-1	Dieldrin	39	U
72-55-9	4,4'-DDE	39	U
72-20-8	Endrin	39	U
33213-65-9	Endosulfan II	39	U
72-54-8	4,4'-DDD	39	U
1031-07-8	Endosulfan sulfate	39	U
50-29-3	4,4'-DDT	39	U
72-43-5	Methoxychlor	200	U
53494-70-5	Endrin ketone	39	U
5103-71-9	alpha-Chlordane	200	U
5103-74-2	gamma-Chlordane	200	U
8001-35-2	Toxaphene	390	U
12674-11-2	Aroclor-1016	200	U
11104-28-2	Aroclor-1221	200	U
11141-16-5	Aroclor-1232	200	U
53469-21-9	Aroclor-1242	200	U
12672-29-6	Aroclor-1248	200	U
11097-69-1	Aroclor-1254	390	U
11096-82-5	Aroclor-1260	390	U
465-73-6	ISODRIN	20	U
143-50-0	KEPONE	39	U
510-15-6	CHLOROBENZILATE	39	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

334

EPA SAMPLE NO.

00360

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2670

Sample wt/vol: 29.2 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 41 dec. Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/06/90

GPC Cleanup: (Y/N) N pH: 12.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	14	U
319-85-7	beta-BHC	14	U
319-86-8	delta-BHC	14	U
58-89-9	gamma-BHC (Lindane)	14	U
76-44-8	Heptachlor	14	U
309-00-2	Aldrin	14	U
1024-57-3	Heptachlor epoxide	14	U
959-98-8	Endosulfan I	14	U
60-57-1	Dieldrin	28	U
72-55-9	4,4'-DDE	28	U
72-20-8	Endrin	28	U
33213-65-9	Endosulfan II	28	U
72-54-8	4,4'-DDD	28	U
1031-07-8	Endosulfan sulfate	28	U
50-29-3	4,4'-DDT	28	U
72-43-5	Methoxychlor	140	U
53494-70-5	Endrin ketone	28	U
5103-71-9	alpha-Chlordane	140	U
5103-74-2	gamma-Chlordane	140	U
8001-35-2	Toxaphene	280	U
12674-11-2	Aroclor-1016	140	U
11104-28-2	Aroclor-1221	140	U
11141-16-5	Aroclor-1232	140	U
53469-21-9	Aroclor-1242	140	U
12672-29-6	Aroclor-1248	140	U
11097-69-1	Aroclor-1254	280	U
11096-82-5	Aroclor-1260	280	U
465-73-6	ISODRIN	14	U
143-50-0	KEPONE	28	U
510-15-6	CHLOROBENZILATE	28	U

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2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	00350	109	90	87	0	0
02	00351	103	104	84	0	0
03	00352	96	105	89	0	0
04	00353	111	97	87	0	0
05	00354	97	106	83	0	0
06	00355	100	99	87	0	0
07	00356	102	102	101	0	0
08	00357	98	94	93	0	0
09	00358	104	104	84	0	0
10	00359	95	103	80	0	0
11	00360	101	100	93	0	0
12	00350MS	106	93	114	0	0
13	00350MSD	101	86	95	0	0
14	VBLK1	104	103	103	0	0
15	VBLK2	104	103	98	0	0
16	VBLK3	107	108	99	0	0

		QC LIMITS
S1 (TOL)	= Toluene-d8	(81-117)
S2 (BFB)	= Bromofluorobenzene	(74-121)
S3 (DCE)	= 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

MDS 02/23/90

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (DBC) #	OTHER
01	00350	518 *	0
02	00350DL	456 *	0
03	00351	257 *	0
04	00351DL	210 *	0
05	00352	295 *	0
06	00352DL	240 *	0
07	00353	342 *	0
08	00353DL	258 *	0
09	00354	154 *	0
10	00355	90	0
11	00356	337 *	0
12	00357	200 *	0
13	00358	105	0
14	00359	390 *	0
15	00360	109	0
16	00352MS	540 *	0
17	00352MSD	284 *	0
18	PBLK1	83	0

ADVISORY QC LIMITS

S1 (DBC) = Dibutlychlorendate (20-150)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

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FORM II PEST-2 02/08/90 MW 1/87 Rev.

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix Spike - EPA Sample No.: 00350 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	57.5	0	50.3	87	59-172
Trichloroethene	57.5	1.32	47.6	80	62-137
Benzene	57.5	0	46.1	80	66-142
Toluene	57.5	5.38	63.0	100	59-139
Chlorobenzene	57.5	0	55.4	96	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	57.5	43.8	76	13	22	59-172
Trichloroethene	57.5	48.7	82	-2	24	62-137
Benzene	57.5	48.7	85	-6	21	66-142
Toluene	57.5	65.3	104	-4	21	59-139
Chlorobenzene	57.5	54.6	95	1	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: CLP,35794,00350,00350,LOW,SOIL,MM2671,VOA,EPA,
INST: OWA1 ANALYST: MAS

WOS 6/23/90

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix Spike - EPA Sample No.: 00352DL Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	63.5	0	28.0	44 *	46-127
Heptachlor	63.5	0	29.0	46	35-130
Aldrin	63.5	0	28.8	45	34-132
Dieldrin	159	0	76.7	48	31-134
Endrin	159	0	79.3	50	42-139
4,4'-DDT	159	0	96.8	61	23-134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	63.6	29.8	47	-7	50	46-127
Heptachlor	63.6	29.8	47	-2	31	35-130
Aldrin	63.6	30.3	48	-6	43	34-132
Dieldrin	159	80.3	51	-5	38	31-134
Endrin	159	81.9	52	-3	45	42-139
4,4'-DDT	159	107	67	-10	50	23-134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 1 out of 12 outside limits

COMMENTS:

4A
VOLATILE METHOD BLANK SUMMARY

ab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

ab File ID: VBLK0206 Lab Sample ID: VBLK0206

Date Analyzed: 02/06/90 Time Analyzed: 1136

atrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: OWA1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	00352	MM2675	MM2675	1520
02	00356	MM2679	MM2679	1612

COMMENTS: CLP,,,VBLK,LOW,WATER,VBLK0206,VOA,BLANK,
INST: OWA1 ANALYST: MAS

WOS 02/23/90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA WDS 02/23/90 SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: VBLK0206

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBLK0206

Level: (low/med) LOW Date Received: _____

Moisture: not dec. ____ Date Analyzed: 02/06/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	J
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	5	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
	Total Xylenes	5	U

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00400

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

VBLK1

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA MWS 02/23/90 SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: VBLK0206

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBLK0206

Level: (low/med) LOW Date Received: _____

Moisture: not dec. ____ dec. ____ Date Extracted: _____

Extraction: (SepF/Cont/Sonc) ____ Date Analyzed: 02/06/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	1000	U
107-02-8	Acrolein	10	U
107-13-1	Acrylonitrile	10	U
126-99-8	2-Chloro-1,3-Butadiene	5	U
107-05-1	3-Chloropropene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	1	J
106-93-4	1,2-Dibromoethane	5	U
74-95-3	Dibromomethane	10	U
110-57-6	trans-1,4-Dichloro-2-butene	100	U
75-71-8	Dichlorodifluoromethane	200	U
123-91-1	1,4-Dioxane	10	J
107-12-0	Ethyl Cyanide	100	U
97-63-2	Ethyl Methacrylate	10	U
74-88-4	Iodomethane	5	U
78-83-1	Isobutyl Alcohol	58	J
126-98-7	Methacrylonitrile	10	U
80-62-6	Methyl Methacrylate	10	U
110-86-1	Pyridine	55	J
630-20-6	1,1,1,2-Tetrachloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
96-16-4	1,2,3-Trichloropropane	5	U

MWS 02/23/90

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Lab File ID: VBLK0207 Lab Sample ID: VBLK0207

Date Analyzed: 02/07/90 Time Analyzed: 1143

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: OWA1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	00354	MM2677	MM2677	1738
02	00355	MM2678	MM2678	1825
03	00357	MM2680	MM2680	1316
04	00359	MM2682	MM2682	1503
05	00360	MM2683	MM2683	1553
06	00350MS	MM2672	MM2672	1911
07	00350MSD	MM2673	MM2673	2000

COMMENTS: CLP,,,VBLK,LOW,SOIL,VBLK0207,VOA,BLANK,
INST: OWA1 ANALYST: MAS

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00425

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA WDS 0423PO SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: VBLK0207

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBLK0207

Level: (low/med) LOW Date Received: _____

Moisture: not dec. ____ Date Analyzed: 02/07/90

Column: (pack/cap) PACK Dilution Factor: 1.0

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	2	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	5	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
	Total Xylenes	5	U

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WDS 0423PO

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

VBLK2

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA WS 02/23/90 SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: VBLK0207

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBLK0207

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: _____

Extraction: (SepF/Cont/Sonc) ____ Date Analyzed: 02/07/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	1000	U
107-02-8	Acrolein	10	U
107-13-1	Acrylonitrile	10	U
126-99-8	2-Chloro-1,3-Butadiene	5	U
107-05-1	3-Chloropropene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	1	J
106-93-4	1,2-Dibromoethane	5	U
74-95-3	Dibromomethane	10	U
110-57-6	trans-1,4-Dichloro-2-butene	100	U
75-71-8	Dichlorodifluoromethane	200	U
123-91-1	1,4-Dioxane	5000	U
107-12-0	Ethyl Cyanide	100	U
97-63-2	Ethyl Methacrylate	10	U
74-88-4	Iodomethane	5	U
78-83-1	Isobutyl Alcohol	46	J
126-98-7	Methacrylonitrile	10	U
80-62-6	Methyl Methacrylate	10	U
110-86-1	Pyridine	74	J
630-20-6	1,1,1,2-Tetrachloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
96-16-4	1,2,3-Trichloropropane	5	U

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4A
VOLATILE METHOD BLANK SUMMARY

ab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

ab File ID: VBLK0208 Lab Sample ID: VBLK0208

ate Analyzed: 02/08/90 Time Analyzed: 1201

atrix: (soil/water) SOIL Level:(low/med) LOW

nstrument ID: OWA1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	00350	MM2671	MM2671R	1247
02	00351	MM2674	MM2674R	1333
03	00353	MM2676	MM2676R	1445
04	00358	MM2681	MM2681R	1538

OMMENTS: CLP,,,VBLK,LOW,SOIL,VBLK0208,VOA,BLANK,
INST: OWA1 ANALYST: MAS,LJW

WOS 02/23/90

00451

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK3

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA WDS 02/23/90 SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: VBLK0208

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBLK0208

Level: (low/med) LOW Date Received: _____

Moisture: not dec. ____ Date Analyzed: 02/08/90

Column: (pack/cap) PACK Dilution Factor: 1.0

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	4	J
67-64-1	Acetone	1	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	5	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
	Total Xylenes	5	U

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WDS 02/23/90

334 00452

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

VBLK3

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA WS 02/23/90 SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: VBLK0208

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBLK0208

Level: (low/med) LOW Date Received: _____

Moisture: not dec. ____ dec. ____ Date Extracted: _____

Extraction: (SepF/Cont/Sonc) ____ Date Analyzed: 02/08/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	1000	U
107-02-8	Acrolein	10	U
107-13-1	Acrylonitrile	10	U
126-99-8	2-Chloro-1,3-Butadiene	5	U
107-05-1	3-Chloropropene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	2	J
106-93-4	1,2-Dibromoethane	5	U
74-95-3	Dibromomethane	10	U
110-57-6	trans-1,4-Dichloro-2-butene	100	U
75-71-8	Dichlorodifluoromethane	200	U
123-91-1	1,4-Dioxane	11	J
107-12-0	Ethyl Cyanide	100	U
97-63-2	Ethyl Methacrylate	10	U
74-88-4	Iodomethane	5	U
78-83-1	Isobutyl Alcohol	67	J
126-98-7	Methacrylonitrile	10	U
80-62-6	Methyl Methacrylate	10	U
110-86-1	Pyridine	64	J
630-20-6	1,1,1,2-Tetrachloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
96-16-4	1,2,3-Trichloropropane	5	U

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CC003

4C

PESTICIDE METHOD BLANK SUMMARY

334

KF 2/13/90

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Lab Sample ID: Q1552 Lab File ID: _____

Matrix:(soil/water) SOIL Level:(low/med) LOW

Date Extracted: 02/01/90 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed (1): 02/06/90 Date Analyzed (2): 02/07/90

Time Analyzed (1): 0854 Time Analyzed (2): 1506

Instrument ID (1): HP3-A Instrument ID (2): SH1-A

GC Column ID (1): 3_OV-1 GC Column ID (2): 22502401

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	00350	MM2658-2	02/06/90	02/07/90
02	00350DL	MM2658-5	02/06/90	02/07/90
03	00351	MM2661-5	02/06/90	
04	00351DL	MM2661-15	02/07/90	02/07/90
05	00352	MM2662	02/06/90	
06	00352DL	MM2662-5	02/06/90	
07	00353	MM2663-5	02/07/90	
08	00353DL	MM2663-10	02/07/90	02/07/90
09	00354	MM2664	02/07/90	
10	00355	MM2665	02/07/90	
11	00356	MM2666	02/06/90	
12	00357	MM2667	02/06/90	
13	00358	MM2668	02/06/90	
14	00359	MM2669	02/07/90	
15	00360	MM2670	02/06/90	
16	00352MS	MM2662MS-5	02/06/90	
17	00352MSD	MM2662MSD-5	02/06/90	

COMMENTS:

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

334

EPA SAMPLE NO.

PBLK1

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

ab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: Q1552

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

evel: (low/med) LOW Date Received: NA

% Moisture: not dec. 0 dec. Date Extracted: 02/01/90

xtraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/06/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.0	U
319-85-7	beta-BHC	8.0	U
319-86-8	delta-BHC	8.0	U
58-89-9	gamma-BHC (Lindane)	8.0	U
76-44-8	Heptachlor	8.0	U
309-00-2	Aldrin	8.0	U
1024-57-3	Heptachlor epoxide	8.0	U
959-98-8	Endosulfan I	8.0	U
60-57-1	Dieldrin	16	U
72-55-9	4,4'-DDE	16	U
72-20-8	Endrin	16	U
33213-65-9	Endosulfan II	16	U
72-54-8	4,4'-DDD	16	U
1031-07-8	Endosulfan sulfate	16	U
50-29-3	4,4'-DDT	16	U
72-43-5	Methoxychlor	80	U
53494-70-5	Endrin ketone	16	U
5103-71-9	alpha-Chlordane	80	U
5103-74-2	gamma-Chlordane	80	U
8001-35-2	Toxaphene	160	U
12674-11-2	Aroclor-1016	80	U
11104-28-2	Aroclor-1221	80	U
11141-16-5	Aroclor-1232	80	U
53469-21-9	Aroclor-1242	80	U
12672-29-6	Aroclor-1248	80	U
11097-69-1	Aroclor-1254	160	U
11096-82-5	Aroclor-1260	160	U
465-73-6	ISODRIN	8.0	U
143-50-0	KEPONE	16	U
510-15-6	CHLOROBENZILATE	16	U

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334 00477

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00350MS

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2672

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2672

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 13 Date Analyzed: 02/07/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	3	J
75-15-0	Carbon Disulfide	3	J
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	310	BE
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	1	J
100-42-5	Styrene	6	U
	Total Xylenes	3	J

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MDS 02/23/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00350MS

ab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

atrix: (soil/water) SOIL Lab Sample ID: MM2672

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2672

evel: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 13 dec. ____ Date Extracted: _____

xtraction: (SepF/Cont/Sonc): ____ Date Analyzed: 02/07/90

PC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	1100	U
107-02-8	Acrolein	11	U
107-13-1	Acrylonitrile	11	U
126-99-8	2-Chloro-1,3-Butadiene	11	
107-05-1	3-Chloropropene	6	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
106-93-4	1,2-Dibromoethane	6	U
74-95-3	Dibromomethane	11	U
110-57-6	trans-1,4-Dichloro-2-butene	110	U
75-71-8	Dichlorodifluoromethane	230	U
123-91-1	1,4-Dioxane	5700	U
107-12-0	Ethyl Cyanide	110	U
97-63-2	Ethyl Methacrylate	11	U
74-88-4	Iodomethane	6	U
78-83-1	Isobutyl Alcohol	3400	U
126-98-7	Methacrylonitrile	1	J
80-62-6	Methyl Methacrylate	11	U
110-86-1	Pyridine	25	JB
630-20-6	1,1,1,2-Tetrachloroethane	6	U
75-69-4	Trichlorofluoromethane	24	
96-16-4	1,2,3-Trichloropropane	6	U

MWS 02/23/90

334 00488

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00350MSD

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2673

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2673

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 13 Date Analyzed: 02/07/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	22	B
67-64-1	Acetone	20	
75-15-0	Carbon Disulfide	3	J
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	270	BE
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	16	
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	1	J
100-42-5	Styrene	6	U
	Total Xylenes	3	J

60

WOS 02/23/90

00489

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE No.: 00350MSD

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2673

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MM2673

Level: (low/med) LOW Date Received: 01/25/90

Moisture: not dec. 13 dec. ____ Date Extracted: ____

Extraction: (SepF/Cont/Sonc) ____ Date Analyzed: 02/07/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-05-8	Acetonitrile	1100	U
107-02-8	Acrolein	11	U
107-13-1	Acrylonitrile	11	U
126-99-8	2-Chloro-1,3-Butadiene	7	
107-05-1	3-Chloropropene	6	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
106-93-4	1,2-Dibromoethane	6	U
74-95-3	Dibromomethane	11	U
110-57-6	trans-1,4-Dichloro-2-butene	110	U
75-71-8	Dichlorodifluoromethane	230	U
123-91-1	1,4-Dioxane	5700	U
107-12-0	Ethyl Cyanide	110	U
97-63-2	Ethyl Methacrylate	11	U
74-88-4	Iodomethane	6	U
78-83-1	Isobutyl Alcohol	42	JB
126-98-7	Methacrylonitrile	11	U
80-62-6	Methyl Methacrylate	11	U
110-86-1	Pyridine	40	JB
630-20-6	1,1,1,2-Tetrachloroethane	6	U
75-69-4	Trichlorofluoromethane	6	U
96-16-4	1,2,3-Trichloropropane	6	U

WOS 02/23/90

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00352MS

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

ab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2662MS-5

ample wt/vol: 29.3 (g/mL) G Lab File ID:

evel: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 57 dec. Date Extracted: 02/01/90

xtraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/06/90

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	95	U
319-85-7	beta-BHC	95	U
319-86-8	delta-BHC	95	U
58-89-9	gamma-BHC (Lindane)	95	U
76-44-8	Heptachlor	95	U
309-00-2	Aldrin	95	U
1024-57-3	Heptachlor epoxide	95	U
959-98-8	Endosulfan I	95	U
60-57-1	Dieldrin	190	U
72-55-9	4,4'-DDE	190	U
72-20-8	Endrin	190	U
33213-65-9	Endosulfan II	190	U
72-54-8	4,4'-DDD	190	U
1031-07-8	Endosulfan sulfate	190	U
50-29-3	4,4'-DDT	190	U
72-43-5	Methoxychlor	950	U
53494-70-5	Endrin ketone	190	U
5103-71-9	alpha-Chlordane	950	U
5103-74-2	gamma-Chlordane	950	U
8001-35-2	Toxaphene	1900	U
12674-11-2	Aroclor-1016	950	U
11104-28-2	Aroclor-1221	950	U
11141-16-5	Aroclor-1232	950	U
53469-21-9	Aroclor-1242	950	U
12672-29-6	Aroclor-1248	950	U
11097-69-1	Aroclor-1254	1900	U
11096-82-5	Aroclor-1260	1900	U
465-73-6	ISODRIN	95	U
143-50-0	KEPONE	190	U
510-15-6	CHLOROBENZILATE	190	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00352MSD

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

ab Code: IT-MWL Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2662MSD-5

ample wt/vol: 29.2 (g/mL) G Lab File ID:

evel: (low/med) LOW Date Received: 01/25/90

% Moisture: not dec. 57 dec. Date Extracted: 02/01/90

xtraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/06/90

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	96	U
319-85-7	beta-BHC	96	U
319-86-8	delta-BHC	96	U
58-89-9	gamma-BHC (Lindane)	96	U
76-44-8	Heptachlor	96	U
309-00-2	Aldrin	96	U
1024-57-3	Heptachlor epoxide	96	U
959-98-8	Endosulfan I	96	U
60-57-1	Dieldrin	190	U
72-55-9	4,4'-DDE	190	U
72-20-8	Endrin	190	U
33213-65-9	Endosulfan II	190	U
72-54-8	4,4'-DDD	190	U
1031-07-8	Endosulfan sulfate	190	U
50-29-3	4,4'-DDT	190	U
72-43-5	Methoxychlor	960	U
53494-70-5	Endrin ketone	190	U
5103-71-9	alpha-Chlordane	960	U
5103-74-2	gamma-Chlordane	960	U
8001-35-2	Toxaphene	1900	U
12674-11-2	Aroclor-1016	960	U
11104-28-2	Aroclor-1221	960	U
11141-16-5	Aroclor-1232	960	U
53469-21-9	Aroclor-1242	960	U
12672-29-6	Aroclor-1248	960	U
11097-69-1	Aroclor-1254	1900	U
11096-82-5	Aroclor-1260	1900	U
465-73-6	ISODRIN	96	U
143-50-0	KEPONE	190	U
510-15-6	CHLOROBENZILATE	190	U

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

SOW No.: 7/87_

EPA Sample No.	Lab Sample ID.
__00350___	MM_2619___
__00350_D_	MM_2620_D_
__00350_S_	MM_2621_S_
__00351___	MM_2622___
__00352___	MM_2623___
__00353___	MM_2624___
__00354___	MM_2625___
__00355___	MM_2626___
__00356___	MM_2627___
__00357___	MM_2628___
__00358___	MM_2629___
__00359___	MM_2630___
__00360___	MM_2631___

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No NO_

If yes - were raw data generated before application of background corrections ? Yes/No

Comments:

Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Lab Manager: Small Mis

Date: 3/22/90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

00350

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Lab Sample ID: MM 2619___

Level (low/med): _____ Date Received: 01/25/~~00~~ 90 VL 1/26/90

% Solids: _87.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	481			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	5.1		N*	F
7440-39-3	Barium	16.0	B		P
7440-41-7	Beryllium	0.23	U		P
7440-43-9	Cadmium	0.46	B		P
7440-70-2	Calcium	33100			P
7440-47-3	Chromium	10.8			P
7440-48-4	Cobalt	2.3	U		P
7440-50-8	Copper	8.1			P
7439-89-6	Iron	1080			P
7439-92-1	Lead	3.2		N	F
7439-95-4	Magnesium	1120	B		P
7439-96-5	Manganese	30.1			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	4.6	U		P
7440-09-7	Potassium	327	B		A
7782-49-2	Selenium	0.46	U	EN	F
7440-22-4	Silver	2.3	U		P
7440-23-5	Sodium	243000			P
7440-28-0	Thallium	0.46	U	WN	F
7440-62-2	Vanadium	4.3	B		P
7440-66-6	Zinc	11.6		E	P
	Cyanide	0.36	B		AS
	~~Osmium~~ Tin	~~115~~ 11.5	~~U~~ U		~~P~~ P

dlc 3/14/90

Color Before: WHITE____ Clarity Before: N/A___ Texture: COARSE

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

Comments:

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3/14/90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

00351

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

ab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Lab Sample ID: MM 2622___

evel (low/med): _____ Date Received: 01/25/~~00~~ 90 vl 1/26/90

% Solids: _60.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8140			P
7440-36-0	Antimony	9.7	U		P
7440-38-2	Arsenic	11.2		N*	F
7440-39-3	Barium	143			P
7440-41-7	Beryllium	0.75	B		P
7440-43-9	Cadmium	3.2			P
7440-70-2	Calcium	37400			P
7440-47-3	Chromium	23.0			P
7440-48-4	Cobalt	8.3	B		P
7440-50-8	Copper	163			P
7439-89-6	Iron	18500			P
7439-92-1	Lead	111		N	F
7439-95-4	Magnesium	8780			P
7439-96-5	Manganese	869			P
7439-97-6	Mercury	4.4			CV
7440-02-0	Nickel	26.4			P
7440-09-7	Potassium	18000			A
7782-49-2	Selenium	0.57	U	WN	F
7440-22-4	Silver	3.2	U		P
7440-23-5	Sodium	3010			P
7440-28-0	Thallium	0.57	U	N	F
7440-62-2	Vanadium	15.8	B		P
7440-66-6	Zinc	173		E	P
	Cyanide	0.41	U		AS
	Osmium / Tin	162 / 16.2	U / U		P / P

dac 3/14/90

olor Before: BLACK____ Clarity Before: N/A___ Texture: COARSE

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

omments:

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3/14/90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

00352

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Lab Sample ID: MM 2623___

Level (low/med): _____ Date Received: 01/25/~~00~~ 90 VL 4/26/90

% Solids: _42.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2430			P
7440-36-0	Antimony	13.6	U		P
7440-38-2	Arsenic	16.9		N*	F
7440-39-3	Barium	1100			P
7440-41-7	Beryllium	1.4	B		P
7440-43-9	Cadmium	5.9			P
7440-70-2	Calcium	88800			P
7440-47-3	Chromium	51.1			P
7440-48-4	Cobalt	11.2	B		P
7440-50-8	Copper	39.6			P
7439-89-6	Iron	12100			P
7439-92-1	Lead	17.1		N	F
7439-95-4	Magnesium	13800			P
7439-96-5	Manganese	14000			P
7439-97-6	Mercury	0.19	U		CV
7440-02-0	Nickel	62.4			P
7440-09-7	Potassium	766	B		A
7782-49-2	Selenium	0.84	U	EN	F
7440-22-4	Silver	4.5	U		P
7440-23-5	Sodium	8400			P
7440-28-0	Thallium	0.84	U	N	F
7440-62-2	Vanadium	46.7			P
7440-66-6	Zinc	70.2		E	P
	Cyanide	0.58	U		AS
	Osmium / Tin	226 / 63.8	U		P / P

dzc 3/14/90

Color Before: BROWN____ Clarity Before: N/A___ Texture: COARSE

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

Comments:

FORM I - IN 7/87

3/14/90

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

00353

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

ab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Lab Sample ID: MM 2624___

evel (low/med): _____ Date Received: 01/25/~~00~~ 90 vb 4/26/90

% Solids: _48.6

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	8000			P	
7440-36-0	Antimony	11.0	U		P	
7440-38-2	Arsenic	12.5		N*	F	
7440-39-3	Barium	142			P	
7440-41-7	Beryllium	1.3	B		P	
7440-43-9	Cadmium	3.7			P	
7440-70-2	Calcium	54800			P	
7440-47-3	Chromium	24.8			P	
7440-48-4	Cobalt	8.9	B		P	
7440-50-8	Copper	173			P	
7439-89-6	Iron	17400			P	
7439-92-1	Lead	54.7		N	F	
7439-95-4	Magnesium	11100			P	
7439-96-5	Manganese	790			P	
7439-97-6	Mercury	1.0			CV	
7440-02-0	Nickel	31.3			P	
7440-09-7	Potassium	152000			A	dzc 3/14/90
7782-49-2	Selenium	0.61	U	WN	F	
7440-22-4	Silver	3.7	U		P	
7440-23-5	Sodium	4540			P	
7440-28-0	Thallium	0.61	U	WN	F	
7440-62-2	Vanadium	20.2			P	
7440-66-6	Zinc	156		E	P	
	Cyanide	0.51	U		AS	
	~~Osmium~~ Tin	~~184~~ 18.4	~~U~~ U		~~P~~ P	dzc 3/14/90

olor Before: BLACK____ Clarity Before: N/A___ Texture: COARSE

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

omments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

00354

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

ab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Lab Sample ID: MM 2625___

evel (low/med): _____ Date Received: 01/25/~~00~~ 90 JL 1/26/90

% Solids: _41.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2590			P
7440-36-0	Antimony	12.5	U		P
7440-38-2	Arsenic	5.4		N*	F
7440-39-3	Barium	410			P
7440-41-7	Beryllium	1.5	B		P
7440-43-9	Cadmium	4.4			P
7440-70-2	Calcium	96800			P
7440-47-3	Chromium	39.0			P
7440-48-4	Cobalt	7.9	B		P
7440-50-8	Copper	40.6			P
7439-89-6	Iron	13000			P
7439-92-1	Lead	9.7		N	F
7439-95-4	Magnesium	5250			P
7439-96-5	Manganese	8680			P
7439-97-6	Mercury	0.22	U		CV
7440-02-0	Nickel	40.7			P
7440-09-7	Potassium	954	B		A
7782-49-2	Selenium	0.71	U	WN	F
7440-22-4	Silver	4.2	U		P
7440-23-5	Sodium	5050			P
7440-28-0	Thallium	0.71	U	WN	F
7440-62-2	Vanadium	63.7			P
7440-66-6	Zinc	88.9		E	P
	Cyanide	0.60	U		AS
	~~Osmium~~ Tin	~~208~~ 20.8	~~U~~ U		~~P~~ P

DJC 3/14/90

olor Before: TAN_____ Clarity Before: N/A___ Texture: COARSE

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

omments:

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3/14/90

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

00355

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

ab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Lab Sample ID: MM 2626___

evel (low/med): _____ Date Received: 01/25/~~90~~ 90 VL 4/26/90

% Solids: _66.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1370			P
7440-36-0	Antimony	14.5	B		P
7440-38-2	Arsenic	5.5		N*	F
7440-39-3	Barium	884			P
7440-41-7	Beryllium	1.4			P
7440-43-9	Cadmium	5.0			P
7440-70-2	Calcium	248000			P
7440-47-3	Chromium	25.4			P
7440-48-4	Cobalt	11.4	B		P
7440-50-8	Copper	2.7	B		P
7439-89-6	Iron	5410			P
7439-92-1	Lead	2.4		N	F
7439-95-4	Magnesium	29400			P
7439-96-5	Manganese	11500			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	35.5			P
7440-09-7	Potassium	429	B		A
7782-49-2	Selenium	0.52	U	EN	F
7440-22-4	Silver	2.4	U		P
7440-23-5	Sodium	8210			P
7440-28-0	Thallium	0.52	U	WN	F
7440-62-2	Vanadium	29.2			P
7440-66-6	Zinc	39.9		E	P
	Cyanide	0.38	U		AS
	Osmium	121	U		P
	Tin	12.1	U		P

dzc 3/14/90

olor Before: BROWN____ Clarity Before: N/A___ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

omments:

FORM I - IN 7/87

3/14/90

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

00356

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Lab Sample ID: MM 2627___

Level (low/med): _____ Date Received: 01/25/~~00~~ 90 4/26/90

% Solids: _54.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2840			P
7440-36-0	Antimony	8.4	B		P
7440-38-2	Arsenic	7.5		N*	F
7440-39-3	Barium	449			P
7440-41-7	Beryllium	1.8			P
7440-43-9	Cadmium	5.8			P
7440-70-2	Calcium	161000			P
7440-47-3	Chromium	33.1			P
7440-48-4	Cobalt	8.3	B		P
7440-50-8	Copper	9.3			P
7439-89-6	Iron	9750			P
7439-92-1	Lead	2.8		N	F
7439-95-4	Magnesium	36500			P
7439-96-5	Manganese	6830			P
7439-97-6	Mercury	4.4			CV
7440-02-0	Nickel	43.4			P
7440-09-7	Potassium	655	B		A
7782-49-2	Selenium	0.62	U	WN	F
7440-22-4	Silver	2.8	U		P
7440-23-5	Sodium	7840			P
7440-28-0	Thallium	0.62	U	WN	F
7440-62-2	Vanadium	60.7			P
7440-66-6	Zinc	44.7		E	P
	Cyanide	0.46	U		AS
	Osmium	139	U		P
	Tin	39.5			P

dec 3/14/90

Color Before: BROWN____ Clarity Before: N/A___ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

00357

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

ab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Lab Sample ID: MM 2628___

evel (low/med): _____ Date Received: 01/25/~~00~~ 90 VL 4/26/90

% Solids: _42.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5280			P
7440-36-0	Antimony	11.5	U		P
7440-38-2	Arsenic	17.7		N*	F
7440-39-3	Barium	298			P
7440-41-7	Beryllium	1.7	B		P
7440-43-9	Cadmium	11.6			P
7440-70-2	Calcium	130000			P
7440-47-3	Chromium	46.6			P
7440-48-4	Cobalt	11.8	B		P
7440-50-8	Copper	53.9			P
7439-89-6	Iron	18900			P
7439-92-1	Lead	32.0		N	F
7439-95-4	Magnesium	83400			P
7439-96-5	Manganese	7100			P
7439-97-6	Mercury	0.23	U		CV
7440-02-0	Nickel	45.7			P
7440-09-7	Potassium	18600			A
7782-49-2	Selenium	0.81	U	EN	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	13600			P
7440-28-0	Thallium	0.81	U	WN	F
7440-62-2	Vanadium	32.2			P
7440-66-6	Zinc	106		E	P
	Cyanide	0.59	U		AS
	~~Osmium~~ Tin	~~191~~ 19.1	~~U~~ U		~~P~~ P

dec 3/14/90

olor Before: TAN_____ Clarity Before: N/A___ Texture: COARSE

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

omments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

00358

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Lab Sample ID: MM 2629___

Level (low/med): _____ Date Received: 01/25/~~88~~ 90 4/26/90

% Solids: _59.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2780			P
7440-36-0	Antimony	8.8	U		P
7440-38-2	Arsenic	47.4		N*	F
7440-39-3	Barium	316			P
7440-41-7	Beryllium	1.7			P
7440-43-9	Cadmium	3.3			P
7440-70-2	Calcium	178000			P
7440-47-3	Chromium	28.1			P
7440-48-4	Cobalt	4.4	B		P
7440-50-8	Copper	5.2	B		P
7439-89-6	Iron	7880			P
7439-92-1	Lead	3.8		N	F
7439-95-4	Magnesium	16400			P
7439-96-5	Manganese	4020			P
7439-97-6	Mercury	0.17	U		CV
7440-02-0	Nickel	30.5			P
7440-09-7	Potassium	553	B		A
7782-49-2	Selenium	0.65	U	EN	F
7440-22-4	Silver	2.9	U		P
7440-23-5	Sodium	9910			P
7440-28-0	Thallium	0.65	U	WN	F
7440-62-2	Vanadium	57.7			P
7440-66-6	Zinc	38.5		E	P
	Cyanide	0.42	U		AS
	Osmium / Tin	147 / 14.7	U / U		P / P

dzc 3/14/90

Color Before: TAN_____ Clarity Before: N/A___ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

00359

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Lab Sample ID: MM 2630___

Level (low/med): _____ Date Received: 01/25/~~00~~ 90 VC 4/26/90

% Solids: _41.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3600			P
7440-36-0	Antimony	14.6	B		P
7440-38-2	Arsenic	14.7		N*	F
7440-39-3	Barium	413			P
7440-41-7	Beryllium	1.7			P
7440-43-9	Cadmium	9.5			P
7440-70-2	Calcium	121000			P
7440-47-3	Chromium	62.3			P
7440-48-4	Cobalt	10.9	B		P
7440-50-8	Copper	67.5			P
7439-89-6	Iron	8070			P
7439-92-1	Lead	37.5		N	F
7439-95-4	Magnesium	49200			P
7439-96-5	Manganese	6380			P
7439-97-6	Mercury	1.3			CV
7440-02-0	Nickel	121			P
7440-09-7	Potassium	5600			A
7782-49-2	Selenium	0.65	U	WN	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	6230			P
7440-28-0	Thallium	0.65	U	WN	F
7440-62-2	Vanadium	81.5			P
7440-66-6	Zinc	210		E	P
	Cyanide	0.60	U		AS
	Osmium / Tin	168 / 16.8	U / U		P / P

dzc 3/14/90

Color Before: TAN_____ Clarity Before: N/A___ Texture: COARSE

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

00360

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Lab Sample ID: MM 2631___

Level (low/med): _____ Date Received: 01/25/~~08~~ 90 VL 4/26/90

% Solids: _59.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5050			P
7440-36-0	Antimony	10.2	B		P
7440-38-2	Arsenic	7.3		N*	F
7440-39-3	Barium	252			P
7440-41-7	Beryllium	1.7			P
7440-43-9	Cadmium	4.3			P
7440-70-2	Calcium	154000			P
7440-47-3	Chromium	36.6			P
7440-48-4	Cobalt	6.4	B		P
7440-50-8	Copper	11.3			P
7439-89-6	Iron	8900			P
7439-92-1	Lead	1.8		N	F
7439-95-4	Magnesium	26400			P
7439-96-5	Manganese	2900			P
7439-97-6	Mercury	0.17	U		CV
7440-02-0	Nickel	42.5			P
7440-09-7	Potassium	974	B		A
7782-49-2	Selenium	0.60	U	EN	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	14500			P
7440-28-0	Thallium	0.60	U	WN	F
7440-62-2	Vanadium	80.2			P
7440-66-6	Zinc	44.8		E	P
	Cyanide	0.42	U		AS
	Osmium	162	U		P
	Tin	69.2			P

ASC 3/14/90

Color Before: TAN_____ Clarity Before: N/A___ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

Comments:

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A 3/14/90

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

00013

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	40000.0	43360.00	108.4	40000.0	43170.00	107.9	43580.00	109.0	P
Antimony	1000.0	1017.00	101.7	1000.0	1026.00	102.6	1022.00	102.2	P
Arsenic	30.0	32.06	106.9	30.0	28.42	94.7	29.95	99.8	F
Barium	1000.0	1010.00	101.0	1000.0	1002.00	100.2	1003.00	100.3	P
Beryllium	500.0	474.80	95.0	500.0	472.10	94.4	473.00	94.6	P
Cadmium	1000.0	999.30	99.9	1000.0	997.70	99.8	1008.00	100.8	P
Calcium	40000.0	42540.00	106.4	40000.0	42420.00	106.0	42620.00	106.6	P
Chromium	4000.0	4033.00	100.8	4000.0	4011.00	100.3	4025.00	100.6	P
Cobalt	2000.0	1979.00	99.0	2000.0	1967.00	98.4	1980.00	99.0	P
Copper	4000.0	4047.00	101.2	4000.0	3999.00	100.0	4022.00	100.6	P
Iron	40000.0	40720.00	101.8	40000.0	40370.00	100.9	40590.00	101.5	P
Lead	25.0	25.99	104.0	25.0	27.10	108.4			F
Magnesium	40000.0	43820.00	109.6	40000.0	43450.00	108.6	43980.00	110.0	P
Manganese	1000.0	974.80	97.5	1000.0	970.10	97.0	973.20	97.3	P
Mercury	4.0	4.25	106.2	4.0	4.18	104.5	4.31	107.8	CV
Nickel	4000.0	4098.00	102.4	4000.0	4065.00	101.6	4097.00	102.4	P
Potassium	2000.0	1982.00	99.1	2000.0	2095.00	104.8	2194.00	109.7	A
Selenium	25.0	26.54	106.2	25.0	23.44	93.8	22.74	91.0	F
Silver	1000.0	963.20	96.3	1000.0	962.10	96.2	960.80	96.1	P
Sodium	40000.0	42340.00	105.8	40000.0	41780.00	104.4	42460.00	106.2	P
Thallium	25.0	26.10	104.4	25.0	25.72	102.9	23.11	92.4	F
Vanadium	1000.0	1001.00	100.1	1000.0	993.90	99.4	1002.00	100.2	P
Zinc	4000.0	4222.00	105.6	4000.0	4191.00	104.8	4212.00	105.3	P
Cyanide	100.0	98.34	98.3	100.0	102.73	102.7	103.11	103.1	AS
Osmium	2000.0	2029.00	101.4	4000.0	3575.00	89.4	3683.00	92.1	P
Tin	4000.0	4006.00	100.2	4000.0	4138.00	103.4	4453.00	111.3	P

dxc 3/14/90

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				40000.0	43070.00	107.7	43380.00	108.4	P
Antimony				1000.0	1011.00	101.1	1044.00	104.4	P
Arsenic				30.0	28.40	94.7	32.21	107.4	F
Barium				1000.0	1010.00	101.0	1014.00	101.4	P
Beryllium				500.0	481.20	96.2	481.00	96.2	P
Cadmium				1000.0	988.00	98.8	1000.00	100.0	P
Calcium				40000.0	42260.00	105.6	42580.00	106.4	P
Chromium				4000.0	4021.00	100.5	4037.00	100.9	P
Cobalt				2000.0	1980.00	99.0	1995.00	99.8	P
Copper				4000.0	4034.00	100.8	4037.00	100.9	P
Iron				40000.0	40650.00	101.6	40720.00	101.8	P
Lead	25.0	26.07	104.3	25.0	26.93	107.7	27.11	108.4	F
Magnesium				40000.0	43470.00	108.7	43600.00	109.0	P
Manganese				1000.0	972.60	97.3	977.90	97.8	P
Mercury									NR
Nickel				4000.0	4098.00	102.4	4124.00	103.1	P
Potassium				2000.0	2103.00	105.2	2156.00	107.8	A
Selenium				25.0	23.99	96.0			F
Silver				1000.0	957.40	95.7	960.80	96.1	P
Sodium				40000.0	41820.00	104.6	41760.00	104.4	P
Thallium				25.0	23.78	95.1	24.76	99.0	F
Vanadium				1000.0	999.10	99.9	999.60	100.0	P
Zinc				4000.0	4168.00	104.2	4196.00	104.9	P
Cyanide				100.0	105.63	105.6			AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

3/14/90

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	40000.0	43170.00	107.9	40000.0	43470.00	108.7	43080.00	107.7	P
Antimony	1000.0	1053.00	105.3	1000.0	1040.00	104.0	1042.00	104.2	P
Arsenic				30.0	28.44	94.8			F
Barium	1000.0	1010.00	101.0	1000.0	1024.00	102.4	1029.00	102.9	P
Beryllium	500.0	478.00	95.6	500.0	488.80	97.8	499.30	99.9	P
Cadmium	1000.0	999.00	99.9	1000.0	993.00	99.3	977.60	97.8	P
Calcium	40000.0	43110.00	107.8	40000.0	43590.00	109.0	43920.00	109.8	P
Chromium	4000.0	4062.00	101.6	4000.0	4096.00	102.4	4112.00	102.8	P
Cobalt	2000.0	1991.00	99.6	2000.0	2008.00	100.4	2009.00	100.4	P
Copper	4000.0	4029.00	100.7	4000.0	4084.00	102.1	4080.00	102.0	P
Iron	40000.0	40960.00	102.4	40000.0	41500.00	103.8	41940.00	104.8	P
Lead	25.0	24.57	98.3	25.0	24.96	99.8	25.77	103.1	F
Magnesium	40000.0	43600.00	109.0	40000.0	43620.00	109.0	43460.00	108.6	P
Manganese	1000.0	978.00	97.8	1000.0	983.80	98.4	985.70	98.6	P
Mercury									NR
Nickel	4000.0	4115.00	102.9	4000.0	4107.00	102.7	4136.00	103.4	P
Potassium				2000.0	2130.00	106.5	2092.00	104.6	A
Selenium	25.0	27.52	110.1	25.0	26.24	105.0			F
Silver	1000.0	954.70	95.5	1000.0	954.40	95.4	942.70	94.3	P
Sodium	40000.0	41640.00	104.1	40000.0	41890.00	104.7	41850.00	104.6	P
Thallium				25.0	25.68	102.7	25.25	101.0	F
Vanadium	1000.0	1008.00	100.8	1000.0	1015.00	101.5	1020.00	102.0	P
Zinc	4000.0	4122.00	103.0	4000.0	4148.00	103.7	4138.00	103.4	P
Cyanide	100.0	102.80	102.8	100.0	100.18	100.2	102.00	102.0	AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

3/14/90

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				40000.0	43050.00	107.6	41700.00	104.2	P
Antimony				1000.0	1073.00	107.3	1013.00	101.3	P
Arsenic	30.0	30.16	100.5	30.0	30.98	103.3	31.14	103.8	F
Barium				1000.0	1029.00	102.9	996.50	99.6	P
Beryllium				500.0	500.70	100.1	485.50	97.1	P
Cadmium				1000.0	971.90	97.2	944.00	94.4	P
Calcium				40000.0	43840.00	109.6	42500.00	106.2	P
Chromium				4000.0	4103.00	102.6	3981.00	99.5	P
Cobalt				2000.0	2007.00	100.4	1948.00	97.4	P
Copper				4000.0	4092.00	102.3	3974.00	99.4	P
Iron				40000.0	42000.00	105.0	40690.00	101.7	P
Lead				25.0	27.55	110.2	25.17	100.7	F
Magnesium				40000.0	43440.00	108.6	42070.00	105.2	P
Manganese				1000.0	980.40	98.0	950.30	95.0	P
Mercury									NR
Nickel				4000.0	4105.00	102.6	4020.00	100.5	P
Potassium				2000.0	2103.00	105.2	2146.00	107.3	A
Selenium	25.0	25.71	102.8	25.0	23.01	92.0	26.71	106.8	F
Silver				1000.0	940.20	94.0	956.70	95.7	P
Sodium				40000.0	41920.00	104.8	40500.00	101.2	P
Thallium				25.0	25.27	101.1	23.31	93.2	F
Vanadium				1000.0	1019.00	101.9	986.30	98.6	P
Zinc				4000.0	4132.00	103.3	3996.00	99.9	P
Cyanide				100.0	102.16	102.2			AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

3/14/90

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

ab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

nitial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				40000.0	41610.00	104.0			P
Antimony				1000.0	1013.00	101.3			P
Arsenic				30.0	30.12	100.4			F
Barium				1000.0	993.20	99.3			P
Beryllium				500.0	484.30	96.9			P
Cadmium				1000.0	922.00	92.2			P
Calcium				40000.0	42070.00	105.2			P
Chromium				4000.0	3937.00	98.4			P
Cobalt				2000.0	1925.00	96.2			P
Copper				4000.0	3952.00	98.8			P
Iron				40000.0	40370.00	100.9			P
Lead									NR
Magnesium				40000.0	41670.00	104.2			P
Manganese				1000.0	940.40	94.0			P
Mercury									NR
Nickel				4000.0	3957.00	98.9			P
Potassium									NR
Selenium				25.0	23.98	95.9			F
Silver				1000.0	940.80	94.1			P
Sodium				40000.0	40380.00	101.0			P
Thallium				25.0	24.09	96.4	24.50	98.0	F
Vanadium				1000.0	975.90	97.6			P
Zinc				4000.0	3934.00	98.4			P
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

A 7/14/90

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00018

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

AA CRDL Standard Source: SPEX_____

ICP CRDL Standard Source: SPEX_____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony				120.0	124.20	103.5	124.30	103.6
Arsenic	10.0	11.20	112.0					
Barium								
Beryllium				10.0	10.00	100.0	10.00	100.0
Cadmium				10.0	11.40	114.0	11.00	110.0
Calcium								
Chromium				20.0	17.10	85.5	16.30	81.5
Cobalt				100.0	98.30	98.3	98.30	98.3
Copper				50.0	57.60	115.2	57.00	114.0
Iron								
Lead	5.0	5.30	106.0					
Magnesium								
Manganese				30.0	29.70	99.0	29.10	97.0
Mercury	0.2	0.18	90.0					
Nickel				80.0	80.30	100.4	84.80	106.0
Potassium								
Selenium	5.0	6.52	130.4					
Silver				20.0	21.00	105.0	17.90	89.5
Sodium								
Thallium	10.0	12.31	123.1					
Vanadium				100.0	96.40	96.4	94.30	94.3
Zinc				40.0	45.10	112.8	48.00	120.0

FORM II (PART 2) - IN 7/87

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2B
CRDL STANDARD FOR AA AND ICP

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

AA CRDL Standard Source: _____

ICP CRDL Standard Source: SPEX_____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony				120.0	136.00	113.3	144.20	120.2
Arsenic								
Barium								
Beryllium				10.0	11.20	112.0	12.00	120.0
Cadmium				10.0	9.60	96.0	9.60	96.0
Calcium								
Chromium				20.0	15.20	76.0	12.20	61.0
Cobalt				100.0	99.60	99.6	98.70	98.7
Copper				50.0	59.90	119.8	57.40	114.8
Iron								
Lead								
Magnesium								
Manganese				30.0	30.20	100.7	29.90	99.7
Mercury								
Nickel				80.0	80.50	100.6	92.50	115.6
Potassium								
Selenium								
Silver				20.0	18.40	92.0	14.50	72.5
Sodium								
Thallium								
Vanadium				100.0	94.90	94.9	93.90	93.9
Zinc				40.0	50.80	127.0	51.70	129.2

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3
BLANKS

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	60.0	U	60.0	U	60.0	U	60.0	U	60.0	U	P
Antimony	30.0	U	30.0	U	30.0	U	30.0	U	30.0	U	P
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Barium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	P
Cadmium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Calcium	20.0	U	20.0	U	20.0	U	-20.8	B	20.0	U	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Cobalt	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Copper	12.3	B	10.0	U	10.0	U	10.0	U	10.0	U	P
Iron	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Lead	2.0	U	2.0	U					2.0	U	F
Magnesium	60.0	U	60.0	U	60.0	U	60.0	U	60.0	U	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Mercury	0.2	U	0.2	U	0.2	U			0.2	U	CV
Nickel	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	P
Potassium	100.0	U	100.0	U	100.0	U	100.0	U	100.0	U	A
Selenium			2.0	U	2.0	U	2.0	U	2.0	U	F
Silver	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Sodium	100.0	U	100.0	U	100.0	U	100.0	U	100.0	U	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Vanadium	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Zinc	2.0	U	2.0	U	2.0	U	2.0	U	7.3	B	P
Cyanide	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	AS
Osmium	500.0	U	500.0	U	500.0	U			500.0	U	P
Tin	50.0	U	50.0	U	-170.0				-106.0		P

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3
BLANKS

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			60.0	U							P
Antimony			30.0	U							P
Arsenic			2.0	U	2.0	U					F
Barium			2.0	U							P
Beryllium			1.0	U							P
Cadmium			2.0	U							P
Calcium			20.0	U							P
Chromium			10.0	U							P
Cobalt			10.0	U							P
Copper			10.0	U							P
Iron			10.0	U							P
Lead	2.0	U	2.0	U	2.0	U					F
Magnesium			60.0	U							P
Manganese			2.0	U							P
Mercury											NR
Nickel			20.0	U							P
Potassium			100.0	U	100.0	U	100.0	U			A
Selenium	2.0	U	2.0	U							F
Silver			10.0	U							P
Sodium			100.0	U							P
Thallium			2.0	U	2.0	U	2.0	U			F
Vanadium			10.0	U							P
Zinc			2.0	U							P
Cyanide	5.0	U	5.0	U	5.0	U	5.0	U			AS

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3
BLANKS

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	60.0	U	60.0	U	60.0	U	60.0	U			P
Antimony	30.0	U	30.0	U	30.0	U	30.0	U			P
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U			F
Barium	2.0	U	2.0	U	2.0	U	2.0	U			P
Beryllium	1.0	U	1.0	U	2.0	B	1.5	B			P
Cadmium	2.0	U	2.0	U	2.0	U	2.0	U			P
Calcium	20.0	U	20.0	U	20.0	U	-21.1	B			P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U			P
Cobalt	10.0	U	10.0	U	10.0	U	10.0	U			P
Copper	10.0	U	10.0	U	10.0	U	10.0	U			P
Iron	10.0	U	10.0	U	10.0	U	10.0	U			P
Lead	2.0	U	2.0	U	2.0	U	2.0	U			F
Magnesium	60.0	U	60.0	U	60.0	U	60.0	U			P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U			P
Mercury											NR
Nickel	20.0	U	20.0	U	20.0	U	20.0	U			P
Potassium			100.0	U	100.0	U					A
Selenium	2.0	U	2.0	U	2.0	U	2.0	U			F
Silver	10.0	U	10.0	U	10.0	U	10.0	U			P
Sodium	100.0	U	100.0	U	100.0	U	100.0	U			P
Thallium			2.0	U	2.0	U	2.0	U			F
Vanadium	10.0	U	10.0	U	10.0	U	10.0	U			P
Zinc	2.2	B	2.7	B	2.7	B	3.2	B			P
Cyanide											NR

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3
BLANKS

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			60.0	U	60.0	U					P
Antimony			30.0	U	30.0	U					P
Arsenic											NR
Barium			2.0	U	2.0	U					P
Beryllium			1.4	B	1.4	B					P
Cadmium			2.0	U	2.0	U					P
Calcium			20.0	U	20.0	U					P
Chromium			10.0	U	10.0	U					P
Cobalt			10.0	U	10.0	U					P
Copper			10.0	U	10.0	U					P
Iron			10.0	U	10.0	U					P
Lead			2.0	U							F
Magnesium			60.0	U	60.0	U					P
Manganese			2.0	U	2.0	U					P
Mercury											NR
Nickel			20.0	U	20.0	U					P
Potassium											NR
Selenium											NR
Silver			10.0	U	10.0	U					P
Sodium			100.0	U	100.0	U					P
Thallium			2.0	U							F
Vanadium			10.0	U	10.0	U					P
Zinc			2.2	B	2.0	U					P
Cyanide											NR

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ICP INTERFERENCE CHECK SAMPLE

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No: _____ SDG No.: 00350_

ICP ID Number: ICAP 61_____ ICS Source: SPEX_____

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	500000	500000	508300	516100.0	103.2	506000	510300.0	102.1
Antimony								
Arsenic								
Barium		500		498.5	99.7		498.3	99.7
Beryllium		500		455.7	91.1		457.7	91.5
Cadmium		1000		946.5	94.6		939.8	94.0
Calcium	500000	500000	502700	510900.0	102.2	501000	507400.0	101.5
Chromium		500		512.7	102.5		514.0	102.8
Cobalt		500		510.1	102.0		513.9	102.8
Copper		500		487.2	97.4		489.3	97.9
Iron	200000	200000	198100	201000.0	100.5	198600	200400.0	100.2
Lead								
Magnesium	500000	500000	493900	498800.0	99.8	490900	492700.0	98.5
Manganese		500		525.8	105.2		524.2	104.8
Mercury								
Nickel		1000		1040.0	104.0		1048.0	104.8
Potassium								
Selenium								
Silver		1000		828.4	82.8		818.7	81.9
Sodium								
Thallium								
Vanadium		500		444.4	88.9		441.4	88.3
Zinc		1000		986.5	98.6		978.1	97.8

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4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

ab Code: ITMWL_ Case No.: 35794 SAS No: _____ SDG No.: 00350_

ICP ID Number: ICAP 61_____ ICS Source: SPEX_____

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	500000	500000	508200	510200.0	102.0	513500	515900.0	103.2
Antimony								
Arsenic								
Barium		500		500.0	100.0		507.8	101.6
Beryllium		500		459.2	91.8		476.8	95.4
Cadmium		1000		929.0	92.9		928.0	92.8
Calcium		500000		512400.0	102.5		527500.0	105.5
Chromium		500		514.6	102.9		522.1	104.4
Cobalt		500		516.3	103.3		522.3	104.5
Copper		500		493.2	98.6		493.9	98.8
Iron	200000	200000	508800	200000.0	100.0	525700	203100.0	101.6
Lead								
Magnesium	500000	500000	199000	494500.0	98.9	202200	498000.0	99.6
Manganese		500		523.2	104.6		529.9	106.0
Mercury								
Nickel		1000		1044.0	104.4		1052.0	105.2
Potassium								
Selenium								
Silver		1000		816.3	81.6		919.1	91.9
Sodium								
Thallium								
Vanadium		500		442.5	88.5		451.8	90.4
Zinc		1000		960.4	96.0		965.6	96.6

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

00350 S

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Level (low/med): _____

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	109.9080		6.8966	U	114.9	95.6		P
Arsenic	75-125	13.0966		5.0989		459.8	1.7	N	F
Barium	75-125	443.6782		16.0230	B	459.8	93.0		P
Beryllium	75-125	10.7356		0.2299	U	11.5	93.4		P
Cadmium	75-125	10.7586		0.4598	B	11.5	89.6		P
Calcium									NR
Chromium	75-125	51.9770		10.7816		46.0	89.6		P
Cobalt	75-125	101.8851		2.2989	U	114.9	88.6		P
Copper	75-125	56.6207		8.0920		57.5	84.4		P
Iron									NR
Lead	75-125	10.3310		3.2046		459.8	1.5	N	F
Magnesium									NR
Manganese	75-125	135.1034		30.0920		114.9	91.4		P
Mercury	75-125	0.8471		0.1149	U	0.6	148.6	N	CV
Nickel	75-125	105.9540		4.5977	U	114.9	92.2		P
Potassium									NR
Selenium	75-125	0.4598	U	0.4598	U	459.8	0.0	N	F
Silver	75-125	10.9655		2.2989	U	11.5	95.4		P
Sodium									NR
Thallium	75-125	8.8874		0.4598	U	459.8	1.9	N	F
Vanadium	75-125	108.0000		4.3448	B	114.9	90.2		P
Zinc	75-125	113.5402		11.5862		114.9	88.7		P
Cyanide	75-125	6.5253		0.3621	B	5.8	107.2		AS
Tin	75-125	969.6500		11.5000	U	919.5	105.4		P

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Comments:

FORM V (PART 1) - IN 7/87

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5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

00350 A

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Level (low/med): _____

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead		15.70		13.94		10.0	17.6		F
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium		2.00	U	2.00	U	10.0	0.0		F
Silver									NR
Sodium									NR
Thallium		14.23		2.00	U	20.0	71.2		F
Vanadium									NR
Zinc									NR
Cyanide									

Comments:

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6
DUPLICATES

EPA SAMPLE NO.

00350 D

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Level (low/med): _____

Solids for Sample: _87.0 % Solids for Duplicate: _87.0

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		481.1494		479.5402		0.3		P
Antimony	13.8	6.8966	U	6.8966	U			P
Arsenic	2.3	5.0989		11.4000		76.4	*	F
Barium	46.0	16.0230	B	22.7586	B	34.7		P
Beryllium	1.1	0.2299	U	0.2299	U			P
Cadmium	1.1	0.4598	B	0.4598	U	200.0		P
Calcium		33126.4368		28459.7701		15.2		P
Chromium	2.3	10.7816		9.9770		7.8		P
Cobalt	11.5	2.2989	U	2.2989	U			P
Copper	5.7	8.0920		5.8621		32.0		P
Iron		1078.1609		935.1724		14.2		P
Lead	1.1	3.2046		3.6966		14.3		F
Magnesium	1149.4	1120.9195	B	1164.1379		3.8		P
Manganese		30.0920		33.5172		10.8		P
Mercury	0.1	0.1149	U	0.1149	U			CV
Nickel	9.2	4.5977	U	4.5977	U			P
Potassium	1149.4	327.1264	B	314.9425	B	3.8		A
Selenium	1.1	0.4598	U	0.4598	U			F
Silver	2.3	2.2989	U	2.2989	U			P
Sodium		242988.5058		247126.4368		1.7		P
Thallium	2.3	0.4598	U	0.4598	U			F
Vanadium	11.5	4.3448	B	3.5632	B	19.8		P
Zinc	4.6	11.5862		7.7471		39.7		P
Cyanide	0.6	0.3621	B	0.3328	B	8.4		AS
Osmium		115.0000	U	115.0000	U			P
Tin		11.5000	U	29.9000		200.0		P

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8
STANDARD ADDITION RESULTS

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Concentration Units: ug/L

EPA Sample No.	An	Dil.	0 ADD Abs	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
00350	AS	1	0.046	10	0.080	15	0.104	20	0.126	22.2	0.9974	
00350_D	AS	1	0.074	10	0.100	15	0.115	20	0.134	49.6	0.9950	
00351	AS	1	0.060	10	0.094	15	0.111	20	0.123	38.8	0.9976	
00352	AS	1	0.081	10	0.118	15	0.138	20	0.161	40.3	0.9988	
00353	AS	1	0.057	10	0.090	15	0.107	20	0.113	40.7	0.9900	+
00357	AS	1	0.040	10	0.069	15	0.092	20	0.110	44.1	0.9953	
00359	AS	1	0.051	10	0.085	15	0.105	20	0.118	45.6	0.9984	

3/14/90

U.S. EPA - CLP

9
ICP SERIAL DILUTION

EPA SAMPLE NO.

00350 L

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

Matrix (soil/water): SOIL_ Level (low/med): _____

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	2093.00		1911.00		8.7		P
Antimony	30.00	U	150.00	U			NR
Arsenic							F
Barium	69.70	B	72.50	B	4.0		P
Beryllium	1.00	U	5.00	U			NR
Cadmium	2.00	B	10.00	U	100.0		P
Calcium	144100.00		145250.00		0.8		P
Chromium	46.90		50.00	U	100.0		P
Cobalt	10.00	U	50.00	U			NR
Copper	35.20		50.00	U	100.0		P
Iron	4690.00		5005.00		6.7		P
Lead							F
Magnesium	4876.00	B	4887.00	B	0.2		P
Manganese	130.90		133.00		1.6		P
Mercury							CV
Nickel	20.00	U	100.00	U			NR
Potassium							A
Selenium							F
Silver	10.00	U	50.00	U			NR
Sodium	1057000.00		1065000.00		0.8		P
Thallium							F
Vanadium	18.90	B	50.00	U	100.0		P
Zinc	50.40		31.50	B	37.5	E	P

3/14/90

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10
HOLDING TIMES

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

EPA Sample No.	Matrix	Date Received	Mercury Prep Date	Mercury Holding Time	Cyanide Prep Date	Cyanide Holding Time
00350	SOIL	01/25/90	02/07/90	13	02/02/90	8
00351	SOIL	01/25/90	02/07/90	13	01/29/90	4
00352	SOIL	01/25/90	02/07/90	13	01/29/90	4
00353	SOIL	01/25/90	02/07/90	13	01/29/90	4
00354	SOIL	01/25/90	02/07/90	13	02/02/90	8
00355	SOIL	01/25/90	02/07/90	13	02/02/90	8
00356	SOIL	01/25/90	02/07/90	13	02/02/90	8
00357	SOIL	01/25/90	02/07/90	13	02/02/90	8
00358	SOIL	01/25/90	02/07/90	13	02/02/90	8
00359	SOIL	01/25/90	02/07/90	13	02/02/90	8
00360	SOIL	01/25/90	02/07/90	13	02/02/90	8

K 3/14/90

U.S. EPA - CLP

11
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

ICP ID Number: ICAP_61_____ Date: 12/21/89

Flame AA ID Number : _____

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.22		200	60.0	P
Antimony	206.84		60	30.0	P
Arsenic			10		NR
Barium	493.41		200	2.0	P
Beryllium	313.04		5	1.0	P
Cadmium	228.80		5	2.0	P
Calcium	317.93		5000	20.0	P
Chromium	267.72		10	10.0	P
Cobalt	228.62		50	10.0	P
Copper	324.75		25	10.0	P
Iron	259.94		100	10.0	P
Lead			5		NR
Magnesium	279.08		5000	60.0	P
Manganese	257.61		15	2.0	P
Mercury			0.2		NR
Nickel	231.60		40	20.0	P
Potassium			5000		NR
Selenium			5		NR
Silver	328.07		10	10.0	P
Sodium	589.00		5000	100.0	P
Thallium			10		NR
Vanadium	292.40		50	10.0	P
Zinc	213.86		20	2.0	P

Comments:

11/14/90

U.S. EPA - CLP

11
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

ICP ID Number: _____ Date: 12/21/89

Flame AA ID Number : BUCK_400____

Furnace AA ID Number : PEZ1_____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic	193.70	BZ	10	2.0	F
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead	283.31	BZ	5	2.0	F
Magnesium			5000		NR
Manganese			15		NR
Mercury	253.65		0.2	0.2	CV
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium	276.79	BZ	10	2.0	F
Vanadium			50		NR
Zinc			20		NR

Comments:

3/14/90

U.S. EPA - CLP

11
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

ICP ID Number: _____ Date: 12/21/89

Flame AA ID Number : TJA_____

Furnace AA ID Number : PEZ2_____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead	283.30	BZ	5	2.0	F
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium	766.49		5000	100.0	A
Selenium	196.03	BZ	5	2.0	F
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR

Comments:

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U.S. EPA - CLP

12A
ICP INTERELEMENT CORRECTION FACTORS (QUARTERLY)

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

ab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

ICP ID Number: ICAP 61_____ Date: 06/21/89

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	CR
Aluminum	308.22					
Antimony	206.84	0.0033900		0.0006600	0.0000354	0.0126000
Arsenic	189.00					
Barium	493.41					
Beryllium	313.04					
Cadmium	228.80					
Calcium	317.93			0.0002000	0.0001000	
Chromium	267.72		0.0001200	0.0000892	0.0001300	
Cobalt	228.62					
Copper	324.75		0.0000600			
Iron	259.94					
Lead	220.30					
Magnesium	279.08		0.0005000			0.0020000
Manganese	257.61			0.0008000		
Mercury						
Nickel	231.60				0.0004000	
Potassium						
Selenium	196.00					
Silver	328.07		0.0001560			
Sodium	589.00		0.0002000			
Thallium	377.50					
Vanadium	292.40			0.0002200		
Zinc	213.86					

omments:

3/14/90

U.S. EPA - CLP

13
ICP LINEAR RANGES (QUARTERLY)

Lab Name: ITAS_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 35794 SAS No.: _____ SDG No.: 00350_

ICP ID Number: ICAP 61_____ Date: 12/21/89

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	M
Aluminum	10.00	400000.0	
Antimony	10.00	2000.0	
Arsenic	10.00		
Barium	10.00	6000.0	
Beryllium	10.00	2000.0	
Cadmium	10.00	4000.0	
Calcium	10.00	440000.0	
Chromium	10.00	10000.0	
Cobalt	10.00	4000.0	
Copper	10.00	10000.0	
Iron	10.00	400000.0	
Lead	10.00		
Magnesium	10.00	400000.0	
Manganese	10.00	4000.0	
Mercury			NR
Nickel	10.00	10000.0	
Potassium			NR
Selenium	10.00		
Silver	10.00	1000.0	
Sodium	10.00	400000.0	
Thallium	10.00		
Vanadium	10.00	2000.0	
Zinc	10.00	10000.0	

Comments:

9/14/90

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
00350

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2658

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KK2710

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 20 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/05/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1600	U
111-44-4	bis(2-Chloroethyl)Ether	1600	U
95-57-8	2-Chlorophenol	1600	U
541-73-1	1,3-Dichlorobenzene	1600	U
106-46-7	1,4-Dichlorobenzene	1600	U
100-51-6	Benzyl Alcohol	1600	U
95-50-1	1,2-Dichlorobenzene	1600	U
95-48-7	2-Methylphenol	1600	U
108-60-1	bis(2-Chloroisopropyl)Ether	1600	U
106-44-5	4-Methylphenol	1600	U
621-64-7	N-Nitroso-Di-n-Propylamine	1600	U
67-72-1	Hexachloroethane	1600	U
98-95-3	Nitrobenzene	1600	U
78-59-1	Isophorone	1600	U
88-75-5	2-Nitrophenol	1600	U
105-67-9	2,4-Dimethylphenol	1600	U
65-85-0	Benzoic Acid	7900	U
111-91-1	bis(2-Chloroethoxy)Methane	1600	U
120-83-2	2,4-Dichlorophenol	1600	U
120-82-1	1,2,4-Trichlorobenzene	1600	U
91-20-3	Naphthalene	1600	U
106-47-8	4-Chloroaniline	1600	U
87-68-3	Hexachlorobutadiene	1600	U
59-50-7	4-Chloro-3-Methylphenol	1600	U
91-57-6	2-Methylnaphthalene	1600	U
77-47-4	Hexachlorocyclopentadiene	1600	U
88-06-2	2,4,6-Trichlorophenol	1600	U
95-95-4	2,4,5-Trichlorophenol	7900	U
91-58-7	2-Chloronaphthalene	1600	U
88-74-4	2-Nitroaniline	7900	U
131-11-3	Dimethyl Phthalate	1600	U
208-96-8	Acenaphthylene	1600	U
606-20-2	2,6-Dinitrotoluene	1600	U

gpw 2/12/90

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00350 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2658

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KK2710

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 20 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/05/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	7900	U
83-32-9	Acenaphthene	1600	U
51-28-5	2,4-Dinitrophenol	7900	U
100-02-7	4-Nitrophenol	7900	U
132-64-9	Dibenzofuran	1600	U
121-14-2	2,4-Dinitrotoluene	1600	U
84-66-2	Diethylphthalate	1600	U
7005-72-3	4-Chlorophenyl-phenylether	1600	U
86-73-7	Fluorene	1600	U
100-01-6	4-Nitroaniline	7900	U
534-52-1	4,6-Dinitro-2-Methylphenol	7900	U
86-30-6	N-Nitrosodiphenylamine (1)	240	BJ
101-55-3	4-Bromophenyl-phenylether	1600	U
118-74-1	Hexachlorobenzene	1600	U
87-86-5	Pentachlorophenol	7900	U
85-01-8	Phenanthrene	1800	
120-12-7	Anthracene	330	J
84-74-2	Di-n-Butylphthalate	1600	U
206-44-0	Fluoranthene	2900	
129-00-0	Pyrene	1900	
85-68-7	Butylbenzylphthalate	1600	U
91-94-1	3,3'-Dichlorobenzidine	3300	U
56-55-3	Benzo(a)Anthracene	870	J
218-01-9	Chrysene	1100	J
117-81-7	bis(2-Ethylhexyl)Phthalate	4100	B
117-84-0	Di-n-Octyl Phthalate	1600	U
205-99-2	Benzo(b)Fluoranthene	940	J
207-08-9	Benzo(k)Fluoranthene	1500	J
50-32-8	Benzo(a)Pyrene	810	J
193-39-5	Indeno(1,2,3-cd)Pyrene	610	J
53-70-3	Dibenz(a,h)Anthracene	1600	U
191-24-2	Benzo(g,h,i)Perylene	560	J

(1) - Cannot be separated from Diphenylamine

gw 2/12/90

SAMPLE NO.

00350334

1X
ORGANICS ANALYSIS DATA SHEET

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2658

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KK2710

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 20 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/05/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	1600	U
109-06-8	2-Picoline	11000	U
10595-95-6	N-Nitrosomethylethylamine	1600	U
66-27-3	Methyl methanesulfonate	1600	U
55-18-5	N-Nitrosodiethylamine	1600	U
62-50-0	Ethyl methanesulfonate	1600	U
62-53-3	Aniline	8400	U
76-01-7	Pentachloroethane	3300	U
108-39-4	3-Methylphenol	1600	U
930-55-2	N-Nitrosopyrrolidine	1600	U
98-86-2	Acetophenone	1600	U
59-89-2	N-Nitrosomorpholine	1600	U
95-53-4	o-Toluidine	1600	U
100-75-4	N-Nitrosopiperidine	1600	U
126-68-1	o,o,o-Triethylphosphorot(1)	1600	U
87-65-0	2,6-Dichlorophenol	1600	U
1888-71-7	Hexachloropropene	3300	U
122-09-8	a,a-dimethylphenethylamine	1600	U
924-16-3	N-Nitrosodi-n-butylamine	3300	U
106-50-3	p-Phenylenediamine	8300	U
94-59-7	Safrole	1600	U
95-94-3	1,2,4,5-Tetrachlorobenzene	1600	U
120-58-1	Isosafrole	1600	U
130-15-4	1,4-Naphthoquinone	1600	U

Jan 2/12/90

SAMPLE NO.

00350 334

1X
ORGANICS ANALYSIS DATA SHEET

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2658

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KK2710

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 20 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/05/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-65-0	m-Dinitrobenzene	1600	U
608-93-5	Pentachlorobenzene	3300	U
91-59-8	2-Naphthylamine	28000	U
134-32-7	1-Naphthylamine	20000	U
58-90-2	2,3,4,6-Tetrachlorophenol	1600	U
99-55-8	5-Nitro-o-toluidine	3300	U
122-39-4	Diphenylamine	1600	U
3689-24-5	Tetraethyl dithiopyropho(2)	1600	U
99-35-4	sym-Trinitrobenzene	1600	U
62-44-2	Phenacetin	1600	U
2303-16-4	Diallate	1600	U
92-67-1	4-Aminobiphenyl	8300	U
23950-58-5	Pronamide	5000	U
82-68-8	Pentachloronitrobenzene	3300	U
88-85-7	Dinoseb	3300	U
56-57-5	4-Nitroquinoline-1-oxide	1600	U
91-80-5	Methapyrilene	6600	U
140-57-8	Aramite	1600	U
60-11-7	p-(Dimethylamino)azobenzene	5000	U
119-93-7	3,3'-Dimethylbenzidine	13000	U
53-96-3	2-Acetylaminofluorene	1600	U
57-97-6	7,12-Dimethylbenz(a)anth(3)	3300	U
70-30-4	Hexachlorophene(4)	8400	U
56-49-5	3-Methylcholanthrene	5000	U

gw 2/12/90

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00351 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2661

Sample wt/vol: 30.1 (g/mL) G Lab File ID: KK2713

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 45 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/05/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2400	U
111-44-4	bis(2-Chloroethyl)Ether	2400	U
95-57-8	2-Chlorophenol	2400	U
541-73-1	1,3-Dichlorobenzene	2400	U
106-46-7	1,4-Dichlorobenzene	2400	U
100-51-6	Benzyl Alcohol	2400	U
95-50-1	1,2-Dichlorobenzene	2400	U
95-48-7	2-Methylphenol	2400	U
108-60-1	bis(2-Chloroisopropyl)Ether	2400	U
106-44-5	4-Methylphenol	280	J
621-64-7	N-Nitroso-Di-n-Propylamine	2400	U
67-72-1	Hexachloroethane	2400	U
98-95-3	Nitrobenzene	2400	U
78-59-1	Isophorone	2400	U
88-75-5	2-Nitrophenol	2400	U
105-67-9	2,4-Dimethylphenol	2400	U
65-85-0	Benzoic Acid	12000	U
111-91-1	bis(2-Chloroethoxy)Methane	2400	U
120-83-2	2,4-Dichlorophenol	2400	U
120-82-1	1,2,4-Trichlorobenzene	2400	U
91-20-3	Naphthalene	340	J
106-47-8	4-Chloroaniline	2400	U
87-68-3	Hexachlorobutadiene	2400	U
59-50-7	4-Chloro-3-Methylphenol	2400	U
91-57-6	2-Methylnaphthalene	360	J
77-47-4	Hexachlorocyclopentadiene	2400	U
88-06-2	2,4,6-Trichlorophenol	2400	U
95-95-4	2,4,5-Trichlorophenol	12000	U
91-58-7	2-Chloronaphthalene	2400	U
88-74-4	2-Nitroaniline	12000	U
131-11-3	Dimethyl Phthalate	2400	U
208-96-8	Acenaphthylene	640	J
606-20-2	2,6-Dinitrotoluene	2400	U

FORM I SV-1 2/12/90 1/87 Rev.

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00351 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2661

Sample wt/vol: 30.1 (g/mL) G Lab File ID: KK2713

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 45 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/05/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	12000	U
83-32-9	Acenaphthene	2400	U
51-28-5	2,4-Dinitrophenol	12000	U
100-02-7	4-Nitrophenol	12000	U
132-64-9	Dibenzofuran	2400	U
121-14-2	2,4-Dinitrotoluene	2400	U
84-66-2	Diethylphthalate	2400	U
7005-72-3	4-Chlorophenyl-phenylether	2400	U
86-73-7	Fluorene	2400	U
100-01-6	4-Nitroaniline	12000	U
534-52-1	4,6-Dinitro-2-Methylphenol	12000	U
86-30-6	N-Nitrosodiphenylamine (1)	440	BJ
101-55-3	4-Bromophenyl-phenylether	2400	U
118-74-1	Hexachlorobenzene	2400	U
87-86-5	Pentachlorophenol	12000	U
85-01-8	Phenanthrene	1200	J
120-12-7	Anthracene	580	J
84-74-2	Di-n-Butylphthalate	2400	U
206-44-0	Fluoranthene	2400	
129-00-0	Pyrene	2200	J
85-68-7	Butylbenzylphthalate	2400	U
91-94-1	3,3'-Dichlorobenzidine	4800	U
56-55-3	Benzo(a)Anthracene	1400	J
218-01-9	Chrysene	1800	J
117-81-7	bis(2-Ethylhexyl)Phthalate	3000	B
117-84-0	Di-n-Octyl Phthalate	2400	U
205-99-2	Benzo(b)Fluoranthene	2000	J
207-08-9	Benzo(k)Fluoranthene	3100	
50-32-8	Benzo(a)Pyrene	1600	J
193-39-5	Indeno(1,2,3-cd)Pyrene	1200	J
53-70-3	Dibenz(a,h)Anthracene	420	J
191-24-2	Benzo(g,h,i)Perylene	1200	J

(1) - Cannot be separated from Diphenylamine

ecw 2/1/90

FORM I SV-2 1/87 Rev.

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00351 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2661

Sample wt/vol: 30.1 (g/mL) G Lab File ID: KK2713

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 45 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/05/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	2400	U
109-06-8	2-Picoline	17000	U
10595-95-6	N-Nitrosomethylethylamine	2400	U
66-27-3	Methyl methanesulfonate	2400	U
55-18-5	N-Nitrosodiethylamine	2400	U
62-50-0	Ethyl methanesulfonate	2400	U
62-53-3	Aniline	12000	U
76-01-7	Pentachloroethane	4900	U
108-39-4	3-Methylphenol	290	J
930-55-2	N-Nitrosopyrrolidine	2400	U
98-86-2	Acetophenone	2400	U
59-89-2	N-Nitrosomorpholine	2400	U
95-53-4	o-Toluidine	2400	U
100-75-4	N-Nitrosopiperidine	2400	U
126-68-1	o,o,o-Triethylphosphorot(1)	2400	U
87-65-0	2,6-Dichlorophenol	2400	U
1888-71-7	Hexachloropropene	4900	U
122-09-8	a,a-dimethylphenethylamine	2400	U
924-16-3	N-Nitrosodi-n-butylamine	4900	U
106-50-3	p-Phenylenediamine	12000	U
94-59-7	Safrole	2400	U
95-94-3	1,2,4,5-Tetrachlorobenzene	2400	U
120-58-1	Isosafrole	2400	U
130-15-4	1,4-Naphthoquinone	2400	U

gw 2/12/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00351 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2661

Sample wt/vol: 30.1 (g/mL) G Lab File ID: KK2713

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 45 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/05/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-65-0	m-Dinitrobenzene	2400	U
608-93-5	Pentachlorobenzene	4900	U
91-59-8	2-Naphthylamine	41000	U
134-32-7	1-Naphthylamine	29000	U
58-90-2	2,3,4,6-Tetrachlorophenol	2400	U
99-55-8	5-Nitro-o-toluidine	4900	U
122-39-4	Diphenylamine	2400	U
3689-24-5	Tetraethyl dithiopyropho(2)	2400	U
99-35-4	sym-Trinitrobenzene	2400	U
62-44-2	Phenacetin	2400	U
2303-16-4	Diallate	2400	U
92-67-1	4-Aminobiphenyl	12000	U
23950-58-5	Pronamide	7300	U
82-68-8	Pentachloronitrobenzene	4900	U
88-85-7	Dinoseb	4900	U
56-57-5	4-Nitroquinoline-1-oxide	2400	U
91-80-5	Methapyrilene	9600	U
140-57-8	Aramite	2400	U
60-11-7	p-(Dimethylamino)azobenzene	7300	U
119-93-7	3,3'-Dimethylbenzidine	20000	U
53-96-3	2-Acetylaminofluorene	2400	U
57-97-6	7,12-Dimethylbenz(a)anth(3)	4900	U
70-30-4	Hexachlorophene(4)	12000	U
56-49-5	3-Methylcholanthrene	7300	U

gw 2/12/90

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00352 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2662

Sample wt/vol: 23.8 (g/mL) G Lab File ID: KK2714

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 50 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	140	J
111-44-4	bis(2-Chloroethyl)Ether	830	U
95-57-8	2-Chlorophenol	830	U
541-73-1	1,3-Dichlorobenzene	830	U
106-46-7	1,4-Dichlorobenzene	830	U
100-51-6	Benzyl Alcohol	830	U
95-50-1	1,2-Dichlorobenzene	830	U
95-48-7	2-Methylphenol	830	U
108-60-1	bis(2-Chloroisopropyl)Ether	830	U
106-44-5	4-Methylphenol	830	U
621-64-7	N-Nitroso-Di-n-Propylamine	830	U
67-72-1	Hexachloroethane	830	U
98-95-3	Nitrobenzene	830	U
78-59-1	Isophorone	830	U
88-75-5	2-Nitrophenol	830	U
105-67-9	2,4-Dimethylphenol	830	U
65-85-0	Benzoic Acid	4000	U
111-91-1	bis(2-Chloroethoxy)Methane	830	U
120-83-2	2,4-Dichlorophenol	830	U
120-82-1	1,2,4-Trichlorobenzene	830	U
91-20-3	Naphthalene	830	U
106-47-8	4-Chloroaniline	830	U
87-68-3	Hexachlorobutadiene	830	U
59-50-7	4-Chloro-3-Methylphenol	830	U
91-57-6	2-Methylnaphthalene	830	U
77-47-4	Hexachlorocyclopentadiene	830	U
88-06-2	2,4,6-Trichlorophenol	830	U
95-95-4	2,4,5-Trichlorophenol	4000	U
91-58-7	2-Chloronaphthalene	830	U
88-74-4	2-Nitroaniline	4000	U
131-11-3	Dimethyl Phthalate	830	U
208-96-8	Acenaphthylene	830	U
606-20-2	2,6-Dinitrotoluene	830	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00352 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2662

Sample wt/vol: 23.8 (g/mL) G Lab File ID: KK2714

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 50 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4000	U
83-32-9	Acenaphthene	830	U
51-28-5	2,4-Dinitrophenol	4000	U
100-02-7	4-Nitrophenol	4000	U
132-64-9	Dibenzofuran	830	U
121-14-2	2,4-Dinitrotoluene	830	U
84-66-2	Diethylphthalate	830	U
7005-72-3	4-Chlorophenyl-phenylether	830	U
86-73-7	Fluorene	830	U
100-01-6	4-Nitroaniline	4000	U
534-52-1	4,6-Dinitro-2-Methylphenol	4000	U
86-30-6	N-Nitrosodiphenylamine (1)	130	BJ
101-55-3	4-Bromophenyl-phenylether	830	U
118-74-1	Hexachlorobenzene	830	U
87-86-5	Pentachlorophenol	4000	U
85-01-8	Phenanthrene	830	U
120-12-7	Anthracene	830	U
84-74-2	Di-n-Butylphthalate	830	U
206-44-0	Fluoranthene	830	U
129-00-0	Pyrene	830	U
85-68-7	Butylbenzylphthalate	830	U
91-94-1	3,3'-Dichlorobenzidine	1700	U
56-55-3	Benzo(a)Anthracene	830	U
218-01-9	Chrysene	830	U
117-81-7	bis(2-Ethylhexyl)Phthalate	18000	BE
117-84-0	Di-n-Octyl Phthalate	86	J
205-99-2	Benzo(b)Fluoranthene	830	U
207-08-9	Benzo(k)Fluoranthene	830	U
50-32-8	Benzo(a)Pyrene	830	U
193-39-5	Indeno(1,2,3-cd)Pyrene	830	U
53-70-3	Dibenz(a,h)Anthracene	830	U
191-24-2	Benzo(g,h,i)Perylene	830	U

(1) - Cannot be separated from Diphenylamine

gcw 2/12/90

SAMPLE NO.

00352 334

1X
ORGANICS ANALYSIS DATA SHEET

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2662

Sample wt/vol: 23.8 (g/mL) G Lab File ID: KK2714

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 50 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	830	U
109-06-8	2-Picoline	5800	U
10595-95-6	N-Nitrosomethylethylamine	830	U
66-27-3	Methyl methanesulfonate	830	U
55-18-5	N-Nitrosodiethylamine	830	U
62-50-0	Ethyl methanesulfonate	830	U
62-53-3	Aniline	4300	U
76-01-7	Pentachloroethane	1700	U
108-39-4	3-Methylphenol	830	U
930-55-2	N-Nitrosopyrrolidine	830	U
98-86-2	Acetophenone	830	U
59-89-2	N-Nitrosomorpholine	830	U
95-53-4	o-Toluidine	830	U
100-75-4	N-Nitrosopiperidine	830	U
126-68-1	o,o,o-Triethylphosphorot(1)	830	U
87-65-0	2,6-Dichlorophenol	830	U
1888-71-7	Hexachloropropene	1700	U
122-09-8	a,a-dimethylphenethylamine	830	U
924-16-3	N-Nitrosodi-n-butylamine	1700	U
106-50-3	p-Phenylenediamine	4200	U
94-59-7	Safrole	830	U
95-94-3	1,2,4,5-Tetrachlorobenzene	830	U
120-58-1	Isosafrole	830	U
130-15-4	1,4-Naphthoquinone	830	U

gw 2/12/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00352 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2662

Sample wt/vol: 23.8 (g/mL) G Lab File ID: KK2714

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 50 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-65-0	m-Dinitrobenzene	830	U
608-93-5	Pentachlorobenzene	1700	U
91-59-8	2-Naphthylamine	14000	U
134-32-7	1-Naphthylamine	10000	U
58-90-2	2,3,4,6-Tetrachlorophenol	830	U
99-55-8	5-Nitro-o-toluidine	1700	U
122-39-4	Diphenylamine	830	U
3689-24-5	Tetraethyl dithiopyropho(2)	830	U
99-35-4	sym-Trinitrobenzene	830	U
62-44-2	Phenacetin	830	U
2303-16-4	Diallate	830	U
92-67-1	4-Aminobiphenyl	4200	U
23950-58-5	Pronamide	2500	U
82-68-8	Pentachloronitrobenzene	1700	U
88-85-7	Dinoseb	1700	U
56-57-5	4-Nitroquinoline-1-oxide	830	U
91-80-5	Methapyrilene	3400	U
140-57-8	Aramite	830	U
60-11-7	p-(Dimethylamino)azobenzene	2500	U
119-93-7	3,3'-Dimethylbenzidine	6800	U
53-96-3	2-Acetylaminofluorene	830	U
57-97-6	7,12-Dimethylbenz(a)anth(3)	1700	U
70-30-4	Hexachlorophene(4)	4300	U
56-49-5	3-Methylcholanthrene	2500	U

jm 2/12/90

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00353 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2663

Sample wt/vol: 23.1 (g/mL) G Lab File ID: KK2715

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 37 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/05/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2700	U
111-44-4	bis(2-Chloroethyl)Ether	2700	U
95-57-8	2-Chlorophenol	2700	U
541-73-1	1,3-Dichlorobenzene	2700	U
106-46-7	1,4-Dichlorobenzene	2700	U
100-51-6	Benzyl Alcohol	2700	U
95-50-1	1,2-Dichlorobenzene	2700	U
95-48-7	2-Methylphenol	2700	U
108-60-1	bis(2-Chloroisopropyl)Ether	2700	U
106-44-5	4-Methylphenol	2700	U
621-64-7	N-Nitroso-Di-n-Propylamine	2700	U
67-72-1	Hexachloroethane	2700	U
98-95-3	Nitrobenzene	2700	U
78-59-1	Isophorone	2700	U
88-75-5	2-Nitrophenol	2700	U
105-67-9	2,4-Dimethylphenol	2700	U
65-85-0	Benzoic Acid	13000	U
111-91-1	bis(2-Chloroethoxy)Methane	2700	U
120-83-2	2,4-Dichlorophenol	2700	U
120-82-1	1,2,4-Trichlorobenzene	2700	U
91-20-3	Naphthalene	2700	U
106-47-8	4-Chloroaniline	2700	U
87-68-3	Hexachlorobutadiene	2700	U
59-50-7	4-Chloro-3-Methylphenol	2700	U
91-57-6	2-Methylnaphthalene	2700	U
77-47-4	Hexachlorocyclopentadiene	2700	U
88-06-2	2,4,6-Trichlorophenol	2700	U
95-95-4	2,4,5-Trichlorophenol	13000	U
91-58-7	2-Chloronaphthalene	2700	U
88-74-4	2-Nitroaniline	13000	U
131-11-3	Dimethyl Phthalate	2700	U
208-96-8	Acenaphthylene	510	J
606-20-2	2,6-Dinitrotoluene	2700	U

gw 2/12/90

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00353 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2663

Sample wt/vol: 23.1 (g/mL) G Lab File ID: KK2715

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 37 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/05/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	13000	U
83-32-9	Acenaphthene	2700	U
51-28-5	2,4-Dinitrophenol	13000	U
100-02-7	4-Nitrophenol	13000	U
132-64-9	Dibenzofuran	2700	U
121-14-2	2,4-Dinitrotoluene	2700	U
84-66-2	Diethylphthalate	2700	U
7005-72-3	4-Chlorophenyl-phenylether	2700	U
86-73-7	Fluorene	2700	U
100-01-6	4-Nitroaniline	13000	U
534-52-1	4,6-Dinitro-2-Methylphenol	13000	U
86-30-6	N-Nitrosodiphenylamine (1)	570	BJ
101-55-3	4-Bromophenyl-phenylether	2700	U
118-74-1	Hexachlorobenzene	2700	U
87-86-5	Pentachlorophenol	13000	U
85-01-8	Phenanthrene	900	J
120-12-7	Anthracene	520	J
84-74-2	Di-n-Butylphthalate	2700	U
206-44-0	Fluoranthene	2300	J
129-00-0	Pyrene	2000	J
85-68-7	Butylbenzylphthalate	2700	U
91-94-1	3,3'-Dichlorobenzidine	5400	U
56-55-3	Benzo(a)Anthracene	1400	J
218-01-9	Chrysene	1800	J
117-81-7	bis(2-Ethylhexyl)Phthalate	970	BJ
117-84-0	Di-n-Octyl Phthalate	2700	U
205-99-2	Benzo(b)Fluoranthene	2000	J
207-08-9	Benzo(k)Fluoranthene	2300	J
50-32-8	Benzo(a)Pyrene	1300	J
193-39-5	Indeno(1,2,3-cd)Pyrene	1100	J
53-70-3	Dibenz(a,h)Anthracene	2700	U
191-24-2	Benzo(g,h,i)Perylene	980	J

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

Jem 2/12/91

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00353 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2663

Sample wt/vol: 23.1 (g/mL) G Lab File ID: KK2715

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 37 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/05/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	2700	U
109-06-8	2-Picoline	19000	U
10595-95-6	N-Nitrosomethylethylamine	2700	U
66-27-3	Methyl methanesulfonate	2700	U
55-18-5	N-Nitrosodiethylamine	2700	U
62-50-0	Ethyl methanesulfonate	2700	U
62-53-3	Aniline	14000	U
76-01-7	Pentachloroethane	5500	U
108-39-4	3-Methylphenol	2700	U
930-55-2	N-Nitrosopyrrolidine	2700	U
98-86-2	Acetophenone	2700	U
59-89-2	N-Nitrosomorpholine	2700	U
95-53-4	o-Toluidine	2700	U
100-75-4	N-Nitrosopiperidine	2700	U
126-68-1	o,o,o-Triethylphosphorot(1)	2700	U
87-65-0	2,6-Dichlorophenol	2700	U
1888-71-7	Hexachloropropene	5500	U
122-09-8	a,a-dimethylphenethylamine	2700	U
924-16-3	N-Nitrosodi-n-butylamine	5500	U
106-50-3	p-Phenylenediamine	14000	U
94-59-7	Safrole	2700	U
95-94-3	1,2,4,5-Tetrachlorobenzene	2700	U
120-58-1	Isosafrole	2700	U
130-15-4	1,4-Naphthoquinone	2700	U

fm 2/12/90

00260

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
~~334~~
00353

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2663

Sample wt/vol: 23.1 (g/mL) G Lab File ID: KK2715

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 37 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/05/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-65-0	m-Dinitrobenzene	2700	U
608-93-5	Pentachlorobenzene	5500	U
91-59-8	2-Naphthylamine	47000	U
134-32-7	1-Naphthylamine	33000	U
58-90-2	2,3,4,6-Tetrachlorophenol	2700	U
99-55-8	5-Nitro-o-toluidine	5500	U
122-39-4	Diphenylamine	280	BJ
3689-24-5	Tetraethyl dithiopyropho(2)	2700	U
99-35-4	sym-Trinitrobenzene	2700	U
62-44-2	Phenacetin	2700	U
2303-16-4	Diallate	2700	U
92-67-1	4-Aminobiphenyl	14000	U
23950-58-5	Pronamide	8200	U
82-68-8	Pentachloronitrobenzene	5500	U
88-85-7	Dinoseb	5500	U
56-57-5	4-Nitroquinoline-1-oxide	2700	U
91-80-5	Methapyrilene	11000	U
140-57-8	Aramite	2700	U
60-11-7	p-(Dimethylamino)azobenzene	8200	U
119-93-7	3,3'-Dimethylbenzidine	22000	U
53-96-3	2-Acetylaminofluorene	2700	U
57-97-6	7,12-Dimethylbenz(a)anth(3)	5500	U
70-30-4	Hexachlorophene(4)	14000	U
56-49-5	3-Methylcholanthrene	8200	U

gw 2/12/90

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
334

00354

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2664

Sample wt/vol: 30.4 (g/mL) G Lab File ID: KK2716

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 50 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	650	U
111-44-4	bis(2-Chloroethyl)Ether	650	U
95-57-8	2-Chlorophenol	650	U
541-73-1	1,3-Dichlorobenzene	650	U
106-46-7	1,4-Dichlorobenzene	650	U
100-51-6	Benzyl Alcohol	650	U
95-50-1	1,2-Dichlorobenzene	650	U
95-48-7	2-Methylphenol	650	U
108-60-1	bis(2-Chloroisopropyl)Ether	650	U
106-44-5	4-Methylphenol	650	U
621-64-7	N-Nitroso-Di-n-Propylamine	650	U
67-72-1	Hexachloroethane	650	U
98-95-3	Nitrobenzene	650	U
78-59-1	Isophorone	650	U
88-75-5	2-Nitrophenol	650	U
105-67-9	2,4-Dimethylphenol	650	U
65-85-0	Benzoic Acid	3200	U
111-91-1	bis(2-Chloroethoxy)Methane	650	U
120-83-2	2,4-Dichlorophenol	650	U
120-82-1	1,2,4-Trichlorobenzene	650	U
91-20-3	Naphthalene	650	U
106-47-8	4-Chloroaniline	650	U
87-68-3	Hexachlorobutadiene	650	U
59-50-7	4-Chloro-3-Methylphenol	650	U
91-57-6	2-Methylnaphthalene	650	U
77-47-4	Hexachlorocyclopentadiene	650	U
88-06-2	2,4,6-Trichlorophenol	650	U
95-95-4	2,4,5-Trichlorophenol	3200	U
91-58-7	2-Chloronaphthalene	650	U
88-74-4	2-Nitroaniline	3200	U
131-11-3	Dimethyl Phthalate	650	U
208-96-8	Acenaphthylene	650	U
606-20-2	2,6-Dinitrotoluene	650	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00354 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2664

Sample wt/vol: 30.4 (g/mL) G Lab File ID: KK2716

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 50 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3200	U
83-32-9	Acenaphthene	650	U
51-28-5	2,4-Dinitrophenol	3200	U
100-02-7	4-Nitrophenol	3200	U
132-64-9	Dibenzofuran	650	U
121-14-2	2,4-Dinitrotoluene	650	U
84-66-2	Diethylphthalate	650	U
7005-72-3	4-Chlorophenyl-phenylether	650	U
86-73-7	Fluorene	650	U
100-01-6	4-Nitroaniline	3200	U
534-52-1	4,6-Dinitro-2-Methylphenol	3200	U
86-30-6	N-Nitrosodiphenylamine (1)	160	BJ
101-55-3	4-Bromophenyl-phenylether	650	U
118-74-1	Hexachlorobenzene	650	U
87-86-5	Pentachlorophenol	3200	U
85-01-8	Phenanthrene	650	U
120-12-7	Anthracene	650	U
84-74-2	Di-n-Butylphthalate	650	U
206-44-0	Fluoranthene	650	U
129-00-0	Pyrene	650	U
85-68-7	Butylbenzylphthalate	650	U
91-94-1	3,3'-Dichlorobenzidine	1300	U
56-55-3	Benzo(a)Anthracene	650	U
218-01-9	Chrysene	650	U
117-81-7	bis(2-Ethylhexyl)Phthalate	520	BJ
117-84-0	Di-n-Octyl Phthalate	650	U
205-99-2	Benzo(b)Fluoranthene	650	U
207-08-9	Benzo(k)Fluoranthene	650	U
50-32-8	Benzo(a)Pyrene	650	U
193-39-5	Indeno(1,2,3-cd)Pyrene	650	U
53-70-3	Dibenz(a,h)Anthracene	650	U
191-24-2	Benzo(g,h,i)Perylene	650	U

(1) - Cannot be separated from Diphenylamine

pw 2/12/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

334
00354

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2664

Sample wt/vol: 30.4 (g/mL) G Lab File ID: KK2716

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 50 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	650	U
109-06-8	2-Picoline	4500	U
10595-95-6	N-Nitrosomethylethylamine	650	U
66-27-3	Methyl methanesulfonate	650	U
55-18-5	N-Nitrosodiethylamine	650	U
62-50-0	Ethyl methanesulfonate	650	U
62-53-3	Aniline	3400	U
76-01-7	Pentachloroethane	1300	U
108-39-4	3-Methylphenol	650	U
930-55-2	N-Nitrosopyrrolidine	650	U
98-86-2	Acetophenone	650	U
59-89-2	N-Nitrosomorpholine	650	U
95-53-4	o-Toluidine	650	U
100-75-4	N-Nitrosopiperidine	650	U
126-68-1	o,o,o-Triethylphosphorot(1)	650	U
87-65-0	2,6-Dichlorophenol	650	U
1888-71-7	Hexachloropropene	1300	U
122-09-8	a,a-dimethylphenethylamine	650	U
924-16-3	N-Nitrosodi-n-butylamine	1300	U
106-50-3	p-Phenylenediamine	3300	U
94-59-7	Safrole	650	U
95-94-3	1,2,4,5-Tetrachlorobenzene	650	U
120-58-1	Isosafrole	650	U
130-15-4	1,4-Naphthoquinone	650	U

jw 2/12/90

FORM I X-1 1/87 Rev.

SAMPLE NO.

334

00354

1X
ORGANICS ANALYSIS DATA SHEET

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2664

Sample wt/vol: 30.4 (g/mL) G Lab File ID: KK2716

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 50 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-65-0	m-Dinitrobenzene	650	U
608-93-5	Pentachlorobenzene	1300	U
91-59-8	2-Naphthylamine	11000	U
134-32-7	1-Naphthylamine	7900	U
58-90-2	2,3,4,6-Tetrachlorophenol	650	U
99-55-8	5-Nitro-o-toluidine	1300	U
122-39-4	Diphenylamine	83	BJ
3689-24-5	Tetraethyl dithiopyropho(2)	650	U
99-35-4	sym-Trinitrobenzene	650	U
62-44-2	Phenacetin	650	U
2303-16-4	Diallate	650	U
92-67-1	4-Aminobiphenyl	3300	U
23950-58-5	Pronamide	2000	U
82-68-8	Pentachloronitrobenzene	1300	U
88-85-7	Dinoseb	1300	U
56-57-5	4-Nitroquinoline-1-oxide	650	U
91-80-5	Methapyrilene	2600	U
140-57-8	Aramite	650	U
60-11-7	p-(Dimethylamino)azobenzene	2000	U
119-93-7	3,3'-Dimethylbenzidine	5300	U
53-96-3	2-Acetylaminofluorene	650	U
57-97-6	7,12-Dimethylbenz(a)anth(3)	1300	U
70-30-4	Hexachlorophene(4)	3400	U
56-49-5	3-Methylcholanthrene	2000	U

pw 2/12/90

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00355 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2665

Sample wt/vol: 26.1 (g/mL) G Lab File ID: KK2717

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 34 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	570	U
111-44-4	bis(2-Chloroethyl)Ether	570	U
95-57-8	2-Chlorophenol	570	U
541-73-1	1,3-Dichlorobenzene	570	U
106-46-7	1,4-Dichlorobenzene	570	U
100-51-6	Benzyl Alcohol	570	U
95-50-1	1,2-Dichlorobenzene	570	U
95-48-7	2-Methylphenol	570	U
108-60-1	bis(2-Chloroisopropyl)Ether	570	U
106-44-5	4-Methylphenol	570	U
621-64-7	N-Nitroso-Di-n-Propylamine	570	U
67-72-1	Hexachloroethane	570	U
98-95-3	Nitrobenzene	570	U
78-59-1	Isophorone	570	U
88-75-5	2-Nitrophenol	570	U
105-67-9	2,4-Dimethylphenol	570	U
65-85-0	Benzoic Acid	2800	U
111-91-1	bis(2-Chloroethoxy)Methane	570	U
120-83-2	2,4-Dichlorophenol	570	U
120-82-1	1,2,4-Trichlorobenzene	570	U
91-20-3	Naphthalene	570	U
106-47-8	4-Chloroaniline	570	U
87-68-3	Hexachlorobutadiene	570	U
59-50-7	4-Chloro-3-Methylphenol	570	U
91-57-6	2-Methylnaphthalene	570	U
77-47-4	Hexachlorocyclopentadiene	570	U
88-06-2	2,4,6-Trichlorophenol	570	U
95-95-4	2,4,5-Trichlorophenol	2800	U
91-58-7	2-Chloronaphthalene	570	U
88-74-4	2-Nitroaniline	2800	U
131-11-3	Dimethyl Phthalate	570	U
208-96-8	Acenaphthylene	570	U
606-20-2	2,6-Dinitrotoluene	570	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00355 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2665

Sample wt/vol: 26.1 (g/mL) G Lab File ID: KK2717

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 34 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2800	U
83-32-9	Acenaphthene	570	U
51-28-5	2,4-Dinitrophenol	2800	U
100-02-7	4-Nitrophenol	2800	U
132-64-9	Dibenzofuran	570	U
121-14-2	2,4-Dinitrotoluene	570	U
84-66-2	Diethylphthalate	570	U
7005-72-3	4-Chlorophenyl-phenylether	570	U
86-73-7	Fluorene	570	U
100-01-6	4-Nitroaniline	2800	U
534-52-1	4,6-Dinitro-2-Methylphenol	2800	U
86-30-6	N-Nitrosodiphenylamine (1)	130	BJ
101-55-3	4-Bromophenyl-phenylether	570	U
118-74-1	Hexachlorobenzene	570	U
87-86-5	Pentachlorophenol	2800	U
85-01-8	Phenanthrene	570	U
120-12-7	Anthracene	570	U
84-74-2	Di-n-Butylphthalate	570	U
206-44-0	Fluoranthene	570	U
129-00-0	Pyrene	570	U
85-68-7	Butylbenzylphthalate	570	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
56-55-3	Benzo(a)Anthracene	570	U
218-01-9	Chrysene	570	U
117-81-7	bis(2-Ethylhexyl)Phthalate	510	BJ
117-84-0	Di-n-Octyl Phthalate	570	U
205-99-2	Benzo(b)Fluoranthene	570	U
207-08-9	Benzo(k)Fluoranthene	570	U
50-32-8	Benzo(a)Pyrene	570	U
193-39-5	Indeno(1,2,3-cd)Pyrene	570	U
53-70-3	Dibenz(a,h)Anthracene	570	U
191-24-2	Benzo(g,h,i)Perylene	570	U

(1) - Cannot be separated from Diphenylamine

gm 2/12/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
334
00355

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2665

Sample wt/vol: 26.1 (g/mL) G Lab File ID: KK2717

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 34 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	570	U
109-06-8	2-Picoline	4000	U
10595-95-6	N-Nitrosomethylethylamine	570	U
66-27-3	Methyl methanesulfonate	570	U
55-18-5	N-Nitrosodiethylamine	570	U
62-50-0	Ethyl methanesulfonate	570	U
62-53-3	Aniline	3000	U
76-01-7	Pentachloroethane	1200	U
108-39-4	3-Methylphenol	570	U
930-55-2	N-Nitrosopyrrolidine	570	U
98-86-2	Acetophenone	570	U
59-89-2	N-Nitrosomorpholine	570	U
95-53-4	o-Toluidine	570	U
100-75-4	N-Nitrosopiperidine	570	U
126-68-1	o,o,o-Triethylphosphorot(1)	570	U
87-65-0	2,6-Dichlorophenol	570	U
1888-71-7	Hexachloropropene	1200	U
122-09-8	a,a-dimethylphenethylamine	570	U
924-16-3	N-Nitrosodi-n-butylamine	1200	U
106-50-3	p-Phenylenediamine	2900	U
94-59-7	Safrole	570	U
95-94-3	1,2,4,5-Tetrachlorobenzene	570	U
120-58-1	Isosafrole	570	U
130-15-4	1,4-Naphthoquinone	570	U

pw 2/12/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00355 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2665

Sample wt/vol: 26.1 (g/mL) G Lab File ID: KK2717

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 34 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-65-0	m-Dinitrobenzene	570	U
608-93-5	Pentachlorobenzene	1200	U
91-59-8	2-Naphthylamine	9900	U
134-32-7	1-Naphthylamine	7000	U
58-90-2	2,3,4,6-Tetrachlorophenol	570	U
99-55-8	5-Nitro-o-toluidine	1200	U
122-39-4	Diphenylamine	65	BJ
3689-24-5	Tetraethyl dithiopyropho(2)	570	U
99-35-4	sym-Trinitrobenzene	570	U
62-44-2	Phenacetin	570	U
2303-16-4	Diallate	570	U
92-67-1	4-Aminobiphenyl	2900	U
23950-58-5	Pronamide	1700	U
82-68-8	Pentachloronitrobenzene	1200	U
88-85-7	Dinoseb	1200	U
56-57-5	4-Nitroquinoline-1-oxide	570	U
91-80-5	Methapyrilene	2300	U
140-57-8	Aramite	570	U
60-11-7	p-(Dimethylamino)azobenzene	1700	U
119-93-7	3,3'-Dimethylbenzidine	4700	U
53-96-3	2-Acetylaminofluorene	570	U
57-97-6	7,12-Dimethylbenz(a)anth(3)	1200	U
70-30-4	Hexachlorophene(4)	3000	U
56-49-5	3-Methylcholanthrene	1700	U

gw 2/12/90

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00356 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2666

Sample wt/vol: 30.4 (g/mL) G Lab File ID: KK2718

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 47 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	610	U
111-44-4	bis(2-Chloroethyl)Ether	610	U
95-57-8	2-Chlorophenol	610	U
541-73-1	1,3-Dichlorobenzene	610	U
106-46-7	1,4-Dichlorobenzene	610	U
100-51-6	Benzyl Alcohol	610	U
95-50-1	1,2-Dichlorobenzene	610	U
95-48-7	2-Methylphenol	610	U
108-60-1	bis(2-Chloroisopropyl)Ether	610	U
106-44-5	4-Methylphenol	610	U
621-64-7	N-Nitroso-Di-n-Propylamine	610	U
67-72-1	Hexachloroethane	610	U
98-95-3	Nitrobenzene	610	U
78-59-1	Isophorone	610	U
88-75-5	2-Nitrophenol	610	U
105-67-9	2,4-Dimethylphenol	610	U
65-85-0	Benzoic Acid	3000	U
111-91-1	bis(2-Chloroethoxy)Methane	610	U
120-83-2	2,4-Dichlorophenol	610	U
120-82-1	1,2,4-Trichlorobenzene	610	U
91-20-3	Naphthalene	610	U
106-47-8	4-Chloroaniline	610	U
87-68-3	Hexachlorobutadiene	610	U
59-50-7	4-Chloro-3-Methylphenol	610	U
91-57-6	2-Methylnaphthalene	610	U
77-47-4	Hexachlorocyclopentadiene	610	U
88-06-2	2,4,6-Trichlorophenol	610	U
95-95-4	2,4,5-Trichlorophenol	3000	U
91-58-7	2-Chloronaphthalene	610	U
88-74-4	2-Nitroaniline	3000	U
131-11-3	Dimethyl Phthalate	610	U
208-96-8	Acenaphthylene	610	U
606-20-2	2,6-Dinitrotoluene	610	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00356 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2666

Sample wt/vol: 30.4 (g/mL) G Lab File ID: KK2718

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 47 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3000	U
83-32-9	Acenaphthene	610	U
51-28-5	2,4-Dinitrophenol	3000	U
100-02-7	4-Nitrophenol	3000	U
132-64-9	Dibenzofuran	610	U
121-14-2	2,4-Dinitrotoluene	610	U
84-66-2	Diethylphthalate	610	U
7005-72-3	4-Chlorophenyl-phenylether	610	U
86-73-7	Fluorene	610	U
100-01-6	4-Nitroaniline	3000	U
534-52-1	4,6-Dinitro-2-Methylphenol	3000	U
86-30-6	N-Nitrosodiphenylamine (1)	99	BJ
101-55-3	4-Bromophenyl-phenylether	610	U
118-74-1	Hexachlorobenzene	610	U
87-86-5	Pentachlorophenol	3000	U
85-01-8	Phenanthrene	610	U
120-12-7	Anthracene	610	U
84-74-2	Di-n-Butylphthalate	610	U
206-44-0	Fluoranthene	610	U
129-00-0	Pyrene	610	U
85-68-7	Butylbenzylphthalate	610	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
56-55-3	Benzo(a)Anthracene	610	U
218-01-9	Chrysene	610	U
117-81-7	bis(2-Ethylhexyl)Phthalate	1400	B
117-84-0	Di-n-Octyl Phthalate	610	U
205-99-2	Benzo(b)Fluoranthene	610	U
207-08-9	Benzo(k)Fluoranthene	610	U
50-32-8	Benzo(a)Pyrene	610	U
193-39-5	Indeno(1,2,3-cd)Pyrene	610	U
53-70-3	Dibenz(a,h)Anthracene	610	U
191-24-2	Benzo(g,h,i)Perylene	610	U

(1) - Cannot be separated from Diphenylamine

gw 2/12/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00356 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2666

Sample wt/vol: 30.4 (g/mL) G Lab File ID: KK2718

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 47 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	610	U
109-06-8	2-Picoline	4300	U
10595-95-6	N-Nitrosomethylethylamine	610	U
66-27-3	Methyl methanesulfonate	610	U
55-18-5	N-Nitrosodiethylamine	610	U
62-50-0	Ethyl methanesulfonate	610	U
62-53-3	Aniline	3200	U
76-01-7	Pentachloroethane	1200	U
108-39-4	3-Methylphenol	610	U
930-55-2	N-Nitrosopyrrolidine	610	U
98-86-2	Acetophenone	610	U
59-89-2	N-Nitrosomorpholine	610	U
95-53-4	o-Toluidine	610	U
100-75-4	N-Nitrosopiperidine	610	U
126-68-1	o,o,o-Triethylphosphorot(1)	610	U
87-65-0	2,6-Dichlorophenol	610	U
1888-71-7	Hexachloropropene	1200	U
122-09-8	a,a-dimethylphenethylamine	610	U
924-16-3	N-Nitrosodi-n-butylamine	1200	U
106-50-3	p-Phenylenediamine	3100	U
94-59-7	Safrole	610	U
95-94-3	1,2,4,5-Tetrachlorobenzene	610	U
120-58-1	Isosafrole	610	U
130-15-4	1,4-Naphthoquinone	610	U

gmw 2/12/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00356 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2666

Sample wt/vol: 30.4 (g/mL) G Lab File ID: KK2718

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 47 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-65-0	m-Dinitrobenzene	610	U
608-93-5	Pentachlorobenzene	1200	U
91-59-8	2-Naphthylamine	11000	U
134-32-7	1-Naphthylamine	7400	U
58-90-2	2,3,4,6-Tetrachlorophenol	610	U
99-55-8	5-Nitro-o-toluidine	1200	U
122-39-4	Diphenylamine	610	U
3689-24-5	Tetraethyl dithiopyropho(2)	610	U
99-35-4	sym-Trinitrobenzene	610	U
62-44-2	Phenacetin	610	U
2303-16-4	Diallate	610	U
92-67-1	4-Aminobiphenyl	3100	U
23950-58-5	Pronamide	1900	U
82-68-8	Pentachloronitrobenzene	1200	U
88-85-7	Dinoseb	1200	U
56-57-5	4-Nitroquinoline-1-oxide	610	U
91-80-5	Methapyrilene	2500	U
140-57-8	Aramite	610	U
60-11-7	p-(Dimethylamino)azobenzene	1900	U
119-93-7	3,3'-Dimethylbenzidine	5000	U
53-96-3	2-Acetylaminofluorene	610	U
57-97-6	7,12-Dimethylbenz(a)anth(3)	1200	U
70-30-4	Hexachlorophene(4)	3200	U
56-49-5	3-Methylcholanthrene	1900	U

pw 2/12/90

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00357 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2667

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KK2719

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 56 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	85	J
111-44-4	bis(2-Chloroethyl)Ether	740	U
95-57-8	2-Chlorophenol	740	U
541-73-1	1,3-Dichlorobenzene	740	U
106-46-7	1,4-Dichlorobenzene	740	U
100-51-6	Benzyl Alcohol	740	U
95-50-1	1,2-Dichlorobenzene	740	U
95-48-7	2-Methylphenol	740	U
108-60-1	bis(2-Chloroisopropyl)Ether	740	U
106-44-5	4-Methylphenol	740	U
621-64-7	N-Nitroso-Di-n-Propylamine	740	U
67-72-1	Hexachloroethane	740	U
98-95-3	Nitrobenzene	740	U
78-59-1	Isophorone	740	U
88-75-5	2-Nitrophenol	740	U
105-67-9	2,4-Dimethylphenol	740	U
65-85-0	Benzoic Acid	3600	U
111-91-1	bis(2-Chloroethoxy)Methane	740	U
120-83-2	2,4-Dichlorophenol	740	U
120-82-1	1,2,4-Trichlorobenzene	740	U
91-20-3	Naphthalene	740	U
106-47-8	4-Chloroaniline	740	U
87-68-3	Hexachlorobutadiene	740	U
59-50-7	4-Chloro-3-Methylphenol	740	U
91-57-6	2-Methylnaphthalene	740	U
77-47-4	Hexachlorocyclopentadiene	740	U
88-06-2	2,4,6-Trichlorophenol	740	U
95-95-4	2,4,5-Trichlorophenol	3600	U
91-58-7	2-Chloronaphthalene	740	U
88-74-4	2-Nitroaniline	3600	U
131-11-3	Dimethyl Phthalate	740	U
208-96-8	Acenaphthylene	740	U
606-20-2	2,6-Dinitrotoluene	740	U

FORM I SV-1 1/87 Rev.

gw 2/12/90

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00357 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2667

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KK2719

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 56 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3600	U
83-32-9	Acenaphthene	740	U
51-28-5	2,4-Dinitrophenol	3600	U
100-02-7	4-Nitrophenol	3600	U
132-64-9	Dibenzofuran	740	U
121-14-2	2,4-Dinitrotoluene	740	U
84-66-2	Diethylphthalate	740	U
7005-72-3	4-Chlorophenyl-phenylether	740	U
86-73-7	Fluorene	740	U
100-01-6	4-Nitroaniline	3600	U
534-52-1	4,6-Dinitro-2-Methylphenol	3600	U
86-30-6	N-Nitrosodiphenylamine (1)	150	BJ
101-55-3	4-Bromophenyl-phenylether	740	U
118-74-1	Hexachlorobenzene	740	U
87-86-5	Pentachlorophenol	3600	U
85-01-8	Phenanthrene	110	J
120-12-7	Anthracene	740	U
84-74-2	Di-n-Butylphthalate	740	U
206-44-0	Fluoranthene	740	U
129-00-0	Pyrene	740	U
85-68-7	Butylbenzylphthalate	740	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)Anthracene	740	U
218-01-9	Chrysene	740	U
117-81-7	bis(2-Ethylhexyl)Phthalate	1800	B
117-84-0	Di-n-Octyl Phthalate	740	U
205-99-2	Benzo(b)Fluoranthene	740	U
207-08-9	Benzo(k)Fluoranthene	740	U
50-32-8	Benzo(a)Pyrene	740	U
193-39-5	Indeno(1,2,3-cd)Pyrene	740	U
53-70-3	Dibenz(a,h)Anthracene	740	U
191-24-2	Benzo(g,h,i)Perylene	740	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

jcw 2/12/90

00470

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00357 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2667

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KK2719

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 56 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	740	U
109-06-8	2-Picoline	5200	U
10595-95-6	N-Nitrosomethylethylamine	740	U
66-27-3	Methyl methanesulfonate	740	U
55-18-5	N-Nitrosodiethylamine	740	U
62-50-0	Ethyl methanesulfonate	740	U
62-53-3	Aniline	3800	U
76-01-7	Pentachloroethane	1500	U
108-39-4	3-Methylphenol	740	U
930-55-2	N-Nitrosopyrrolidine	740	U
98-86-2	Acetophenone	740	U
59-89-2	N-Nitrosomorpholine	740	U
95-53-4	o-Toluidine	740	U
100-75-4	N-Nitrosopiperidine	740	U
126-68-1	o,o,o-Triethylphosphorot(1)	740	U
87-65-0	2,6-Dichlorophenol	740	U
1888-71-7	Hexachloropropene	1500	U
122-09-8	a,a-dimethylphenethylamine	740	U
924-16-3	N-Nitrosodi-n-butylamine	1500	U
106-50-3	p-Phenylenediamine	3800	U
94-59-7	Safrole	740	U
95-94-3	1,2,4,5-Tetrachlorobenzene	740	U
120-58-1	Isosafrole	740	U
130-15-4	1,4-Naphthoquinone	740	U

gw 2/12/90

SAMPLE NO.

00357 334

1X
ORGANICS ANALYSIS DATA SHEET

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2667

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KK2719

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 56 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-65-0	m-Dinitrobenzene	740	U
608-93-5	Pentachlorobenzene	1500	U
91-59-8	2-Naphthylamine	13000	U
134-32-7	1-Naphthylamine	9000	U
58-90-2	2,3,4,6-Tetrachlorophenol	740	U
99-55-8	5-Nitro-o-toluidine	1500	U
122-39-4	Diphenylamine	740	U
3689-24-5	Tetraethyl dithiopyropho(2)	740	U
99-35-4	sym-Trinitrobenzene	740	U
62-44-2	Phenacetin	740	U
2303-16-4	Diallate	740	U
92-67-1	4-Aminobiphenyl	3800	U
23950-58-5	Pronamide	2300	U
82-68-8	Pentachloronitrobenzene	1500	U
88-85-7	Dinoseb	1500	U
56-57-5	4-Nitroquinoline-1-oxide	740	U
91-80-5	Methapyrilene	3000	U
140-57-8	Aramite	740	U
60-11-7	p-(Dimethylamino)azobenzene	2300	U
119-93-7	3,3'-Dimethylbenzidine	6100	U
53-96-3	2-Acetylaminofluorene	740	U
57-97-6	7,12-Dimethylbenz(a)anth(3)	1500	U
70-30-4	Hexachlorophene(4)	3800	U
56-49-5	3-Methylcholanthrene	2300	U

gw 2/12/90

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00358 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2668

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KK2720

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 41 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	71	J
111-44-4	bis(2-Chloroethyl)Ether	560	U
95-57-8	2-Chlorophenol	560	U
541-73-1	1,3-Dichlorobenzene	560	U
106-46-7	1,4-Dichlorobenzene	560	U
100-51-6	Benzyl Alcohol	560	U
95-50-1	1,2-Dichlorobenzene	560	U
95-48-7	2-Methylphenol	560	U
108-60-1	bis(2-Chloroisopropyl)Ether	560	U
106-44-5	4-Methylphenol	560	U
621-64-7	N-Nitroso-Di-n-Propylamine	560	U
67-72-1	Hexachloroethane	560	U
98-95-3	Nitrobenzene	560	U
78-59-1	Isophorone	560	U
88-75-5	2-Nitrophenol	560	U
105-67-9	2,4-Dimethylphenol	560	U
65-85-0	Benzoic Acid	2700	U
111-91-1	bis(2-Chloroethoxy)Methane	560	U
120-83-2	2,4-Dichlorophenol	560	U
120-82-1	1,2,4-Trichlorobenzene	560	U
91-20-3	Naphthalene	560	U
106-47-8	4-Chloroaniline	560	U
87-68-3	Hexachlorobutadiene	560	U
59-50-7	4-Chloro-3-Methylphenol	560	U
91-57-6	2-Methylnaphthalene	560	U
77-47-4	Hexachlorocyclopentadiene	560	U
88-06-2	2,4,6-Trichlorophenol	560	U
95-95-4	2,4,5-Trichlorophenol	2700	U
91-58-7	2-Chloronaphthalene	560	U
88-74-4	2-Nitroaniline	2700	U
131-11-3	Dimethyl Phthalate	560	U
208-96-8	Acenaphthylene	560	U
606-20-2	2,6-Dinitrotoluene	560	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00358 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2668

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KK2720

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 41 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2700	U
83-32-9	Acenaphthene	560	U
51-28-5	2,4-Dinitrophenol	2700	U
100-02-7	4-Nitrophenol	2700	U
132-64-9	Dibenzofuran	560	U
121-14-2	2,4-Dinitrotoluene	560	U
84-66-2	Diethylphthalate	560	U
7005-72-3	4-Chlorophenyl-phenylether	560	U
86-73-7	Fluorene	560	U
100-01-6	4-Nitroaniline	2700	U
534-52-1	4,6-Dinitro-2-Methylphenol	2700	U
86-30-6	N-Nitrosodiphenylamine (1)	120	BJ
101-55-3	4-Bromophenyl-phenylether	560	U
118-74-1	Hexachlorobenzene	560	U
87-86-5	Pentachlorophenol	2700	U
85-01-8	Phenanthrene	560	U
120-12-7	Anthracene	560	U
84-74-2	Di-n-Butylphthalate	560	U
206-44-0	Fluoranthene	560	U
129-00-0	Pyrene	560	U
85-68-7	Butylbenzylphthalate	560	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
56-55-3	Benzo(a)Anthracene	560	U
218-01-9	Chrysene	560	U
117-81-7	bis(2-Ethylhexyl)Phthalate	920	B
117-84-0	Di-n-Octyl Phthalate	560	U
205-99-2	Benzo(b)Fluoranthene	560	U
207-08-9	Benzo(k)Fluoranthene	560	U
50-32-8	Benzo(a)Pyrene	560	U
193-39-5	Indeno(1,2,3-cd)Pyrene	560	U
53-70-3	Dibenz(a,h)Anthracene	560	U
191-24-2	Benzo(g,h,i)Perylene	560	U

(1) - Cannot be separated from Diphenylamine

gw 2/12/90

00549
SAMPLE NO.

1X
ORGANICS ANALYSIS DATA SHEET

00358 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2668

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KK2720

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 41 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	560	U
109-06-8	2-Picoline	3900	U
10595-95-6	N-Nitrosomethylethylamine	560	U
66-27-3	Methyl methanesulfonate	560	U
55-18-5	N-Nitrosodiethylamine	560	U
62-50-0	Ethyl methanesulfonate	560	U
62-53-3	Aniline	2900	U
76-01-7	Pentachloroethane	1100	U
108-39-4	3-Methylphenol	560	U
930-55-2	N-Nitrosopyrrolidine	560	U
98-86-2	Acetophenone	560	U
59-89-2	N-Nitrosomorpholine	560	U
95-53-4	o-Toluidine	560	U
100-75-4	N-Nitrosopiperidine	560	U
126-68-1	o,o,o-Triethylphosphorot(1)	560	U
87-65-0	2,6-Dichlorophenol	560	U
1888-71-7	Hexachloropropene	1100	U
122-09-8	a,a-dimethylphenethylamine	560	U
924-16-3	N-Nitrosodi-n-butylamine	1100	U
106-50-3	p-Phenylenediamine	2800	U
94-59-7	Safrole	560	U
95-94-3	1,2,4,5-Tetrachlorobenzene	560	U
120-58-1	Isosafrole	560	U
130-15-4	1,4-Naphthoquinone	560	U

pr 2/12/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00358 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2668

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KK2720

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 41 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-65-0	m-Dinitrobenzene	560	U
608-93-5	Pentachlorobenzene	1100	U
91-59-8	2-Naphthylamine	9600	U
134-32-7	1-Naphthylamine	6700	U
58-90-2	2,3,4,6-Tetrachlorophenol	560	U
99-55-8	5-Nitro-o-toluidine	1100	U
122-39-4	Diphenylamine	60	BJ
3689-24-5	Tetraethyl dithiopyropho(2)	560	U
99-35-4	sym-Trinitrobenzene	560	U
62-44-2	Phenacetin	560	U
2303-16-4	Diallate	560	U
92-67-1	4-Aminobiphenyl	2800	U
23950-58-5	Pronamide	1700	U
82-68-8	Pentachloronitrobenzene	1100	U
88-85-7	Dinoseb	1100	U
56-57-5	4-Nitroquinoline-1-oxide	560	U
91-80-5	Methapyrilene	2200	U
140-57-8	Aramite	560	U
60-11-7	p-(Dimethylamino)azobenzene	1700	U
119-93-7	3,3'-Dimethylbenzidine	4500	U
53-96-3	2-Acetylaminofluorene	560	U
57-97-6	7,12-Dimethylbenz(a)anth(3)	1100	U
70-30-4	Hexachlorophene(4)	2900	U
56-49-5	3-Methylcholanthrene	1700	U

pow 2/12/90

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00359 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2669

Sample wt/vol: 21.0 (g/mL) G Lab File ID: KK2721

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 53 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)Ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl Alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-Chloroisopropyl)Ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	N-Nitroso-Di-n-Propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
65-85-0	Benzoic Acid	4900	U
111-91-1	bis(2-Chloroethoxy)Methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-Methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	4900	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	4900	U
131-11-3	Dimethyl Phthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00359 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2669

Sample wt/vol: 21.0 (g/mL) G Lab File ID: KK2721

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 53 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4900	U
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	4900	U
100-02-7	4-Nitrophenol	4900	U
132-64-9	Dibenzofuran	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
86-73-7	Fluorene	1000	U
100-01-6	4-Nitroaniline	4900	U
534-52-1	4,6-Dinitro-2-Methylphenol	4900	U
86-30-6	N-Nitrosodiphenylamine (1)	160	BJ
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	4900	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-Butylphthalate	1000	U
206-44-0	Fluoranthene	1000	U
129-00-0	Pyrene	1000	U
85-68-7	Butylbenzylphthalate	1000	U
91-94-1	3,3'-Dichlorobenzidine	2000	U
56-55-3	Benzo(a)Anthracene	1000	U
218-01-9	Chrysene	1000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	4800	B
117-84-0	Di-n-Octyl Phthalate	1000	U
205-99-2	Benzo(b)Fluoranthene	1000	U
207-08-9	Benzo(k)Fluoranthene	1000	U
50-32-8	Benzo(a)Pyrene	1000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1000	U
53-70-3	Dibenz(a,h)Anthracene	1000	U
191-24-2	Benzo(g,h,i)Perylene	1000	U

(1) - Cannot be separated from Diphenylamine

pw 2/12/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00359 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2669

Sample wt/vol: 21.0 (g/mL) G Lab File ID: KK2721

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 53 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	1000	U
109-06-8	2-Picoline	7000	U
10595-95-6	N-Nitrosomethylethylamine	1000	U
66-27-3	Methyl methanesulfonate	1000	U
55-18-5	N-Nitrosodiethylamine	1000	U
62-50-0	Ethyl methanesulfonate	1000	U
62-53-3	Aniline	5200	U
76-01-7	Pentachloroethane	2000	U
108-39-4	3-Methylphenol	1000	U
930-55-2	N-Nitrosopyrrolidine	1000	U
98-86-2	Acetophenone	1000	U
59-89-2	N-Nitrosomorpholine	1000	U
95-53-4	o-Toluidine	1000	U
100-75-4	N-Nitrosopiperidine	1000	U
126-68-1	o,o,o-Triethylphosphorot(1)	1000	U
87-65-0	2,6-Dichlorophenol	1000	U
1888-71-7	Hexachloropropene	2000	U
122-09-8	a,a-dimethylphenethylamine	1000	U
924-16-3	N-Nitrosodi-n-butylamine	2000	U
106-50-3	p-Phenylenediamine	5100	U
94-59-7	Safrole	1000	U
95-94-3	1,2,4,5-Tetrachlorobenzene	1000	U
120-58-1	Isosafrole	1000	U
130-15-4	1,4-Naphthoquinone	1000	U

gw 2/12/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00359 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2669

Sample wt/vol: 21.0 (g/mL) G Lab File ID: KK2721

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 53 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-65-0	m-Dinitrobenzene	1000	U
608-93-5	Pentachlorobenzene	2000	U
91-59-8	2-Naphthylamine	17000	U
134-32-7	1-Naphthylamine	12000	U
58-90-2	2,3,4,6-Tetrachlorophenol	1000	U
99-55-8	5-Nitro-o-toluidine	2000	U
122-39-4	Diphenylamine	1000	U
3689-24-5	Tetraethyl dithiopyropho(2)	1000	U
99-35-4	sym-Trinitrobenzene	1000	U
62-44-2	Phenacetin	1000	U
2303-16-4	Diallate	1000	U
92-67-1	4-Aminobiphenyl	5100	U
23950-58-5	Pronamide	3000	U
82-68-8	Pentachloronitrobenzene	2000	U
88-85-7	Dinoseb	2000	U
56-57-5	4-Nitroquinoline-1-oxide	1000	U
91-80-5	Methapyrilene	4000	U
140-57-8	Aramite	1000	U
60-11-7	p-(Dimethylamino)azobenzene	3000	U
119-93-7	3,3'-Dimethylbenzidine	8200	U
53-96-3	2-Acetylaminofluorene	1000	U
57-97-6	7,12-Dimethylbenz(a)anth(3)	2000	U
70-30-4	Hexachlorophene(4)	5200	U
56-49-5	3-Methylcholanthrene	3000	U

jw 2/12/91

1X
ORGANICS ANALYSIS DATA SHEET
COMMENTS

(1) o,o,o-Triethylphosphorothioate
(2) Tetraethyl dithiopyrophosphate
(3) 7,12-Dimethylbenz(a)anthracene
(4) Quantitation limit for Hexachlorophene in soil is ten times that listed.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00360 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2670

Sample wt/vol: 29.3 (g/mL) G Lab File ID: KK2722

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 42 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	580	U
111-44-4	bis(2-Chloroethyl)Ether	580	U
95-57-8	2-Chlorophenol	580	U
541-73-1	1,3-Dichlorobenzene	580	U
106-46-7	1,4-Dichlorobenzene	580	U
100-51-6	Benzyl Alcohol	580	U
95-50-1	1,2-Dichlorobenzene	580	U
95-48-7	2-Methylphenol	580	U
108-60-1	bis(2-Chloroisopropyl)Ether	580	U
106-44-5	4-Methylphenol	580	U
621-64-7	N-Nitroso-Di-n-Propylamine	580	U
67-72-1	Hexachloroethane	580	U
98-95-3	Nitrobenzene	580	U
78-59-1	Isophorone	580	U
88-75-5	2-Nitrophenol	580	U
105-67-9	2,4-Dimethylphenol	580	U
65-85-0	Benzoic Acid	2800	U
111-91-1	bis(2-Chloroethoxy)Methane	580	U
120-83-2	2,4-Dichlorophenol	580	U
120-82-1	1,2,4-Trichlorobenzene	580	U
91-20-3	Naphthalene	580	U
106-47-8	4-Chloroaniline	580	U
87-68-3	Hexachlorobutadiene	580	U
59-50-7	4-Chloro-3-Methylphenol	580	U
91-57-6	2-Methylnaphthalene	580	U
77-47-4	Hexachlorocyclopentadiene	580	U
88-06-2	2,4,6-Trichlorophenol	580	U
95-95-4	2,4,5-Trichlorophenol	2800	U
91-58-7	2-Chloronaphthalene	580	U
88-74-4	2-Nitroaniline	2800	U
131-11-3	Dimethyl Phthalate	580	U
208-96-8	Acenaphthylene	580	U
606-20-2	2,6-Dinitrotoluene	580	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

00360 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2670

Sample wt/vol: 29.3 (g/mL) G Lab File ID: KK2722

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 42 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2800	U
83-32-9	Acenaphthene	580	U
51-28-5	2,4-Dinitrophenol	2800	U
100-02-7	4-Nitrophenol	2800	U
132-64-9	Dibenzofuran	580	U
121-14-2	2,4-Dinitrotoluene	580	U
84-66-2	Diethylphthalate	580	U
7005-72-3	4-Chlorophenyl-phenylether	580	U
86-73-7	Fluorene	580	U
100-01-6	4-Nitroaniline	2800	U
534-52-1	4,6-Dinitro-2-Methylphenol	2800	U
86-30-6	N-Nitrosodiphenylamine (1)	93	BJ
101-55-3	4-Bromophenyl-phenylether	580	U
118-74-1	Hexachlorobenzene	580	U
87-86-5	Pentachlorophenol	2800	U
85-01-8	Phenanthrene	580	U
120-12-7	Anthracene	580	U
84-74-2	Di-n-Butylphthalate	580	U
206-44-0	Fluoranthene	580	U
129-00-0	Pyrene	580	U
85-68-7	Butylbenzylphthalate	580	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
56-55-3	Benzo(a)Anthracene	580	U
218-01-9	Chrysene	580	U
117-81-7	bis(2-Ethylhexyl)Phthalate	940	B
117-84-0	Di-n-Octyl Phthalate	580	U
205-99-2	Benzo(b)Fluoranthene	580	U
207-08-9	Benzo(k)Fluoranthene	580	U
50-32-8	Benzo(a)Pyrene	580	U
193-39-5	Indeno(1,2,3-cd)Pyrene	580	U
53-70-3	Dibenz(a,h)Anthracene	580	U
191-24-2	Benzo(g,h,i)Perylene	580	U

(1) - Cannot be separated from Diphenylamine

gw 2/12/90

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

00360 334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2670

Sample wt/vol: 29.3 (g/mL) G Lab File ID: KK2722

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 42 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	580	U
109-06-8	2-Picoline	4000	U
10595-95-6	N-Nitrosomethylethylamine	580	U
66-27-3	Methyl methanesulfonate	580	U
55-18-5	N-Nitrosodiethylamine	580	U
62-50-0	Ethyl methanesulfonate	580	U
62-53-3	Aniline	3000	U
76-01-7	Pentachloroethane	1200	U
108-39-4	3-Methylphenol	580	U
930-55-2	N-Nitrosopyrrolidine	580	U
98-86-2	Acetophenone	580	U
59-89-2	N-Nitrosomorpholine	580	U
95-53-4	o-Toluidine	580	U
100-75-4	N-Nitrosopiperidine	580	U
126-68-1	o,o,o-Triethylphosphorot(1)	580	U
87-65-0	2,6-Dichlorophenol	580	U
1888-71-7	Hexachloropropene	1200	U
122-09-8	a,a-dimethylphenethylamine	580	U
924-16-3	N-Nitrosodi-n-butylamine	1200	U
106-50-3	p-Phenylenediamine	2900	U
94-59-7	Safrole	580	U
95-94-3	1,2,4,5-Tetrachlorobenzene	580	U
120-58-1	Isosafrole	580	U
130-15-4	1,4-Naphthoquinone	580	U

gw 2/12/90

SAMPLE NO.

00360 334

1X
ORGANICS ANALYSIS DATA SHEET

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix: (soil/water) SOIL Lab Sample ID: MM2670

Sample wt/vol: 29.3 (g/mL) G Lab File ID: KK2722

Level: (low/med) LOW Date Received: 01/31/90

% Moisture: not dec. 42 dec. ____ Date Extracted: 02/01/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/02/90

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-65-0	m-Dinitrobenzene	580	U
608-93-5	Pentachlorobenzene	1200	U
91-59-8	2-Naphthylamine	10000	U
134-32-7	1-Naphthylamine	7000	U
58-90-2	2,3,4,6-Tetrachlorophenol	580	U
99-55-8	5-Nitro-o-toluidine	1200	U
122-39-4	Diphenylamine	580	U
3689-24-5	Tetraethyl dithiopyropho(2)	580	U
99-35-4	sym-Trinitrobenzene	580	U
62-44-2	Phenacetin	580	U
2303-16-4	Diallate	580	U
92-67-1	4-Aminobiphenyl	2900	U
23950-58-5	Pronamide	1800	U
82-68-8	Pentachloronitrobenzene	1200	U
88-85-7	Dinoseb	1200	U
56-57-5	4-Nitroquinoline-1-oxide	580	U
91-80-5	Methapyrilene	2300	U
140-57-8	Aramite	580	U
60-11-7	p-(Dimethylamino)azobenzene	1800	U
119-93-7	3,3'-Dimethylbenzidine	4700	U
53-96-3	2-Acetylaminofluorene	580	U
57-97-6	7,12-Dimethylbenz(a)anth(3)	1200	U
70-30-4	Hexachlorophene(4)	3000	U
56-49-5	3-Methylcholanthrene	1800	U

pw 2/12/90

1X
ORGANICS ANALYSIS DATA SHEET
COMMENTS

(1) o,o,o-Triethylphosphorothioate
(2) Tetraethyl dithiopyrophosphate
(3) 7,12-Dimethylbenz(a)anthracene
(4) Quantitation limit for Hexachlorophene in soil is ten times that listed.

gw 2/7/90

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	OTHER	TOT OUT
01	00350	71	67	69	51	60	38	0	0
02	00351	85	82	91	64	74	71	0	0
03	00352	74	71	83	65	69	70	0	0
04	00352DL	75	72	76	58	67	60	0	0
05	00353	77	73	82	58	70	64	0	0
06	00354	79	75	79	64	72	71	0	0
07	00355	63	62	62	50	56	55	0	0
08	00356	73	69	73	61	64	65	0	0
09	00357	70	69	73	58	65	52	0	0
10	00358	65	63	62	53	45	58	0	0
11	00359	68	67	74	63	66	63	0	0
12	00360	67	64	87	59	42	64	0	0
13	00350MS	85	77	80	67	73	56	0	0
14	00350MSD	78	69	75	63	68	60	0	0
15	SBLK1	72	71	66	61	67	67	0	0

	QC LIMITS
S1 (NBZ) = Nitrobenzene-d5	(23-120)
S2 (FBP) = 2-Fluorobiphenyl	(30-115)
S3 (TPH) = Terphenyl	(18-137)
S4 (PHL) = Phenol-d5	(24-113)
S5 (2FP) = 2-Fluorophenol	(25-121)
S6 (TBP) = 2,4,6-Tribromophenol	(19-122)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

gw 7/12/90

FORM II SV-2 1/87 Rev.

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Matrix Spike - EPA Sample No.: 00350 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	8250	0	5730	69	26- 90
2-Chlorophenol	8250	0	6390	77	25-102
1,4-Dichlorobenzene	4120	0	2870	70	28 104
N-Nitroso-di-n-prop.(1)	4120	0	2920	71	41 126
1,2,4-Trichlorobenzene	4120	0	3200	78	38 107
4-Chloro-3-methylphenol	8250	0	4870	59	26 103
Acenaphthene	4120	0	3230	78	31-137
4-Nitrophenol	8250	0	4550	55	11-114
2,4-Dinitrotoluene	4120	0	2770	67	28- 89
Pentachlorophenol	8250	0	1130	14 *	17-109
Pyrene	4120	1930	5440	85	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	8250	5310	64	8	35	26- 90
2-Chlorophenol	8250	5870	71	8	50	25-102
1,4-Dichlorobenzene	4120	2660	65	7	27	28 104
N-Nitroso-di-n-prop.(1)	4120	2850	69	3	38	41 126
1,2,4-Trichlorobenzene	4120	2920	71	9	23	38 107
4-Chloro-3-methylphenol	8250	5330	65	-10	33	26 103
Acenaphthene	4120	2970	72	8	19	31-137
4-Nitrophenol	8250	5030	61	-10	50	11-114
2,4-Dinitrotoluene	4120	2770	67	0	47	28- 89
Pentachlorophenol	8250	1640	20	-35	47	17-109
Pyrene	4120	5200	79	7	36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 1 out of 22 outside limits

jm 7/12/90

COMMENTS: CLP,35794,,00350,LOW,SOIL,MM2658,BNA,EPA,
INST.4500:RESTEK RTX-5(30M*.32MM/1UM) 45-325@10D/M: 1UL INJ

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Lab File ID: BL0421 Lab Sample ID: BL0421

Date Extracted: 02/01/90 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed: 02/02/90 Time Analyzed: 1555

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 4500

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	00350	MM2658	KK2710	02/05/90
02	00351	MM2661	KK2713	02/05/90
03	00352	MM2662	KK2714	02/02/90
04	00352DL	MM2662	KK2714DL	02/05/90
05	00353	MM2663	KK2715	02/05/90
06	00354	MM2664	KK2716	02/02/90
07	00355	MM2665	KK2717	02/02/90
08	00356	MM2666	KK2718	02/02/90
09	00357	MM2667	KK2719	02/02/90
10	00358	MM2668	KK2720	02/02/90
11	00359	MM2669	KK2721	02/02/90
12	00360	MM2670	KK2722	02/02/90
13	00350MS	MM2659	KK2711	02/05/90
14	00350MSD	MM2660	KK2712	02/05/90

COMMENTS: CLP,35794,,SBLK1,LOW,SOIL,BL0421,BNA,BLANK,
INST.4500:RESTEK RTX-5(30M*.32MM/1UM) 45-325@10D/M: 1UL INJ

gw 2/12/90

FORM IV SV 1/87 Rev.

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-STU Case No: TNT 45031 (ADV 35794) SAS No: NA SDG No: ~~417~~ 00350 JW 2/12/90

Lab File ID: DFB0929 DFTPP Injection Date: 09/29/89

Instrument ID: 4500 JW 2/7/90 DFTPP Injection Time: 11:30

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	49.18
68	Less than 2.0% of mass 69	0.64(1.4)1
69	Mass 69 relative abundance	47.24
70	Less than 2.0% of mass 69	0.26(0.5)1
127	40.0 - 60.0% of mass 198	50.19
197	Less than 1.0% of mass 198	0.00
198	Base peak, 100% relative abundance	100.00
199	5.0 - 9.0% of mass 198	6.53
275	10.0 - 30.0% of mass 198	21.23
365	Greater than 1.00% of mass 198	1.59
441	Present, but less than mass 443	5.43
442	Greater than 40.0% of mass 198	43.15
443	17.0 - 23.0% of mass 442	8.12(18.8)2

1-value is % mass 69 2-Value is % mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD020A9	A9200929	A9200929	09/29/89	1243
02	SSTD050A9	A9500929	A9500929	09/29/89	1333
03	SSTD080A9	A9800929	A9800929	09/29/89	1435
04	SSTD180A9	A91200929	A91200929	09/29/89	1528
05	SSTD160A9	A91600929	A91600929	09/29/89	1626
06	SSTD160A	AC1600929	AC1600929	09/29/89	1739
07	SSTD120A	AC1200929	AC1200929	09/29/89	1836
08	SSTD080A	AC0800929	AC0800929	09/29/89	1944
09	SSTD050A	AC0500929	AC0500929	09/29/89	2043
10	SSTD020A	AC0200929	AC0200929	09/29/89	2139
11					
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FORM V SV 1/87 Rev.

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: IT-STU Case No: ITNT 45031 (ADV 35744) SAS No: NA SDG No: ~~417~~ 0035D jmw 2/12/90

Lab File ID: DFB1002 DFTPP Injection Date: 10/02/89

Instrument ID: 4500 jmw 2/7/90 DFTPP Injection Time: 9:51

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	45.52
68	Less than 2.0% of mass 69	0.75(1.7)1
69	Mass 69 relative abundance	43.90
70	Less than 2.0% of mass 69	0.25(0.6)1
127	40.0 - 60.0% of mass 198	48.54
197	Less than 1.0% of mass 198	0.00
198	Base peak, 100% relative abundance	100.00
199	5.0 - 9.0% of mass 198	6.61
275	10.0 - 30.0% of mass 198	21.44
365	Greater than 1.00% of mass 198	1.62
441	Present, but less than mass 443	5.35
442	Greater than 40.0% of mass 198	43.68
443	17.0 - 23.0% of mass 442	8.36(19.1)2

1-value is % mass 69 2-Value is % mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD200H	HCP200	HCP200	10/02/89	1017
02	SSTD500H	HCP500	HCP500	10/02/89	1108
03	SSTD1000H	HCP1000	HCP1000	10/02/89	1158
04					
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FORM V SV 1/87 Rev.

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Lab File ID: DFB1023 DFTPP Injection Date: 10/23/89

Instrument ID: 4500 DFTPP Injection Time: 0915

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	40.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	40.5
70	Less than 2.0% of mass 69	0.6 (1.4)1
127	40.0 - 60.0% of mass 198	43.7
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.5
275	10.0 - 30.0% of mass 198	22.0
365	Greater than 1.00% of mass 198	1.47
441	Present, but less than mass 443	6.3
442	Greater than 40.0% of mass 198	51.9
443	17.0 - 23.0% of mass 442	9.7 (18.6)2

1-Value is % mass 69 2-Value is % mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD160	BIC51023	BIC51023	10/23/89	935
02	SSTD120	BIC41023	BIC41023	10/23/89	1114
03	SSTD080	BIC31023	BIC31023	10/23/89	1232
04	SSTD050	BIC21023	BIC21023	10/23/89	1435
05	SSTD020	BIC11023	BIC11023	10/23/89	1539

gen 2/12/90

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Lab File ID: DFB0205 DFTPP Injection Date: 02/05/90

Instrument ID: 4500 DFTPP Injection Time: 0929

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	42.8
68	Less than 2.0% of mass 69	0.3 (0.8)1
69	Mass 69 relative abundance	41.2
70	Less than 2.0% of mass 69	0.5 (1.3)1
127	40.0 - 60.0% of mass 198	44.7
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	23.7
365	Greater than 1.00% of mass 198	1.57
441	Present, but less than mass 443	7.6
442	Greater than 40.0% of mass 198	64.8
443	17.0 - 23.0% of mass 442	11.7 (18.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	BCC0205	BCC0205	02/05/90	945
02	SSTD050A9	A90205	A90205	02/05/90	1047
03	SSTDA9AC	AC0205	AC0205	02/05/90	1142
04	00352DL	MM2662	KK2714DL	02/05/90	1326
05	00353	MM2663	KK2715	02/05/90	1419
06	00351	MM2661	KK2713	02/05/90	1516
07	00350	MM2658	KK2710	02/05/90	1613
08	00350MS	MM2659	KK2711	02/05/90	1705
09	00350MSD	MM2660	KK2712	02/05/90	1801

Jen 2/12/90

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Lab File ID: DFB02023 DFTPP Injection Date: 02/02/90

Instrument ID: 4500 DFTPP Injection Time: 1153

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	43.1
68	Less than 2.0% of mass 69	0.5 (1.2)1
69	Mass 69 relative abundance	41.8
70	Less than 2.0% of mass 69	0.6 (1.4)1
127	40.0 - 60.0% of mass 198	44.2
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	23.7
365	Greater than 1.00% of mass 198	1.62
441	Present, but less than mass 443	7.6
442	Greater than 40.0% of mass 198	63.6
443	17.0 - 23.0% of mass 442	12.0 (18.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	BCC0202	BCC02022	02/02/90	1212
02	SSTD050A9	A90202	A90202	02/02/90	1317
03	SSTDA9AC	AC0202	AC0202	02/02/90	1414
04	SBLK1	BL0421	BL0421	02/02/90	1555
05	00358	MM2668	KK2720	02/02/90	1706
06	00360	MM2670	KK2722	02/02/90	1756
07	00356	MM2666	KK2718	02/02/90	1847
08	00355	MM2665	KK2717	02/02/90	1938
09	00354	MM2664	KK2716	02/02/90	2048
10	00359	MM2669	KK2721	02/02/90	2138
11	00352	MM2662	KK2714	02/02/90	2303
12	00357	MM2667	KK2719	02/02/90	2352

pw 2/12/90

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Lab File ID (Standard): BCC02022 Date Analyzed: 02/02/90

Instrument ID: 4500 Time Analyzed: 1212

		IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
	12 HOUR STD	17900	6.30	64900	9.19	34200	13.45
	UPPER LIMIT	35800		129800		68400	
	LOWER LIMIT	8950		32450		17100	
	EPA SAMPLE NO.						
01	00352	18100	6.27	71700	9.14	36500	13.42
02	00354	16400	6.30	61800	9.19	29800	13.45
03	00355	16700	6.30	61100	9.17	28600	13.44
04	00356	18900	6.27	69700	9.15	35700	13.42
05	00357	18800	6.28	70500	9.15	32000	13.42
06	00358	17000	6.27	64300	9.14	30700	13.40
07	00359	21800	6.28	88000	9.17	47000	13.44
08	00360	21100	6.28	82300	9.15	43600	13.42
09	SBLK1	18100	6.32	70300	9.20	31700	13.47

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

gcw 2/12/90

FORM VIII SV-1 1/87 Rev.

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

334

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Lab File ID (Standard): BCC02022 Date Analyzed: 02/02/90

Instrument ID: 4500 Time Analyzed: 1212

		IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
	12 HOUR STD	63000	17.07	72700	23.77	64700	27.66
	UPPER LIMIT	126000		145400		129400	
	LOWER LIMIT	31500		36350		32350	
	EPA SAMPLE NO.						
01	00352	64500	17.04	63300	23.72	40200	27.51
02	00354	51800	17.07	56000	23.77	46500	27.59
03	00355	47100	17.05	57300	23.72	46200	27.52
04	00356	62200	17.04	70900	23.72	58300	27.51
05	00357	51700	17.05	60900	23.74	45200	27.52
06	00358	52200	17.02	62800	23.70	52000	27.51
07	00359	77000	17.07	69200	23.75	43400	27.52
08	00360	77800	17.05	66100	23.74	51100	27.62
09	SBLK1	51900	17.09	60700	23.80	52800	27.69

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

fmw 2/12/90

FORM VIII SV-2 1/87 Rev.

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

334

Lab Name: ITAS-KNOXVILLE Contract: FERNALD

Lab Code: ITSTU Case No.: 35794 SAS No.: NA SDG No.: 00350

Lab File ID (Standard): BCC0205 Date Analyzed: 02/05/90

Instrument ID: 4500 Time Analyzed: 945

		IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
	12 HOUR STD	11700	6.25	43000	9.15	22900	13.40
	UPPER LIMIT	23400		86000		45800	
	LOWER LIMIT	5850		21500		11450	
	EPA SAMPLE NO.						
01	00350	11800	6.28	41700	9.15	20000	13.44
02	00351	11300	6.25	40500	9.12	18700	13.39
03	00352DL	12200	6.27	44600	9.15	20600	13.42
04	00353	12900	6.28	46400	9.15	21000	13.42
05	00350MS	12300	6.28	46000	9.17	20500	13.44
06	00350MSD	14800	6.25	55500	9.12	27100	13.39

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII SV-1 1/87 Rev.

Jen 2/12/90

ANALYSIS DATA SHEET--APPENDIX IX OP PESTICIDES Form = CLPDATA
Patterned After CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2645/46/47 00350

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-01
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 74.4% Dilution Factor: 1, 10
Extraction Method: SONC

Concentration Units: mg/Kg

Compound	Result	Qualifier
Thionazin	.04	U
Sulfotepp	.04	U
Phorate	.04	U
Dimethoate	.04	U
Disulfoton	.04	U
Methyl Parathion	.04	U
Ethyl Parathion	.04	U
Famphur	.08	U

FORM I APP IX ~~HERBS~~ PESTS 12/87 Modification
KDM 3/12/90

ANALYSIS DATA SHEET--APPENDIX IX OP PESTICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2648 00351

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-04
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 65.6% Dilution Factor: 1
Extraction Method: SONC

Concentration Units: mg/Kg

Compound	Result	Qualifier
Thionazin	.05	U
Sulfotepp	.05	U
Phorate	.05	U
Dimethoate	.05	U
Disulfoton	.05	U
Methyl Parathion	.05	U
Ethyl Parathion	.05	U
Famphur	.10	U

ANALYSIS DATA SHEET--APPENDIX IX OP PESTICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2649 00352

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-05
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 59.9% Dilution Factor: 1
Extraction Method: SONC

Concentration Units: mg/Kg

Compound	Result	Qualifier
Thionazin	.05	U
Sulfotepp	.05	U
Phorate	.05	U
Dimethoate	.05	U
Disulfoton	.05	U
Methyl Parathion	.05	U
Ethyl Parathion	.05	U
Famphur	.10	U

ANALYSIS DATA SHEET--APPENDIX IX OP PESTICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2650 00353

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-06
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 71.0% Dilution Factor: 1
Extraction Method: SONC

Concentration Units: mg/Kg

Compound	Result	Qualifier
Thionazin	.04	U
Sulfotepp	.04	U
Phorate	.04	U
Dimethoate	.04	U
Disulfoton	.04	U
Methyl Parathion	.04	U
Ethyl Parathion	.04	U
Famphur	.09	U

ANALYSIS DATA SHEET--APPENDIX IX OP PESTICIDES Form - CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2651 00354

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-07
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 58.4% Dilution Factor: 1
Extraction Method: SONC

Concentration Units: mg/Kg

Compound	Result	Qualifier
Thionazin	.05	U
Sulfotepp	.05	U
Phorate	.05	U
Dimethoate	.05	U
Disulfoton	.05	U
Methyl Parathion	.05	U
Ethyl Parathion	.05	U
Famphur	.11	U

ANALYSIS DATA SHEET--APPENDIX IX OP PESTICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2652 00355

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-08
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 76.1% Dilution Factor: 1, 10
Extraction Method: SONC

Concentration Units: mg/Kg

Compound	Result	Qualifier
Thionazin	.04	U
Sulfotepp	.04	U
Phorate	.04	U
Dimethoate	.04	U
Disulfoton	.04	U
Methyl Parathion	.04	U
Ethyl Parathion	.04	U
Famphur	.08	U

ANALYSIS DATA SHEET--APPENDIX IX OP PESTICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2653 00356

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-09
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 61.6% Dilution Factor: 1, 10
Extraction Method: SONC

Concentration Units: mg/Kg

Compound	Result	Qualifier
Thionazin	.05	U
Sulfotepp	.05	U
Phorate	.05	U
Dimethoate	.05	U
Disulfoton	.05	U
Methyl Parathion	.05	U
Ethyl Parathion	.05	U
Famphur	.10	U

ANALYSIS DATA SHEET--APPENDIX IX OP PESTICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2654 00357

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-10
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 51.3% Dilution Factor: 1, 10
Extraction Method: SONC

Concentration Units: mg/Kg

Compound	Result	Qualifier
Thionazin	.06	U
Sulfotepp	.06	U
Phorate	.06	U
Dimethoate	.06	U
Disulfoton	.06	U
Methyl Parathion	.06	U
Ethyl Parathion	.06	U
Famphur	.12	U

ANALYSIS DATA SHEET--APPENDIX IX OP PESTICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2655 00358

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-11
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 59.8% Dilution Factor: 1. 10
Extraction Method: SONC

Concentration Units: mg/Kg

Compound	Result	Qualifier
Thionazin	.05	U
Sulfotepp	.05	U
Phorate	.05	U
Dimethoate	.05	U
Disulfoton	.05	U
Methyl Parathion	.05	U
Ethyl Parathion	.05	U
Famphur	.10	U

FORM I APP IX OP ~~HERB~~ PESTS 12/87 Modification
sm 5/24/90

ANALYSIS DATA SHEET--APPENDIX IX OP PESTICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2656 00359

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-12
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 49.4% Dilution Factor: 1, 10
Extraction Method: SONC

Concentration Units: mg/Kg

Compound	Result	Qualifier
Thionazin	.06	U
Sulfotepp	.06	U
Phorate	.06	U
Dimethoate	.06	U
Disulfoton	.06	U
Methyl Parathion	.06	U
Ethyl Parathion	.06	U
Famphur	.13	U

ANALYSIS DATA SHEET--APPENDIX IX OP PESTICIDES Form = CLPDATA
Patterned after CLP I-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2657 00360

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-13
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 63.6% Dilution Factor: 1, 10
Extraction Method: SONC

Concentration Units: mg/Kg

Compound	Result	Qualifier
Thionazin	.05	U
Sulfotepp	.05	U
Phorate	.05	U
Dimethoate	.05	U
Disulfoton	.05	U
Methyl Parathion	.05	U
Ethyl Parathion	.05	U
Famphur	.10	U

ANALYSIS DATA SHEET--APPENDIX IX HERBICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2658/59/60 00350

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-14
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 71.2% Dilution Factor: 1
Extraction Method: Shake

Concentration Units: mg/Kg

Compound	Result	Qualifier
2,4-D	.11 ~~.10~~ Em 3/12/90	U
2,4,5-T	.03	U
2,4,5-TP	.03	U
Dinoseb	.03	U

ANALYSIS DATA SHEET--APPENDIX IX HERBICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2661 00351

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-17
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 66.1% Dilution Factor: 1
Extraction Method: Shake

Concentration Units: mg/Kg

Compound	Result	Qualifier
2,4-D	.12 ~~10~~ am 5/12/90	U
2,4,5-T	.03	U
2,4,5-TP	.03	U
Dinoseb	.03	U

ANALYSIS DATA SHEET--APPENDIX IX HERBICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2662 00352

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-18
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 55.3% Dilution Factor: 1
Extraction Method: Shake

Concentration Units: mg/Kg

Compound	Result	Qualifier
2,4-D	0.14 ~~18~~ 3/12/90	U
2,4,5-T	.04	U
2,4,5-TP	.04	U
Dinoseb	.04	U

ANALYSIS DATA SHEET--APPENDIX IX HERBICIDES Form = CLPDATA
Patterned after CLP I-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2663 00353

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-19
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 69.5% Dilution Factor: 1
Extraction Method: Shake

Concentration Units: mg/Kg

Compound	Result	Qualifier
2,4-D	.12 ~~.10~~ KM 3/12/90	U
2,4,5-T	.03	U
2,4,5-TP	.03	U
Dinoseb	.03	U

ANALYSIS DATA SHEET--APPENDIX IX HERBICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2664 00354

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-20
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 55.6% Dilution Factor: 1
Extraction Method: Shake

Concentration Units: ug/Kg

Compound	Result	Qualifier
2,4-D	.14 ~~10~~ DA 3/12/90	U
2,4,5-T	.04	U
2,4,5-TP	.04	U
Dinoseb	.04	U

ANALYSIS DATA SHEET--APPENDIX IX HERBICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2665 00355

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-21
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 69.9% Dilution Factor: 1
Extraction Method: Shake

Concentration Units: mg/Kg

Compound	Result	Qualifier
2,4-D	.11 ~~10~~ on 3/12/90	U
2,4,5-T	.03	U
2,4,5-TP	.03	U
Dinoseb	.03	U

ANALYSIS DATA SHEET--APPENDIX IX HERBICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2666 00356

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-22
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 57.9% Dilution Factor: 1
Extraction Method: Shake

Concentration Units: mg/Kg

Compound	Result	Qualifier
2,4-D	.14 ~~.10~~ KM 3/12/90	U
2,4,5-T	.03	U
2,4,5-TP	.03	U
Dinoseb	.03	U

ANALYSIS DATA SHEET--APPENDIX IX HERBICIDES Form = CLPDATA
Patterned after CLP I-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2667 00357

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-23
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 48.9% Dilution Factor: 1
Extraction Method: Shake

Concentration Units: mg/Kg

Compound	Result	Qualifier
2,4-D	.16 ~~.20~~ EM 3/12/90	U
2,4,5-T	.04	U
2,4,5-TP	.04	U
Dinoseb	.04	U

ANALYSIS DATA SHEET--APPENDIX IX HERBICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2668 00358

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-24
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 55.6% Dilution Factor: 1
Extraction Method: Shake

Concentration Units: mg/Kg

Compound	Result	Qualifier
2,4-D	.14 ~~.10~~ DM 3/12/90	U
2,4,5-T	.04	U
2,4,5-TP	.04	U
Dinoseb	.04	U

ANALYSIS DATA SHEET--APPENDIX IX HERBICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2669 00359

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-25
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 47.7% Dilution Factor: 1
Extraction Method: Shake

Concentration Units: mg/Kg

Compound	Result	Qualifier
2,4-D	.17 ~~20~~ 2m 3/12/90	U
2,4,5-T	.04	U
2,4,5-TP	.04	U
Dinoseb	.04	U

ANALYSIS DATA SHEET--APPENDIX IX HERBICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990 Client ID: MM2670 00360

Work Order Number: T0-02-001 Lab Sample ID: T0-02-001-26
Matrix: Soil Lab File ID: T0-02-001
Sample wt/vol: 10 g Date Received: 02/01/90
Level: Low Date Extracted: 02/02/90
% Moisture: 59.4% Dilution Factor: 1
Extraction Method: Shake

Concentration Units: ug/Kg

Compound	Result	Qualifier
2,4-D	.13 ~~10~~ 3/12/90	U
2,4,5-T	.03	U
2,4,5-TP	.03	U
Dinoseb	.03	U

Surrogate Recovery Form-Appendix IX GP Pesticides
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990

Work Order Number: T0-02-001

Surrogate ID: Methidathion QC Limits: Not Determined

	Sample Number	Surrogate % Recovered
1	T0-02-001-MB 1/10	111
2	T0-02-001-RS 1/10	102
3	T0-02-001-01 1/10	111
4	T0-02-001-02MS 1/10	108
5	T0-02-001-03MSD 1/10	88
6	T0-02-001-04	54
7	T0-02-001-05	57
8	T0-02-001-06	60
9	T0-02-001-07	56
10	T0-02-001-08 1/10	110
11	T0-02-001-09 1/10	86
12	T0-02-001-10 1/10	81
13	T0-02-001-11 1/10	133
14	T0-02-001-12 1/10	78
15	T0-02-001-13 1/10	103

* Values outside of QC limits
D Surrogate diluted out
NA Not analyzed
I Interference with the surrogate
NS Not spiked
ND Not detected

Surrogate Recovery Form-Appendix IV Herbicides
Patterned after CLP 1-37 Rev

II Corp - San Jose Lab
February 1990

Work Order Number: T0-02-001

Surrogate ID: 2,4-Dichlorophenylacetic acid QC Limits: Not Determined

	Sample Number	Surrogate % Recovered
1	T0-02-001-MB II	91
2	T0-02-001-RS II	94
3	T0-02-001-14	73
4	T0-02-001-15MS	105
5	T0-02-001-16MSD	76
6	T0-02-001-17	67
7	T0-02-001-18	23
8	T0-02-001-19	63
9	T0-02-001-20	35
10	T0-02-001-21	64
11	T0-02-001-22	97
12	T0-02-001-23	67
13	T0-02-001-24	67
14	T0-02-001-25	50
15	T0-02-001-26	79

* Values outside of QC limits
D Surrogate diluted out
NA Not analyzed
I Interference with the surrogate
NS Not spiked
ND Not detected

FORM II APP IX HERBICIDES 12/87 Modification K. Cin 2/16/90

Matrix Spike/ Matrix Spike Duplicate Recoveries
Patterned after CLP 1/87 Rev

IT Corp - San Jose Lab
February 1990

Lab File ID: T0-02-001
Matrix Spike - Sample Numbers: T0-02-001-02MS, T0-02-001-03MSD
Client ID: MM2645/46/47 00350

Concentration units: mg/Kg

Compound	Spike added (conc.)	Spl conc.	MS conc.	MSD conc.	MS % Rec	MSD % Rec
Ethyl Parathion	10	0	8.57	10.43	86	104
Famphur	10	0	13.51	9.4	135	94

Compound	% RPD	QC Limits Rec	QC Limits RPD
Ethyl Parathion	-20	23% - 163%	46%
Famphur	36	23% - 163%	46%

ND None detected
* Values outside of QC limits; see Comments on QC data in Case Summary.

Blank Spike Recoveries
Patterned after CLP 1/87 Rev

IT Corp - San Jose Lab
February 1990

Lab File ID: F0-02-001
Matrix Spike - Sample Number: F0-02-001-BS
Client ID: Blank Spike

Concentration units: ug/Kg

Compound	Spike added (conc.)	BS conc.	BS % Rec
Ethyl Parathion	10	10.94	109
Famphur	10	11.87	119

QC Limits Recovery
23% - 163%

ND None detected
* Values outside of QC limits; see Comments on QC data in Case Summary.

Matrix Spike/ Matrix Spike Duplicate Recoveries
Patterned after CLP 1/87 Rev

IT Corp - San Jose Lab
February 1990

Lab File ID: TO-02-001
Matrix Spike - Sample Numbers: TO-02-001-15MS, TO-02-001-16MSD
Client ID: MM2658/59/60 00350

Concentration units: mg/Kg

Compound	Spike added (conc.)	Spl conc.	MS conc.	MSD conc.	MS % Rec	MSD % Rec
2,4-D	1	0	.67	.50	67	50
2,4,5-T	1	0	.66	.47	66	47
2,4,5-TP	1	0	.72	.49	72	49

Compound	% RPD	QC Limits Rec	QC Limits RPD
2,4-D	29	11% - 177%	43.5%
2,4,5-T	34	11% - 177%	43.5%
2,4,5-TP	38	11% - 177%	43.5%

ND None detected
' Values outside of QC limits; see Comments on QC data in Case Summary.

FORM III APP IX HERBS 8/87 Modification

Corr 2/16/90

Blank Spike Recoveries
Referred after CLP 1987 Rev

[illegible] - San Jose Lab
February 1990

Lab File ID: T0-02-001
Matrix Spike - Sample Number: T0-02-001-BS II
Client ID: Blank Spike

Concentration units: mg/Kg

Compound	Spike added (conc.)	BS conc.	BS % Rec
2,4-D	1	.46*	46
2,4,5-T	1	.51*	51
2,4,5-TP	1	.59*	59

QC Limits Recovery
11% - 177%

ND None detected
* Values outside of QC limits; see Comments on QC data in Case Summary.

FORM III APP IX HERBS 8/87 Modification K. Cone 2/16/90

Method Blank Summary
Patterned after CLP 1-87 Rev

APPENDIX IX OP PESTICIDES

IT Corp - San Jose Lab
February 1990

Work Order Number: T0-02-001

Lab Sample ID: T0-02-001-MB

Matrix: Soil

Lab File ID: T0-02-001

Date Extracted: 02/02/90

Extraction Method: Sonc

Date Analyzed (1): 02/14/90

Time Analyzed (1): 21:26

Instrument ID (1): #1 HP5890 NPD

GC Column ID (1): RTx-1701

Date Analyzed (2):

Time Analyzed (2):

Instrument ID (2):

GC Column ID (2):

This Method Blank applies to the following samples, MS and MSD:

	Sample Number	Lab Sample ID	Date Analyzed (1)	Date Analyzed (2)
1	Blank Spike	T0-02-001-BS	02/14/90	
2	MM2645/46/47 00350	T0-02-001-01	02/15/90	
3	MM2645/46/47 00350 MS	T0-02-001-02MS	02/14/90	
4	MM2645/46/47 00350 MSD	T0-02-001-03MSD	02/14/90	
5	MM2648 00351	T0-02-001-04	02/15/90	
6	MM2649 00352	T0-02-001-05	02/15/90	
7	MM2650 00353	T0-02-001-06	02/15/90	
8	MM2651 00354	T0-02-001-07	02/15/90	
9	MM2652 00355	T0-02-001-08	02/15/90	
10	MM2653 00356	T0-02-001-09	02/15/90	
11	MM2654 00357	T0-02-001-10	02/15/90	
12	MM2655 00358	T0-02-001-11	02/15/90	
13	MM2656 00359	T0-02-001-12	02/15/90	
14	MM2657 00360	T0-02-001-13	02/15/90	

K Cone 2/28/90

ANALYSIS DATA SHEET--APPENDIX IX OP PESTICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990

Client ID: Method Blank

Work Order Number: T0-02-001
Matrix: Soil
Sample wt/vol: 10 g
Level: Low
% Moisture: NA
Extraction Method: SONC

Lab Sample ID: T0-02-001-MB
Lab File ID: T0-02-001
Date Received: NA
Date Extracted: 02/02/90
Dilution Factor: 1

Concentration Units: mg/Kg

Compound	Result	Qualifier
Thionazin	.03	U
Sulfotepp	.03	U
Phorate	.03	U
Dimethoate	.03	U
Disulfoton	.03	U
Methyl Parathion	.03	U
Ethyl Parathion	.03	U
Famphur	.06	U

Method Blank Summary
Patterned after CLP 1-87 Rev

APPENDIX IX HERBICIDES

IT Corp - San Jose Lab
February 1990

Work Order Number: TO-02-001 Lab Sample ID: TO-02-001-MB II

Matrix: Soil Lab File ID: TO-02-001

Date Extracted: 02/02/90 Extraction Method: Shake
Date Analyzed (1): 02/08/90 Date Analyzed (2): 02/08/90
Time Analyzed (1): 04:17 Time Analyzed (2): 04:18
Instrument ID (1): #19 HP5890 ECD Instrument ID (2): #19 HP5890 ECD
GC Column ID (1): RTx-1 GC Column ID (2): RTx-1701

This Method Blank applies to the following samples, MS and MSD:

	Sample Number	Lab Sample ID	Date Analyzed (1)	Date Analyzed (2)
1	Blank Spike	TO-02-001-BS II	02/08/90	02/08/90
2	MM2658/59/60 00350	TO-02-001-14	02/08/90	02/08/90
3	MM2658/59/60 00350 MS	TO-02-001-15MS	02/08/90	02/08/90
4	MM2658/59/60 00350 MSD	TO-02-001-16MSD	02/08/90	02/08/90
5	MM2661 00351	TO-02-001-17	02/08/90	02/08/90
6	MM2662 00352	TO-02-001-18	02/08/90	02/08/90
7	MM2663 00353	TO-02-001-19	02/08/90	02/08/90
8	MM2664 00354	TO-02-001-20	02/08/90	02/08/90
9	MM2665 00355	TO-02-001-21	02/08/90	02/08/90
10	MM2666 00356	TO-02-001-22	02/08/90	02/08/90
11	MM2667 00357	TO-02-001-23	02/08/90	02/08/90
12	MM2668 00358	TO-02-001-24	02/08/90	02/08/90
13	MM2669 00359	TO-02-001-25	02/08/90	02/08/90
14	MM2670 00360	TO-02-001-26	02/08/90	02/08/90

 K. Cox 2/16/90

ANALYSIS DATA SHEET--APPENDIX IX HERBICIDES Form = CLPDATA
Patterned after CLP 1-87 Rev

IT Corp - San Jose Lab
February 1990

Client ID: Method Blank

Work Order Number: TO-02-001
Matrix: Soil
Sample wt/vol: 10 g
Level: Low
% Moisture: NA
Extraction Method: Shake

Lab Sample ID: TO-02-001-MB II
Lab File ID: TO-02-001
Date Received: NA
Date Extracted: 02/02/90
Dilution Factor: 1

Concentration Units: mg/Kg

Compound	Result	Qualifier
2,4-D	.08	U
2,4,5-T	.02	U
2,4,5-TP	.02	U
Dinoseb	.02	U

K Cory 2/16/90

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

COPY 334

CERTIFICATE OF ANALYSIS

C/O ASI Inc.
11030 Hamilton Cleves Road
Ross, OH 45061
Attn: Cindy Capannari

Date: March 26,1990

Job Number: ADV 35794

P.O Number: Accounts Payable

This is the Certificate of Analysis for the following:

Client Project ID:	FMPC RI/FS
Date Received by Lab:	01/25/90
Number of Samples:	Eleven (11)
Sample Type:	Sludge

I. INTRODUCTION

On January 25, 1990, eleven (11) sludge samples were received at ITAS-Oak Ridge Lab from Advanced Sciences Inc., Ross, Ohio. The list of analytical tests performed, as well as date of receipt and analysis can be found in the attached report.

Blanks are identified with client sample ID's starting with either "QX..B" or "QX...B.". Data are reported with the qualifier "U" if the compound was analyzed for but not detected. Lists with concentration unit code and lab and client suffix code definitions are attached.

II. ANALYTICAL RESULTS/METHODOLOGY

The analytical results for this report are presented by analytical tests. Each set of data will include sample identification information, the analytical results, and the appropriate detection limits.

Reviewed and Approved

Snell A. Mills III

Snell A. Mills III
Laboratory Manager

SAM/sca

American Council of Independent Laboratories
International Association of Environmental Testing Laboratories
American Association for Laboratory Accreditation

IT Analytical Services, 1550 Bear Creek Road, Oak Ridge, TN 37830

II. ANALYTICAL RESULTS/METHODOLOGY (Continued)

The samples were analyzed for Appendix IX semivolatiles at ITAS Knoxville, Knoxville, TN. and will be submitted separately.

The samples were analyzed for Appendix IX dioxins/furans at ITAS TDL Knoxville, Knoxville, TN. and will be submitted separately.

The samples were analyzed for Appendix IX organophosphorus pesticides and herbicides at ITAS San Jose Laboratory, San Jose, California and will be submitted separately.

The samples were analyzed for Appendix IX volatiles using the USEPA CLP Statement of Work, Method 624, 7/87 revision.

The samples were analyzed for Appendix IX pesticide/PCB compounds using the USEPA CLP Statement of Work, Method 608, 7/87 revision.

The samples were analyzed for Appendix IX herbicides using the USEPA SW846, Method 8150 ,3rd revision.

The samples were analyzed for Appendix IX metals and cyanide using the USEPA CLP statement of Work, 7/87 revision.

The samples were analyzed for sulfide using Method 9030, USEPA SW-84, 3rd edition, 1986.

III. QUALITY CONTROL

The matrix spike (MS) and matrix spike duplicate (MSD) analyses for the organic parameters were performed on sample 00350.

The samples were analyzed for volatile organics 02/06/90 - 02/08/90. The sample run proceeded well. All surrogates and internal standards were within QC required limits. All % recoveries for the matrix spike and matrix spike duplicate were within QC required limits. All RPD % recoveries were within QC limits. There were no problems, QC or otherwise, seen in the final data review.

The pesticide and aroclor analyses were performed on 02/06/90 and 02/07/90. All samples and blank were prepared as low-level soils and analyzed by CLP protocol EPA method 608. Fourteen (14) out of eighteen (18) soil pesticide surrogate recoveries were outside the QC required limits,this was due to co-eluding peak with dibutylchlorendate . One (1) out of twelve (12) soil matrix spike recoveries was outside the QC required limits. All matrix spike duplicate recoveries were within QC required limits.

III. QUALITY CONTROL (Cont.)

Organic data was reported with qualifiers as follows:

U - Compound analyzed for but not detected.
E - Compound exceeded calibration range of instrument.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below the contract required quantitation limit. The value given was an estimate.
B - Compound was found in the method blank.
A - Compound Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.

The duplicate and spike analyses for the inorganics were performed on sample 00350.

The samples were prepared for ICP analysis on 01/19/90, and analyzed on 02/13/90. The ICP serial dilution was outside of QC limits for zinc.

The samples were prepared for GFAA analysis on 02/13/90 and analyzed during the period 02/21/90 - 03/07/90. The matrix spike % recoveries were outside the QC required limits for arsenic, lead, selenium, and thallium. The furnace analytical spike was <40% for selenium. The furnace analytical spike recovery was outside the ± 15% window for thallium client number 00350.

The samples were prepared and analyzed for Mercury on 02/07/90.

The samples were prepared for Potassium analysis on 02/13/90 and analyzed on 02/21/90.

The samples were prepared for cyanide analysis on 01/29/90 and 02/02/90. The samples were analyzed for cyanide on 01/31/90 and 02/05/90, respectively.

Inorganic data was reported with the following qualifiers:

N - Matrix spike outside QC limits.
* - Duplicate values outside QC limits.
E - Furnace anal. spike <40%; ICP serial dilution outside QC limits.
W - Furnace anal. spike recovery outside + or - 15% window.
S - Method of standard used (MSA)
+ - Correlation coefficient for MSA <0.995

IT ANALYTICAL SERVICES
OAK RIDGE, TN

Advanced Sciences, Inc.
Date: March 26, 1990 Page 4 of 5
Client Project ID: RI/FS Fernald Job Number: ADV 35794

SAMPLE SUMARY TABLE

Field #	ITAS #	Matrix	Conc.	Analysis
00350	MM2671	SLUDGE	LOW	VOA
	MM2658	SLUDGE	LOW	PEST/PCB
	MM2619	SLUDGE	LOW	METALS
	MM2606	SLUDGE	LOW	CYANIDE
	MM2606	SLUDGE	LOW	SULFIDE
00350MS	MM2672	SLUDGE	LOW	QC/MS/VOA
	MM2659	SLUDGE	LOW	QC/MS/PEST/PCB
	MM2620	SLUDGE	LOW	QC/MS/METALS
	MM2607	SLUDGE	LOW	QC/MS/CYANIDE
	MM2607	SLUDGE	LOW	QC/MS/SULFIDE
00350MSD	MM2673	SLUDGE	LOW	QC/MSD/VOA
	MM2660	SLUDGE	LOW	QC/MSD/PEST/PCB
	MM2608	SLUDGE	LOW	QC/MSD/SULFIDE
00350DUP	MM2621	SLUDGE	LOW	QC/DUP/METALS
	MM2608	SLUDGE	LOW	QC/DUP/CYANIDE
00351	MM2674	SLUDGE	LOW	VOA
	MM2661	SLUDGE	LOW	PEST/PCB
	MM2622	SLUDGE	LOW	METALS
	MM2609	SLUDGE	LOW	CYANIDE
	MM2609	SLUDGE	LOW	SULFIDE
00352	MM2675	SLUDGE	LOW	VOA
	MM2662	SLUDGE	LOW	PEST/PCB
	MM2623	SLUDGE	LOW	METALS
	MM2610	SLUDGE	LOW	CYANIDE
	MM2610	SLUDGE	LOW	SULFIDE
00353	MM2676	SLUDGE	LOW	VOA
	MM2663	SLUDGE	LOW	PEST/PCB
	MM2624	SLUDGE	LOW	METALS
	MM2611	SLUDGE	LOW	CYANIDE
	MM2611	SLUDGE	LOW	SULFIDE
00354	MM2677	SLUDGE	LOW	VOA
	MM2664	SLUDGE	LOW	PEST/PCB
	MM2625	SLUDGE	LOW	METALS
	MM2612	SLUDGE	LOW	CYANIDE
	MM2612	SLUDGE	LOW	SULFIDE

Advanced Sciences, Inc.
Date: March 26, 1990
Client Project ID: RI/FS Fernald

Job Number: ADV 35794

SAMPLE SUMARY TABLE CONT

Field #	ITAS #	Matrix	Conc.	Analysis
00355	MM2678	SLUDGE	LOW	VOA
	MM2665	SLUDGE	LOW	PEST/PCB
	MM2626	SLUDGE	LOW	METALS
	MM2613	SLUDGE	LOW	CYANIDE
	MM2613	SLUDGE	LOW	SULFIDE
00356	MM2679	SLUDGE	LOW	VOA
	MM2666	SLUDGE	LOW	PEST/PCB
	MM2627	SLUDGE	LOW	METALS
	MM2614	SLUDGE	LOW	CYANIDE
	MM2614	SLUDGE	LOW	SULFIDE
00357	MM2680	SLUDGE	LOW	VOA
	MM2667	SLUDGE	LOW	PEST/PCB
	MM2628	SLUDGE	LOW	METALS
	MM2615	SLUDGE	LOW	CYANIDE
	MM2615	SLUDGE	LOW	SULFIDE
00358	MM2681	SLUDGE	LOW	VOA
	MM2668	SLUDGE	LOW	PEST/PCB
	MM2629	SLUDGE	LOW	METALS
	MM2616	SLUDGE	LOW	CYANIDE
	MM2616	SLUDGE	LOW	SULFIDE
00359	MM2682	SLUDGE	LOW	VOA
	MM2669	SLUDGE	LOW	PEST/PCB
	MM2630	SLUDGE	LOW	METALS
	MM2617	SLUDGE	LOW	CYANIDE
	MM2617	SLUDGE	LOW	SULFIDE
00360	MM2683	SLUDGE	LOW	VOA
	MM2670	SLUDGE	LOW	PEST/PCB
	MM2631	SLUDGE	LOW	METALS
	MM2618	SLUDGE	LOW	CYANIDE
	MM2618	SLUDGE	LOW	SULFIDE

Abbreviations:
VOA - VOLATILES
PEST - PESTICIDES
PCB - POLYCHLORINATED BIPHENYLS
MS - MATRIX SPIKE
MSD - MATRIX SPIKE DUPLICATE

"CONCENTRATION UNIT" CODES

% MOISTURE	Percent Moisture Content
% RECOVERY	Percent Recovery of Known Spiked Compound
% SOLIDS	Percent Solids Content
COLONIES/100 ML	Colonies/100 milliliters (bacteriological concentration)
MG/KG	Milligrams per Kilogram (ppm)
MG/LITER	Milligrams per Liter (ppm)
UG/KG	Microgram per Kilogram (ppb)
UG/LITER	Microgram per Liter (ppb)
STANDARD UNITS	Standard pH Units
UMHOS/CM	Micromhos per Centimeter (conductivity concentration)
PCI/LITER	picoCuries/Liter (radiological concentration)
PCI/G	picoCuries/Gram (radiological concentration)
TOTAL MG	Total Milligrams
MG/M3	Milligrams per Cubic Meter
STD	Standard Deviation
RPD	Relative Percent Difference
UL/LITER	Microliters per Liter (ppb)
COLONIES/50 ML	Colonies/50 Milliliters (bacteriological concentration)
MMPY	Millimeters per Year
F	Degrees F
NG/G	Nanograms per Gram (ppb)
C	Degrees C
TOTAL UG	Total Micrograms
BTU/POUND	British Thermal Units per Pound

EDT SUFFIX CODES FOR "LAB SAMPLE" AND "CLIENT SAMPLE" NUMBERS

MS	Matrix Spike (sample spiked before prep)
MSD	Matrix Spike Duplicate (duplicate prep/analysis of spiked sample)
D	Duplicate (duplicate prep/analysis of a sample--could also have a D1, D2, etc.)
S	Spike (spiked before prep)
SD	Spike Duplicate (duplicate prep/analysis of a spiked sample)
S1	Original Spike (same as S--only used if there is an S2)
S2	Post Digestion Spike (original sample spiked after prep)
R	Reprepped (could be combined with other suffix codes, i.e. RMS, RD or could also have a R1, R2, etc.)
A	Replicate Analysis (additional analysis of original prepped sample--could also have a A1, A2, etc.)
U	Unfiltered Sample (unfiltered sample prep/analysis--used when client sample number is the same for both unfiltered and filtered samples--could be combined with other suffix codes, i.e. UMS, UMSD, UD, etc.)
F	Filtered Sample (sample filtered before prep/analysis--used when client sample number is the same for both unfiltered and filtered samples--could be combined with other suffix codes, i.e. FMS, FMSD, FD, etc.)
BK	Back sorbent section of sampler tube
FR	Front sorbent section of sampler tube
DL	Dilution (original sample diluted for analysis)
C	Confirmation Analysis (additional analysis of original prepped sample using a different column or detector as instructed under one method)

edt1.jes

Table EDT-4

EPA CLP ORGANIC QUALIFIERS/RECOVERY FLAGS

U - Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and reanalyzed. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate Forms I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

F - Estimated value due to a confirmed compound which is off-scale in both columns.

X - A flag that FORMASTER III CLP software automatically inserts to indicate that the data was entered manually.

Y - Indistinguishable isomer in tentatively identified compounds.

Z - No estimated value reported, or an elevated CRQL reported because matrix effects interfere with or obscure the compound on one or both columns. In either situation, the compound does not confirm as a positive identification.

* - Values outside of contract required QC limits.

Table EDT-5

EPA CLP INORGANIC QUALIFIERS

U - Indicates compound was analyzed for but not detected.

B - The reported value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).

E - The reported value is estimated because of the presence of interference.

M - Duplicate injection precision not met.

N - Spiked sample recovery not within control limits.

S - The reported value was determined by the Method of Standard Additions.

W - Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance.

G - Native analyte > 4 times spike added, therefore acceptance criteria do not apply.

X - Detection limit is higher than normal due to sample matrix interferences.

* - Duplicate analysis not within control limits.

+ - Correlation coefficient for the MSA is less than 0.995.

Entering "S", "W", or "+" is mutually exclusive. No combination of these qualifiers can appear in the same field for an analyte.

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: QXM10B002061VBK

Sample Date: N/A
IT Sample ID: XVBLK0206
Prep Date:
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXM10B002061VBK
Concentration Units: UG/KG

Parameter	Result		Parameter	Result	
Chloromethane	10	U	Acrolein	10	U
Bromomethane	10	U	Acrylonitrile	10	U
Vinyl chloride	10	U	2-Chloro-1,3-butadiene	5	U
Chloroethane	10	U	3-Chloropropene	5	U
Methylene chloride	3	J	1,2-Dibromo-3-chloropropane	1	J
Acetone	2	J	1,2-Dibromoethane	5	U
Carbon disulfide	5	U	Dibromomethane	10	U
1,1-Dichloroethene	5	U	trans-1,4-Dichloro-2-butene	100	U
1,1-Dichloroethane	5	U	Dichlorodifluoromethane	200	U
1,2-Dichloroethylene	5	U	1,4-Dioxane	10	J
Chloroform	5	U	Ethyl cyanide	100	U
1,2-Dichloroethane	5	U	Ethyl methacrylate	10	U
2-Butanone	5	J	Iodomethane	5	U
1,1,1-Trichloroethane	5	U	Isobutyl alcohol	58	J
Carbon Tetrachloride	5	U	Methacrylonitrile	10	U
Vinyl Acetate	10	U	Methyl methacrylate	10	U
Bromodichloromethane	5	U	Pyridine	55	J
1,2-Dichloropropane	5	U	1,1,1,2-Tetrachloroethane	5	U
cis-1,3-Dichloropropene	5	U	Trichlorofluoromethane	5	U
Trichloroethene	5	U	1,2,3-Trichloropropane	5	U
Dibromochloromethane	5	U			
1,1,2-Trichloroethane	5	U			
Benzene	5	U			
trans-1,3-Dichloropropene	5	U			
Bromoform	5	U			
4-Methyl-2-pentanone	10	U			
2-Hexanone	10	U			
Tetrachlorethene	5	U			
1,1,2,2-Tetrachloroethane	5	U			
Toluene	5	U			
Chlorobenzene	5	U			
Ethylbenzene	5	U			
Styrene	5	U			
Total xylenes	5	U			
Acetonitrile	1000	U			

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: 00352

Sample Date: N/A
IT Sample ID: MM2675
Prep Date:
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXM10B002061VBK
Concentration Units: UG/KG

Parameter	Result		Parameter	Result	
Chloromethane	23	U	Acrolein	23	U
Bromomethane	23	U	Acrylonitrile	23	U
Vinyl chloride	23	U	2-Chloro-1,3-butadiene	12	U
Chloroethane	23	U	3-Chloropropene	12	U
Methylene chloride	50	B	1,2-Dibromo-3-chloropropane	23	U
Acetone	23	U	1,2-Dibromoethane	4	J
Carbon disulfide	12	U	Dibromomethane	23	U
1,1-Dichloroethene	12	U	trans-1,4-Dichloro-2-butene	230	U
1,1-Dichloroethane	12	U	Dichlorodifluoromethane	470	U
1,2-Dichloroethylene	12	U	1,4-Dioxane	12000	U
Chloroform	12	U	Ethyl cyanide	230	U
1,2-Dichloroethane	12	U	Ethyl methacrylate	23	U
2-Butanone	97	B	Iodomethane	12	U
1,1,1-Trichloroethane	12	U	Isobutyl alcohol	19	JB
Carbon Tetrachloride	12	U	Methacrylonitrile	23	U
Vinyl Acetate	23	U	Methyl methacrylate	23	U
Bromodichloromethane	12	U	Pyridine	12000	U
1,2-Dichloropropane	12	U	1,1,1,2-Tetrachloroethane	12	U
cis-1,3-Dichloropropene	12	U	Trichlorofluoromethane	210	
Trichloroethene	7	J	1,2,3-Trichloropropane	12	U
Dibromochloromethane	12	U			
1,1,2-Trichloroethane	12	U			
Benzene	12	U			
trans-1,3-Dichloropropene	12	U			
Bromoform	12	U			
4-Methyl-2-pentanone	16	J			
2-Hexanone	23	U			
Tetrachlorethene	12	U			
1,1,2,2-Tetrachloroethane	12	U			
Toluene	12	U			
Chlorobenzene	12	U			
Ethylbenzene	12	U			
Styrene	12	U			
Total xylenes	12	U			
Acetonitrile	2300	U			

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: 00356

Sample Date: N/A
IT Sample ID: MM2679
Prep Date:
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXM10B002061VBK
Concentration Units: UG/KG

Parameter	Result		Parameter	Result	
Chloromethane	18	U	Acrolein	18	U
Bromomethane	18	U	Acrylonitrile	18	U
Vinyl chloride	18	U	2-Chloro-1,3-butadiene	9	U
Chloroethane	18	U	3-Chloropropene	9	U
Methylene chloride	24	B	1,2-Dibromo-3-chloropropane	18	U
Acetone	18	U	1,2-Dibromoethane	9	U
Carbon disulfide	9	U	Dibromomethane	18	U
1,1-Dichloroethene	9	U	trans-1,4-Dichloro-2-butene	180	U
1,1-Dichloroethane	9	U	Dichlorodifluoromethane	360	U
1,2-Dichloroethylene	9	U	1,4-Dioxane	9100	U
Chloroform	2	J	Ethyl cyanide	180	U
1,2-Dichloroethane	9	U	Ethyl methacrylate	18	U
2-Butanone	110	B	Iodomethane	9	U
1,1,1-Trichloroethane	9	U	Isobutyl alcohol	12	JB
Carbon Tetrachloride	9	U	Methacrylonitrile	18	U
Vinyl Acetate	18	U	Methyl methacrylate	18	U
Bromodichloromethane	9	U	Pyridine	19	JB
1,2-Dichloropropane	9	U	1,1,1,2-Tetrachloroethane	9	U
cis-1,3-Dichloropropene	9	U	Trichlorofluoromethane	9	U
Trichloroethene	9	U	1,2,3-Trichloropropane	9	U
Dibromochloromethane	9	U			
1,1,2-Trichloroethane	9	U			
Benzene	9	U			
trans-1,3-Dichloropropene	9	U			
Bromoform	9	U			
4-Methyl-2-pentanone	18	U			
2-Hexanone	18	U			
Tetrachlorethene	9	U			
1,1,2,2-Tetrachloroethane	9	U			
Toluene	9	U			
Chlorobenzene	9	U			
Ethylbenzene	9	U			
Styrene	9	U			
Total xylenes	9	U			
Acetonitrile	1800	U			

Advanced Sciences. Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE. TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: QXM10B002071VBK

Sample Date: N/A
IT Sample ID: XVBLK0207
Prep Date:
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXM10B002071VBK
Concentration Units: UG/KG

Parameter	Result		Parameter	Result	
Chloromethane	10	U	Acrolein	10	U
Bromomethane	10	U	Acrylonitrile	10	U
Vinyl chloride	10	U	2-Chloro-1,3-butadiene	5	U
Chloroethane	10	U	3-Chloropropene	5	U
Methylene chloride	2	J	1,2-Dibromo-3-chloropropane	1	J
Acetone	10	U	1,2-Dibromoethane	5	U
Carbon disulfide	5	U	Dibromomethane	10	U
1,1-Dichloroethene	5	U	trans-1,4-Dichloro-2-butene	100	U
1,1-Dichloroethane	5	U	Dichlorodifluoromethane	200	U
1,2-Dichloroethylene	5	U	1,4-Dioxane	5000	U
Chloroform	5	U	Ethyl cyanide	100	U
1,2-Dichloroethane	5	U	Ethyl methacrylate	10	U
2-Butanone	5	J	Iodomethane	5	U
1,1,1-Trichloroethane	5	U	Isobutyl alcohol	46	J
Carbon Tetrachloride	5	U	Methacrylonitrile	10	U
Vinyl Acetate	10	U	Methyl methacrylate	10	U
Bromodichloromethane	5	U	Pyridine	74	J
1,2-Dichloropropane	5	U	1,1,1,2-Tetrachloroethane	5	U
cis-1,3-Dichloropropene	5	U	Trichlorofluoromethane	5	U
Trichloroethene	5	U	1,2,3-Trichloropropane	5	U
Dibromochloromethane	5	U			
1,1,2-Trichloroethane	5	U			
Benzene	5	U			
trans-1,3-Dichloropropene	5	U			
Bromoform	5	U			
4-Methyl-2-pentanone	10	U			
2-Hexanone	10	U			
Tetrachlorethene	5	U			
1,1,2,2-Tetrachloroethane	5	U			
Toluene	5	U			
Chlorobenzene	5	U			
Ethylbenzene	5	U			
Styrene	5	U			
Total xylenes	5	U			
Acetonitrile	1000	U			

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: 00350MS

Sample Date: N/A
IT Sample ID: MM2672MS
Prep Date:
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXM10B002071VBK
Concentration Units: % RECOVERY

Parameter	Result
1,1-Dichloroethene	87
Trichloroethene	80
Benzene	80
Toluene	100
Chlorobenzene	96

Client Sample ID: 00350MSD

Sample Date: N/A
IT Sample ID: MM2673MSD
Prep Date:
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXM10B002071VBK
Concentration Units: % RECOVERY

Parameter	Result
1,1-Dichloroethene	76
Trichloroethene	82
Benzene	85
Toluene	104
Chlorobenzene	95

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: 00354

Sample Date: N/A
IT Sample ID: MM2677
Prep Date:
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXM10B002071VBK
Concentration Units: UG/KG

Parameter	Result		Parameter	Result	
Chloromethane	24	U	Acrolein	24	U
Bromomethane	24	U	Acrylonitrile	24	U
Vinyl chloride	24	U	2-Chloro-1,3-butadiene	12	U
Chloroethane	24	U	3-Chloropropene	12	U
Methylene chloride	67	B	1,2-Dibromo-3-chloropropane	24	U
Acetone	24	U	1,2-Dibromoethane	3	J
Carbon disulfide	12	U	Dibromomethane	24	U
1,1-Dichloroethene	12	U	trans-1,4-Dichloro-2-butene	240	U
1,1-Dichloroethane	12	U	Dichlorodifluoromethane	480	U
1,2-Dichloroethylene	12	U	1,4-Dioxane	12000	U
Chloroform	12	U	Ethyl cyanide	240	U
1,2-Dichloroethane	12	U	Ethyl methacrylate	24	U
2-Butanone	110	B	Iodomethane	12	U
1,1,1-Trichloroethane	12	U	Isobutyl alcohol	7100	U
Carbon Tetrachloride	12	U	Methacrylonitrile	24	U
Vinyl Acetate	24	U	Methyl methacrylate	24	U
Bromodichloromethane	12	U	Pyridine	12000	U
1,2-Dichloropropane	12	U	1,1,1,2-Tetrachloroethane	12	U
cis-1,3-Dichloropropene	12	U	Trichlorofluoromethane	200	
Trichloroethene	7	J	1,2,3-Trichloropropane	12	U
Dibromochloromethane	12	U			
1,1,2-Trichloroethane	12	U			
Benzene	12	U			
trans-1,3-Dichloropropene	12	U			
Bromoform	12	U			
4-Methyl-2-pentanone	24	U			
2-Hexanone	24	U			
Tetrachlorethene	12	U			
1,1,2,2-Tetrachloroethane	12	U			
Toluene	12	U			
Chlorobenzene	12	U			
Ethylbenzene	12	U			
Styrene	12	U			
Total xylenes	12	U			
Acetonitrile	2400	U			

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: 00355

Sample Date: N/A
IT Sample ID: MM2678
Prep Date:
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXM10B002071VBK
Concentration Units: UG/KG

Parameter	Result		Parameter	Result	
Chloromethane	15	U	Acrolein	15	U
Bromomethane	15	U	Acrylonitrile	15	U
Vinyl chloride	15	U	2-Chloro-1,3-butadiene	7	U
Chloroethane	15	U	3-Chloropropene	7	U
Methylene chloride	31	B	1,2-Dibromo-3-chloropropane	15	U
Acetone	12	J	1,2-Dibromoethane	7	U
Carbon disulfide	7	U	Dibromomethane	15	U
1,1-Dichloroethene	7	U	trans-1,4-Dichloro-2-butene	150	U
1,1-Dichloroethane	7	U	Dichlorodifluoromethane	300	U
1,2-Dichloroethylene	7	U	1,4-Dioxane	7500	U
Chloroform	7	U	Ethyl cyanide	150	U
1,2-Dichloroethane	7	U	Ethyl methacrylate	15	U
2-Butanone	8	JB	Iodomethane	7	U
1,1,1-Trichloroethane	7	U	Isobutyl alcohol	9	JB
Carbon Tetrachloride	7	U	Methacrylonitrile	15	U
Vinyl Acetate	15	U	Methyl methacrylate	15	U
Bromodichloromethane	7	U	Pyridine	7500	U
1,2-Dichloropropane	7	U	1,1,1,2-Tetrachloroethane	7	U
cis-1,3-Dichloropropene	7	U	Trichlorofluoromethane	7	U
Trichloroethene	7	U	1,2,3-Trichloropropane	7	U
Dibromochloromethane	7	U			
1,1,2-Trichloroethane	7	U			
Benzene	7	U			
trans-1,3-Dichloropropene	7	U			
Bromoform	7	U			
4-Methyl-2-pentanone	15				
2-Hexanone	15	U			
Tetrachlorethene	7	U			
1,1,2,2-Tetrachloroethane	7	U			
Toluene	7	U			
Chlorobenzene	7	U			
Ethylbenzene	7	U			
Styrene	7	U			
Total xylenes	7	U			
Acetonitrile	1500	U			

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: 00357

Sample Date: N/A
IT Sample ID: MM2680
Prep Date:
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXM10B002071VBK
Concentration Units: UG/KG

Parameter	Result		Parameter	Result	
Chloromethane	23	U	Acrolein	23	U
Bromomethane	23	U	Acrylonitrile	23	U
Vinyl chloride	23	U	2-Chloro-1,3-butadiene	12	U
Chloroethane	23	U	3-Chloropropene	12	U
Methylene chloride	8	JB	1,2-Dibromo-3-chloropropane	23	U
Acetone	170		1,2-Dibromoethane	12	U
Carbon disulfide	12	U	Dibromomethane	23	U
1,1-Dichloroethene	12	U	trans-1,4-Dichloro-2-butene	230	U
1,1-Dichloroethane	12	U	Dichlorodifluoromethane	470	U
1,2-Dichloroethylene	12	U	1,4-Dioxane	12000	U
Chloroform	12	U	Ethyl cyanide	230	U
1,2-Dichloroethane	12	U	Ethyl methacrylate	23	U
2-Butanone	72	B	Iodomethane	12	U
1,1,1-Trichloroethane	12	U	Isobutyl alcohol	34	JB
Carbon Tetrachloride	12	U	Methacrylonitrile	23	U
Vinyl Acetate	23	U	Methyl methacrylate	23	U
Bromodichloromethane	12	U	Pyridine	45	JB
1,2-Dichloropropane	12	U	1,1,1,2-Tetrachloroethane	12	U
cis-1,3-Dichloropropene	12	U	Trichlorofluoromethane	12	U
Trichloroethene	12	U	1,2,3-Trichloropropane	12	U
Dibromochloromethane	12	U			
1,1,2-Trichloroethane	12	U			
Benzene	12	U			
trans-1,3-Dichloropropene	12	U			
Bromoform	12	U			
4-Methyl-2-pentanone	23	U			
2-Hexanone	23	U			
Tetrachlorethene	12	U			
1,1,2,2-Tetrachloroethane	12	U			
Toluene	3	J			
Chlorobenzene	12	U			
Ethylbenzene	12	U			
Styrene	12	U			
Total xylenes	3	J			
Acetonitrile	2300	U			

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: 00359

Sample Date: N/A
IT Sample ID: MM2682
Prep Date:
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXM10B002071VBK
Concentration Units: UG/KG

Parameter	Result		Parameter	Result	
Chloromethane	24	U	Acrolein	24	U
Bromomethane	24	U	Acrylonitrile	24	U
Vinyl chloride	24	U	2-Chloro-1,3-butadiene	12	U
Chloroethane	24	U	3-Chloropropene	12	U
Methylene chloride	47	B	1,2-Dibromo-3-chloropropane	24	U
Acetone	24	U	1,2-Dibromoethane	3	J
Carbon disulfide	12	U	Dibromomethane	24	U
1,1-Dichloroethene	12	U	trans-1,4-Dichloro-2-butene	240	U
1,1-Dichloroethane	12	U	Dichlorodifluoromethane	480	U
1,2-Dichloroethylene	12	U	1,4-Dioxane	12000	U
Chloroform	12	U	Ethyl cyanide	240	U
1,2-Dichloroethane	12	U	Ethyl methacrylate	24	U
2-Butanone	180	B	Iodomethane	12	U
1,1,1-Trichloroethane	12	U	Isobutyl alcohol	22	JB
Carbon Tetrachloride	12	U	Methacrylonitrile	24	U
Vinyl Acetate	24	U	Methyl methacrylate	24	U
Bromodichloromethane	12	U	Pyridine	12000	U
1,2-Dichloropropane	12	U	1,1,1,2-Tetrachloroethane	12	U
cis-1,3-Dichloropropene	12	U	Trichlorofluoromethane	160	
Trichloroethene	7	J	1,2,3-Trichloropropane	12	U
Dibromochloromethane	12	U			
1,1,2-Trichloroethane	12	U			
Benzene	12	U			
trans-1,3-Dichloropropene	12	U			
Bromoform	12	U			
4-Methyl-2-pentanone	6	J			
2-Hexanone	5	J			
Tetrachlorethene	12	U			
1,1,2,2-Tetrachloroethane	12	U			
Toluene	12	U			
Chlorobenzene	12	U			
Ethylbenzene	12	U			
Styrene	12	U			
Total xylenes	12	U			
Acetonitrile	2400	U			

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: 00360

Sample Date: N/A
IT Sample ID: MM2683
Prep Date:
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXM10B002071VBK
Concentration Units: UG/KG

Parameter	Result		Parameter	Result	
Chloromethane	17	U	Acrolein	17	U
Bromomethane	17	U	Acrylonitrile	17	U
Vinyl chloride	17	U	2-Chloro-1,3-butadiene	8	U
Chloroethane	17	U	3-Chloropropene	8	U
Methylene chloride	56	B	1,2-Dibromo-3-chloropropane	17	U
Acetone	17	U	1,2-Dibromoethane	8	U
Carbon disulfide	8	U	Dibromomethane	17	U
1,1-Dichloroethene	8	U	trans-1,4-Dichloro-2-butene	170	U
1,1-Dichloroethane	8	U	Dichlorodifluoromethane	340	U
1,2-Dichloroethylene	8	U	1,4-Dioxane	8500	U
Chloroform	8	U	Ethyl cyanide	170	U
1,2-Dichloroethane	8	U	Ethyl methacrylate	17	U
2-Butanone	130	B	Iodomethane	8	U
1,1,1-Trichloroethane	8	U	Isobutyl alcohol	19	JB
Carbon Tetrachloride	8	U	Methacrylonitrile	17	U
Vinyl Acetate	17	U	Methyl methacrylate	17	U
Bromodichloromethane	8	U	Pyridine	30	JB
1,2-Dichloropropane	8	U	1,1,1,2-Tetrachloroethane	8	U
cis-1,3-Dichloropropene	8	U	Trichlorofluoromethane	8	U
Trichloroethene	8	U	1,2,3-Trichloropropane	8	U
Dibromochloromethane	8	U			
1,1,2-Trichloroethane	8	U			
Benzene	8	U			
trans-1,3-Dichloropropene	8	U			
Bromoform	8	U			
4-Methyl-2-pentanone	4	J			
2-Hexanone	17	U			
Tetrachlorethene	8	U			
1,1,2,2-Tetrachloroethane	8	U			
Toluene	8	U			
Chlorobenzene	8	U			
Ethylbenzene	8	U			
Styrene	8	U			
Total xylenes	8	U			
Acetonitrile	1700	U			

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IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: QXM10B002081VBK

Sample Date: N/A
IT Sample ID: XVBLK0208
Prep Date:
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QXM10B002081VBK
Concentration Units: UG/KG

Parameter	Result		Parameter	Result	
Chloromethane	10	U	Acrolein	10	U
Bromomethane	10	U	Acrylonitrile	10	U
Vinyl chloride	10	U	2-Chloro-1,3-butadiene	5	U
Chloroethane	10	U	3-Chloropropene	5	U
Methylene chloride	4	J	1,2-Dibromo-3-chloropropane	2	J
Acetone	1	J	1,2-Dibromoethane	5	U
Carbon disulfide	5	U	Dibromomethane	10	U
1,1-Dichloroethene	5	U	trans-1,4-Dichloro-2-butene	100	U
1,1-Dichloroethane	5	U	Dichlorodifluoromethane	200	U
1,2-Dichloroethylene	5	U	1,4-Dioxane	11	J
Chloroform	5	U	Ethyl cyanide	100	U
1,2-Dichloroethane	5	U	Ethyl methacrylate	10	U
2-Butanone	5	J	Iodomethane	5	U
1,1,1-Trichloroethane	5	U	Isobutyl alcohol	67	J
Carbon Tetrachloride	5	U	Methacrylonitrile	10	U
Vinyl Acetate	10	U	Methyl methacrylate	10	U
Bromodichloromethane	5	U	Pyridine	64	J
1,2-Dichloropropane	5	U	1,1,1,2-Tetrachloroethane	5	U
cis-1,3-Dichloropropene	5	U	Trichlorofluoromethane	5	U
Trichloroethene	5	U	1,2,3-Trichloropropane	5	U
Dibromochloromethane	5	U			
1,1,2-Trichloroethane	5	U			
Benzene	5	U			
trans-1,3-Dichloropropene	5	U			
Bromoform	5	U			
4-Methyl-2-pentanone	10	U			
2-Hexanone	10	U			
Tetrachlorethene	5	U			
1,1,2,2-Tetrachloroethane	5	U			
Toluene	5	U			
Chlorobenzene	5	U			
Ethylbenzene	5	U			
Styrene	5	U			
Total xylenes	5	U			
Acetonitrile	1000	U			

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: 00350

Sample Date: N/A
IT Sample ID: MM2671
Prep Date:
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QXM10B002081VBK
Concentration Units: UG/KG

Parameter	Result	
Chloromethane	11	U
Bromomethane	11	U
Vinyl chloride	11	U
Chloroethane	11	U
Methylene chloride	11	B
Acetone	29	B
Carbon disulfide	6	U
1,1-Dichloroethene	6	U
1,1-Dichloroethane	6	U
1,2-Dichloroethylene	6	U
Chloroform	6	U
1,2-Dichloroethane	6	U
2-Butanone	21	B
1,1,1-Trichloroethane	6	U
Carbon Tetrachloride	6	U
Vinyl Acetate	11	U
Bromodichloromethane	6	U
1,2-Dichloropropane	6	U
cis-1,3-Dichloropropene	6	U
Trichloroethene	1	J
Dibromochloromethane	6	U
1,1,2-Trichloroethane	6	U
Benzene	6	U
trans-1,3-Dichloropropene	6	U
Bromoform	6	U
4-Methyl-2-pentanone	11	U
2-Hexanone	11	U
Tetrachlorethene	6	U
1,1,2,2-Tetrachloroethane	6	U
Toluene	5	J
Chlorobenzene	6	U
Ethylbenzene	6	U
Styrene	6	U
Total xylenes	1	J
Acetonitrile	1100	U

Parameter	Result	
Acrolein	11	U
Acrylonitrile	11	U
2-Chloro-1,3-butadiene	6	U
3-Chloropropene	6	U
1,2-Dibromo-3-chloropropane	11	U
1,2-Dibromoethane	6	U
Dibromomethane	11	U
trans-1,4-Dichloro-2-butene	110	U
Dichlorodifluoromethane	230	U
1,4-Dioxane	5700	U
Ethyl cyanide	110	U
Ethyl methacrylate	11	U
Iodomethane	6	U
Isobutyl alcohol	43	JB
Methacrylonitrile	11	U
Methyl methacrylate	11	U
Pyridine	54	JB
1,1,1,2-Tetrachloroethane	6	U
Trichlorofluoromethane	6	U
1,2,3-Trichloropropane	6	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: 00351

Sample Date: N/A
IT Sample ID: MM2674
Prep Date:
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QXM10B002081VBK
Concentration Units: UG/KG

Parameter	Result		Parameter	Result	
Chloromethane	16	U	Acrolein	16	U
Bromomethane	16	U	Acrylonitrile	16	U
Vinyl chloride	16	U	2-Chloro-1,3-butadiene	8	U
Chloroethane	16	U	3-Chloropropene	8	U
Methylene chloride	18	B	1,2-Dibromo-3-chloropropane	16	U
Acetone	34	B	1,2-Dibromoethane	8	U
Carbon disulfide	8	U	Dibromomethane	16	U
1,1-Dichloroethene	8	U	trans-1,4-Dichloro-2-butene	160	U
1,1-Dichloroethane	8	U	Dichlorodifluoromethane	330	U
1,2-Dichloroethylene	8	U	1,4-Dioxane	8200	U
Chloroform	8	U	Ethyl cyanide	160	U
1,2-Dichloroethane	8	U	Ethyl methacrylate	16	U
2-Butanone	63	B	Iodomethane	8	U
1,1,1-Trichloroethane	8	U	Isobutyl alcohol	15	JB
Carbon Tetrachloride	8	U	Methacrylonitrile	16	U
Vinyl Acetate	16	U	Methyl methacrylate	16	U
Bromodichloromethane	8	U	Pyridine	8200	U
1,2-Dichloropropane	8	U	1,1,1,2-Tetrachloroethane	8	U
cis-1,3-Dichloropropene	8	U	Trichlorofluoromethane	140	
Trichloroethene	5	J	1,2,3-Trichloropropane	8	U
Dibromochloromethane	8	U			
1,1,2-Trichloroethane	8	U			
Benzene	8	U			
trans-1,3-Dichloropropene	8	U			
Bromoform	8	U			
4-Methyl-2-pentanone	16	U			
2-Hexanone	16	U			
Tetrachlorethene	8	U			
1,1,2,2-Tetrachloroethane	8	U			
Toluene	8	U			
Chlorobenzene	8	U			
Ethylbenzene	8	U			
Styrene	8	U			
Total xylenes	8	U			
Acetonitrile	1600	U			

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: 00353

Sample Date: N/A
IT Sample ID: MM2676
Prep Date:
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QXM10B002081VBK
Concentration Units: UG/KG

Parameter	Result	
Chloromethane	20	U
Bromomethane	20	U
Vinyl chloride	20	U
Chloroethane	20	U
Methylene chloride	28	B
Acetone	82	B
Carbon disulfide	10	U
1,1-Dichloroethene	10	U
1,1-Dichloroethane	10	U
1,2-Dichloroethylene	10	U
Chloroform	4	J
1,2-Dichloroethane	10	U
2-Butanone	87	B
1,1,1-Trichloroethane	10	U
Carbon Tetrachloride	10	U
Vinyl Acetate	20	U
Bromodichloromethane	10	U
1,2-Dichloropropane	10	U
cis-1,3-Dichloropropene	10	U
Trichloroethene	10	U
Dibromochloromethane	10	U
1,1,2-Trichloroethane	10	U
Benzene	10	U
trans-1,3-Dichloropropene	10	U
Bromoform	10	U
4-Methyl-2-pentanone	12	J
2-Hexanone	20	U
Tetrachlorethene	10	U
1,1,2,2-Tetrachloroethane	10	U
Toluene	3	J
Chlorobenzene	10	U
Ethylbenzene	10	U
Styrene	10	U
Total xylenes	10	U
Acetonitrile	2000	U

Parameter	Result	
Acrolein	20	U
Acrylonitrile	20	U
2-Chloro-1,3-butadiene	10	U
3-Chloropropene	10	U
1,2-Dibromo-3-chloropropane	20	U
1,2-Dibromoethane	10	U
Dibromomethane	20	U
trans-1,4-Dichloro-2-butene	200	U
Dichlorodifluoromethane	410	U
1,4-Dioxane	10000	U
Ethyl cyanide	200	U
Ethyl methacrylate	20	U
Iodomethane	10	U
Isobutyl alcohol	35	JB
Methacrylonitrile	20	U
Methyl methacrylate	20	U
Pyridine	27	JB
1,1,1,2-Tetrachloroethane	10	U
Trichlorofluoromethane	78	
1,2,3-Trichloropropane	10	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Volatile Organics - Modified Current EPA CLP Protocol - MV 714

Client Sample ID: 00358

Sample Date: N/A
IT Sample ID: MM2681
Prep Date:
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QXM10B002081VBK
Concentration Units: UG/KG

Parameter	Result		Parameter	Result	
Chloromethane	17	U	Acrolein	17	U
Bromomethane	17	U	Acrylonitrile	17	U
Vinyl chloride	17	U	2-Chloro-1,3-butadiene	8	U
Chloroethane	17	U	3-Chloropropene	8	U
Methylene chloride	62	B	1,2-Dibromo-3-chloropropane	17	U
Acetone	27	B	1,2-Dibromoethane	8	U
Carbon disulfide	8	U	Dibromomethane	17	U
1,1-Dichloroethene	8	U	trans-1,4-Dichloro-2-butene	170	U
1,1-Dichloroethane	8	U	Dichlorodifluoromethane	340	U
1,2-Dichloroethylene	8	U	1,4-Dioxane	8500	U
Chloroform	8	U	Ethyl cyanide	170	U
1,2-Dichloroethane	8	U	Ethyl methacrylate	17	U
2-Butanone	10	JB	Iodomethane	8	U
1,1,1-Trichloroethane	8	U	Isobutyl alcohol	18	JB
Carbon Tetrachloride	8	U	Methacrylonitrile	17	U
Vinyl Acetate	17	U	Methyl methacrylate	17	U
Bromodichloromethane	8	U	Pyridine	8500	U
1,2-Dichloropropane	8	U	1,1,1,2-Tetrachloroethane	8	U
cis-1,3-Dichloropropene	8	U	Trichlorofluoromethane	8	U
Trichloroethene	8	U	1,2,3-Trichloropropane	8	U
Dibromochloromethane	8	U			
1,1,2-Trichloroethane	8	U			
Benzene	8	U			
trans-1,3-Dichloropropene	8	U			
Bromoform	8	U			
4-Methyl-2-pentanone	9	J			
2-Hexanone	17	U			
Tetrachlorethene	8	U			
1,1,2,2-Tetrachloroethane	8	U			
Toluene	8	U			
Chlorobenzene	8	U			
Ethylbenzene	8	U			
Styrene	8	U			
Total xylenes	8	U			
Acetonitrile	1700	U			

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00350

Sample Date: N/A
IT Sample ID: MM2658-2
Prep Date: 02/01/90
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	19	U
beta-BHC	19	U
delta-BHC	19	U
gamma-BHC (Lindane)	19	U
Heptachlor	19	U
Aldrin	19	U
Heptachlor epoxide	19	U
Endosulfan-I	19	U
Dieldrin	38	U
4,4'-DDE	38	U
Endrin	38	U
Endosulfan II	38	U
4,4'-DDD	38	U
Endosulfan sulfate	38	U
4,4'-DDT	38	U
Methoxychlor	190	U
Endrin ketone	38	U
alpha-Chlordane	190	U
gamma-Chlordane	190	U
Toxaphene	380	U
Aroclor-1016	190	U
Aroclor-1221	190	U
Aroclor-1232	190	U
Aroclor-1242	190	U
Aroclor-1248	190	U
Aroclor-1254	380	U
Aroclor-1260	380	U
Chlorobenzilate	38	U
Isodrin	19	U
Kepone	38	U

Advanced Sciences, Inc.
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KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00350DL

Sample Date: N/A
IT Sample ID: MM2658-5
Prep Date: 02/01/90
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	47	U
beta-BHC	47	U
delta-BHC	47	U
gamma-BHC (Lindane)	47	U
Heptachlor	47	U
Aldrin	47	U
Heptachlor epoxide	47	U
Endosulfan-I	47	U
Dieldrin	94	U
4,4'-DDE	94	U
Endrin	94	U
Endosulfan II	94	U
4,4'-DDD	94	U
Endosulfan sulfate	94	U
4,4'-DDT	94	U
Methoxychlor	470	U
Endrin ketone	94	U
alpha-Chlordane	470	U
gamma-Chlordane	470	U
Toxaphene	940	U
Aroclor-1016	470	U
Aroclor-1221	470	U
Aroclor-1232	470	U
Aroclor-1242	470	U
Aroclor-1248	470	U
Aroclor-1254	940	U
Aroclor-1260	940	U
Chlorobenzilate	94	U
Isodrin	47	U
Kepone	94	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00351

Sample Date: N/A
IT Sample ID: MM2661-5
Prep Date: 02/01/90
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	69	U
beta-BHC	69	U
delta-BHC	69	U
gamma-BHC (Lindane)	69	U
Heptachlor	69	U
Aldrin	69	U
Heptachlor epoxide	69	U
Endosulfan-I	69	U
Dieldrin	140	U
4,4'-DDE	440	F
Endrin	140	U
Endosulfan II	140	U
4,4'-DDD	140	U
Endosulfan sulfate	140	U
4,4'-DDT	140	U
Methoxychlor	690	U
Endrin ketone	140	U
alpha-Chlordane	690	U
gamma-Chlordane	690	U
Toxaphene	1400	U
Aroclor-1016	690	U
Aroclor-1221	690	U
Aroclor-1232	690	U
Aroclor-1242	690	U
Aroclor-1248	690	U
Aroclor-1254	1400	U
Aroclor-1260	1400	U
Chlorobenzilate	140	U
Isodrin	69	U
Kepone	140	U

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KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00351DL

Sample Date: N/A
IT Sample ID: MM2661-15
Prep Date: 02/01/90
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	210	U
beta-BHC	210	U
delta-BHC	210	U
gamma-BHC (Lindane)	210	U
Heptachlor	210	U
Aldrin	210	U
Heptachlor epoxide	210	U
Endosulfan-I	210	U
Dieldrin	410	U
4,4'-DDE	420	D
Endrin	410	U
Endosulfan II	410	U
4,4'-DDD	410	U
Endosulfan sulfate	410	U
4,4'-DDT	410	U
Methoxychlor	2100	U
Endrin ketone	410	U
alpha-Chlordane	2100	U
gamma-Chlordane	2100	U
Toxaphene	4100	U
Aroclor-1016	2100	U
Aroclor-1221	2100	U
Aroclor-1232	2100	U
Aroclor-1242	2100	U
Aroclor-1248	2100	U
Aroclor-1254	4100	U
Aroclor-1260	4100	U
Chlorobenzilate	410	U
Isodrin	210	U
Kepone	410	U

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IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00352

Sample Date: N/A
IT Sample ID: MM2662
Prep Date: 02/01/90
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	19	U
beta-BHC	19	U
delta-BHC	19	U
gamma-BHC (Lindane)	19	U
Heptachlor	19	U
Aldrin	19	U
Heptachlor epoxide	19	U
Endosulfan-I	19	U
Dieldrin	38	U
4,4'-DDE	38	U
Endrin	38	U
Endosulfan II	38	U
4,4'-DDD	38	U
Endosulfan sulfate	38	U
4,4'-DDT	38	U
Methoxychlor	190	U
Endrin ketone	38	U
alpha-Chlordane	190	U
gamma-Chlordane	190	U
Toxaphene	380	U
Aroclor-1016	190	U
Aroclor-1221	190	U
Aroclor-1232	190	U
Aroclor-1242	190	U
Aroclor-1248	190	U
Aroclor-1254	380	U
Aroclor-1260	380	U
Chlorobenzilate	38	U
Isodrin	19	U
Kepone	38	U

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Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00352DL

Sample Date: N/A
IT Sample ID: MM2662-5
Prep Date: 02/01/90
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	96	U
beta-BHC	96	U
delta-BHC	96	U
gamma-BHC (Lindane)	96	U
Heptachlor	96	U
Aldrin	96	U
Heptachlor epoxide	96	U
Endosulfan-I	96	U
Dieldrin	190	U
4,4'-DDE	190	U
Endrin	190	U
Endosulfan II	190	U
4,4'-DDD	190	U
Endosulfan sulfate	190	U
4,4'-DDT	190	U
Methoxychlor	960	U
Endrin ketone	190	U
alpha-Chlordane	960	U
gamma-Chlordane	960	U
Toxaphene	1900	U
Aroclor-1016	960	U
Aroclor-1221	960	U
Aroclor-1232	960	U
Aroclor-1242	960	U
Aroclor-1248	960	U
Aroclor-1254	1900	U
Aroclor-1260	1900	U
Chlorobenzilate	190	U
Isodrin	96	U
Kepone	190	U

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Job Number: ADV35794

Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00352MS

Sample Date: N/A
IT Sample ID: MM2662MS5
Prep Date: 02/01/90
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXG17B002011
Concentration Units: % RECOVERY

Parameter	Result	
gamma-BHC (Lindane)	44	*
Heptachlor	46	
Aldrin	45	
Dieldrin	48	
Endrin	50	
4,4'-DDT	61	

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Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00352MSD

Sample Date: N/A
IT Sample ID: M2662MSD5
Prep Date: 02/01/90
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXG17B002011
Concentration Units: % RECOVERY

Parameter	Result
gamma-BHC (Lindane)	47
Heptachlor	47
Aldrin	48
Dieldrin	51
Endrin	52
4,4'-DDT	67

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Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: QXG17B002011

Sample Date: N/A
IT Sample ID: QX1552
Prep Date: 02/01/90
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	8	U
beta-BHC	8	U
delta-BHC	8	U
gamma-BHC (Lindane)	8	U
Heptachlor	8	U
Aldrin	8	U
Heptachlor epoxide	8	U
Endosulfan-I	8	U
Dieldrin	16	U
4,4'-DDE	16	U
Endrin	16	U
Endosulfan II	16	U
4,4'-DDD	16	U
Endosulfan sulfate	16	U
4,4'-DDT	16	U
Methoxychlor	80	U
Endrin ketone	16	U
alpha-Chlordane	80	U
gamma-Chlordane	80	U
Toxaphene	160	U
Aroclor-1016	80	U
Aroclor-1221	80	U
Aroclor-1232	80	U
Aroclor-1242	80	U
Aroclor-1248	80	U
Aroclor-1254	160	U
Aroclor-1260	160	U
Chlorobenzilate	16	U
Isodrin	8	U
Kepone	16	U

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Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00353

Sample Date: N/A
IT Sample ID: MM2663-5
Prep Date: 02/01/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	83	U
beta-BHC	83	U
delta-BHC	83	U
gamma-BHC (Lindane)	83	U
Heptachlor	83	U
Aldrin	83	U
Heptachlor epoxide	83	U
Endosulfan-I	83	U
Dieldrin	170	U
4,4'-DDE	270	F
Endrin	170	U
Endosulfan II	170	U
4,4'-DDD	170	U
Endosulfan sulfate	170	U
4,4'-DDT	170	U
Methoxychlor	830	U
Endrin ketone	170	U
alpha-Chlordane	830	U
gamma-Chlordane	830	U
Toxaphene	1700	U
Aroclor-1016	830	U
Aroclor-1221	830	U
Aroclor-1232	830	U
Aroclor-1242	830	U
Aroclor-1248	830	U
Aroclor-1254	1700	U
Aroclor-1260	1700	U
Chlorobenzilate	170	U
Isodrin	83	U
Kepone	170	U

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Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00353DL

Sample Date: N/A
IT Sample ID: MM2663-10
Prep Date: 02/01/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	170	U
beta-BHC	170	U
delta-BHC	170	U
gamma-BHC (Lindane)	170	U
Heptachlor	170	U
Aldrin	170	U
Heptachlor epoxide	170	U
Endosulfan-I	170	U
Dieldrin	330	U
4,4'-DDE	250	DJ
Endrin	330	U
Endosulfan II	330	U
4,4'-DDD	330	U
Endosulfan sulfate	330	U
4,4'-DDT	330	U
Methoxychlor	1700	U
Endrin ketone	330	U
alpha-Chlordane	1700	U
gamma-Chlordane	1700	U
Toxaphene	3300	U
Aroclor-1016	1700	U
Aroclor-1221	1700	U
Aroclor-1232	1700	U
Aroclor-1242	1700	U
Aroclor-1248	1700	U
Aroclor-1254	3300	U
Aroclor-1260	3300	U
Chlorobenzilate	330	U
Isodrin	170	U
Kepone	330	U

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Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00354

Sample Date: N/A
IT Sample ID: MM2664
Prep Date: 02/01/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	19	U
beta-BHC	19	U
delta-BHC	19	U
gamma-BHC (Lindane)	19	U
Heptachlor	19	U
Aldrin	19	U
Heptachlor epoxide	19	U
Endosulfan-I	19	U
Dieldrin	38	U
4,4'-DDE	38	U
Endrin	38	U
Endosulfan II	38	U
4,4'-DDD	38	U
Endosulfan sulfate	38	U
4,4'-DDT	38	U
Methoxychlor	190	U
Endrin ketone	38	U
alpha-Chlordane	190	U
gamma-Chlordane	190	U
Toxaphene	380	U
Aroclor-1016	190	U
Aroclor-1221	190	U
Aroclor-1232	190	U
Aroclor-1242	190	U
Aroclor-1248	190	U
Aroclor-1254	380	U
Aroclor-1260	380	U
Chlorobenzilate	38	U
Isodrin	19	U
Kepone	38	U

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Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00355

Sample Date: N/A
IT Sample ID: MM2665
Prep Date: 02/01/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	12	U
beta-BHC	12	U
delta-BHC	12	U
gamma-BHC (Lindane)	12	U
Heptachlor	12	U
Aldrin	12	U
Heptachlor epoxide	12	U
Endosulfan-I	12	U
Dieldrin	25	U
4,4'-DDE	25	U
Endrin	25	U
Endosulfan II	25	U
4,4'-DDD	25	U
Endosulfan sulfate	25	U
4,4'-DDT	25	U
Methoxychlor	120	U
Endrin ketone	25	U
alpha-Chlordane	120	U
gamma-Chlordane	120	U
Toxaphene	250	U
Aroclor-1016	120	U
Aroclor-1221	120	U
Aroclor-1232	120	U
Aroclor-1242	120	U
Aroclor-1248	120	U
Aroclor-1254	250	U
Aroclor-1260	250	U
Chlorobenzilate	25	U
Isodrin	21	U
Kepone	25	U

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Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00356

Sample Date: N/A
IT Sample ID: MM2666
Prep Date: 02/01/90
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	15	U
beta-BHC	15	U
delta-BHC	15	U
gamma-BHC (Lindane)	15	U
Heptachlor	15	U
Aldrin	15	U
Heptachlor epoxide	15	U
Endosulfan-I	15	U
Dieldrin	30	U
4,4'-DDE	30	U
Endrin	30	U
Endosulfan II	30	U
4,4'-DDD	30	U
Endosulfan sulfate	30	U
4,4'-DDT	30	U
Methoxychlor	150	U
Endrin ketone	30	U
alpha-Chlordane	150	U
gamma-Chlordane	150	U
Toxaphene	300	U
Aroclor-1016	150	U
Aroclor-1221	150	U
Aroclor-1232	150	U
Aroclor-1242	150	U
Aroclor-1248	150	U
Aroclor-1254	300	U
Aroclor-1260	300	U
Chlorobenzilate	30	U
Isodrin	15	U
Kepone	30	U

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Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00357

Sample Date: N/A
IT Sample ID: MM2667
Prep Date: 02/01/90
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	20	U
beta-BHC	20	U
delta-BHC	20	U
gamma-BHC (Lindane)	20	U
Heptachlor	20	U
Aldrin	20	U
Heptachlor epoxide	20	U
Endosulfan-I	20	U
Dieldrin	39	U
4,4'-DDE	39	U
Endrin	39	U
Endosulfan II	39	U
4,4'-DDD	39	U
Endosulfan sulfate	39	U
4,4'-DDT	39	U
Methoxychlor	200	U
Endrin ketone	39	U
alpha-Chlordane	200	U
gamma-Chlordane	200	U
Toxaphene	390	U
Aroclor-1016	200	U
Aroclor-1221	200	U
Aroclor-1232	200	U
Aroclor-1242	200	U
Aroclor-1248	200	U
Aroclor-1254	390	U
Aroclor-1260	390	U
Chlorobenzilate	39	U
Isodrin	20	U
Kepone	39	U

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Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00358

Sample Date: N/A
IT Sample ID: MM2668
Prep Date: 02/01/90
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	14	U
beta-BHC	14	U
delta-BHC	14	U
gamma-BHC (Lindane)	14	U
Heptachlor	14	U
Aldrin	14	U
Heptachlor epoxide	14	U
Endosulfan-I	14	U
Dieldrin	28	U
4,4'-DDE	28	U
Endrin	28	U
Endosulfan II	28	U
4,4'-DDD	28	U
Endosulfan sulfate	28	U
4,4'-DDT	28	U
Methoxychlor	140	U
Endrin ketone	28	U
alpha-Chlordane	140	U
gamma-Chlordane	140	U
Toxaphene	280	U
Aroclor-1016	140	U
Aroclor-1221	140	U
Aroclor-1232	140	U
Aroclor-1242	140	U
Aroclor-1248	140	U
Aroclor-1254	280	U
Aroclor-1260	280	U
Chlorobenzilate	28	U
Isodrin	14	U
Kepone	28	U

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Job Number: ADV35794

Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00359

Sample Date: N/A
IT Sample ID: MM2669
Prep Date: 02/01/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	20	U
beta-BHC	20	U
delta-BHC	20	U
gamma-BHC (Lindane)	20	U
Heptachlor	20	U
Aldrin	20	U
Heptachlor epoxide	20	U
Endosulfan-I	20	U
Dieldrin	39	U
4,4'-DDE	39	U
Endrin	39	U
Endosulfan II	39	U
4,4'-DDD	39	U
Endosulfan sulfate	39	U
4,4'-DDT	39	U
Methoxychlor	200	U
Endrin ketone	39	U
alpha-Chlordane	200	U
gamma-Chlordane	200	U
Toxaphene	390	U
Aroclor-1016	200	U
Aroclor-1221	200	U
Aroclor-1232	200	U
Aroclor-1242	200	U
Aroclor-1248	200	U
Aroclor-1254	390	U
Aroclor-1260	390	U
Chlorobenzilate	39	U
Isodrin	20	U
Kepone	39	U

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Appendix IX Chlorinated Pesticides - Modified Current CLP Protocol - GC 782

Client Sample ID: 00360

Sample Date: N/A
IT Sample ID: MM2670
Prep Date: 02/01/90
Analysis Date: (Completed) 02/06/90
Blank Sample ID: QXG17B002011
Concentration Units: UG/KG

Parameter	Result	
alpha-BHC	14	U
beta-BHC	14	U
delta-BHC	14	U
gamma-BHC (Lindane)	14	U
Heptachlor	14	U
Aldrin	14	U
Heptachlor epoxide	14	U
Endosulfan-I	14	U
Dieldrin	28	U
4,4'-DDE	28	U
Endrin	28	U
Endosulfan II	28	U
4,4'-DDD	28	U
Endosulfan sulfate	28	U
4,4'-DDT	28	U
Methoxychlor	140	U
Endrin ketone	28	U
alpha-Chlordane	140	U
gamma-Chlordane	140	U
Toxaphene	280	U
Aroclor-1016	140	U
Aroclor-1221	140	U
Aroclor-1232	140	U
Aroclor-1242	140	U
Aroclor-1248	140	U
Aroclor-1254	280	U
Aroclor-1260	280	U
Chlorobenzilate	28	U
Isodrin	14	U
Kepone	28	U

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Appendix IX Metals by ICP - Modified Current EPA CLP Protocol - AP 715

Client Sample ID: QXA15B001191

Sample Date: N/A
IT Sample ID: 15B001191
Prep Date: 01/19/90
Analysis Date: (Completed) 02/13/90
Blank Sample ID: QXA15B001191
Concentration Units: UG/LITER

Parameter	Result	
Aluminum	60	U
Antimony	30	U
Barium	2	U
Beryllium	1	U
Cadmium	2	U
Calcium	20	U
Chromium	10	U
Cobalt	10	U
Copper	10	U
Iron	10	U
Magnesium	60	U
Manganese	2	U
Nickel	20	U
Silver	10	U
Sodium	100	U
Vanadium	10	U
Zinc	7.3	B
Osmium	500	U
Tin	-106	

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Appendix IX Metals by ICP - Modified Current EPA CLP Protocol - AP 715

Client Sample ID: 00350

Sample Date: N/A
IT Sample ID: MM2619
Prep Date: 01/19/90
Analysis Date: (Completed) 02/13/90
Blank Sample ID: QXA15B001191
Concentration Units: MG/KG

Parameter	Result	
Aluminum	481	
Antimony	6.9	U
Barium	16	B
Beryllium	.23	U
Cadmium	.46	B
Calcium	33100	
Chromium	10.8	
Cobalt	2.3	U
Copper	8.1	
Iron	1080	
Magnesium	1120	B
Manganese	30.1	
Nickel	4.6	U
Silver	2.3	U
Sodium	243000	
Vanadium	4.3	B
Zinc	11.6	E
Osmium	115	U
Tin	11.5	U

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Appendix IX Metals by ICP - Modified Current EPA CLP Protocol - AP 715

Client Sample ID: 00350D

Sample Date: N/A
IT Sample ID: MM2620D
Prep Date: 01/19/90
Analysis Date: (Completed) 02/13/90
Blank Sample ID: QXA15B001191
Concentration Units: MG/KG

Parameter	Result
Aluminum	479.5402
Antimony	6.8966U
Barium	22.7586B
Beryllium	.2299U
Cadmium	.4598U
Calcium	28459.7701
Chromium	9.977
Cobalt	2.2989U
Copper	5.8621
Iron	935.1724
Magnesium	1164.1379
Manganese	33.5172
Nickel	4.5977U
Silver	2.2989U
Sodium	247126.4368
Vanadium	3.5632B
Zinc	7.7471
Osmium	115 U
Tin	29.9

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Appendix IX Metals by ICP - Modified Current EPA CLP Protocol - AP 715

Client Sample ID: 00350S1

Sample Date: N/A
IT Sample ID: MM2621S1
Prep Date: 01/19/90
Analysis Date: (Completed) 02/13/90
Blank Sample ID: QXA15B001191
Concentration Units: % RECOVERY

Parameter	Result
Antimony	95.6
Barium	93
Beryllium	93.4
Cadmium	89.6
Chromium	89.6
Cobalt	88.6
Copper	84.4
Manganese	91.4
Nickel	92.2
Silver	95.4
Vanadium	90.2
Zinc	88.7
Tin	105.4

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Appendix IX Metals by ICP - Modified Current EPA CLP Protocol - AP 715

Client Sample ID: 00351

Sample Date: N/A
IT Sample ID: MM2622
Prep Date: 01/19/90
Analysis Date: (Completed) 02/13/90
Blank Sample ID: QXA15B001191
Concentration Units: MG/KG

Parameter	Result	
Aluminum	8140	
Antimony	9.7	U
Barium	143	
Beryllium	.75	B
Cadmium	3.2	
Calcium	37400	
Chromium	23	
Cobalt	8.3	B
Copper	163	
Iron	18500	
Magnesium	8780	
Manganese	869	
Nickel	26.4	
Silver	3.2	U
Sodium	3010	
Vanadium	15.8	B
Zinc	173	E
Osmium	162	U
Tin	16.2	U

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IT CORPORATION
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Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Metals by ICP - Modified Current EPA CLP Protocol - AP 715

Client Sample ID: 00352

Sample Date: N/A
IT Sample ID: MM2623
Prep Date: 01/19/90
Analysis Date: (Completed) 02/13/90
Blank Sample ID: QXA15B001191
Concentration Units: MG/KG

Parameter	Result	
Aluminum	2430	
Antimony	13.6	U
Barium	1100	
Beryllium	1.4	B
Cadmium	5.9	
Calcium	88800	
Chromium	51.1	
Cobalt	11.2	B
Copper	39.6	
Iron	12100	
Magnesium	13800	
Manganese	14000	
Nickel	62.4	
Silver	4.5	U
Sodium	8400	
Vanadium	46.7	
Zinc	70.2	E
Osmium	226	U
Tin	63.8	

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Metals by ICP - Modified Current EPA CLP Protocol - AP 715

Client Sample ID: 00353

Sample Date: N/A
IT Sample ID: MM2624
Prep Date: 01/19/90
Analysis Date: (Completed) 02/13/90
Blank Sample ID: QXA15B001191
Concentration Units: MG/KG

Parameter	Result	
Aluminum	8000	
Antimony	11	U
Barium	142	
Beryllium	1.3	B
Cadmium	3.7	
Calcium	54800	
Chromium	24.8	
Cobalt	8.9	B
Copper	173	
Iron	17400	
Magnesium	11100	
Manganese	790	
Nickel	31.3	
Silver	3.7	U
Sodium	4540	
Vanadium	20.2	
Zinc	156	E
Osmium	184	U
Tin	18.4	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Metals by ICP - Modified Current EPA CLP Protocol - AP 715

Client Sample ID: 00354

Sample Date: N/A
IT Sample ID: MM2625
Prep Date: 01/19/90
Analysis Date: (Completed) 02/13/90
Blank Sample ID: QXA15B001191
Concentration Units: MG/KG

Parameter	Result	
Aluminum	2590	
Antimony	12.5	U
Barium	410	
Beryllium	1.5	B
Cadmium	4.4	
Calcium	96800	
Chromium	39	
Cobalt	7.9	B
Copper	40.6	
Iron	13000	
Magnesium	5250	
Manganese	8680	
Nickel	40.7	
Silver	4.2	U
Sodium	5050	
Vanadium	63.7	
Zinc	88.9	E
Osmium	208	U
Tin	20.8	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Metals by ICP - Modified Current EPA CLP Protocol - AP 715

Client Sample ID: 00355

Sample Date: N/A
IT Sample ID: MM2626
Prep Date: 01/19/90
Analysis Date: (Completed) 02/13/90
Blank Sample ID: QXA15B001191
Concentration Units: MG/KG

Parameter	Result	
Aluminum	1370	
Antimony	14.5	B
Barium	884	
Beryllium	1.4	
Cadmium	5	
Calcium	248000	
Chromium	25.4	
Cobalt	11.4	B
Copper	2.7	B
Iron	5410	
Magnesium	29400	
Manganese	11500	
Nickel	35.5	
Silver	2.4	U
Sodium	8210	
Vanadium	29.2	
Zinc	39.9	E
Osmium	121	U
Tin	12.1	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Metals by ICP - Modified Current EPA CLP Protocol - AP 715

Client Sample ID: 00356

Sample Date: N/A
IT Sample ID: MM2627
Prep Date: 01/19/90
Analysis Date: (Completed) 02/13/90
Blank Sample ID: QXA15B001191
Concentration Units: MG/KG

Parameter	Result	
Aluminum	2840	
Antimony	8.4	B
Barium	449	
Beryllium	1.8	
Cadmium	5.8	
Calcium	161000	
Chromium	33.1	
Cobalt	8.3	B
Copper	9.3	
Iron	9750	
Magnesium	36500	
Manganese	6830	
Nickel	43.4	
Silver	2.8	U
Sodium	7840	
Vanadium	60.7	
Zinc	44.7	E
Osmium	139	U
Tin	39.5	

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Metals by ICP - Modified Current EPA CLP Protocol - AP 715

Client Sample ID: 00357

Sample Date: N/A
IT Sample ID: MM2628
Prep Date: 01/19/90
Analysis Date: (Completed) 02/13/90
Blank Sample ID: QXA15B001191
Concentration Units: MG/KG

Parameter	Result	
Aluminum	5280	
Antimony	11.5	U
Barium	298	
Beryllium	1.7	B
Cadmium	11.6	
Calcium	130000	
Chromium	46.6	
Cobalt	11.8	B
Copper	53.9	
Iron	18900	
Magnesium	83400	
Manganese	7100	
Nickel	45.7	
Silver	3.8	U
Sodium	13600	
Vanadium	32.2	
Zinc	106	E
Osmium	191	U
Tin	19.1	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Metals by ICP - Modified Current EPA CLP Protocol - AP 715

Client Sample ID: 00358

Sample Date: N/A
IT Sample ID: MM2629
Prep Date: 01/19/90
Analysis Date: (Completed) 02/13/90
Blank Sample ID: QXA15B001191
Concentration Units: MG/KG

Parameter	Result	
Aluminum	2780	
Antimony	8.8	U
Barium	316	
Beryllium	1.7	
Cadmium	3.3	
Calcium	178000	
Chromium	28.1	
Cobalt	4.4	B
Copper	5.2	B
Iron	7880	
Magnesium	16400	
Manganese	4020	
Nickel	30.5	
Silver	2.9	U
Sodium	9910	
Vanadium	57.7	
Zinc	38.5	E
Osmium	147	U
Tin	14.7	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Metals by ICP - Modified Current EPA CLP Protocol - AP 715

Client Sample ID: 00359

Sample Date: N/A
IT Sample ID: MM2630
Prep Date: 01/19/90
Analysis Date: (Completed) 02/13/90
Blank Sample ID: QXA15B001191
Concentration Units: MG/KG

Parameter	Result	
Aluminum	3600	
Antimony	14.6	B
Barium	413	
Beryllium	1.7	
Cadmium	9.5	
Calcium	121000	
Chromium	62.3	
Cobalt	10.9	B
Copper	67.5	
Iron	8070	
Magnesium	49200	
Manganese	6380	
Nickel	121	
Silver	3.3	U
Sodium	6230	
Vanadium	81.5	
Zinc	210	E
Osmium	168	U
Tin	16.8	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Metals by ICP - Modified Current EPA CLP Protocol - AP 715

Client Sample ID: 00360

Sample Date: N/A
IT Sample ID: MM2631
Prep Date: 01/19/90
Analysis Date: (Completed) 02/13/90
Blank Sample ID: QXA15B001191
Concentration Units: MG/KG

Parameter	Result	
Aluminum	5050	
Antimony	10.2	B
Barium	252	
Beryllium	1.7	
Cadmium	4.3	
Calcium	15400	
Chromium	36.6	
Cobalt	6.4	B
Copper	11.3	
Iron	8900	
Magnesium	26400	
Manganese	2900	
Nickel	42.5	
Silver	3.3	U
Sodium	14500	
Vanadium	80.2	
Zinc	44.8	E
Osmium	162	U
Tin	69.2	

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

TAL Metals by Furnace AA - Current EPA CLP Protocol - AG 704

Client Sample ID: QXA13B002131

Sample Date: N/A
IT Sample ID: 13B002131
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: UG/LITER

Parameter	Result	
Arsenic	2	U
Lead	2	U
Selenium	2	U
Thallium	2	U

Client Sample ID: 00350

Sample Date: N/A
IT Sample ID: MM2619
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: MG/KG

Parameter	Result	
Arsenic	5.1	N*
Lead	3.2	N
Selenium	.46	UEN
Thallium	.46	UWN

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

TAL Metals by Furnace AA - Current EPA CLP Protocol - AG 704

Client Sample ID: 00350S2

Sample Date: N/A
IT Sample ID: MM2619S2
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: % RECOVERY

Parameter	Result
Lead	17.6
Selenium	0
Thallium	71.2

Client Sample ID: 00350D

Sample Date: N/A
IT Sample ID: MM2620D
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: MG/KG

Parameter	Result
Arsenic	11.4
Lead	3.6966
Selenium	.4598U
Thallium	.4598U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

TAL Metals by Furnace AA - Current EPA CLP Protocol - AG 704

Client Sample ID: 00350S1

Sample Date: N/A
IT Sample ID: MM2621S1
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: % RECOVERY

Parameter	Result	
Arsenic	1.7	N
Lead	1.5	N
Selenium	0	N
Thallium	1.9	N

Client Sample ID: 00351

Sample Date: N/A
IT Sample ID: MM2622
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: MG/KG

Parameter	Result	
Arsenic	11.2	N*
Lead	111	N
Selenium	.57	UWN
Thallium	.57	UN

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

TAL Metals by Furnace AA - Current EPA CLP Protocol - AG 704

Client Sample ID: 00352

Sample Date: N/A
IT Sample ID: MM2623
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: MG/KG

Parameter	Result	
Arsenic	16.9	N*
Lead	17.1	N
Selenium	.84	UEN
Thallium	.84	UN

Client Sample ID: 00353

Sample Date: N/A
IT Sample ID: MM2624
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: MG/KG

Parameter	Result	
Arsenic	12.5	N*
Lead	54.7	N
Selenium	.61	UWN
Thallium	.61	UWN

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

TAL Metals by Furnace AA - Current EPA CLP Protocol - AG 704

Client Sample ID: 00354

Sample Date: N/A
IT Sample ID: MM2625
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: MG/KG

Parameter	Result	
Arsenic	5.4	N*
Lead	9.7	N
Selenium	.71	UWN
Thallium	.71	UWN

Client Sample ID: 00355

Sample Date: N/A
IT Sample ID: MM2626
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: MG/KG

Parameter	Result	
Arsenic	5.5	N*
Lead	2.4	N
Selenium	.52	UEN
Thallium	.52	UWN

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

TAL Metals by Furnace AA - Current EPA CLP Protocol - AG 704

Client Sample ID: 00356

Sample Date: N/A
IT Sample ID: MM2627
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: MG/KG

Parameter	Result	
Arsenic	7.5	N*
Lead	2.8	N
Selenium	.62	UWN
Thallium	.62	UWN

Client Sample ID: 00357

Sample Date: N/A
IT Sample ID: MM2628
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: MG/KG

Parameter	Result	
Arsenic	17.7	N*
Lead	32	N
Selenium	.81	UEN
Thallium	.81	UWN

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

TAL Metals by Furnace AA - Current EPA CLP Protocol - AG 704

Client Sample ID: 00358

Sample Date: N/A
IT Sample ID: MM2629
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: MG/KG

Parameter	Result	
Arsenic	47.4	N*
Lead	3.8	N
Selenium	.65	UEN
Thallium	.65	UWN

Client Sample ID: 00359

Sample Date: N/A
IT Sample ID: MM2630
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: MG/KG

Parameter	Result	
Arsenic	14.7	N*
Lead	37.5	N
Selenium	.65	UWN
Thallium	.65	UWN

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

TAL Metals by Furnace AA - Current EPA CLP Protocol - AG 704

Client Sample ID: 00360

Sample Date: N/A
IT Sample ID: MM2631
Prep Date: 02/13/90
Analysis Date: (Completed) 03/07/90
Blank Sample ID: QXA13B002131
Concentration Units: MG/KG

Parameter	Result	
Arsenic	7.3	N*
Lead	1.8	N
Selenium	.6	UEN
Thallium	.6	UWN

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Mercury by Cold Vapor AA - Current EPA CLP Protocol (Mod. EPA 245.5) - AV 006

Client Sample ID: QXA04B002071

Sample Date: N/A
IT Sample ID: 04B002071
Prep Date: 02/07/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXA04B002071
Concentration Units: UG/LITER

Parameter	Result
Mercury	.2 U

Client Sample ID: 00350

Sample Date: N/A
IT Sample ID: MM2619
Prep Date: 02/07/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXA04B002071
Concentration Units: MG/KG

Parameter	Result
Mercury	.11 U

Client Sample ID: 00350D

Sample Date: N/A
IT Sample ID: MM2620D
Prep Date: 02/07/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXA04B002071
Concentration Units: MG/KG

Parameter	Result
Mercury	.1149U

Advanced Sciences, Inc.
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IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Mercury by Cold Vapor AA - Current EPA CLP Protocol (Mod. EPA 245.5) - AV 006

Client Sample ID: 00350S1

Sample Date: N/A
IT Sample ID: MM2621S1
Prep Date: 02/07/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXA04B002071
Concentration Units: % RECOVERY

Parameter	Result	
Mercury	148.6	N

Client Sample ID: 00351

Sample Date: N/A
IT Sample ID: MM2622
Prep Date: 02/07/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXA04B002071
Concentration Units: MG/KG

Parameter	Result
Mercury	4.4

Client Sample ID: 00352

Sample Date: N/A
IT Sample ID: MM2623
Prep Date: 02/07/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXA04B002071
Concentration Units: MG/KG

Parameter	Result	
Mercury	.19	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Mercury by Cold Vapor AA - Current EPA CLP Protocol (Mod. EPA 245.5) - AV 006

Client Sample ID: 00353

Sample Date: N/A
IT Sample ID: MM2624
Prep Date: 02/07/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXA04B002071
Concentration Units: MG/KG

Parameter	Result
Mercury	1

Client Sample ID: 00354

Sample Date: N/A
IT Sample ID: MM2625
Prep Date: 02/07/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXA04B002071
Concentration Units: MG/KG

Parameter	Result
Mercury	.22 U

Client Sample ID: 00355

Sample Date: N/A
IT Sample ID: MM2626
Prep Date: 02/07/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXA04B002071
Concentration Units: MG/KG

Parameter	Result
Mercury	.13 U

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Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Mercury by Cold Vapor AA - Current EPA CLP Protocol (Mod. EPA 245.5) - AV 006

Client Sample ID: 00356

Sample Date: N/A
IT Sample ID: MM2627
Prep Date: 02/07/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXA04B002071
Concentration Units: MG/KG

Parameter	Result
Mercury	4.4

Client Sample ID: 00357

Sample Date: N/A
IT Sample ID: MM2628
Prep Date: 02/07/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXA04B002071
Concentration Units: MG/KG

Parameter	Result
Mercury	.23 U

Client Sample ID: 00358

Sample Date: N/A
IT Sample ID: MM2629
Prep Date: 02/07/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXA04B002071
Concentration Units: MG/KG

Parameter	Result
Mercury	.17 U

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IT CORPORATION
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Client Project ID: Fernald RI/FS

Job Number: ADV35794

Mercury by Cold Vapor AA - Current EPA CLP Protocol (Mod. EPA 245.5) - AV 006

Client Sample ID: 00359

Sample Date: N/A
IT Sample ID: MM2630
Prep Date: 02/07/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXA04B002071
Concentration Units: MG/KG

Parameter	Result
Mercury	1.3

Client Sample ID: 00360

Sample Date: N/A
IT Sample ID: MM2631
Prep Date: 02/07/90
Analysis Date: (Completed) 02/07/90
Blank Sample ID: QXA04B002071
Concentration Units: MG/KG

Parameter	Result
Mercury	.17 U

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Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Potassium by Flame AA - Current EPA CLP Protocol - AA 068

Client Sample ID: QXA15B002131

Sample Date: N/A
IT Sample ID: 15B002131
Prep Date: 02/13/90
Analysis Date: (Completed) 02/21/90
Blank Sample ID: QXA15B002131
Concentration Units: UG/LITER

Parameter	Result	
Potassium	100	U

Client Sample ID: 00350

Sample Date: N/A
IT Sample ID: MM2619
Prep Date: 02/13/90
Analysis Date: (Completed) 02/21/90
Blank Sample ID: QXA15B002131
Concentration Units: MG/KG

Parameter	Result	
Potassium	327	B

Client Sample ID: 00350D

Sample Date: N/A
IT Sample ID: MM2620D
Prep Date: 02/13/90
Analysis Date: (Completed) 02/21/90
Blank Sample ID: QXA15B002131
Concentration Units: MG/KG

Parameter	Result
Potassium	314.9425B

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Potassium by Flame AA - Current EPA CLP Protocol - AA 068

Client Sample ID: 00351

Sample Date: N/A
IT Sample ID: MM2622
Prep Date: 02/13/90
Analysis Date: (Completed) 02/21/90
Blank Sample ID: QXA15B002131
Concentration Units: MG/KG

Parameter	Result	
Potassium	18000	

Client Sample ID: 00352

Sample Date: N/A
IT Sample ID: MM2623
Prep Date: 02/13/90
Analysis Date: (Completed) 02/21/90
Blank Sample ID: QXA15B002131
Concentration Units: MG/KG

Parameter	Result	
Potassium	766	B

Client Sample ID: 00353

Sample Date: N/A
IT Sample ID: MM2624
Prep Date: 02/13/90
Analysis Date: (Completed) 02/21/90
Blank Sample ID: QXA15B002131
Concentration Units: MG/KG

Parameter	Result
Potassium	152000

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Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Potassium by Flame AA - Current EPA CLP Protocol - AA 068

Client Sample ID: 00354

Sample Date: N/A
IT Sample ID: MM2625
Prep Date: 02/13/90
Analysis Date: (Completed) 02/21/90
Blank Sample ID: QXA15B002131
Concentration Units: MG/KG

Parameter	Result	
Potassium	954	B

Client Sample ID: 00355

Sample Date: N/A
IT Sample ID: MM2626
Prep Date: 02/13/90
Analysis Date: (Completed) 02/21/90
Blank Sample ID: QXA15B002131
Concentration Units: MG/KG

Parameter	Result	
Potassium	429	B

Client Sample ID: 00356

Sample Date: N/A
IT Sample ID: MM2627
Prep Date: 02/13/90
Analysis Date: (Completed) 02/21/90
Blank Sample ID: QXA15B002131
Concentration Units: MG/KG

Parameter	Result	
Potassium	655	B

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Potassium by Flame AA - Current EPA CLP Protocol - AA 068

Client Sample ID: 00357

Sample Date: N/A
IT Sample ID: MM2628
Prep Date: 02/13/90
Analysis Date: (Completed) 02/21/90
Blank Sample ID: QXA15B002131
Concentration Units: MG/KG

Parameter	Result	
Potassium	18600	

Client Sample ID: 00358

Sample Date: N/A
IT Sample ID: MM2629
Prep Date: 02/13/90
Analysis Date: (Completed) 02/21/90
Blank Sample ID: QXA15B002131
Concentration Units: MG/KG

Parameter	Result	
Potassium	553	B

Client Sample ID: 00359

Sample Date: N/A
IT Sample ID: MM2630
Prep Date: 02/13/90
Analysis Date: (Completed) 02/21/90
Blank Sample ID: QXA15B002131
Concentration Units: MG/KG

Parameter	Result
Potassium	5600

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Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Potassium by Flame AA - Current EPA CLP Protocol - AA 068

Client Sample ID: 00360

Sample Date: N/A
IT Sample ID: MM2631
Prep Date: 02/13/90
Analysis Date: (Completed) 02/21/90
Blank Sample ID: QXA15B002131
Concentration Units: MG/KG

Parameter	Result	
Potassium	974	B

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Total Cyanide - Current EPA CLP Protocol - WW 037

Client Sample ID: QXW37B002021

Sample Date: N/A
IT Sample ID: 37B002021
Prep Date: 02/02/90
Analysis Date: (Completed) 02/05/90
Blank Sample ID: QXW37B002021
Concentration Units: UG/LITER

Parameter	Result	
Cyanide	5	U

Client Sample ID: 00350

Sample Date: N/A
IT Sample ID: MM2619
Prep Date: 02/02/90
Analysis Date: (Completed) 02/05/90
Blank Sample ID: QXW37B002021
Concentration Units: MG/KG

Parameter	Result	
Cyanide	.36	B

Client Sample ID: 00350D

Sample Date: N/A
IT Sample ID: MM2620D
Prep Date: 02/02/90
Analysis Date: (Completed) 02/05/90
Blank Sample ID: QXW37B002021
Concentration Units: MG/KG

Parameter	Result
Cyanide	.3328B

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Total Cyanide - Current EPA CLP Protocol - WW 037

Client Sample ID: 00350S1

Sample Date: N/A
IT Sample ID: MM2621S1
Prep Date: 02/02/90
Analysis Date: (Completed) 02/05/90
Blank Sample ID: QXW37B002021
Concentration Units: % RECOVERY

Parameter	Result
Cyanide	107.2

Client Sample ID: 00351

Sample Date: N/A
IT Sample ID: MM2622
Prep Date: 02/02/90
Analysis Date: (Completed) 02/05/90
Blank Sample ID: QXW37B002021
Concentration Units: MG/KG

Parameter	Result
Cyanide	.41 U

Client Sample ID: 00352

Sample Date: N/A
IT Sample ID: MM2623
Prep Date: 02/02/90
Analysis Date: (Completed) 02/05/90
Blank Sample ID: QXW37B002021
Concentration Units: MG/KG

Parameter	Result
Cyanide	.58 U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Total Cyanide - Current EPA CLP Protocol - WW 037

Client Sample ID: 00353

Sample Date: N/A
IT Sample ID: MM2624
Prep Date: 02/02/90
Analysis Date: (Completed) 02/05/90
Blank Sample ID: QXW37B002021
Concentration Units: MG/KG

Parameter	Result	
Cyanide	.51	U

Client Sample ID: 00354

Sample Date: N/A
IT Sample ID: MM2625
Prep Date: 02/02/90
Analysis Date: (Completed) 02/05/90
Blank Sample ID: QXW37B002021
Concentration Units: MG/KG

Parameter	Result	
Cyanide	.6	U

Client Sample ID: 00355

Sample Date: N/A
IT Sample ID: MM2626
Prep Date: 02/02/90
Analysis Date: (Completed) 02/05/90
Blank Sample ID: QXW37B002021
Concentration Units: MG/KG

Parameter	Result	
Cyanide	.38	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Total Cyanide - Current EPA CLP Protocol - WW 037

Client Sample ID: 00356

Sample Date: N/A
IT Sample ID: MM2627
Prep Date: 02/02/90
Analysis Date: (Completed) 02/05/90
Blank Sample ID: QXW37B002021
Concentration Units: MG/KG

Parameter	Result
Cyanide	.46 U

Client Sample ID: 00357

Sample Date: N/A
IT Sample ID: MM2628
Prep Date: 02/02/90
Analysis Date: (Completed) 02/05/90
Blank Sample ID: QXW37B002021
Concentration Units: MG/KG

Parameter	Result
Cyanide	.59 U

Client Sample ID: 00358

Sample Date: N/A
IT Sample ID: MM2629
Prep Date: 02/02/90
Analysis Date: (Completed) 02/05/90
Blank Sample ID: QXW37B002021
Concentration Units: MG/KG

Parameter	Result
Cyanide	.42 U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Total Cyanide - Current EPA CLP Protocol - WW 037

Client Sample ID: 00359

Sample Date: N/A
IT Sample ID: MM2630
Prep Date: 02/02/90
Analysis Date: (Completed) 02/05/90
Blank Sample ID: QXW37B002021
Concentration Units: MG/KG

Parameter	Result	
Cyanide	.6	U

Client Sample ID: 00360

Sample Date: N/A
IT Sample ID: MM2631
Prep Date: 02/02/90
Analysis Date: (Completed) 02/05/90
Blank Sample ID: QXW37B002021
Concentration Units: MG/KG

Parameter	Result	
Cyanide	.42	U

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

334

CERTIFICATE OF ANALYSIS

IT Analytical Services
1550 Bear Creek Road
Oakridge, TN 37830

Date: March 23, 1990

Job Number: Fernald

P.O. Number: 484000.02

This is the Certificate of Analysis for the following samples:

Client Project ID: ADV 35794
Date Received by Lab: 2/01/90
Number of Samples: 22
Sample Type: Soil

I. Introduction

On 2/01/90, twenty-two (22) samples arrived at the ITAS San Jose, laboratory from ITAS Oakridge, Tennessee. Our laboratory reference to your samples is as follows:

T0-02-001-01	MM2645/46/47	00350 - AW 049
T0-02-001-04	MM2648	00351 - AW 008
T0-02-001-05	MM2649	00352 - AW 085
T0-02-001-06	MM2650	00353 - AW 043
T0-02-001-07	MM2651	00354 - AW 024
T0-02-001-08	MM2652	00355 - AW 062
T0-02-001-09	MM2653	00356 - AW 066
T0-02-001-10	MM2654	00357 - AW 025
T0-02-001-11	MM2655	00358 - AW 064
T0-02-001-12	MM2656	00359 - AW 039
T0-02-001-13	MM2657	00360 - AW 064
T0-02-001-14	MM2658/59/60	00350 - AW 049
T0-02-001-17	MM2661	00351 - AW 008
T0-02-001-18	MM2662	00352 - AW 085
T0-02-001-19	MM2663	00353 - AW 043
T0-02-001-20	MM2664	00354 - AW 024
T0-02-001-21	MM2665	00355 - AW 062
T0-02-001-22	MM2666	00356 - AW 066
T0-02-001-23	MM2667	00357 - AW 025
T0-02-001-24	MM2668	00358 - AW 064
T0-02-001-25	MM2669	00359 - AW 039
T0-02-001-26	MM2670	00360 - AW 064

II. Analytical Results/Methodology

The method of analysis for Appendix IX Organophosphorus Pesticides was taken from E.P.A. Methods 614, 622 and 8140. The samples were extracted with solvent and concentrated. Final detection was by gas chromatography using a flameless alkali salt nitrogen-phosphorus detector.

The method of analysis for Appendix IX Phenolic Herbicides was taken from E.P.A. Methods 615 and 8150. Samples were acidified, extracted with solvent hydrolyzed, partitioned in base, partitioned from acid and methylated. If necessary, a portion of the extract was cleaned up to remove interferences. Final detection was by gas chromatography using an electron capture detector.

III. Quality Control

Method blanks were identified with laboratory ID's, e.g. T0-02-001MB.

For EPA Methods 614, 622 and 8140 samples were spiked with surrogate (Methidathion) and surrogate recoveries calculated. QC Limits for this surrogate have not been established. Surrogate recoveries were within 50 - 140%. Famphur and Ethyl Parathion were added as matrix spike compounds and recoveries calculated.

For E.P.A. Methods 615 and 8150 samples were spiked with surrogate (OCAA) and surrogate recoveries were calcualted. QC Limits have not been established for this surrogate. Recoveries were within 35 - 110%. 2,4,D, 2,4,5-T, and 2,4,5-TP were added as matrix spike compounds and recoveries calculated.

No unusual problems were encountered with the analysis of these samples.

Reviewed and Approved

Christine Horn
Operations Manager

CH/jd

"CONCENTRATION UNIT" CODES

% MOISTURE	Percent Moisture Content
% RECOVERY	Percent Recovery of Known Spiked Compound
% SOLIDS	Percent Solids Content
COLONIES/100 ML	Colonies/100 milliliters (bacteriological concentration)
MG/KG	Milligrams per Kilogram (ppm)
MG/LITER	Milligrams per Liter (ppm)
UG/KG	Microgram per Kilogram (ppb)
UG/LITER	Microgram per Liter (ppb)
STANDARD UNITS	Standard pH Units
UMHOS/CM	Micromhos per Centimeter (conductivity concentration)
PCI/LITER	picoCuries/Liter (radiological concentration)
PCI/G	picoCuries/Gram (radiological concentration)
OTAL MG	Total Milligrams
MG/M3	Milligrams per Cubic Meter
STD	Standard Deviation
RPD	Relative Percent Difference
UL/LITER	Microliters per Liter (ppb)
COLONIES/50 ML	Colonies/50 Milliliters (bacteriological concentration)
MMPY	Millimeters per Year
F	Degrees F
NG/G	Nanograms per Gram (ppb)
C	Degrees C
TOTAL UG	Total Micrograms
BTU/POUND	British Thermal Units per Pound

EDT SUFFIX CODES FOR "LAB SAMPLE" AND "CLIENT SAMPLE" NUMBERS

MS	Matrix Spike (sample spiked before prep)
MSD	Matrix Spike Duplicate (duplicate prep/analysis of spiked sample)
D	Duplicate (duplicate prep/analysis of a sample--could also have a D1, D2, etc.)
S	Spike (spiked before prep)
SD	Spike Duplicate (duplicate prep/analysis of a spiked sample)
S1	Original Spike (same as S--only used if there is an S2)
S2	Post Digestion Spike (original sample spiked after prep)
R	Reprepped (could be combined with other suffix codes, i.e. RMS, RD or could also have a R1, R2, etc.)
A	Replicate Analysis (additional analysis of original prepped sample--could also have a A1, A2, etc.)
U	Unfiltered Sample (unfiltered sample prep/analysis--used when client sample number is the same for both unfiltered and filtered samples--could be combined with other suffix codes, i.e. UMS, UMSD, UD, etc.)
F	Filtered Sample (sample filtered before prep/analysis--used when client sample number is the same for both unfiltered and filtered samples--could be combined with other suffix codes, i.e. FMS, FMSD, FD, etc.)
BK	Back sorbent section of sampler tube
FR	Front sorbent section of sampler tube
DL	Dilution (original sample diluted for analysis)
C	Confirmation Analysis (additional analysis of original prepped sample using a different column or detector as instructed under one method)

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Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Organophosphorus Pesticides - EPA SW846-8140 - GC 786

Client Sample ID: 00350

Sample Date: N/A
IT Sample ID: MM2645
Prep Date: 02/02/90
Analysis Date: (Completed) 02/15/90
Blank Sample ID: QJ05B002021
Concentration Units: MG/KG

Parameter	Result	
Dimethoate	.04	U
Disulfoton	.04	U
Famphur	.08	U
Parathion, ethyl	.04	U
Parathion, methyl	.04	U
Phorate	.04	U
Sulfotepp	.04	U
Thionazin	.04	U

Client Sample ID: 00350MS

Sample Date: N/A
IT Sample ID: MM2646MS
Prep Date: 02/02/90
Analysis Date: (Completed) 02/14/90
Blank Sample ID: QJ05B002021
Concentration Units: % RECOVERY

Parameter	Result
Famphur	135
Parathion, ethyl	86

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Organophosphorus Pesticides - EPA SW846-8140 - GC 786

Client Sample ID: 00350MSD

Sample Date: N/A
IT Sample ID: MM2647MSD
Prep Date: 02/02/90
Analysis Date: (Completed) 02/14/90
Blank Sample ID: QJ05B002021
Concentration Units: % RECOVERY

Parameter	Result
Famphur	94
Parathion, ethyl	104

Client Sample ID: 00351

Sample Date: N/A
IT Sample ID: MM2648
Prep Date: 02/02/90
Analysis Date: (Completed) 02/15/90
Blank Sample ID: QJ05B002021
Concentration Units: MG/KG

Parameter	Result	
Dimethoate	.05	U
Disulfoton	.05	U
Famphur	.1	U
Parathion, ethyl	.05	U
Parathion, methyl	.05	U
Phorate	.05	U
Sulfotepp	.05	U
Thionazin	.05	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Organophosphorus Pesticides - EPA SW846-8140 - GC 786

Client Sample ID: 00352

Sample Date: N/A
IT Sample ID: MM2649
Prep Date: 02/02/90
Analysis Date: (Completed) 02/15/90
Blank Sample ID: QJ05B002021
Concentration Units: MG/KG

Parameter	Result	
Dimethoate	.05	U
Disulfoton	.05	U
Famphur	.1	U
Parathion, ethyl	.05	U
Parathion, methyl	.05	U
Phorate	.05	U
Sulfotepp	.05	U
Thionazin	.05	U

Client Sample ID: 00353

Sample Date: N/A
IT Sample ID: MM2650
Prep Date: 02/02/90
Analysis Date: (Completed) 02/15/90
Blank Sample ID: QJ05B002021
Concentration Units: MG/KG

Parameter	Result	
Dimethoate	.04	U
Disulfoton	.04	U
Famphur	.09	U
Parathion, ethyl	.04	U
Parathion, methyl	.04	U
Phorate	.04	U
Sulfotepp	.04	U
Thionazin	.04	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Organophosphorus Pesticides - EPA SW846-8140 - GC 786

Client Sample ID: 00354

Sample Date: N/A
IT Sample ID: MM2651
Prep Date: 02/02/90
Analysis Date: (Completed) 02/15/90
Blank Sample ID: QJ05B002021
Concentration Units: MG/KG

Parameter	Result	
Dimethoate	.05	U
Disulfoton	.05	U
Famphur	.11	U
Parathion, ethyl	.05	U
Parathion, methyl	.05	U
Phorate	.05	U
Sulfotepp	.05	U
Thionazin	.05	U

Client Sample ID: 00355

Sample Date: N/A
IT Sample ID: MM2652
Prep Date: 02/02/90
Analysis Date: (Completed) 02/15/90
Blank Sample ID: QJ05B002021
Concentration Units: MG/KG

Parameter	Result	
Dimethoate	.04	U
Disulfoton	.04	U
Famphur	.08	U
Parathion, ethyl	.04	U
Parathion, methyl	.04	U
Phorate	.04	U
Sulfotepp	.04	U
Thionazin	.04	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Organophosphorus Pesticides - EPA SW846-8140 - GC 786

Client Sample ID: 00356

Sample Date: N/A
IT Sample ID: MM2653
Prep Date: 02/02/90
Analysis Date: (Completed) 02/15/90
Blank Sample ID: QJ05B002021
Concentration Units: MG/KG

Parameter	Result	
Dimethoate	.05	U
Disulfoton	.05	U
Famphur	.1	U
Parathion, ethyl	.05	U
Parathion, methyl	.05	U
Phorate	.05	U
Sulfotepp	.05	U
Thionazin	.05	U

Client Sample ID: 00357

Sample Date: N/A
IT Sample ID: MM2654
Prep Date: 02/02/90
Analysis Date: (Completed) 02/15/90
Blank Sample ID: QJ05B002021
Concentration Units: MG/KG

Parameter	Result	
Dimethoate	.06	U
Disulfoton	.06	U
Famphur	.12	U
Parathion, ethyl	.06	U
Parathion, methyl	.06	U
Phorate	.06	U
Sulfotepp	.06	U
Thionazin	.06	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Organophosphorus Pesticides - EPA SW846-8140 - GC 786

Client Sample ID: 00358

Sample Date: N/A
IT Sample ID: MM2655
Prep Date: 02/02/90
Analysis Date: (Completed) 02/15/90
Blank Sample ID: QJ05B002021
Concentration Units: MG/KG

Parameter	Result	
Dimethoate	.05	U
Disulfoton	.05	U
Famphur	.1	U
Parathion, ethyl	.05	U
Parathion, methyl	.05	U
Phorate	.05	U
Sulfotepp	.05	U
Thionazin	.05	U

Client Sample ID: 00359

Sample Date: N/A
IT Sample ID: MM2656
Prep Date: 02/02/90
Analysis Date: (Completed) 02/15/90
Blank Sample ID: QJ05B002021
Concentration Units: MG/KG

Parameter	Result	
Dimethoate	.06	U
Disulfoton	.06	U
Famphur	.13	U
Parathion, ethyl	.06	U
Parathion, methyl	.06	U
Phorate	.06	U
Sulfotepp	.06	U
Thionazin	.06	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

Appendix IX Organophosphorus Pesticides - EPA SW846-8140 - GC 786

Client Sample ID: 00360

Sample Date: N/A
IT Sample ID: MM2657
Prep Date: 02/02/90
Analysis Date: (Completed) 02/15/90
Blank Sample ID: QJ05B002021
Concentration Units: MG/KG

Parameter	Result	
Dimethoate	.05	U
Disulfoton	.05	U
Famphur	.1	U
Parathion, ethyl	.05	U
Parathion, methyl	.05	U
Phorate	.05	U
Sulfotepp	.05	U
Thionazin	.05	U

Client Sample ID: QJ05B002021

Sample Date: N/A
IT Sample ID: T002001MB
Prep Date: 02/02/90
Analysis Date: (Completed) 02/14/90
Blank Sample ID: QJ05B002021
Concentration Units: MG/KG

Parameter	Result	
Dimethoate	.03	U
Disulfoton	.03	U
Famphur	.06	U
Parathion, ethyl	.03	U
Parathion, methyl	.03	U
Phorate	.03	U
Sulfotepp	.03	U
Thionazin	.03	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

- EPA SW846-8150 - GC 755

Client Sample ID: 00350

Sample Date: N/A
IT Sample ID: MM2658
Prep Date: 02/02/90
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QJ23B002021
Concentration Units: MG/KG

Parameter	Result
2,4-D	.11 U
2,4,5-TP (Silvex)	.03 U
2,4,5-T	.03 U

Client Sample ID: 00350MS

Sample Date: N/A
IT Sample ID: MM2659MS
Prep Date: 02/02/90
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QJ23B002021
Concentration Units: % RECOVERY

Parameter	Result
2,4-D	67
2,4,5-TP (Silvex)	72
2,4,5-T	66

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

- EPA SW846-8150 - GC 755

Client Sample ID: 00350MSD

Sample Date: N/A
IT Sample ID: MM2660MSD
Prep Date: 02/02/90
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QJ23B002021
Concentration Units: % RECOVERY

Parameter	Result
2,4-D	50
2,4,5-TP (Silvex)	49
2,4,5-T	47

Client Sample ID: 00351

Sample Date: N/A
IT Sample ID: MM2661
Prep Date: 02/02/90
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QJ23B002021
Concentration Units: MG/KG

Parameter	Result
2,4-D	.12 U
2,4,5-TP (Silvex)	.03 U
2,4,5-T	.03 U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

- EPA SW846-8150 - GC 755

Client Sample ID: 00352

Sample Date: N/A
IT Sample ID: MM2662
Prep Date: 02/02/90
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QJ23B002021
Concentration Units: MG/KG

Parameter	Result
2,4-D	.14 U
2,4,5-TP (Silvex)	.04 U
2,4,5-T	.04 U

Client Sample ID: 00353

Sample Date: N/A
IT Sample ID: MM2663
Prep Date: 02/02/90
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QJ23B002021
Concentration Units: MG/KG

Parameter	Result
2,4-D	.12 U
2,4,5-TP (Silvex)	.03 U
2,4,5-T	.03 U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

- EPA SW846-8150 - GC 755

Client Sample ID: 00354

Sample Date: N/A
IT Sample ID: MM2664
Prep Date: 02/02/90
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QJ23B002021
Concentration Units: MG/KG

Parameter	Result	
2,4-D	.14	U
2,4,5-TP (Silvex)	.04	U
2,4,5-T	.04	U

Client Sample ID: 00355

Sample Date: N/A
IT Sample ID: MM2665
Prep Date: 02/02/90
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QJ23B002021
Concentration Units: MG/KG

Parameter	Result	
2,4-D	.11	U
2,4,5-TP (Silvex)	.03	U
2,4,5-T	.03	U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

- EPA SW846-8150 - GC 755

Client Sample ID: 00356

Sample Date: N/A
IT Sample ID: MM2666
Prep Date: 02/02/90
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QJ23B002021
Concentration Units: MG/KG

Parameter	Result
2,4-D	.14 U
2,4,5-TP (Silvex)	.03 U
2,4,5-T	.03 U

Client Sample ID: 00357

Sample Date: N/A
IT Sample ID: MM2667
Prep Date: 02/02/90
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QJ23B002021
Concentration Units: MG/KG

Parameter	Result
2,4-D	.16 U
2,4,5-TP (Silvex)	.04 U
2,4,5-T	.04 U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

- EPA SW846-8150 - GC 755

Client Sample ID: 00358

Sample Date: N/A
IT Sample ID: MM2668
Prep Date: 02/02/90
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QJ23B002021
Concentration Units: MG/KG

Parameter	Result
2,4-D	.14 U
2,4,5-TP (Silvex)	.04 U
2,4,5-T	.04 U

Client Sample ID: 00359

Sample Date: N/A
IT Sample ID: MM2669
Prep Date: 02/02/90
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QJ23B002021
Concentration Units: MG/KG

Parameter	Result
2,4-D	.17 U
2,4,5-TP (Silvex)	.04 U
2,4,5-T	.04 U

Advanced Sciences, Inc.
Date: 20-APR-90

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV35794

- EPA SW846-8150 - GC 755

Client Sample ID: 00360

Sample Date: N/A
IT Sample ID: MM2670
Prep Date: 02/02/90
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QJ23B002021
Concentration Units: MG/KG

Parameter	Result
2,4-D	.13 U
2,4,5-TP (Silvex)	.03 U
2,4,5-T	.03 U

Client Sample ID: QJ23B002021

Sample Date: N/A
IT Sample ID: T002001MB
Prep Date: 02/02/90
Analysis Date: (Completed) 02/08/90
Blank Sample ID: QJ23B002021
Concentration Units: MG/KG

Parameter	Result
2,4-D	.08 U
2,4,5-TP (Silvex)	.02 U
2,4,5-T	.02 U