

CHAIN OF CUSTODY RECORD 14109

DE 2 FOR COMPLETE INSTRUCTIONS

FOR LABORATORY USE ONLY

Laboratory Project #: 12124 Storage ID: 4-29
Sample Condition Upon Receipt: Temp: 6 °C Gelger: _____

Project Name: ESDF Off-site Drainage Invert.
Project Number: 02.06.01864.001.001
Project Location: (State) CA.

ANALYSES REQUESTED

**Write in ———
Analysis Method**

☐ 3	☐ 4	☐ 5	☐ 6A	☐ 6B
☐ 6E	☐ 6F	☐ 7	☐ 8	☐ A

SAMPLE INFORMATION

FOR LABORATORY USE ONLY Lab ID	Sample ID Number	Date	Time	Description		Container(s)		Matrix Type N/A	Pres. Type TBE	TAT 2 wks	PCR Method
				Locator	Depth	#	Type				
1 12124 - CC1	210041 P	6/23/95	12:00	210041 P	Surface	3	84	848			X
2	210660 P		1:00	210660 P		10	8	Spil			X
3	210810 P		1:00	210810 P							X
4	310700 P		12:00	310700 P							X
5	311510 P		11:50	311510 P							X
6	312850 P		11:30	312850 P							X
7	313402 P		11:30	313402 P							X
8	321750 P		11:05	321750 P							X
9	322680 P		10:55	322680 P							X
10	310503 P		11:30	310503 P							X

SEND REPORT TO:
Company Name McLaren/Hart
Client Name Eric Smith
Address 116250 Van Korman Ave.
Irvine, CA 92714
Phone (714) 750-3232 Fax (714) 750-8460

BILL TO (if different):
Company Name _____
Address _____
PO # _____
Phone _____ Fax _____

Special Instructions/Comments _____

Signature	Date/Time	PPE Worn in Field	Date/Time
Received By: <i>Eric South</i>	<i>6-28-95 3:00 PM</i>	Received By or Method of Shipment/Shipments I.D.	
Received By: <i>Eric South</i>	<i>6-28-95 4:00 PM</i>	Received By or Method of Shipment/Shipments I.D.	
Received By: <i>Eric South</i>	<i>6-28-95 4:00 PM</i>	Received By or Method of Shipment/Shipments I.D.	
Received By: <i>Eric South</i>	<i>6-28-95 4:00 PM</i>	Received By or Method of Shipment/Shipments I.D.	

* Specify Total or Discontinued



083 Santa Ana
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

CHAIN OF CUSTODY RECORD 14108

DE 2 FOR
COMPLETE
INSTRUCTIONS

FOR LABORATORY USE ONLY

Laboratory Project #: 12124 Storage ID: 11-29

Sample Condition Upon Receipt: Temp: 6 °C Gel: 1

Custody Seals Present? Yes/No Intact? Yes/No Samples Intact? Yes/No

Project Name: ESDF Off-site Drainage Invt.

Project Number: 03.0601864.01.001

Project Location: (State) CA.

Sample Disposal
(check one)

☒ Laboratory Standard

☐ Other

Level of QC
(see Side 2)

☒ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6A ☐ 6B

☐ 6C ☐ 6D ☐ 6E ☐ 6F ☐ 7 ☐ 8 ☐ A

Write in
Analysis Method

SAMPLE INFORMATION

FOR LABORATORY USE ONLY Lab ID	Sample ID Number	Date	Time	Description		Container # Type	Matrix Type	Pres. Type	TAT	ANALYSES REQUESTED									
				Locator	Depth														
1 12124 - C11	413580 P	6/28/95	9:30	413580 P	Surface	1 B	JNL	ICE	Arch	X									
2 - C12	4116380 P	9:15	9:15	4116380 P						X									
3 - C12	4116384 P	9:15	9:15	4116384 P						X									
4 - C14	424760 P	8:55	8:55	424760 P						X									
5 - C15	428480 P	8:45	8:45	428480 P						X									
6 - C16	110500 P	2:00	2:00	110500 P						X									
7 - C17	120380 P	1:50	1:50	120380 P						X									
8 - C18	130240 P	2:05	2:05	130240 P						X									
9 - C19	130700 P	2:05	2:05	130700 P						X									
10 - C20	210040 P	1:30	1:30	210040 P						X									

SEND REPORT TO:

Company Name McLaren Hart
Client Name Eric Smith
Address 11455 Van Korman Ave.
Torrance, CA 90704
Phone (714) 792-3230 Fax (714) 754-8440

BILL TO (if different):

Company Name _____
Address _____
PO # _____
Phone _____ Fax _____

Special Instructions/Comments

Sample 416384P is for MS1005
for Sample 416380P. The sample
is the same sample per Eric
Smith 6/28/95

Sampler Name

Signature

PPH Worn in Field

Level D

Relinquished By:

Signature

Received By or Method of Shipment (Shipment I.D.)

Date/Time

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Date/Time

Relinquished By:

Signature

Received By or Method of Shipment (Shipment I.D.)

Project Name: ESOE off-Site Damage Inv.
Project Number: 03-02021846.001.001
Project Location: (State) CA

FOR LABORATORY USE ONLY

Laboratory Project #: 12124 Storage ID: 4-19
 Sample Condition Upon Receipt: Temp: 6 °C Gelger:
 Custody Seals Present? Yes/No Intact? Yes/No Samples Intact? Yes/No

Project Location: (State) CA

[illegible]

SEND REPORT TO:
 Company Name Volacery/Hart
 Client Name Felic Smith
 Address 16755 Van Ness Ave.
Traverse, CA 94904
 Phone (714) 752-3230 Fax (714) 756-8460

BILL TO (if different):
 Company Name _____
 Address _____
 PO # _____
 Phone _____ Fax _____

Special Instructions/Comments _____

Sample Name	Signature	PPE Worn in Field	Date/Time	Date/Time
Received By: Eric Smith	Eric Smith	Level 1	6-28-95	3:00 PM
Retransmitted By: Eric Smith	Eric Smith	Level 1	6-28-95	4:00 PM
Received By: EEL EX	EEL EX	Level 1	6-28-95	4:00 PM
Retransmitted By:		Level 1	6-28-95	4:00 PM

- **Specify Total or Discontinued**

ANALYTICAL REPORT
LABORATORY PROJECT (LP) NUMBER 12124

FSDF OFF-SITE DRAINAGE INVEST.

The analyses performed by MBT Environmental Laboratories in this report comply with the requirements under the following certification/approval:

ARIZONA Hazardous Waste, #AZ0468
Waste Water, # AZ0468
Drinking Water, #AZ0468

✓ CALIFORNIA Hazardous Waste, #1417
Waste Water, # 1417
Drinking Water, #1417

CONNECTICUT Waste Water, #PH0799

FLORIDA Environmental Water,
#E87298
CQAPP #930105

KANSAS: Hazardous Waste, #E-1167
Waste Water, #E-192
Drinking Water, #E-192

NEW HAMPSHIRE: Waste Water, #253195-B
Drinking Water, #253195-A

NEW JERSEY: Waste Water, #44818

NEW YORK: Hazardous Waste, #11241
Waste Water, #11241
CLP, #11241

OKLAHOMA: Hazardous Waste, #9318
Waste Water, #9318

SOUTH CAROLINA: Hazardous Waste, #87013
Waste Water, #87013

TENNESSEE: Underground Storage Tank

UTAH: Hazardous Waste, #E-165
Waste Water, #E-165
Drinking Water, #E-165

WASHINGTON: Hazardous Waste, #C048

WISCONSIN: Hazardous Waste, #999940920
Waste Water, #999940920

USACOE: Hazardous Waste
Waste Water

AFCEE

(CN12124)



GENERAL NARRATIVE

Comments:

Test methods may include minor modifications of published EPA methods (e.g., reporting limits or parameter lists). Reporting limits are adjusted to reflect dilution of the sample when appropriate. Solids and waste are analyzed with no correction made for moisture content.

Percent recoveries for laboratory control samples and matrix spikes have been calculated using unrounded concentration values. Therefore, percent recoveries reported may differ slightly from those obtained from the rounded concentration values which appear on the report.

Abbreviations and Definitions:

MB	<i>Method Blank</i> - An aliquot of a blank matrix carried throughout the entire analytical process
LCS	<i>Laboratory Control Sample</i> - A blank to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the accuracy of the method
MS/MSD	<i>Matrix Spike/Matrix Spike Duplicate</i> - Duplicate samples to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the extent of matrix bias or interference on analyte recovery
RPD	<i>Relative Percent Difference</i> - The measurement of precision between duplicate analyses
BRL	<i>Below Reporting Limit</i>
NS	<i>Not Specified</i>
NA	<i>Not Applicable</i>

Flags:

Organics -

J	Estimated value below the reporting limit and at or above the method detection limit.
B	Analyte found in the associated blank, as well as in the sample.

Inorganics -

B	Estimated value below the reporting limit and at or above the method detection limit.
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(CN12124)



QUALITY CONTROL REPORT

Quality Control Summary

Method: EPA 8080 PCB

CRITERIA	Analytical Section Review		10% QA/QC Validation	
	YES	NO	YES	NO
All samples met holding time.	✓		✓	
All surrogate recoveries met QC acceptance criteria.		✓		✓
Laboratory Control sample recoveries met QC acceptance criteria.	✓		✓	
Matrix spike recoveries met advisory QC acceptance criteria.		✓		✓
Method blanks met QC acceptance criteria.	✓		✓	
Initial calibration met QC acceptance criteria.	✓		✓	
Continuing calibration met QC acceptance criteria.	✓		✓	
Internal standards met QC acceptance criteria.	NA		NA	
Tuning and mass calibrations met QC acceptance criteria.	NA		NA	

Note: For any criteria listed above which are not met, please refer to the General Narrative or below for applicable comments.

Comments:

The following samples were analyzed at a dilution to bring target analytes within linear working range: 12124-8, 12124-16, 12124-17, 12124-18

The surrogate recoveries for the analytes flagged on the data sheet were beyond acceptance limits due to the presence of a suspect interferant for the following samples: 12124-3, 12124-5, 12124-10, 12124-19, 12124-20, 12124-21

The matrix spike/matrix spike duplicate RPDs flagged on the matrix spike data sheet are outside of advisory quality control limits, indicating possible sample matrix nonhomogeneity.

Matrix spike recoveries flagged on the matrix spike data sheets are outside of advisory quality control limits, indicating possible matrix effects. The laboratory control sample results meet QC criteria.

(CN12124)



QUALITY CONTROL REPORT

Comments: (cont.)

The MS/MSD was performed on brass tube 416384P for sample 12124-12.

The initial mass was adjusted for sample 12124-12.

Analytical Section Review: QA/QC Validation:

Arlene Putnam

Dan Mehring



POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDf Off-site Drainage Invest.

Sample Description: 210660P Surface

Sample Number: 210660P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 30 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-2/12470-7535

Date/Time Sampled: 06/28/95 1:00

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	14-JUL-95
Arochlor 1221	BRL	34	1	14-JUL-95
Arochlor 1232	BRL	17	1	14-JUL-95
Arochlor 1242	BRL	17	1	14-JUL-95
Arochlor 1248	BRL	17	1	14-JUL-95
Arochlor 1254	63	17	1	14-JUL-95
Arochlor 1260	BRL	17	1	14-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	101	60 - 150

The cover letter and enclosures are integral parts of this report.

Approved by: _____

Date: 7-19-95

MBT Environmental
Laboratories



Master Builders Technologies

POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDf Off-site Drainage Invest.

Sample Description: 210810P Surface

Sample Number: 210810P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 30 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-3/12471-7535

Date/Time Sampled: 06/28/95 1:00

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	15-JUL-95
Arochlor 1221	BRL	34	1	15-JUL-95
Arochlor 1232	BRL	17	1	15-JUL-95
Arochlor 1242	BRL	17	1	15-JUL-95
Arochlor 1248	BRL	17	1	15-JUL-95
Arochlor 1254	28	17	1	15-JUL-95
Arochlor 1260	BRL	17	1	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	53 *	60 - 150

Qualifier Legend:

* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____

Date: 7-19-95

MBT Environmental
Laboratories



Master Builders Technologies

POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDf Off-site Drainage Invest.

Sample Description: 310700P Surface

Sample Number: 310700P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 30 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-4/12472-7535

Date/Time Sampled: 06/28/95 12:00

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	15-JUL-95
Arochlor 1221	BRL	34	1	15-JUL-95
Arochlor 1232	BRL	17	1	15-JUL-95
Arochlor 1242	BRL	17	1	15-JUL-95
Arochlor 1248	BRL	17	1	15-JUL-95
Arochlor 1254	570	17	1	15-JUL-95
Arochlor 1260	BRL	17	1	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	105	60 - 150

The cover letter and enclosures are integral parts of this report.

Approved by: _____

Date: 7-19-95

MBT Environmental
Laboratories



Master Builders Technologies

POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDF Off-site Drainage Invest.

Sample Description: 311560P Surface

Sample Number: 311560P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 30 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-5/12473-7535

Date/Time Sampled: 06/28/95 11:50

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	15-JUL-95
Arochlor 1221	BRL	34	1	15-JUL-95
Arochlor 1232	BRL	17	1	15-JUL-95
Arochlor 1242	BRL	17	1	15-JUL-95
Arochlor 1248	BRL	17	1	15-JUL-95
Arochlor 1254	99	17	1	15-JUL-95
Arochlor 1260	BRL	17	1	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	26 *	60 - 150

Qualifier Legend:

* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____

Date: 7-19-95

MBT Environmental
Laboratories



Master Builders Technologies

POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart
Project Name: FSDf Off-site Drainage Invest.
Sample Description: 313402P Surface
Sample Number: 313402P
Date/Time Received: 06/29/95 09:00
Date Prepared: 07/05/95 6:50:
Initial Wt./Volume: 30 grams
Final Volume: 5 mL

SDG #: 12124
Project Number: 030601864001001
Lab ID: 12124-7/12475-7535
Date/Time Sampled: 06/28/95 11:20
Matrix: Soil (S)
Batch Number: 1826-950705
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	15-JUL-95
Arochlor 1221	BRL	34	1	15-JUL-95
Arochlor 1232	BRL	17	1	15-JUL-95
Arochlor 1242	BRL	17	1	15-JUL-95
Arochlor 1248	BRL	17	1	15-JUL-95
Arochlor 1254	220	17	1	15-JUL-95
Arochlor 1260	BRL	17	1	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	100	60 - 150

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 7-14-95

MBT Environmental
Laboratories



Master Builders Technologies

POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDF Off-site Drainage Invest.

Sample Description: 321750P Surface

Sample Number: 321750P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 30 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-8/12476-7535

Date/Time Sampled: 06/28/95 11:05

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	170	10	15-JUL-95
Arochlor 1221	BRL	340	10	15-JUL-95
Arochlor 1232	BRL	170	10	15-JUL-95
Arochlor 1242	BRL	170	10	15-JUL-95
Arochlor 1248	BRL	170	10	15-JUL-95
Arochlor 1254	680	170	10	15-JUL-95
Arochlor 1260	BRL	170	10	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	132	60 - 150

The cover letter and enclosures are integral parts of this report.

Approved by: _____

Date: 7-14-95

MBT Environmental
Laboratories



Master Builders Technologies

POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart
Project Name: FSDF Off-site Drainage Invest.
Sample Description: 322680P Surface
Sample Number: 322680P
Date/Time Received: 06/29/95 09:00
Date Prepared: 07/05/95 6:50
Initial Wt./Volume: 30 grams
Final Volume: 5 mL

SDG #: 12124
Project Number: 030601864001001
Lab ID: 12124-9/12477-7535
Date/Time Sampled: 06/28/95 10:55
Matrix: Soil (S)
Batch Number: 1826-950705
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	15-JUL-95
Arochlor 1221	BRL	34	1	15-JUL-95
Arochlor 1232	BRL	17	1	15-JUL-95
Arochlor 1242	BRL	17	1	15-JUL-95
Arochlor 1248	BRL	17	1	15-JUL-95
Arochlor 1254	210	17	1	15-JUL-95
Arochlor 1260	BRL	17	1	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	100	60 - 150

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 7-14-95

MBT Environmental
Laboratories



Master Builders Technologies

POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDF Off-site Drainage Invest.

Sample Description: 210502P Surface

Sample Number: 210502P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 30 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-10/12478-7535

Date/Time Sampled: 06/28/95 1:30

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	15-JUL-95
Arochlor 1221	BRL	34	1	15-JUL-95
Arochlor 1232	BRL	17	1	15-JUL-95
Arochlor 1242	BRL	17	1	15-JUL-95
Arochlor 1248	BRL	17	1	15-JUL-95
Arochlor 1254	25	17	1	15-JUL-95
Arochlor 1260	BRL	17	1	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	19 *	60 - 150

Qualifier Legend:

* - Values outside QC limits

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Date: 7-14-95

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POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDP Off-site Drainage Invest.

Sample Description: 413580P Surface

Sample Number: 413580P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 30 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-11/12479-7535

Date/Time Sampled: 06/28/95 9:30

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	15-JUL-95
Arochlor 1221	BRL	34	1	15-JUL-95
Arochlor 1232	BRL	17	1	15-JUL-95
Arochlor 1242	BRL	17	1	15-JUL-95
Arochlor 1248	BRL	17	1	15-JUL-95
Arochlor 1254	38	17	1	15-JUL-95
Arochlor 1260	BRL	17	1	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	69	60 - 150

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Approved by: _____

Date: 7-19-95

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POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDP Off-site Drainage Invest.

Sample Description: 416380P/384P Surface

Sample Number: 416380P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 70 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-12/12480-7535

Date/Time Sampled: 06/28/95 9:15

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	15-JUL-95
Arochlor 1221	BRL	34	1	15-JUL-95
Arochlor 1232	BRL	17	1	15-JUL-95
Arochlor 1242	BRL	17	1	15-JUL-95
Arochlor 1248	BRL	17	1	15-JUL-95
Arochlor 1254	54	17	1	15-JUL-95
Arochlor 1260	BRL	17	1	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	124	60 - 150

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Approved by: _____

Date: 7-19-95

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POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDF Off-site Drainage Invest.

Sample Description: 424760P Surface

Sample Number: 424760P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 30 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-14/12482-7535

Date/Time Sampled: 06/28/95 8:55

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	15-JUL-95
Arochlor 1221	BRL	34	1	15-JUL-95
Arochlor 1232	BRL	17	1	15-JUL-95
Arochlor 1242	BRL	17	1	15-JUL-95
Arochlor 1248	BRL	17	1	15-JUL-95
Arochlor 1254	56	17	1	15-JUL-95
Arochlor 1260	BRL	17	1	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	107	60 - 150

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Approved by: _____ Date: 7-19-95

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Master Builders Technologies

POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

SDG #: 12124

Project Name: FSDP Off-site Drainage Invest.

Project Number: 030601864001001

Sample Description: 428480P Surface

Lab ID: 12124-15/12483-7535

Sample Number: 428480P

Date/Time Sampled: 06/28/95 8:45

Date/Time Received: 06/29/95 09:00

Matrix: Soil (S)

Date Prepared: 07/05/95 6:50

Batch Number: 1826-950705

Initial Wt./Volume: 30 grams

% Moisture: NA

Final Volume: 5 mL

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	15-JUL-95
Arochlor 1221	BRL	34	1	15-JUL-95
Arochlor 1232	BRL	17	1	15-JUL-95
Arochlor 1242	BRL	17	1	15-JUL-95
Arochlor 1248	BRL	17	1	15-JUL-95
Arochlor 1254	22	17	1	15-JUL-95
Arochlor 1260	BRL	17	1	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	119	60 - 150

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Approved by: _____

Date: 7-19-95

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POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDF Off-site Drainage Invest.

Sample Description: 110500P Surface

Sample Number: 110500P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 30 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-16/12484-7535

Date/Time Sampled: 06/28/95 2:00

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	34	2	17-JUL-95
Arochlor 1221	BRL	68	2	17-JUL-95
Arochlor 1232	BRL	34	2	17-JUL-95
Arochlor 1242	BRL	34	2	17-JUL-95
Arochlor 1248	BRL	34	2	17-JUL-95
Arochlor 1254	890	34	2	17-JUL-95
Arochlor 1260	BRL	34	2	17-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	85	60 - 150

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POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDf Off-site Drainage Invest.

Sample Description: 120380P Surface

Sample Number: 120380P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 30 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-17/12485-7535

Date/Time Sampled: 06/28/95 1:50

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	170	10	15-JUL-95
Arochlor 1221	BRL	340	10	15-JUL-95
Arochlor 1232	BRL	170	10	15-JUL-95
Arochlor 1242	BRL	170	10	15-JUL-95
Arochlor 1248	BRL	170	10	15-JUL-95
Arochlor 1254	920	170	10	15-JUL-95
Arochlor 1260	BRL	170	10	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	140	60 - 150

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Date: 7-19-95

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POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080
Preparation Method: EPA 3550

Company: McLaren/Hart
Project Name: FSDf Off-site Drainage Invest.
Sample Description: 130240P Surface
Sample Number: 130240P
Date/Time Received: 06/29/95 09:00
Date Prepared: 07/05/95 6:50:
Initial Wt./Volume: 30 grams
Final Volume: 5 mL

SDG #: 12124
Project Number: 030601864001001
Lab ID: 12124-18/12486-7535
Date/Time Sampled: 06/28/95 2:05
Matrix: Soil (S)
Batch Number: 1826-950705
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	85	5	15-JUL-95
Arochlor 1221	BRL	170	5	15-JUL-95
Arochlor 1232	BRL	85	5	15-JUL-95
Arochlor 1242	BRL	85	5	15-JUL-95
Arochlor 1248	BRL	85	5	15-JUL-95
Arochlor 1254	880	85	5	15-JUL-95
Arochlor 1260	BRL	85	5	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	126	60 - 150

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POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDF Off-site Drainage Invest.

Sample Description: 210040P Surface

Sample Number: 210040P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 30 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-20/12487-7535

Date/Time Sampled: 06/28/95 1:30

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	15-JUL-95
Arochlor 1221	BRL	34	1	15-JUL-95
Arochlor 1232	BRL	17	1	15-JUL-95
Arochlor 1242	BRL	17	1	15-JUL-95
Arochlor 1248	BRL	17	1	15-JUL-95
Arochlor 1254	18	17	1	15-JUL-95
Arochlor 1260	BRL	17	1	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	26 *	60 - 150

Qualifier Legend:

* - Values outside QC limits

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Date: 7-19-95

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POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDF Off-site Drainage Invest.

Sample Description: 312850P Surface

Sample Number: 312850P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 30 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-6/12474-7535

Date/Time Sampled: 06/28/95 11:20

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	15-JUL-95
Arochlor 1221	BRL	34	1	15-JUL-95
Arochlor 1232	BRL	17	1	15-JUL-95
Arochlor 1242	BRL	17	1	15-JUL-95
Arochlor 1248	BRL	17	1	15-JUL-95
Arochlor 1254	280	17	1	15-JUL-95
Arochlor 1260	BRL	17	1	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	109	60 - 150

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Date: 7-19-95

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POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDF Off-site Drainage Invest.

Sample Description: 133700P Surface

Sample Number: 133700P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 30 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-19/12490-7535

Date/Time Sampled: 06/28/95 2:05

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	15-JUL-95
Arochlor 1221	BRL	34	1	15-JUL-95
Arochlor 1232	BRL	17	1	15-JUL-95
Arochlor 1242	BRL	17	1	15-JUL-95
Arochlor 1248	BRL	17	1	15-JUL-95
Arochlor 1254	150	17	1	15-JUL-95
Arochlor 1260	BRL	17	1	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	24 *	60 - 150

Qualifier Legend:

* - Values outside QC limits

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Date: 7-19-95

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POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080

Preparation Method: EPA 3550

Company: McLaren/Hart

Project Name: FSDP Off-site Drainage Invest.

Sample Description: 500000P Surface

Sample Number: 500000P

Date/Time Received: 06/29/95 09:00

Date Prepared: 07/05/95 6:50:

Initial Wt./Volume: 30 grams

Final Volume: 5 mL

SDG #: 12124

Project Number: 030601864001001

Lab ID: 12124-21/12491-7535

Date/Time Sampled: 06/28/95 11:40

Matrix: Soil (S)

Batch Number: 1826-950705

% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Arochlor 1016	BRL	17	1	15-JUL-95
Arochlor 1221	BRL	34	1	15-JUL-95
Arochlor 1232	BRL	17	1	15-JUL-95
Arochlor 1242	BRL	17	1	15-JUL-95
Arochlor 1248	BRL	17	1	15-JUL-95
Arochlor 1254	BRL	17	1	15-JUL-95
Arochlor 1260	BRL	17	1	15-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	22 *	60 - 150

Qualifier Legend:

* - Values outside QC limits

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Date: 7-19-95

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METHOD BLANK
POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080
Preparation Method: EPA 3550

Date Prepared: 07/05/95 6:50:
Initial Wt./Volume: 30 grams
Final Volume: 5 mL

Lab ID: 13346-MB /7535
Matrix: Soil
Batch Number: 1826-950705

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Date Analyzed
Arochlor 1016	BRL	17	14-JUL-95
Arochlor 1221	BRL	34	14-JUL-95
Arochlor 1232	BRL	17	14-JUL-95
Arochlor 1242	BRL	17	14-JUL-95
Arochlor 1248	BRL	17	14-JUL-95
Arochlor 1254	BRL	17	14-JUL-95
Arochlor 1260	BRL	17	14-JUL-95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	111	60 - 150

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 7-14-95

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LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080
Preparation Method: EPA 3550

Date Prepared: 07/05/95 6:50:
Initial Wt./Volume: 30 grams
Final Volume: 5 mL
LCS Date Analyzed: 14-JUL-95

Lab ID: 13347-LCS /7535
Matrix: Soil Units: ug/Kg (ppb)
Batch Number: 1826-950705
LCSD Date Analyzed: NA

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec. RPD	
Arochlor 1254	0	83.3	66.7	80	NA	NA	NA	45-121	≤ 25

$$\begin{aligned}\text{Spike Recovery} &= d = ((c-a)/b) \times 100 \\ \text{Spike Duplicate Recovery} &= f = ((e-a)/b) \times 100 \\ \text{Relative Percent Difference} &= g = (|c-e|)/((c+e)/2) \times 100\end{aligned}$$

Surrogate	(h) Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Tetrachloro-m-xylene	8.33	11.2	134	NA	NA	60-150

$$\begin{aligned}\text{Surrogate \% Recovery} &= j = (i-h) \times 100 \\ \text{Surrogate Duplicate Recovery} &= l = (k/h) \times 100\end{aligned}$$

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 7-14-95

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Master Builders Technologies

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

POLYCHLORINATED BIPHENYLS

Analytical Method: EPA 8080
Preparation Method: EPA 3550

Company: McLaren/Hart
Project Name: FSDf Off-site Drainage Invest.
Sample Description: 416380P/384P Surface
Sample Number: 416384P
Date/Time Received: 06/29/95 09:00
Date Prepared: 07/05/95 6:50
Initial Wt./Volume: 30 grams
Final Volume: 5 mL
MS Date Analyzed: 15-JUL-95

SDG #: 12124
Project Number: 030601864001001
Lab ID: 12124-12/13350.13351-7535
Date/Time Sampled: 06/28/95 9:15
Matrix: Soil (S) Units: ug/Kg (ppb)
Batch Number: 1826-950705
% Moisture: NA

MSD Date Analyzed: 15-JUL-95

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	Acceptance Limits	
Analyte	Sample Conc.	Spike Conc.	Sample + Spike Conc.	Spike Rec %	Sample Dup. + Spike Conc.	Spike Dup. Rec %	RPD %	% Rec.	RPD
Arochlor 1254	54	83.3	300 -	295*	213	191*	34*	45-121	≤ 25

$$\begin{aligned}\text{Spike Recovery} &= d = ((c-a)/b) \times 100 \\ \text{Spike Duplicate Recovery} &= f = ((e-a)/b) \times 100 \\ \text{Relative Percent Difference} &= g = (|c-e|)/((c+e) \times .5) \times 100\end{aligned}$$

	(h)	(i)	(j)	(k)	(l)	Acceptance Limits
Surrogate	Surr. Spike Conc.	Sample + Surr. Spike Conc.	Surr. Spike Rec %	Sample Dup. + Surr. Spike Conc.	Surr. Spike Dup. Rec %	
Tetrachloro-m-xylene	8.33	8.52	102	8.73	105	60-150

$$\begin{aligned}\text{Surrogate \% Recovery} &= j = (i-h) \times 100 \\ \text{Surrogate Duplicate Recovery} &= l = (k/h) \times 100\end{aligned}$$

Qualifier Legend:
* - Values outside QC

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 7-14-95

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Master Builders Technologies



July 24, 1995

Alta Batch I.D.: 1500

Mr. Eric Smith
McLaren/Hart
16755 Von Karman Avenue
Irvine, CA 92714

Dear Mr. Smith,

Enclosed are the results for the nineteen soils and one aqueous sample received at Alta Analytical Laboratory on June 29, 1995. The work was authorized under your Project # 03.0601864.001.001. These samples were analyzed using EPA Method 8290 for tetra to octa chlorinated dioxins and furans. A MS/MSD was performed on Sample ID. 310704D. A standard turnaround time was requested for this work.

Results greater than 1.0 part per trillion for the 2,3,7,8-TCDF isomer were confirmed on the DB-225 column.

The following report consists of a Sample Inventory (Section I), Analytical Results (Section II) and the Appendix. The Appendix contains a copy of the chain-of-custody, a list of data qualifiers and abbreviations and copies of the raw data (if requested).

If you have any questions regarding this report please feel free to contact me.

Sincerely,

Robert S. Mitzel
Director of Operations

Alta Analytical Laboratory Inc.

5070 Robert J. Mathews Parkway
El Dorado Hills, CA 95762

FAX (916) 933-0940
(916) 933-1640

SECTION II.

**PCDD & PCDF
EPA METHOD 8290**

METHOD BLANK
Lab ID: 1500-0005-MB
Matrix: Aqueous

Date Received: NA
Date Extracted: 7/14/95
Sample Amount: 1.000 L

ICAL ID: I1613A
QC Lot: LC0706A
Units: pg/L

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	6.2			
Total TCDD	ND	6.2			
✓ 1,2,3,7,8-PeCDD	ND	8.7			
Total PeCDD	ND	8.7			
1,2,3,4,7,8-HxCDD	ND	6.6			
1,2,3,6,7,8-HxCDD	ND	6.5			
1,2,3,7,8,9-HxCDD	ND	6.0			
Total HxCDD	ND	6.6			
1,2,3,4,6,7,8-HpCDD	ND	4.2			
Total HpCDD	ND	4.2			
OCDD	ND	8.7			
2,3,7,8-TCDF	ND	3.9			
Total TCDF	ND	3.9			
1,2,3,7,8-PeCDF	ND	6.7			
2,3,4,7,8-PeCDF	ND	6.0			
Total PeCDF	ND	6.7			
1,2,3,4,7,8-HxCDF	ND	2.5			
1,2,3,6,7,8-HxCDF	ND	2.5			
2,3,4,6,7,8-HxCDF	ND	2.7			
1,2,3,7,8,9-HxCDF	ND	2.9			
Total HxCDF	ND	2.9			
1,2,3,4,6,7,8-HpCDF	ND	2.4			
1,2,3,4,7,8,9-HpCDF	ND	3.5			
Total HpCDF	ND	3.5			
OCDF	ND	11			

Analyst: MM

Reviewer: MM

**PCDD & PCDF
EPA METHOD 8290**

METHOD BLANK
Lab ID: 1500-0005-MB

Isotopic Recovery Results

<u>Internal Standard</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	93	0.87	
¹³ C-1,2,3,7,8-PeCDD	97	1.57	
¹³ C-1,2,3,4,7,8-HxCDD	83	1.33	
¹³ C-1,2,3,6,7,8-HxCDD	100	1.25	
¹³ C-1,2,3,4,6,7,8-HpCDD	102	1.08	
¹³ C-OCDD	90	0.89	
¹³ C-2,3,7,8-TCDF	93	0.82	
¹³ C-1,2,3,7,8-PeCDF	89	1.66	
¹³ C-2,3,4,7,8-PeCDF	89	1.64	
¹³ C-1,2,3,4,7,8-HxCDF	82	0.54	
¹³ C-1,2,3,6,7,8-HxCDF	84	0.56	
¹³ C-2,3,4,6,7,8-HxCDF	82	0.54	
¹³ C-1,2,3,7,8,9-HxCDF	105	0.51	
¹³ C-1,2,3,4,6,7,8-HpCDF	99	0.45	
¹³ C-1,2,3,4,7,8,9-HpCDF	102	0.45	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	110	NA
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Dates Analyzed:

DB-5: 7/15/95

DB-225: NA

SP-2331: NA

Analyst: SK

Reviewer: AM

Section I: Sample Inventory Report**Date Received: 6/29/95**

<u>Alta Lab. ID</u>	<u>Client Sample ID</u>
1500-0001-SA	414502D
1500-0002-SA	413580D
1500-0003-SA	416380D
1500-0004-SA	424760D
1500-0005-SA	424761D
1500-0006-SA	428480D
1500-0007-SA	110500D
1500-0008-SA	120380D
1500-0009-SA	125502D
1500-0010-SA	130240D
1500-0011-SA	210040D
1500-0012-SA	210660D
1500-0013-SA	210810D
1500-0014-SA	310700D
1500-0015-SA	310704D (MS/MSD)
1500-0016-SA	311560D
1500-0017-SA	312850D

Section I: Sample Inventory Report
Date Received: 6/29/95

Alta Lab. ID

Client Sample ID

1500-0018-SA

321750D

1500-0019-SA

322680D

1500-0020-SA

326502D

**PCDD & PCDF
EPA METHOD 8290**

LCS RESULTS

Lab ID: 1500-0005-LCS1/LCS2

Matrix: Aqueous

Date Received: NA

Date Extracted: 7/06/95

Sample Amount: 1.000 L

ICAL ID: I1613A

QC Lot: LC0706A

Units: NA

<u>Compound</u>	<u>LCS1</u> <u>% R</u>	<u>LCS2</u> <u>% R</u>	<u>RPD</u> <u>%</u>
2,3,7,8-TCDD	104	120	14
1,2,3,7,8-PeCDD	105	128	20
1,2,3,4,7,8-HxCDD	104	110	5.6
1,2,3,6,7,8-HxCDD	110	110	0.0
1,2,3,7,8,9-HxCDD	106	110	3.7
1,2,3,4,6,7,8-HpCDD	102	112	9.3
OCDD	109	118	7.9
2,3,7,8-TCDF	99	105	5.9
1,2,3,7,8-PeCDF	118	115	2.6
2,3,4,7,8-PeCDF	115	115	0.0
1,2,3,4,7,8-HxCDF	107	114	6.3
1,2,3,6,7,8-HxCDF	108	113	4.5
2,3,4,6,7,8-HxCDF	105	109	3.7
1,2,3,7,8,9-HxCDF	106	112	5.5
1,2,3,4,6,7,8-HpCDF	109	114	4.5
1,2,3,4,7,8,9-HpCDF	108	110	1.8
OCDF	90	107	17

Analyst: 164

Page 1 of 2

Reviewer: 164

**PCDD & PCDF
EPA METHOD 8290**

LCS RESULTS

Lab ID: 1500-0005-LCS1/LCS2

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>LCS1 % R</u>	<u>LCS2 % R</u>
¹³ C-2,3,7,8-TCDD	86	67
¹³ C-1,2,3,7,8-PeCDD	95	71
¹³ C-1,2,3,4,7,8-HxCDD	81	70
¹³ C-1,2,3,6,7,8-HxCDD	82	72
¹³ C-1,2,3,4,6,7,8-HpCDD	89	77
¹³ C-OCDD	87	76
¹³ C-2,3,7,8-TCDF	79	67
¹³ C-1,2,3,7,8-PeCDF	86	72
¹³ C-2,3,4,7,8-PeCDF	87	74
¹³ C-1,2,3,4,7,8-HxCDF	73	64
¹³ C-1,2,3,6,7,8-HxCDF	71	64
¹³ C-2,3,4,6,7,8-HxCDF	74	66
¹³ C-1,2,3,7,8,9-HxCDF	80	73
¹³ C-1,2,3,4,6,7,8-HpCDF	78	70
¹³ C-1,2,3,4,7,8,9-HpCDF	83	81

**Clean-up Recovery
Standard:**

³⁷ Cl-2,3,7,8-TCDD	96	74
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Date Analyzed: 7/14/95

Analyst: LM

Reviewer: LM

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 424761D
Lab ID: 1500-0005-SA
Matrix: Aqueous

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 1.060 L

ICAL ID: 11613A
QC Lot: LC0706A
Units: pg/L

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	2.3			
Total TCDD	ND	2.3			
1,2,3,7,8-PeCDD	ND	3.8			
Total PeCDD	ND	5.4			
1,2,3,4,7,8-HxCDD	ND	4.1			
1,2,3,6,7,8-HxCDD	ND	4.0			
1,2,3,7,8,9-HxCDD	ND	3.7			
Total HxCDD	ND	4.1			
1,2,3,4,6,7,8-HpCDD	ND	4.0			
Total HpCDD	ND	4.0			
OCDD	ND	8.0			
2,3,7,8-TCDF	ND	2.1			
Total TCDF	ND	2.1			
1,2,3,7,8-PeCDF	ND	3.9			
2,3,4,7,8-PeCDF	ND	3.5			
Total PeCDF	ND	3.9			
1,2,3,4,7,8-HxCDF	ND	1.6			
1,2,3,6,7,8-HxCDF	ND	1.6			
2,3,4,6,7,8-HxCDF	ND	3.0			
1,2,3,7,8,9-HxCDF	ND	2.1			
Total HxCDF	ND	3.0			
1,2,3,4,6,7,8-HpCDF	ND	1.8			
1,2,3,4,7,8,9-HpCDF	ND	2.5			
Total HpCDF	ND	2.5			
OCDF	ND	7.4			

Analyst: SM

Reviewer: WY

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 424761D
Lab ID: 1500-0005-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	93	0.78	
¹³ C-1,2,3,7,8-PeCDD	100	1.57	
¹³ C-1,2,3,4,7,8-HxCDD	90	1.29	
¹³ C-1,2,3,6,7,8-HxCDD	91	1.27	
¹³ C-1,2,3,4,6,7,8-HpCDD	96	1.07	
¹³ C-OCDD	101	0.90	
¹³ C-2,3,7,8-TCDF	92	0.80	
¹³ C-1,2,3,7,8-PeCDF	91	1.58	
¹³ C-2,3,4,7,8-PeCDF	93	1.58	
¹³ C-1,2,3,4,7,8-HxCDF	73	0.52	
¹³ C-1,2,3,6,7,8-HxCDF	75	0.52	
¹³ C-2,3,4,6,7,8-HxCDF	73	0.53	
¹³ C-1,2,3,7,8,9-HxCDF	84	0.51	
¹³ C-1,2,3,4,6,7,8-HpCDF	73	0.44	
¹³ C-1,2,3,4,7,8,9-HpCDF	80	0.44	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	94	NA
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Dates Analyzed:

DB-5: 7/19/95

DB-225: NA

SP-2331: NA

Analyst: SKY

Reviewer: [Signature]

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 110500D
Lab ID: 1500-0007-SA
Matrix: Soil
% Solids: 97

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.18 g

ICAL ID: 11613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.091			
Total TCDD	ND	0.091			
1,2,3,7,8-PeCDD	ND	0.16			
Total PeCDD	ND	0.16			
1,2,3,4,7,8-HxCDD	ND	0.50			
1,2,3,6,7,8-HxCDD	ND	0.55			
1,2,3,7,8,9-HxCDD	ND	0.29			
Total HxCDD	2.1		1.21	>10:1	A,B
1,2,3,4,6,7,8-HpCDD	5.5		1.09	>10:1	
Total HpCDD	11		1.01	>10:1	
OCDD	61		0.90	>10:1	
2,3,7,8-TCDF	1.5		0.67	>10:1	
Total TCDF	12		0.82	>10:1	
1,2,3,7,8-PeCDF	ND	0.30			
2,3,4,7,8-PeCDF	1.3		1.73	9:1	A
Total PeCDF	7.5		1.51	>10:1	
1,2,3,4,7,8-HxCDF	1.3		1.24	8:1	A
1,2,3,6,7,8-HxCDF	ND	0.31			
2,3,4,6,7,8-HxCDF	0.66		1.14	4:1	A
1,2,3,7,8,9-HxCDF	ND	0.26			
Total HxCDF	3.7			8:1	
1,2,3,4,6,7,8-HpCDF	1.6		1.01	>10:1	
1,2,3,4,7,8,9-HpCDF	ND	0.26			
Total HpCDF	3.3		1.13	>10:1	
OCDF	ND	1.2			

Analyst: Jms

I
Reviewer: Ally

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 110500D
Lab ID: 1500-0007-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	111	0.74	
¹³ C-1,2,3,7,8-PeCDD	108	1.68	
¹³ C-1,2,3,4,7,8-HxCDD	98	1.33	
¹³ C-1,2,3,6,7,8-HxCDD	107	1.18	
¹³ C-1,2,3,4,6,7,8-HpCDD	97	1.05	
¹³ C-OCDD	129	0.91	
¹³ C-2,3,7,8-TCDF	108	0.79	
¹³ C-1,2,3,7,8-PeCDF	112	1.50	
¹³ C-2,3,4,7,8-PeCDF	99	1.61	
¹³ C-1,2,3,4,7,8-HxCDF	75	0.53	
¹³ C-1,2,3,6,7,8-HxCDF	79	0.52	
¹³ C-2,3,4,6,7,8-HxCDF	77	0.53	
¹³ C-1,2,3,7,8,9-HxCDF	103	0.52	
¹³ C-1,2,3,4,6,7,8-HpCDF	76	0.45	
¹³ C-1,2,3,4,7,8,9-HpCDF	91	0.46	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	100	NA
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Dates Analyzed:

DB-5: 7/21/95

DB-225: 7/23/95

SP-2331: NA

Analyst: JM

Reviewer: SH

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 120380D
Lab ID: 1500-0008-SA
Matrix: Soil
% Solids: 99

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.43 g

ICAL ID: I1613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.089			
Total TCDD	ND	0.089			
1,2,3,7,8-PeCDD	ND	0.11			
Total PeCDD	ND	0.11			
1,2,3,4,7,8-HxCDD	ND	0.31			
1,2,3,6,7,8-HxCDD	ND	0.29			
1,2,3,7,8,9-HxCDD	ND	0.27			
Total HxCDD	1.0		1.16	>10:1	A,B
1,2,3,4,6,7,8-HpCDD	2.3		1.00	>10:1	A
Total HpCDD	4.9		1.02	>10:1	
OCDD	28		0.90	>10:1	
2,3,7,8-TCDF	0.90		0.69	>10:1	
Total TCDF	6.2		0.81	>10:1	
1,2,3,7,8-PeCDF	ND	0.26			
2,3,4,7,8-PeCDF	0.82		1.64	8:1	A
Total PeCDF	4.2		1.62	8:1	
1,2,3,4,7,8-HxCDF	0.91		1.30	8:1	A
1,2,3,6,7,8-HxCDF	ND	0.14			
2,3,4,6,7,8-HxCDF	0.51		1.25	8:1	A
1,2,3,7,8,9-HxCDF	ND	0.17			
Total HxCDF	2.5		1.25	8:1	
1,2,3,4,6,7,8-HpCDF	ND	0.74			
1,2,3,4,7,8,9-HpCDF	ND	0.15			
Total HpCDF	ND	0.74			
OCDF	ND	0.77			

Analyst: SM

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 120380D
Lab ID: 1500-0008-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	101	0.73	
¹³ C-1,2,3,7,8-PeCDD	110	1.52	
¹³ C-1,2,3,4,7,8-HxCDD	96	1.27	
¹³ C-1,2,3,6,7,8-HxCDD	99	1.26	
¹³ C-1,2,3,4,6,7,8-HpCDD	91	1.06	
¹³ C-OCDD	112	0.92	
¹³ C-2,3,7,8-TCDF	102	0.79	
¹³ C-1,2,3,7,8-PeCDF	102	1.53	
¹³ C-2,3,4,7,8-PeCDF	92	1.61	
¹³ C-1,2,3,4,7,8-HxCDF	74	0.52	
¹³ C-1,2,3,6,7,8-HxCDF	78	0.52	
¹³ C-2,3,4,6,7,8-HxCDF	74	0.52	
¹³ C-1,2,3,7,8,9-HxCDF	94	0.51	
¹³ C-1,2,3,4,6,7,8-HpCDF	73	0.46	
¹³ C-1,2,3,4,7,8,9-HpCDF	87	0.45	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	88	NA
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Dates Analyzed:

DB-5: 7/21/95

DB-225: 7/23/95

SP-2331: NA

Analyst: [Signature]

Reviewer: [Signature]

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 125502D
Lab ID: 1500-0009-SA
Matrix: Soil
% Solids: 98

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.48 g

ICAL ID: I1613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.094			
Total TCDD	ND	0.094			
1,2,3,7,8-PeCDD	ND	0.21			
Total PeCDD	ND	0.21			
1,2,3,4,7,8-HxCDD	ND	0.26			
1,2,3,6,7,8-HxCDD	ND	0.54			
1,2,3,7,8,9-HxCDD	ND	0.26			
Total HxCDD	1.7		1.39	8:1	A,B
1,2,3,4,6,7,8-HpCDD	4.2		1.08	>10:1	
Total HpCDD	9.1		1.11	>10:1	
OCDD	54		0.91	>10:1	
2,3,7,8-TCDF	1.4		0.66	>10:1	
Total TCDF	13		0.72	>10:1	
1,2,3,7,8-PeCDF	ND	0.38			
2,3,4,7,8-PeCDF	1.6		1.61	8:1	A
Total PeCDF	6.7		1.50	>10:1	
1,2,3,4,7,8-HxCDF	1.5		1.32	8:1	A
1,2,3,6,7,8-HxCDF	ND	0.24			
2,3,4,6,7,8-HxCDF	0.78		1.30	4:1	A
1,2,3,7,8,9-HxCDF	ND	0.27			
Total HxCDF	3.5		1.33	8:1	
1,2,3,4,6,7,8-HpCDF	1.4		0.88	>10:1	A
1,2,3,4,7,8,9-HpCDF	ND	0.24			
Total HpCDF	2.9		1.05	>10:1	
OCDF	ND	0.96			

Analyst: Jim

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 125502D
Lab ID: 1500-0009-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	106	0.73	
¹³ C-1,2,3,7,8-PeCDD	107	1.65	
¹³ C-1,2,3,4,7,8-HxCDD	96	1.27	
¹³ C-1,2,3,6,7,8-HxCDD	102	1.26	
¹³ C-1,2,3,4,6,7,8-HpCDD	91	1.05	
¹³ C-OCDD	105	0.90	
¹³ C-2,3,7,8-TCDF	104	0.80	
¹³ C-1,2,3,7,8-PeCDF	105	1.55	
¹³ C-2,3,4,7,8-PeCDF	87	1.63	
¹³ C-1,2,3,4,7,8-HxCDF	76	0.53	
¹³ C-1,2,3,6,7,8-HxCDF	80	0.52	
¹³ C-2,3,4,6,7,8-HxCDF	77	0.52	
¹³ C-1,2,3,7,8,9-HxCDF	96	0.52	
¹³ C-1,2,3,4,6,7,8-HpCDF	77	0.46	
¹³ C-1,2,3,4,7,8,9-HpCDF	87	0.46	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	96	NA
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Dates Analyzed:

DB-5: 7/21/95

DB-225: 7/23/95

SP-2331: NA

Analyst: SM

Reviewer: SM

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 130240D
Lab ID: 1500-0010-SA
Matrix: Soil
% Solids: 98

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.51 g

ICAL ID: I1613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.13			
Total TCDD	ND	0.13			
1,2,3,7,8-PeCDD	ND	0.13			
Total PeCDD	ND	0.13			
1,2,3,4,7,8-HxCDD	ND	0.28			
1,2,3,6,7,8-HxCDD	ND	0.66			
1,2,3,7,8,9-HxCDD	ND	0.25			
Total HxCDD	1.5		1.27	8:1	A,B
1,2,3,4,6,7,8-HpCDD	3.7		1.04	>10:1	
Total HpCDD	7.6		1.08	>10:1	
OCDD	39		0.93	>10:1	
2,3,7,8-TCDF	0.89		0.72	>10:1	
Total TCDF	7.5		0.80	>10:1	
1,2,3,7,8-PeCDF	ND	0.28			
2,3,4,7,8-PeCDF	0.94		1.55	8:1	A
Total PeCDF	4.3		1.77	>10:1	
1,2,3,4,7,8-HxCDF	0.86		1.40	5:1	A
1,2,3,6,7,8-HxCDF	ND	0.32			
2,3,4,6,7,8-HxCDF	0.51		1.26	3:1	A
1,2,3,7,8,9-HxCDF	ND	0.23			
Total HxCDF	2.9		1.06	7:1	
1,2,3,4,6,7,8-HpCDF	1.7		1.02	>10:1	A
1,2,3,4,7,8,9-HpCDF	ND	0.57			
Total HpCDF	4.0		1.02	>10:1	
OCDF	ND	2.0			

Analyst: [Signature]

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Reviewer: [Signature]

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 130240D
Lab ID: 1500-0010-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	112	0.72	
¹³ C-1,2,3,7,8-PeCDD	105	1.62	
¹³ C-1,2,3,4,7,8-HxCDD	98	1.25	
¹³ C-1,2,3,6,7,8-HxCDD	107	1.26	
¹³ C-1,2,3,4,6,7,8-HpCDD	94	1.08	
¹³ C-OCDD	108	0.92	
¹³ C-2,3,7,8-TCDF	107	0.78	
¹³ C-1,2,3,7,8-PeCDF	106	1.55	
¹³ C-2,3,4,7,8-PeCDF	92	1.59	
¹³ C-1,2,3,4,7,8-HxCDF	80	0.52	
¹³ C-1,2,3,6,7,8-HxCDF	83	0.53	
¹³ C-2,3,4,6,7,8-HxCDF	82	0.52	
¹³ C-1,2,3,7,8,9-HxCDF	101	0.53	
¹³ C-1,2,3,4,6,7,8-HpCDF	78	0.45	
¹³ C-1,2,3,4,7,8,9-HpCDF	90	0.45	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	101	NA
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Dates Analyzed:

DB-5: 7/21/95

DB-225: 7/23/95

SP-2331: NA

Analyst: QMA

Reviewer: BLU

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 210660D
Lab ID: 1500-0012-SA
Matrix: Soil
% Solids: 97

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.49 g

ICAL ID: I1613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.16			
Total TCDD	ND	0.16			
1,2,3,7,8-PeCDD	ND	0.30			
Total PeCDD	ND	0.38			
1,2,3,4,7,8-HxCDD	ND	0.31			
1,2,3,6,7,8-HxCDD	ND	1.3			I
1,2,3,7,8,9-HxCDD	ND	0.66			
Total HxCDD	4.5		1.30	>10:1	B
1,2,3,4,6,7,8-HpCDD	19		1.04	>10:1	
Total HpCDD	37		1.06	>10:1	
OCDD	180		0.90	>10:1	
2,3,7,8-TCDF	0.30		0.82	4:1	A
Total TCDF	2.0		0.68	6:1	
1,2,3,7,8-PeCDF	ND	0.18			
2,3,4,7,8-PeCDF	ND	0.23			
Total PeCDF	2.1		1.56	5:1	A
1,2,3,4,7,8-HxCDF	ND	0.28			
1,2,3,6,7,8-HxCDF	ND	0.23			
2,3,4,6,7,8-HxCDF	ND	0.47			I
1,2,3,7,8,9-HxCDF	ND	0.24			
Total HxCDF	3.0		1.09	8:1	
1,2,3,4,6,7,8-HpCDF	4.1		1.11	>10:1	
1,2,3,4,7,8,9-HpCDF	ND	0.36			
Total HpCDF	11		1.11	>10:1	
OCDF	6.1		0.91	>10:1	

Analyst: SM

Reviewer: SM

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 210660D
Lab ID: 1500-0012-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	111	0.73	
¹³ C-1,2,3,7,8-PeCDD	116	1.49	
¹³ C-1,2,3,4,7,8-HxCDD	107	1.27	
¹³ C-1,2,3,6,7,8-HxCDD	96	1.28	
¹³ C-1,2,3,4,6,7,8-HpCDD	108	1.06	
¹³ C-OCDD	134	0.92	
¹³ C-2,3,7,8-TCDF	118	0.80	
¹³ C-1,2,3,7,8-PeCDF	112	1.59	
¹³ C-2,3,4,7,8-PeCDF	100	1.61	
¹³ C-1,2,3,4,7,8-HxCDF	78	0.52	
¹³ C-1,2,3,6,7,8-HxCDF	80	0.53	
¹³ C-2,3,4,6,7,8-HxCDF	80	0.53	
¹³ C-1,2,3,7,8,9-HxCDF	101	0.52	
¹³ C-1,2,3,4,6,7,8-HpCDF	86	0.44	
¹³ C-1,2,3,4,7,8,9-HpCDF	98	0.46	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	105	NA
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Dates Analyzed:

DB-5: 7/21/95

DB-225: NA

SP-2331: NA

Analyst: gmm

Reviewer: SLY

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 210810D
Lab ID: 1500-0013-SA
Matrix: Soil
% Solids: 98

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.18 g

ICAL ID: I1613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.19			
Total TCDD	ND	0.19			
1,2,3,7,8-PeCDD	ND	0.24			
Total PeCDD	ND	0.24			
1,2,3,4,7,8-HxCDD	ND	0.63			
1,2,3,6,7,8-HxCDD	ND	1.2			I
1,2,3,7,8,9-HxCDD	ND	0.63			
Total HxCDD	6.3		1.24	8:1	B
1,2,3,4,6,7,8-HpCDD	15		1.04	>10:1	
Total HpCDD	32		1.07	>10:1	
OCDD	140		0.90	>10:1	
2,3,7,8-TCDF	0.27		0.77	3:1	A
Total TCDF	0.27		0.81	4:1	A
1,2,3,7,8-PeCDF	ND	0.36			
2,3,4,7,8-PeCDF	ND	0.28			
Total PeCDF	1.7		1.47	>10:1	A
1,2,3,4,7,8-HxCDF	ND	0.27			
1,2,3,6,7,8-HxCDF	ND	0.26			
2,3,4,6,7,8-HxCDF	ND	0.46			
1,2,3,7,8,9-HxCDF	ND	0.17			
Total HxCDF	2.8		1.18	>10:1	
1,2,3,4,6,7,8-HpCDF	3.3		1.05	>10:1	
1,2,3,4,7,8,9-HpCDF	ND	0.38			
Total HpCDF	11		1.05	>10:1	
OCDF	4.1		0.83	5:1	A

Analyst: [Signature]

Reviewer: [Signature]

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 210810D
Lab ID: 1500-0013-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	101	0.71	
¹³ C-1,2,3,7,8-PeCDD	116	1.54	
¹³ C-1,2,3,4,7,8-HxCDD	104	1.26	
¹³ C-1,2,3,6,7,8-HxCDD	101	1.24	
¹³ C-1,2,3,4,6,7,8-HpCDD	104	1.05	
¹³ C-OCDD	122	0.89	
¹³ C-2,3,7,8-TCDF	111	0.79	
¹³ C-1,2,3,7,8-PeCDF	106	1.57	
¹³ C-2,3,4,7,8-PeCDF	104	1.61	
¹³ C-1,2,3,4,7,8-HxCDF	80	0.57	
¹³ C-1,2,3,6,7,8-HxCDF	83	0.48	
¹³ C-2,3,4,6,7,8-HxCDF	80	0.52	
¹³ C-1,2,3,7,8,9-HxCDF	96	0.53	
¹³ C-1,2,3,4,6,7,8-HpCDF	86	0.46	
¹³ C-1,2,3,4,7,8,9-HpCDF	93	0.44	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	90	NA
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Dates Analyzed:

DB-5: 7/21/95

DB-225: NA

2SP-2331: NA

Analyst: 

Reviewer: 

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 310700D
Lab ID: 1500-0014-SA
Matrix: Soil
% Solids: 99

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.15 g

ICAL ID: 11613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N</u> <u>Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.049			
Total TCDD	ND	0.049			
1,2,3,7,8-PeCDD	ND	0.060			
Total PeCDD	ND	0.13			
1,2,3,4,7,8-HxCDD	ND	0.15			
1,2,3,6,7,8-HxCDD	ND	0.48			I
1,2,3,7,8,9-HxCDD	ND	0.22			
Total HxCDD	1.6		1.33	6:1	A,B
1,2,3,4,6,7,8-HpCDD	2.8		1.09	>10:1	
Total HpCDD	5.9		1.00	>10:1	
OCDD	26		0.87	>10:1	
2,3,7,8-TCDF	0.53		0.80	>10:1	A
Total TCDF	3.2		0.79	>10:1	
1,2,3,7,8-PeCDF	ND	0.15			
2,3,4,7,8-PeCDF	0.48		1.37	8:1	A
Total PeCDF	2.5		1.41	>10:1	
1,2,3,4,7,8-HxCDF	0.53		1.18	7:1	A
1,2,3,6,7,8-HxCDF	ND	0.20			
2,3,4,6,7,8-HxCDF	0.45		1.30	6:1	A
1,2,3,7,8,9-HxCDF	ND	0.12			
Total HxCDF	1.8		1.16	8:1	A
1,2,3,4,6,7,8-HpCDF	0.84		1.06	6:1	A
1,2,3,4,7,8,9-HpCDF	ND	0.38			
Total HpCDF	1.8		1.06	6:1	A
OCDF	ND	0.86			I

Analyst: AME

Reviewer: ML

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 310700D
Lab ID: 1500-0014-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	101	0.76	
¹³ C-1,2,3,7,8-PeCDD	81	1.51	
¹³ C-1,2,3,4,7,8-HxCDD	95	1.14	
¹³ C-1,2,3,6,7,8-HxCDD	103	1.31	
¹³ C-1,2,3,4,6,7,8-HpCDD	97	1.03	
¹³ C-OCDD	111	0.88	
¹³ C-2,3,7,8-TCDF	106	0.80	
¹³ C-1,2,3,7,8-PeCDF	90	1.61	
¹³ C-2,3,4,7,8-PeCDF	81	1.60	
¹³ C-1,2,3,4,7,8-HxCDF	70	0.51	
¹³ C-1,2,3,6,7,8-HxCDF	71	0.51	
¹³ C-2,3,4,6,7,8-HxCDF	68	0.52	
¹³ C-1,2,3,7,8,9-HxCDF	95	0.51	
¹³ C-1,2,3,4,6,7,8-HpCDF	73	0.43	
¹³ C-1,2,3,4,7,8,9-HpCDF	90	0.44	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	92	NA
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Dates Analyzed:

DB-5: 7/21/95

DB-225: NA

2SP-2331: NA

Analyst: gms

Reviewer: BSM

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 310704D
Lab ID: 1500-0015-SA
Matrix: Soil
% Solids: 98

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.32 g

ICAL ID: I1613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.066			
Total TCDD	ND	0.066			
1,2,3,7,8-PeCDD	ND	0.12			
Total PeCDD	ND	0.20			
1,2,3,4,7,8-HxCDD	ND	0.13			
1,2,3,6,7,8-HxCDD	ND	0.54			I
1,2,3,7,8,9-HxCDD	ND	0.23			
Total HxCDD	1.8		1.33	8:1	A,B
1,2,3,4,6,7,8-HpCDD	3.4		1.01	>10:1	
Total HpCDD	6.7		1.00	>10:1	
OCDD	27		0.88	>10:1	
2,3,7,8-TCDF	0.74		0.72	>10:1	A
Total TCDF	4.1		0.74	>10:1	
1,2,3,7,8-PeCDF	ND	0.15			
2,3,4,7,8-PeCDF	0.77		1.51	>10:1	A
Total PeCDF	3.8		1.62	>10:1	
1,2,3,4,7,8-HxCDF	0.88		1.24	9:1	A
1,2,3,6,7,8-HxCDF	ND	0.15			
2,3,4,6,7,8-HxCDF	0.54		1.17	7:1	A
1,2,3,7,8,9-HxCDF	ND	0.19			
Total HxCDF	2.5		1.24	>10:1	
1,2,3,4,6,7,8-HpCDF	0.95		1.02	6:1	A
1,2,3,4,7,8,9-HpCDF	ND	0.17			
Total HpCDF	2.0		1.02	6:1	A
OCDF	ND	0.86			

Analyst: [Signature]

Reviewer: [Signature]

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 310704D
Lab ID: 1500-0015-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	104	0.79	
¹³ C-1,2,3,7,8-PeCDD	81	1.50	
¹³ C-1,2,3,4,7,8-HxCDD	98	1.22	
¹³ C-1,2,3,6,7,8-HxCDD	103	1.23	
¹³ C-1,2,3,4,6,7,8-HpCDD	97	1.03	
¹³ C-OCDD	116	0.89	
¹³ C-2,3,7,8-TCDF	106	0.82	
¹³ C-1,2,3,7,8-PeCDF	96	1.55	
¹³ C-2,3,4,7,8-PeCDF	81	1.57	
¹³ C-1,2,3,4,7,8-HxCDF	70	0.51	
¹³ C-1,2,3,6,7,8-HxCDF	74	0.51	
¹³ C-2,3,4,6,7,8-HxCDF	71	0.51	
¹³ C-1,2,3,7,8,9-HxCDF	98	0.51	
¹³ C-1,2,3,4,6,7,8-HpCDF	73	0.44	
¹³ C-1,2,3,4,7,8,9-HpCDF	89	0.44	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	94	NA
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Dates Analyzed:

DB-5: 7/21/95

DB-225: NA

2SP-2331: NA

Analyst: [Signature]

Reviewer: [Signature]

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 210040D
Lab ID: 1500-0011-SA
Matrix: Soil
% Solids: 98

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.23 g

ICAL ID: I1613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.15			
Total TCDD	ND	0.15			
1,2,3,7,8-PeCDD	ND	0.17			
Total PeCDD	ND	0.17			
1,2,3,4,7,8-HxCDD	ND	0.46			
1,2,3,6,7,8-HxCDD	ND	0.77			
1,2,3,7,8,9-HxCDD	ND	0.41			
Total HxCDD	2.1		1.43	5:1	A,B
1,2,3,4,6,7,8-HpCDD	12		1.01	>10:1	
Total HpCDD	26		1.04	>10:1	
OCDD	140		0.91	>10:1	
2,3,7,8-TCDF	ND	0.18			
Total TCDF	ND	0.18			
1,2,3,7,8-PeCDF	ND	0.14			
2,3,4,7,8-PeCDF	ND	0.15			
Total PeCDF	0.77		1.60	>10:1	A
1,2,3,4,7,8-HxCDF	ND	0.32			
1,2,3,6,7,8-HxCDF	ND	0.31			
2,3,4,6,7,8-HxCDF	ND	0.41			
1,2,3,7,8,9-HxCDF	ND	0.32			
Total HxCDF	2.2		1.30	6:1	A
1,2,3,4,6,7,8-HpCDF	2.8		1.07	>10:1	
1,2,3,4,7,8,9-HpCDF	ND	0.30			
Total HpCDF	7.4		1.07	>10:1	
OCDF	4.4		0.90	>10:1	A

Analyst: gmr

Reviewer: SM

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 210040D
Lab ID: 1500-0011-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	108	0.75	
¹³ C-1,2,3,7,8-PeCDD	103	1.41	
¹³ C-1,2,3,4,7,8-HxCDD	102	1.27	
¹³ C-1,2,3,6,7,8-HxCDD	113	1.26	
¹³ C-1,2,3,4,6,7,8-HpCDD	102	1.05	
¹³ C-OCDD	139	0.96	
¹³ C-2,3,7,8-TCDF	116	0.78	
¹³ C-1,2,3,7,8-PeCDF	104	1.60	
¹³ C-2,3,4,7,8-PeCDF	95	1.63	
¹³ C-1,2,3,4,7,8-HxCDF	80	0.53	
¹³ C-1,2,3,6,7,8-HxCDF	80	0.52	
¹³ C-2,3,4,6,7,8-HxCDF	82	0.53	
¹³ C-1,2,3,7,8,9-HxCDF	106	0.53	
¹³ C-1,2,3,4,6,7,8-HpCDF	85	0.44	
¹³ C-1,2,3,4,7,8,9-HpCDF	98	0.44	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	97	NA
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Dates Analyzed:

DB-5: 7/21/95

DB-225: NA

SP-2331: NA

Analyst: [Signature]

Reviewer: [Signature]

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 311560D
Lab ID: 1500-0016-SA
Matrix: Soil
% Solids: 100

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.14 g

ICAL ID: I1613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.057			
Total TCDD	ND	0.057			
1,2,3,7,8-PeCDD	ND	0.12			
Total PeCDD	ND	0.13			
1,2,3,4,7,8-HxCDD	ND	0.28			
1,2,3,6,7,8-HxCDD	ND	0.70			I
1,2,3,7,8,9-HxCDD	ND	0.38			
Total HxCDD	2.2		1.17	8:1	A,B
1,2,3,4,6,7,8-HpCDD	5.0		0.98	>10:1	
Total HpCDD	9.8		1.02	>10:1	
OCDD	46		0.87	>10:1	
2,3,7,8-TCDF	0.94		0.73	>10:1	
Total TCDF	6.5		0.86	>10:1	
1,2,3,7,8-PeCDF	ND	0.22			
2,3,4,7,8-PeCDF	0.75		1.50	>10:1	A
Total PeCDF	4.2		1.57	>10:1	
1,2,3,4,7,8-HxCDF	0.61		1.21	7:1	A
1,2,3,6,7,8-HxCDF	ND	0.28			
2,3,4,6,7,8-HxCDF	0.50		1.14	5:1	A
1,2,3,7,8,9-HxCDF	ND	0.10			
Total HxCDF	1.5		1.16	8:1	A
1,2,3,4,6,7,8-HpCDF	1.0		1.14	8:1	A
1,2,3,4,7,8,9-HpCDF	ND	0.18			
Total HpCDF	2.5		1.14	>10:1	
OCDF	1.2		0.91	5:1	A

Analyst: MA

Reviewer: SPS

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 311560D
Lab ID: 1500-0016-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	89	0.82	
¹³ C-1,2,3,7,8-PeCDD	79	1.53	
¹³ C-1,2,3,4,7,8-HxCDD	83	1.20	
¹³ C-1,2,3,6,7,8-HxCDD	97	1.23	
¹³ C-1,2,3,4,6,7,8-HpCDD	98	1.03	
¹³ C-OCDD	114	0.90	
¹³ C-2,3,7,8-TCDF	101	0.82	
¹³ C-1,2,3,7,8-PeCDF	92	1.57	
¹³ C-2,3,4,7,8-PeCDF	79	1.60	
¹³ C-1,2,3,4,7,8-HxCDF	67	0.51	
¹³ C-1,2,3,6,7,8-HxCDF	69	0.50	
¹³ C-2,3,4,6,7,8-HxCDF	64	0.51	
¹³ C-1,2,3,7,8,9-HxCDF	86	0.51	
¹³ C-1,2,3,4,6,7,8-HpCDF	69	0.43	
¹³ C-1,2,3,4,7,8,9-HpCDF	85	0.45	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	92	NA
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Dates Analyzed:

DB-5: 7/21/95

DB-225: 7/23/95

SP-2331: NA

Analyst: h

Reviewer: [Signature]

PCDD & PCDF
EPA METHOD 8290

Sample ID: 312850D
Lab ID: 1500-0017-SA
Matrix: Soil
% Solids: 95

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.42 g

ICAL ID: I1613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N</u> <u>Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.069			
Total TCDD	ND	0.095			
1,2,3,7,8-PeCDD	ND	0.041			
Total PeCDD	13		1.60	7:1	A
1,2,3,4,7,8-HxCDD	ND	0.21			
1,2,3,6,7,8-HxCDD	2.1		1.20	>10:1	A
1,2,3,7,8,9-HxCDD	0.95		1.18	6:1	A
Total HxCDD	12		1.28	>10:1	B
1,2,3,4,6,7,8-HpCDD	31		1.02	>10:1	
Total HpCDD	53		1.19	>10:1	
OCDD	340		0.89	>10:1	
2,3,7,8-TCDF	0.56		0.69	>10:1	A
Total TCDF	3.9		0.69	>10:1	
1,2,3,7,8-PeCDF	ND	0.13			
2,3,4,7,8-PeCDF	0.37		1.43	7:1	A
Total PeCDF	1.8		1.77	8:1	A
1,2,3,4,7,8-HxCDF	0.37		1.21	4:1	A
1,2,3,6,7,8-HxCDF	ND	0.15			
2,3,4,6,7,8-HxCDF	0.46		1.20	4:1	A
1,2,3,7,8,9-HxCDF	ND	0.077			
Total HxCDF	2.5		1.30	9:1	
1,2,3,4,6,7,8-HpCDF	2.4		1.03	>10:1	A
1,2,3,4,7,8,9-HpCDF	ND	0.19			
Total HpCDF	6.1		1.03	>10:1	
OCDF	2.2		0.83	8:1	A

Analyst: SM

Reviewer: SM

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 321750D
Lab ID: 1500-0018-SA
Matrix: Soil
% Solids: 98

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.21 g

ICAL ID: I1613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.052			
Total TCDD	ND	0.052			
1,2,3,7,8-PeCDD	ND	0.16			
Total PeCDD	ND	0.24			
1,2,3,4,7,8-HxCDD	ND	0.13			
1,2,3,6,7,8-HxCDD	1.3		1.14	5:1	A
1,2,3,7,8,9-HxCDD	ND	0.57			
Total HxCDD	3.8		1.12	>10:1	B
1,2,3,4,6,7,8-HpCDD	22		1.01	>10:1	
Total HpCDD	36		1.06	>10:1	
OCDD	120		0.89	>10:1	
2,3,7,8-TCDF	0.55		0.73	>10:1	A
Total TCDF	2.7		0.72	>10:1	
1,2,3,7,8-PeCDF	ND	0.096			
2,3,4,7,8-PeCDF	0.42		1.46	8:1	A
Total PeCDF	2.1		1.57	>10:1	A
1,2,3,4,7,8-HxCDF	0.49		1.28	4:1	A
1,2,3,6,7,8-HxCDF	ND	0.13			
2,3,4,6,7,8-HxCDF	0.41		1.24	4:1	A
1,2,3,7,8,9-HxCDF	ND	0.085			
Total HxCDF	2.2		1.29	9:1	A
1,2,3,4,6,7,8-HpCDF	1.8		1.04	9:1	A
1,2,3,4,7,8,9-HpCDF	ND	0.21			
Total HpCDF	4.1		1.04	>10:1	
OCDF	1.7		0.91	8:1	A

Analyst: AM

Reviewer: AM

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 321750D
Lab ID: 1500-0018-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	98	0.77	
¹³ C-1,2,3,7,8-PeCDD	87	1.52	
¹³ C-1,2,3,4,7,8-HxCDD	91	1.21	
¹³ C-1,2,3,6,7,8-HxCDD	102	1.21	
¹³ C-1,2,3,4,6,7,8-HpCDD	99	1.02	
¹³ C-OCDD	115	0.87	
¹³ C-2,3,7,8-TCDF	109	0.81	
¹³ C-1,2,3,7,8-PeCDF	105	1.58	
¹³ C-2,3,4,7,8-PeCDF	88	1.58	
¹³ C-1,2,3,4,7,8-HxCDF	68	0.51	
¹³ C-1,2,3,6,7,8-HxCDF	67	0.51	
¹³ C-2,3,4,6,7,8-HxCDF	68	0.51	
¹³ C-1,2,3,7,8,9-HxCDF	96	0.51	
¹³ C-1,2,3,4,6,7,8-HpCDF	72	0.44	
¹³ C-1,2,3,4,7,8,9-HpCDF	87	0.45	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	94	NA
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Dates Analyzed:

DB-5: 7/21/95

DB-225: NA

SP-2331: NA

Analyst: AP

Reviewer: AP



**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 322680D
Lab ID: 1500-0019-SA
Matrix: Soil
% Solids: 95

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.37 g

ICAL ID: I1613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.078			
Total TCDD	ND	0.11			
1,2,3,7,8-PeCDD	ND	0.11			
Total PeCDD	1.0		1.59	8:1	A
1,2,3,4,7,8-HxCDD	ND	0.14			
1,2,3,6,7,8-HxCDD	1.3		1.21	4:1	A
1,2,3,7,8,9-HxCDD	ND	0.61			
Total HxCDD	6.6		1.38	>10:1	B
1,2,3,4,6,7,8-HpCDD	4.2		1.06	>10:1	
Total HpCDD	8.0		1.04	>10:1	
OCDD	31		0.87	>10:1	
2,3,7,8-TCDF	0.67		0.76	>10:1	A
Total TCDF	5.1		0.83	>10:1	
1,2,3,7,8-PeCDF	ND	0.17			
2,3,4,7,8-PeCDF	0.52		1.53	5:1	A
Total PeCDF	3.0		1.63	9:1	
1,2,3,4,7,8-HxCDF	0.49		1.24	8:1	A
1,2,3,6,7,8-HxCDF	ND	0.14			
2,3,4,6,7,8-HxCDF	0.44		1.24	6:1	A
1,2,3,7,8,9-HxCDF	ND	0.059			
Total HxCDF	2.0		1.18	>10:1	A
1,2,3,4,6,7,8-HpCDF	1.5		1.02	>10:1	A
1,2,3,4,7,8,9-HpCDF	ND	0.13			
Total HpCDF	3.0		1.02	>10:1	
OCDF	1.1		0.93	5:1	A

Analyst: MM

Reviewer: MM

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 322680D
Lab ID: 1500-0019-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	98	0.77	
¹³ C-1,2,3,7,8-PeCDD	82	1.52	
¹³ C-1,2,3,4,7,8-HxCDD	94	1.21	
¹³ C-1,2,3,6,7,8-HxCDD	98	1.22	
¹³ C-1,2,3,4,6,7,8-HpCDD	103	1.03	
¹³ C-OCDD	122	0.87	
¹³ C-2,3,7,8-TCDF	116	0.80	
¹³ C-1,2,3,7,8-PeCDF	100	1.55	
¹³ C-2,3,4,7,8-PeCDF	82	1.60	
¹³ C-1,2,3,4,7,8-HxCDF	84	0.52	
¹³ C-1,2,3,6,7,8-HxCDF	89	0.50	
¹³ C-2,3,4,6,7,8-HxCDF	69	0.51	
¹³ C-1,2,3,7,8,9-HxCDF	93	0.51	
¹³ C-1,2,3,4,6,7,8-HpCDF	73	0.44	
¹³ C-1,2,3,4,7,8,9-HpCDF	93	0.45	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	95	NA
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Dates Analyzed:

DB-5: 7/21/95

DB-225: NA

SP-2331: NA

Analyst: SA

Reviewer: [Signature]

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 326502D
Lab ID: 1500-0020-SA
Matrix: Soil
% Solids: 98

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.33 g

ICAL ID: I1613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.055			
Total TCDD	ND	0.055			
1,2,3,7,8-PeCDD	ND	0.11			
Total PeCDD	ND	0.22			
1,2,3,4,7,8-HxCDD	ND	0.14			
1,2,3,6,7,8-HxCDD	ND	0.77			I
1,2,3,7,8,9-HxCDD	ND	0.42			
Total HxCDD	3.1		1.26	>10:1	B
1,2,3,4,6,7,8-HpCDD	4.3		1.04	>10:1	
Total HpCDD	8.5		1.03	>10:1	
OCDD	39		0.87	>10:1	
2,3,7,8-TCDF	0.53		0.74	>10:1	A
Total TCDF	3.0		0.76	>10:1	
1,2,3,7,8-PeCDF	ND	0.12			
2,3,4,7,8-PeCDF	0.48		1.46	8:1	A
Total PeCDF	3.0		1.65	>10:1	
1,2,3,4,7,8-HxCDF	0.47		1.21	7:1	A
1,2,3,6,7,8-HxCDF	ND	0.20			
2,3,4,6,7,8-HxCDF	0.44		1.42	6:1	A
1,2,3,7,8,9-HxCDF	ND	0.053			
Total HxCDF	1.9		1.18	>10:1	A
1,2,3,4,6,7,8-HpCDF	1.2		1.04	8:1	A
1,2,3,4,7,8,9-HpCDF	ND	0.14			
Total HpCDF	2.7		1.10	8:1	
OCDF	1.0		0.85	5:1	A

Analyst: ALY

Reviewer: [Signature]

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 326502D
Lab ID: 1500-0020-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	94	0.76	
¹³ C-1,2,3,7,8-PeCDD	76	1.49	
¹³ C-1,2,3,4,7,8-HxCDD	92	1.21	
¹³ C-1,2,3,6,7,8-HxCDD	96	1.22	
¹³ C-1,2,3,4,6,7,8-HpCDD	94	1.01	
¹³ C-OCDD	106	0.89	
¹³ C-2,3,7,8-TCDF	106	0.80	
¹³ C-1,2,3,7,8-PeCDF	96	1.59	
¹³ C-2,3,4,7,8-PeCDF	75	1.59	
¹³ C-1,2,3,4,7,8-HxCDF	68	0.51	
¹³ C-1,2,3,6,7,8-HxCDF	71	0.52	
¹³ C-2,3,4,6,7,8-HxCDF	64	0.51	
¹³ C-1,2,3,7,8,9-HxCDF	92	0.50	
¹³ C-1,2,3,4,6,7,8-HpCDF	68	0.45	
¹³ C-1,2,3,4,7,8,9-HpCDF	83	0.45	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	93	NA
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Dates Analyzed:

DB-5: 7/21/95

DB-225: NA

SP-2331: NA

Analyst: SK

Reviewer: SK

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS



- A** The amount detected is below the Method Calibration Limit.
- B** This compound was also detected in the blank.
- C** The amount detected is less than five times the Method Quantitation Limit.
- D** The amount reported is the maximum possible concentration.
- E** The detection limit was raised above the Method Quantitation Limit due to chemical interferences.
- F** This result has been confirmed on a DB-225 column.
- G** This result has been confirmed on a SP-2331 column.
- H** The signal-to-noise ratio is greater than 10:1.
- I** Chemical Interference

Conc.	Concentration
D.L.	Detection Limit
NA	Not applicable
S/N	Signal-to-noise
*	See Cover Letter
ND	Not Detected
MPC	Maximum Possible Concentration



MB Environmental
Laboratories
3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

CHAIN OF CUSTODY RECORD 14107

SEE SIDE 2 FOR
COMPLETE
INSTRUCTIONS

FOR LABORATORY USE ONLY

Laboratory Project #: Storage ID:
Sample Condition Upon Receipt: Temp: °C Gdgr:
Custody Seals Present? Yes/No Intact? Yes/No Samples Intact? Yes/No

Project Name: ESDF Off-site Drainage, Invt.
Project Number: 03.0601864.001.002
Project Location: (State) CA.

Analytical Methods

4131
4132 Long Method
4133 Short Method
4141 Long Method
4142 Short Method
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CHAIN OF CUSTODY RECORD 14106

**SEE SIDE 2 FOR
COMPLETE
INSTRUCTIONS**

FOR LABORATORY USE ONLY

Laboratory Project #: _____ Storage ID: _____
 Sample Condition Upon Receipt: Temp: _____ °C Gelger: _____
 Custody Seals Present? Yes/No Intact? Yes/No Samples Intact? Yes/No

Project Name: ESPF Off-site Drainage Invest.
 Project Number: 03.0601864.001.001
 Project Location: (State) CA

Chemical Analysis Methods

412.1 Long Method
412.2 Short Method
412.3 Long Method
412.4 Short Method

Sample Disposal (check one)	Level of QC (see Side 2)	☒ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6A	☐ 6B
		☐ 6C	☐ 6D	☐ 6E	☐ 6F	☐ 7	☐ 8	☐ A
☒ Laboratory Standard		Write in  Analysis Method						
		ANALYSES REQUESTED						

SAMPLE INFORMATION

[illegible]

END REPORT TO:

Company Name McLaren/Hart
 Client Name Eric Smith
 Address 11755 Van Korman Ave.
Irvine, CA 92714
 Phone (714) 752-3230 Fax (714) 752-8460

BILL TO (if different):

Company Name
Address

PO #
Phone Fax

Special Instructions/Comments

ship to ALTA Laboratories
5676 Robert J. Mathew Pkwy
El Dorado Hills, CA 95762

Sample Name	Signature	Date/Time	Date/Time
ERIC Smith	ERIC Smith	6-28-95	3:00
Relinquished By:	Date/Time	Received By or Method of Shipment/	Date/Time
ERIC Smith	6-28-95 4:00	ERIC Smith	
Relinquished By:	Date/Time	Received By or Method of Shipment/	Date/Time
ERIC Smith	6-28-95 4:00	ERIC Smith	
Relinquished By:	Date/Time	Received By or Method of Shipment/	Date/Time
ERIC Smith	6-28-95 4:00	ERIC Smith	

ALTA Analytical Laboratory

Project No.: 1500

Sample Log-In Checklist		Yes	No
1. Date Samples Arrived: <u>6-29-95</u> Initials: <u>R.F.</u>			
2. Samples Arrived By: (circle one) Airborne Express <u>Federal Express</u> UPS Emery Freezer Truck Company Courier Other _____			
3. Shipping Documentation Present? (circle one) Shipping Label <u>Airbill</u> Tracking Number <u>8434638063</u>		X	
4. Shipping Container(s) Intact? If no, describe condition below.		X	
5. Custody Seals Present and Intact? If not intact, describe condition below. No. of Seals _____ or Seal No. _____ Type:(circle) Bottle or Container			X
6. Sample Container Intact? If no, indicate sample condition below.		X	
7. Shipping Preservation: (circle) <u>Ice</u> Blue Ice / Dry Ice / Ambient / None Temp(°C) <u>3</u>			
8. Chain of Custody (COC) or other Sample Documentation Present?		X	
9. COC/Documentation Acceptable? If no, complete COC Anomaly Form.		X	
10. Shipping Container: (circle) ALTA or <u>Client</u> / <u>Return</u> or Retain			
11. Container and/or Bottles Requested?			X
12. Sample Control Check In/Out Log Completed?		X	
*13. Drinking Water Sample? If yes, Acceptable Preservation? (circle) Y or N			X

*Required for HRMS

Name: _____ Date Samples Reconciled: _____
(Signature Required for LCMS Only)

Comments:

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 413580D
Lab ID: 1500-0002-SA
Matrix: Soil
% Solids: 98

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.47 g

ICAL ID: 11613A
QC Lot: LC0714S
Units: pg/g

✓
✓

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.11			
Total TCDD	ND	0.11			
1,2,3,7,8-PeCDD	ND	0.18			
Total PeCDD	ND	0.25			
1,2,3,4,7,8-HxCDD	ND	0.23			
1,2,3,6,7,8-HxCDD	1.2		1.14	8:1	A
1,2,3,7,8,9-HxCDD	ND	0.42			
Total HxCDD	5.1		1.32	>10:1	B
1,2,3,4,6,7,8-HpCDD	6.6		1.02	>10:1	
Total HpCDD	13		1.04	>10:1	
OCDD	59		0.90	>10:1	
2,3,7,8-TCDF	0.86		0.68	>10:1	
Total TCDF	7.1		0.74	>10:1	
1,2,3,7,8-PeCDF	ND	0.28			
2,3,4,7,8-PeCDF	0.73		1.55	8:1	A
Total PeCDF	4.1		1.67	>10:1	
1,2,3,4,7,8-HxCDF	0.64		1.31	7:1	A
1,2,3,6,7,8-HxCDF	ND	0.14			
2,3,4,6,7,8-HxCDF	0.54		1.30	5:1	A
1,2,3,7,8,9-HxCDF	ND	0.14			
Total HxCDF	2.5		1.18	>10:1	
1,2,3,4,6,7,8-HpCDF	2.0		1.07	>10:1	A
1,2,3,4,7,8,9-HpCDF	ND	0.21			
Total HpCDF	4.3		1.07	>10:1	
OCDF	1.8		0.81	8:1	A

Analyst: [Signature]

Reviewer: [Signature]

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 413580D
Lab ID: 1500-0002-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	109	0.73	
¹³ C-1,2,3,7,8-PeCDD	105	1.51	
¹³ C-1,2,3,4,7,8-HxCDD	101	1.16	
¹³ C-1,2,3,6,7,8-HxCDD	108	1.35	
¹³ C-1,2,3,4,6,7,8-HpCDD	102	1.05	
¹³ C-OCDD	122	0.90	
¹³ C-2,3,7,8-TCDF	111	0.79	
¹³ C-1,2,3,7,8-PeCDF	114	1.58	
¹³ C-2,3,4,7,8-PeCDF	105	1.60	
¹³ C-1,2,3,4,7,8-HxCDF	78	0.53	
¹³ C-1,2,3,6,7,8-HxCDF	82	0.51	
¹³ C-2,3,4,6,7,8-HxCDF	79	0.53	
¹³ C-1,2,3,7,8,9-HxCDF	105	0.53	
¹³ C-1,2,3,4,6,7,8-HpCDF	83	0.44	
¹³ C-1,2,3,4,7,8,9-HpCDF	96	0.43	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	98	NA
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Dates Analyzed:

DB-5: 7/20/95

DB-225: 7/23/95

SP-2331: NA

Analyst: gmo

Reviewer: ELK

PCDD & PCDF
EPA METHOD 8290

METHOD BLANK
Lab ID: 1500-0001-MB
Matrix: Soil

Date Received: NA
Date Extracted: 7/14/95
Sample Amount: 10.00 g

ICAL ID: 11613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N</u> <u>Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.057			
Total TCDD	ND	0.057			
1,2,3,7,8-PeCDD	ND	0.054			
Total PeCDD	ND	0.12			
1,2,3,4,7,8-HxCDD	ND	0.26			
1,2,3,6,7,8-HxCDD	ND	0.29			
1,2,3,7,8,9-HxCDD	ND	0.21			
Total HxCDD	1.2		1.34	8:1	A
1,2,3,4,6,7,8-HpCDD	ND	0.57			
Total HpCDD	ND	0.87			
OCDD	ND	1.0			
2,3,7,8-TCDF	ND	0.041			
Total TCDF	ND	0.041			
1,2,3,7,8-PeCDF	ND	0.053			
2,3,4,7,8-PeCDF	ND	0.050			
Total PeCDF	ND	0.053			
1,2,3,4,7,8-HxCDF	ND	0.12			
1,2,3,6,7,8-HxCDF	ND	0.12			
2,3,4,6,7,8-HxCDF	ND	0.29			
1,2,3,7,8,9-HxCDF	ND	0.14			
Total HxCDF	ND	0.29			
1,2,3,4,6,7,8-HpCDF	ND	0.25			
1,2,3,4,7,8,9-HpCDF	ND	0.25			
Total HpCDF	ND	0.25			
OCDF	ND	0.41			

Analyst: AMW

**PCDD & PCDF
EPA METHOD 8290**

METHOD BLANK
Lab ID: 1500-0001-MB

Isotopic Recovery Results

<u>Internal Standard</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	110	0.69	
¹³ C-1,2,3,7,8-PeCDD	97	1.53	
¹³ C-1,2,3,4,7,8-HxCDD	96	1.25	
¹³ C-1,2,3,6,7,8-HxCDD	105	1.23	
¹³ C-1,2,3,4,6,7,8-HpCDD	91	1.07	
¹³ C-OCDD	99	0.88	
¹³ C-2,3,7,8-TCDF	108	0.79	
¹³ C-1,2,3,7,8-PeCDF	103	1.60	
¹³ C-2,3,4,7,8-PeCDF	98	1.57	
¹³ C-1,2,3,4,7,8-HxCDF	76	0.53	
¹³ C-1,2,3,6,7,8-HxCDF	79	0.52	
¹³ C-2,3,4,6,7,8-HxCDF	77	0.53	
¹³ C-1,2,3,7,8,9-HxCDF	94	0.53	
¹³ C-1,2,3,4,6,7,8-HpCDF	76	0.46	
¹³ C-1,2,3,4,7,8,9-HpCDF	84	0.45	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	98	NA
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Dates Analyzed:

DB-5: 7/20/95

DB-225: NA

SP-2331: NA

Analyst: [Signature]

Reviewer: [Signature]

**PCDD & PCDF
EPA METHOD 8290**

LCS RESULTS

Lab ID: 1500-0001-LCS1/LCS2

Matrix: Soil

Date Received: NA

Date Extracted: 7/14/95

Sample Amount: 10.00 g

ICAL ID: I1613A

QC Lot: LC0714S

Units: NA

<u>Compound</u>	<u>LCS1 % R</u>	<u>LCS2 % R</u>	<u>RPD %</u>
2,3,7,8-TCDD	85	101	17
1,2,3,7,8-PeCDD	75	81	7.7
1,2,3,4,7,8-HxCDD	81	88	8.3
1,2,3,6,7,8-HxCDD	78	83	6.2
1,2,3,7,8,9-HxCDD	79	87	9.6
1,2,3,4,6,7,8-HpCDD	82	88	7.1
OCDD	82	86	4.8
2,3,7,8-TCDF	80	82	2.5
1,2,3,7,8-PeCDF	80	87	8.4
2,3,4,7,8-PeCDF	80	86	7.2
1,2,3,4,7,8-HxCDF	83	88	5.8
1,2,3,6,7,8-HxCDF	82	88	7.1
2,3,4,6,7,8-HxCDF	79	84	6.1
1,2,3,7,8,9-HxCDF	81	87	7.1
1,2,3,4,6,7,8-HpCDF	80	85	6.1
1,2,3,4,7,8,9-HpCDF	82	87	5.9
OCDF	79	83	4.9

Analyst: [Signature]

Page 1 of 2

Reviewer: [Signature]

**PCDD & PCDF
EPA METHOD 8290**

LCS RESULTS

Lab ID: 1500-0001-LCS1/LCS2

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>LCS1 % R</u>	<u>LCS2 % R</u>
¹³ C-2,3,7,8-TCDD	117	102
¹³ C-1,2,3,7,8-PeCDD	97	93
¹³ C-1,2,3,4,7,8-HxCDD	103	91
¹³ C-1,2,3,6,7,8-HxCDD	115	105
¹³ C-1,2,3,4,6,7,8-HpCDD	97	86
¹³ C-OCDD	105	102
¹³ C-2,3,7,8-TCDF	114	105
¹³ C-1,2,3,7,8-PeCDF	111	107
¹³ C-2,3,4,7,8-PeCDF	99	95
¹³ C-1,2,3,4,7,8-HxCDF	78	71
¹³ C-1,2,3,6,7,8-HxCDF	82	74
¹³ C-2,3,4,6,7,8-HxCDF	80	74
¹³ C-1,2,3,7,8,9-HxCDF	103	94
¹³ C-1,2,3,4,6,7,8-HpCDF	79	73
¹³ C-1,2,3,4,7,8,9-HpCDF	92	84

**Clean-up Recovery
Standard:**

³⁷ Cl-2,3,7,8-TCDD	103	94
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Date Analyzed: 7/20/95

Analyst: AMH

Reviewer: SM

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 414502D
Lab ID: 1500-0001-SA
Matrix: Soil
% Solids: 98

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.25 g

ICAL ID: I1613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.090			
Total TCDD	ND	0.090			
1,2,3,7,8-PeCDD	ND	0.15			
Total PeCDD	ND	0.15			
1,2,3,4,7,8-HxCDD	ND	0.25			
1,2,3,6,7,8-HxCDD	ND	0.72			
1,2,3,7,8,9-HxCDD	ND	0.53			
Total HxCDD	2.6		1.30	>10:1	B
1,2,3,4,6,7,8-HpCDD	12		1.08	>10:1	
Total HpCDD	23		1.02	>10:1	
OCDD	130		0.92	>10:1	
2,3,7,8-TCDF	0.81		0.85	8:1	A
Total TCDF	4.1		0.74	>10:1	
1,2,3,7,8-PeCDF	ND	0.20			
2,3,4,7,8-PeCDF	0.51		1.37	9:1	A
Total PeCDF	3.1		1.51	>10:1	
1,2,3,4,7,8-HxCDF	0.49		1.37	6:1	A
1,2,3,6,7,8-HxCDF	ND	0.11			
2,3,4,6,7,8-HxCDF	0.48		1.08	6:1	A
1,2,3,7,8,9-HxCDF	ND	0.12			
Total HxCDF	2.4		1.35	>10:1	A
1,2,3,4,6,7,8-HpCDF	1.9		0.99	>10:1	A
1,2,3,4,7,8,9-HpCDF	ND	0.18			
Total HpCDF	4.8		0.99	>10:1	A
OCDF	2.7		0.88	8:1	A

Analyst: JAV

Reviewer: BM

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 414502D
Lab ID: 1500-0001-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	108	0.71	
¹³ C-1,2,3,7,8-PeCDD	100	1.39	
¹³ C-1,2,3,4,7,8-HxCDD	98	1.24	
¹³ C-1,2,3,6,7,8-HxCDD	104	1.24	
¹³ C-1,2,3,4,6,7,8-HpCDD	96	1.06	
¹³ C-OCDD	112	0.91	
¹³ C-2,3,7,8-TCDF	109	0.78	
¹³ C-1,2,3,7,8-PeCDF	108	1.55	
¹³ C-2,3,4,7,8-PeCDF	97	1.59	
¹³ C-1,2,3,4,7,8-HxCDF	74	0.53	
¹³ C-1,2,3,6,7,8-HxCDF	77	0.51	
¹³ C-2,3,4,6,7,8-HxCDF	75	0.52	
¹³ C-1,2,3,7,8,9-HxCDF	96	0.52	
¹³ C-1,2,3,4,6,7,8-HpCDF	76	0.44	
¹³ C-1,2,3,4,7,8,9-HpCDF	89	0.44	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	99	NA
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Dates Analyzed:

DB-5: 7/20/95

DB-225: NA

SP-2331: NA

Analyst: SMH

Reviewer: SMH

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 416380D
Lab ID: 1500-0003-SA
Matrix: Soil
% Solids: 99

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.18 g

ICAL ID: 11613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.080			
Total TCDD	ND	0.080			
1,2,3,7,8-PeCDD	ND	0.15			
Total PeCDD	ND	0.15			
1,2,3,4,7,8-HxCDD	ND	0.26			
1,2,3,6,7,8-HxCDD	ND	0.37			
1,2,3,7,8,9-HxCDD	ND	0.23			
Total HxCDD	0.90		1.16	8:1	A,B
1,2,3,4,6,7,8-HpCDD	2.3		0.98	>10:1	A
Total HpCDD	4.3		0.98	>10:1	
OCDD	18		0.91	>10:1	
2,3,7,8-TCDF	0.32		0.69	5:1	A
Total TCDF	1.4		0.66	>10:1	
1,2,3,7,8-PeCDF	ND	0.12			
2,3,4,7,8-PeCDF	ND	0.13			
Total PeCDF	ND	0.29			
1,2,3,4,7,8-HxCDF	ND	0.17			
1,2,3,6,7,8-HxCDF	ND	0.17			
2,3,4,6,7,8-HxCDF	ND	0.22			
1,2,3,7,8,9-HxCDF	ND	0.18			
Total HxCDF	ND	0.30			
1,2,3,4,6,7,8-HpCDF	ND	0.47			
1,2,3,4,7,8,9-HpCDF	ND	0.41			
Total HpCDF	ND	0.79			
OCDF	ND	0.73			

Analyst: JMW

Reviewer: DW

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 416380D
Lab ID: 1500-0003-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	101	0.73	
¹³ C-1,2,3,7,8-PeCDD	94	1.71	
¹³ C-1,2,3,4,7,8-HxCDD	91	1.19	
¹³ C-1,2,3,6,7,8-HxCDD	100	1.33	
¹³ C-1,2,3,4,6,7,8-HpCDD	87	1.07	
¹³ C-OCDD	100	0.88	
¹³ C-2,3,7,8-TCDF	103	0.78	
¹³ C-1,2,3,7,8-PeCDF	100	1.58	
¹³ C-2,3,4,7,8-PeCDF	91	1.60	
¹³ C-1,2,3,4,7,8-HxCDF	69	0.52	
¹³ C-1,2,3,6,7,8-HxCDF	71	0.51	
¹³ C-2,3,4,6,7,8-HxCDF	70	0.52	
¹³ C-1,2,3,7,8,9-HxCDF	94	0.52	
¹³ C-1,2,3,4,6,7,8-HpCDF	70	0.45	
¹³ C-1,2,3,4,7,8,9-HpCDF	82	0.43	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	91	NA
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Dates Analyzed:

DB-5: 7/20/95

DB-225: NA

SP-2331: NA

Analyst: [Signature]

Reviewer: [Signature]

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 424760D
Lab ID: 1500-0004-SA
Matrix: Soil
% Solids: 80

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.34 g

ICAL ID: I1613A
QC Lot: LC0714S
Units: pg/g

✓
✓

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.18			
Total TCDD	ND	0.18			
1,2,3,7,8-PeCDD	ND	0.14			
Total PeCDD	ND	0.72			
1,2,3,4,7,8-HxCDD	ND	0.28			
1,2,3,6,7,8-HxCDD	2.2		1.10	>10:1	A
1,2,3,7,8,9-HxCDD	0.88		1.12	>10:1	A
Total HxCDD	12		1.35	>10:1	B
1,2,3,4,6,7,8-HpCDD	4.2		0.97	>10:1	
Total HpCDD	8.7		1.05	>10:1	
OCDD	14		0.88	>10:1	
2,3,7,8-TCDF	ND	0.26			
Total TCDF	ND	0.30			
1,2,3,7,8-PeCDF	ND	0.24			
2,3,4,7,8-PeCDF	ND	0.25			
Total PeCDF	ND	0.25			
1,2,3,4,7,8-HxCDF	ND	0.38			
1,2,3,6,7,8-HxCDF	ND	0.37			
2,3,4,6,7,8-HxCDF	ND	0.37			
1,2,3,7,8,9-HxCDF	ND	0.38			
Total HxCDF	ND	0.38			
1,2,3,4,6,7,8-HpCDF	1.9		0.95	>10:1	A
1,2,3,4,7,8,9-HpCDF	ND	0.35			
Total HpCDF	3.3		1.13	>10:1	
OCDF	ND	0.80			

Analyst: [Signature]

I
Reviewer: [Signature]

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 424760D
Lab ID: 1500-0004-SA

Isotopic Recovery Results

<u>Internal Standard:</u>	<u>% R</u>	<u>Ratio</u>	<u>Qualifier</u>
¹³ C-2,3,7,8-TCDD	102	0.73	
¹³ C-1,2,3,7,8-PeCDD	97	1.41	
¹³ C-1,2,3,4,7,8-HxCDD	94	1.35	
¹³ C-1,2,3,6,7,8-HxCDD	108	1.17	
¹³ C-1,2,3,4,6,7,8-HpCDD	91	1.05	
¹³ C-OCDD	119	0.90	
¹³ C-2,3,7,8-TCDF	110	0.81	
¹³ C-1,2,3,7,8-PeCDF	112	1.60	
¹³ C-2,3,4,7,8-PeCDF	96	1.62	
¹³ C-1,2,3,4,7,8-HxCDF	73	0.53	
¹³ C-1,2,3,6,7,8-HxCDF	77	0.52	
¹³ C-2,3,4,6,7,8-HxCDF	76	0.52	
¹³ C-1,2,3,7,8,9-HxCDF	100	0.52	
¹³ C-1,2,3,4,6,7,8-HpCDF	75	0.45	
¹³ C-1,2,3,4,7,8,9-HpCDF	87	0.44	

Clean-up Recovery Standard:

³⁷ Cl-2,3,7,8-TCDD	97	NA
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Dates Analyzed:

DB-5: 7/20/95

DB-225: NA

SP-2331: NA

Analyst: SM

Reviewer: SM

**PCDD & PCDF
EPA METHOD 8290**

Sample ID: 428480D
Lab ID: 1500-0006-SA
Matrix: Soil
% Solids: 77

Date Received: 6/29/95
Date Extracted: 7/14/95
Sample Amount: 10.34 g

ICAL ID: 11613A
QC Lot: LC0714S
Units: pg/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Ratio</u>	<u>S/N Ratio</u>	<u>Qualifier</u>
2,3,7,8-TCDD	ND	0.14			
Total TCDD	ND	0.14			
1,2,3,7,8-PeCDD	ND	0.23			
Total PeCDD	ND	0.51			I
1,2,3,4,7,8-HxCDD	ND	0.55			
1,2,3,6,7,8-HxCDD	1.3		1.27	>10:1	A
1,2,3,7,8,9-HxCDD	ND	0.56			
Total HxCDD	6.1		1.34	>10:1	B
1,2,3,4,6,7,8-HpCDD	2.7		0.99	>10:1	
Total HpCDD	5.2		1.01	>10:1	
OCDD	9.5		0.91	>10:1	
2,3,7,8-TCDF	ND	0.26			
Total TCDF	ND	0.26			
1,2,3,7,8-PeCDF	ND	0.14			
2,3,4,7,8-PeCDF	ND	0.14			
Total PeCDF	ND	0.14			
1,2,3,4,7,8-HxCDF	ND	0.28			
1,2,3,6,7,8-HxCDF	ND	0.27			
2,3,4,6,7,8-HxCDF	ND	0.40			
1,2,3,7,8,9-HxCDF	ND	0.27			
Total HxCDF	ND	0.40			
1,2,3,4,6,7,8-HpCDF	1.2		1.05	6:1	A
1,2,3,4,7,8,9-HpCDF	ND	0.92			
Total HpCDF	2.2		1.05	6:1	A
OCDF	ND	0.57			

Analyst: Amo

Reviewer: SM

WORK ORDER NO: 4237 & 4287

Quanterra Incorporated
5815 Middlebrook Pike
Knoxville, Tennessee 37921

615 588-6401 Telephone
615 584-4315 Fax

ICF Kaiser Environment and Energy Group
10 Universal City Plaza, Suite 2400
Universal City, CA 91608-1097
Attn: Tom Watson

October 3, 1995

Job Numbers: 4237 & 4287 (Corrected Certificate)

This is the Certificate of Analysis for the following samples:

Client Project ID:	Rocketdyne FSDF / 66280-002-00
Date Received by Lab:	July 21 and July 27, 1995
Number of Samples:	Thirty-six (36)
Sample Type:	Soil - thirty (30); Water - six (6)

I. Introduction

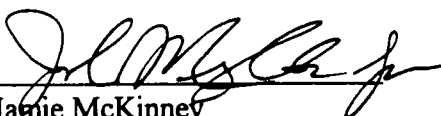
On July 21 and July 27, 1995, thirty (30) soil samples and six (6) water samples arrived at Quanterra Environmental Services, Knoxville, Tennessee, from ICF Kaiser Environment and Energy Group, Universal City, California. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

II. Analytical Results/Methodology

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results.

The samples were analyzed for volatile and semivolatile organic compounds by gas chromatography/mass spectroscopy (GC/MS) based on EPA SW-846 3rd edition methods 8260 and 8270, respectively.

Reviewed and Approved:


Jamie McKinney
Project Manager

Client Project ID: Rocketdyne FSDF / 66280-002-00

Job Number: 4237 & 4287 (Corrected Certificate)

II. Analytical Results/Methodology (Continued)

The samples were analyzed for requested metals by cold vapor atomic absorption spectroscopy (CVAA), inductively coupled argon plasma spectroscopy (ICP) and supertrace by ICP based on EPA methods 7470, 7471 and 6010..

The samples were analyzed for PCBs by gas chromatography/electron capture detection (GC/ECD) based on EPA SW-846 3rd edition method 8080.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel fuel by gas chromatography/flame ionization detection (GC/FID) using California LUFT method 8015.

The samples were analyzed for total low boiling petroleum hydrocarbons as gasoline by gas chromatography/flame ionization detection (GC/FID) based on California LUFT method 8015.

The samples were analyzed for dioxins by Quanterra Environmental Services, Knoxville, Tennessee, and will be reported separately.

III. Quality Control

Volatiles

Samples 10346220SVL0, 10446220SVL0, 10546220SVL2, 10146220SVL0, 10546220SVL0, and 10246220SVL0 exhibited matrix interferences with the surrogate standards and the internal standards. Re-analyses were performed and both sets of data were submitted. Samples 10146220SVL5 and 10146220SVL5 exhibited matrix interferences with the surrogate standards and the internal standards. Similar results were noted in the original sample. Therefore, re-analyses were not performed.

Semivolatiles

Samples 21646220SOC0, 21736220SOC0, and 218BS210SOC0 were analyzed at diluted volumes (1:5) based on GC/FID screening results. Although no targets were seen in the samples at levels greater than the detection limit, the dilutions were required to maintain instrument integrity. The MS for sample 10246220SOC0 yielded a high recovery for 4-nitrophenol, and the MS/MSD for sample 211303310SOC0 yielded high relative percent difference values for 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and acenaphthene.

Client Project ID: Rocketdyne FSDF / 66280-002-00

Job Number: 4237 & 4287 (Corrected Certificate)

III. Quality Control (Continued)

Metals

Spike recovery (accuracy) results for sample 101462208MM5 were outside acceptance limits for chromium, copper, lead and zinc. The laboratory control sample was in control for those elements.

Total Low Boiling Petroleum Hydrocarbons

No problems were encountered during the analysis of these samples.

Total High Boiling Petroleum Hydrocarbons

Samples 21720331SOC0, 21046220SOC0, 21646220SOC0, 21736220SOC0, 10446220SOC0, 10430331SOC0, 218B210SOC0 and 220BS190SOC0 had high surrogate recoveries due to matrix interferences present in the sample. This is not unusual for this analysis. The data should be unaffected.

IV. Comments

The following samples were placed on hold per the client's request:

10446220SVL5
10446220SOC5
10446220SMM5
1054622WOC1

CERTIFICATE OF ANALYSIS

Page 15 B of 481 B

ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 21136220SMM0

Client Matrix: SOIL

Collection Date: 07/18/95

Lab Sample: AG1166/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/21/95

Test: 201713

Retest:

Prep Date: 07/24/95

Prep Batch: 18442

Lab Method: 176

Lab Method Blank: AG1454

Analysis Date: 07/24/95 13:43

Dilution: 1

MERCURY (HG) BY CVAAS-SOLID**EPA 7471****Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7439-97-6	MERCURY	.11	U	.11	MG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10346220SMM0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1169/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201733
Retest:
Prep Date: 07/24/95
Prep Batch: 18442

Lab Method: 176
Lab Method Blank: AG1454
Analysis Date: 07/24/95 13:45
Dilution: 1

**MERCURY (HG) BY CVAAS-SOLID
EPA 7471
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7439-97-6	MERCURY	.11	U	.11	MG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10330331SMM0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1172/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201753
Retest:
Prep Date: 07/24/95
Prep Batch: 18442

Lab Method: 176
Lab Method Blank: AG1454
Analysis Date: 07/24/95 13:48
Dilution: 1

MERCURY (HG) BY CVAAS-SOLID
EPA 7471
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7439-97-6	MERCURY	.11	U	.11	MG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10446220SMM0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1175/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201773
Retest:
Prep Date: 07/24/95
Prep Batch: 18442

Lab Method: 176
Lab Method Blank: AG1454
Analysis Date: 07/24/95 13:50
Dilution: 1

**MERCURY (HG) BY CVAAS-SOLID
EPA 7471
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7439-97-6	MERCURY	.11	U	.11	MG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10430331SMM0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1178/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201793
Retest:
Prep Date: 07/24/95
Prep Batch: 18442

Lab Method: 176
Lab Method Blank: AG1454
Analysis Date: 07/24/95 13:52
Dilution: 1

**MERCURY (HG) BY CVAAS-SOLID
EPA 7471
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7439-97-6	MERCURY	.11	U	.11	MG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SMM2
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1181/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201813
Retest:
Prep Date: 07/24/95
Prep Batch: 18442

Lab Method: 176
Lab Method Blank: AG1454
Analysis Date: 07/24/95 13:54
Dilution: 1

**MERCURY (HG) BY CVAAS-SOLID
EPA 7471
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7439-97-6	MERCURY	.17		.10	MG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10146220SMM0
Client Matrix: SOIL
Collection Date: 07/17/95

Lab Sample: AG1187/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201853
Retest:
Prep Date: 07/24/95
Prep Batch: 18442

Lab Method: 176
Lab Method Blank: AG1454
Analysis Date: 07/24/95 14:04
Dilution: 1

**MERCURY (HG) BY CVAAS-SOLID
EPA 7471
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7439-97-6	MERCURY	.11	U	.11	MG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SMM0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1193/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201893
Retest:
Prep Date: 07/24/95
Prep Batch: 18442

Lab Method: 176
Lab Method Blank: AG1454
Analysis Date: 07/24/95 14:08
Dilution: 1

**MERCURY (HG) BY CVAAS-SOLID
EPA 7471
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7439-97-6	MERCURY	.14		.10	MG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10530330SMM0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1196/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201913
Retest:
Prep Date: 07/24/95
Prep Batch: 18443

Lab Method: 176
Lab Method Blank: AG1451
Analysis Date: 07/24/95 14:20
Dilution: 1

**MERCURY (HG) BY CVAAS-SOLID
EPA 7471
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7439-97-6	MERCURY	.12	U	.12	MG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10246220SMM0

Client Matrix: SOIL

Collection Date: 07/18/95

Lab Sample: AG1199/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/21/95

Test: 201933

Retest:

Prep Date: 07/24/95

Prep Batch: 18443

Lab Method: 176

Lab Method Blank: AG1451

Analysis Date: 07/24/95 14:22

Dilution: 1

MERCURY (HG) BY CVAAS-SOLID**EPA 7471****Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7439-97-6	MERCURY	.11	U	.11	MG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 21136220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1164/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201704
Retest:
Prep Date: 07/27/95
Prep Batch: 18695

Lab Method: 2922
Lab Method Blank: AG2466
Analysis Date: 07/27/95 22:10
Dilution: 1

**NONHALOGENATED VOA'S BY P&T GC/FID
EPA 8015A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
1115-52-3 8-8	LOW BOILING PETROLEUM HYDROCAR A,A,A-TRIFLUOROTOLUENE	5.7	U	5.7	MG/KG	99	TARG SURR

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10346220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1168/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201726
Retest:
Prep Date: 07/27/95
Prep Batch: 18695

Lab Method: 2922
Lab Method Blank: AG2466
Analysis Date: 07/27/95 22:43
Dilution: 1

NONHALOGENATED VOA'S BY P&T GC/FID EPA 8015A Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
IT15-52-3	LOW BOILING PETROLEUM HYDROCAR	5.6	U	5.6	MG/KG		TARG
1-8	A,A,A-TRIFLUOROTOLUENE					104	SURR

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10330331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1171/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201746
Retest:
Prep Date: 07/27/95
Prep Batch: 18695

Lab Method: 2922
Lab Method Blank: AG2466
Analysis Date: 07/27/95 23:15
Dilution: 1

**NONHALOGENATED VOA'S BY P&T GC/FID
EPA 8015A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
1115-52-3 3-8	LOW BOILING PETROLEUM HYDROCAR A,A,A-TRIFLUOROTOLUENE	5.6	U	5.6	MG/KG	97	TARG SURR

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10446220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1174/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201766
Retest:
Prep Date: 07/27/95
Prep Batch: 18695

Lab Method: 2922
Lab Method Blank: AG2466
Analysis Date: 07/27/95 23:48
Dilution: 1

**NONHALOGENATED VOA'S BY P&T GC/FID
EPA 8015A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
IT15-52-3	LOW BOILING PETROLEUM HYDROCAR	5.6	U	5.6	MG/KG		TARG
9-8	A,A,A-TRIFLUOROTOLUENE					103	SURR

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10430331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1177/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201786
Retest:
Prep Date: 07/28/95
Prep Batch: 18695

Lab Method: 2922
Lab Method Blank: AG2466
Analysis Date: 07/28/95 00:20
Dilution: 1

NONHALOGENATED VOA'S BY P&T GC/FID
EPA 8015A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
1715-52-3 8-8	LOW BOILING PETROLEUM HYDROCAR A,A,A-TRIFLUOROTOLUENE	5.5	U	5.5	MG/KG	105	TARG SURR

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC2
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1180/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201806
Retest:
Prep Date: 07/28/95
Prep Batch: 18695

Lab Method: 2922
Lab Method Blank: AG2466
Analysis Date: 07/28/95 00:53
Dilution: 1

**NONHALOGENATED VOA'S BY P&T GC/FID
EPA 8015A
Primary Result**

<u>Gas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
115-52-3	LOW BOILING PETROLEUM HYDROCAR	5.3	U	5.3	MG/KG		TARG
8-8	A,A,A-TRIFLUOROTOLUENE					97	SURR

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10146220SOC0
Client Matrix: SOIL
Collection Date: 07/17/95

Lab Sample: AG1186/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201846
Retest:
Prep Date: 07/28/95
Prep Batch: 18695

Lab Method: 2922
Lab Method Blank: AG2466
Analysis Date: 07/28/95 01:25
Dilution: 1

**NONHALOGENATED VOA'S BY P&T GC/FID
EPA 8015A
Primary Result**

<u>Gas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
IT15-52-3 3-8	LOW BOILING PETROLEUM HYDROCAR BONDS A,A,A-TRIFLUOROTOLUENE	5.6	U	5.6	MG/KG	94	TARG SURR

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC0

Client Matrix: SOIL

Collection Date: 07/18/95

Lab Sample: AG1192/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/21/95

Test: 201886

Retest:

Prep Date: 07/28/95

Prep Batch: 18697

Lab Method: 2922

Lab Method Blank: AG2475

Analysis Date: 07/28/95 11:53

Dilution: 1

NONHALOGENATED VOA'S BY P&T GC/FID

EPA 8015A

Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
IT15-52-3	LOW BOILING PETROLEUM HYDROCAR	6.0	U	6.0	MG/KG		TARG
3-8	A,A,A-TRIFLUOROTOLUENE					99	SURR

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10530330SOC0

Client Matrix: SOIL

Collection Date: 07/18/95

Lab Sample: AG1195/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/21/95

Test: 201906

Retest:

Prep Date: 07/28/95

Prep Batch: 18697

Lab Method: 2922

Lab Method Blank: AG2475

Analysis Date: 07/28/95 12:26

Dilution: 1

NONHALOGENATED VOA'S BY P&T GC/FID

EPA 8015A

Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
1115-52-3	LOW BOILING PETROLEUM HYDROCAR	5.7	U	5.7	MG/KG		TARG
3-8	A,A,A-TRIFLUOROTOLUENE					100	SURR

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10246220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1198/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201926
Retest:
Prep Date: 07/28/95
Prep Batch: 18697

Lab Method: 2922
Lab Method Blank: AG2475
Analysis Date: 07/28/95 12:58
Dilution: 1

**NONHALOGENATED VOA'S BY P&T GC/FID
EPA 8015A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
1115-52-3	LOW BOILING PETROLEUM HYDROCAR	5.4	U	5.4	MG/KG		TARG
18-8	A,A,A-TRIFLUOROTOLUENE					102	SURR

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 21136220SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1165/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201710
Retest:
Prep Date: 07/27/95
Prep Batch: 18727

Lab Method: 2932
Lab Method Blank: AG2532
Analysis Date: 07/27/95 16:08
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
74-87-3	CHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-87-8	DICHLOROFLUOROMETHANE	6.	U	6.	UG/KG		TARG
74-87-9	BROMOMETHANE	6.	U	6.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	6.	U	6.	UG/KG		TARG
75-00-3	CHLOROETHANE	6.	U	6.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	6.	U	6.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	6.	U	6.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
67-66-3	CHLOROFORM	6.	U	6.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	6.	U	6.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	6.	U	6.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	6.	U	6.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
98-82-8	CUMENE	6.	U	6.	UG/KG		TARG
108-86-1	BROMOBENZENE	6.	U	6.	UG/KG		TARG
96-18-4	1,2,3-TRICHLOROPROPANE	6.	U	6.	UG/KG		TARG
65-1	N-PROPYLBENZENE	6.	U	6.	UG/KG		TARG
75-5	1,2-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	6.	U	6.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 21136220SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1165/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201710
Retest:
Prep Date: 07/27/95
Prep Batch: 18727

Lab Method: 2932
Lab Method Blank: AG2532
Analysis Date: 07/27/95 16:08
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
3-2	BENZENE	6.	U	6.	UG/KG		TARG
1-01-5	CIS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
1-02-6	TRANS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
75-25-2	BROMOFORM	6.	U	6.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	6.	U	6.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
108-88-3	TOLUENE	6.	U	6.	UG/KG		TARG
108-90-7	CHLOROBENZENE	6.	U	6.	UG/KG		TARG
100-41-4	ETHYLBENZENE	6.	U	6.	UG/KG		TARG
100-42-5	STYRENE	6.	U	6.	UG/KG		TARG
95-47-6	O-XYLENE	6.	U	6.	UG/KG		TARG
108-88-3	M/P-XYLENE	11	U	11	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
99-87-6	P-CYME	6.	U	6.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	6.	U	6.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
68-3	HEXACHLOROBUTADIENE	6.	U	6.	UG/KG		TARG
1-3	NAPHTHALENE	6.	U	6.	UG/KG		TARG
1-6	1,2,3-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
2037-26-5	TOLUENE-D8					96	SURR
460-00-4	P-BROMOFLUOROBENZENE					80	SURR
1868-53-7	DIBROMOFLUOROMETHANE					99	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10346220SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1167/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 206604
Retest: 1
Prep Date: 07/27/95
Prep Batch: 18765

Lab Method: 2932
Lab Method Blank: AG2701
Analysis Date: 07/27/95 23:59
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
74-87-3	CHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-87-8	DICHLORODIFLUOROMETHANE	6.	U	6.	UG/KG		TARG
74-87-9	BROMOMETHANE	6.	U	6.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	6.	U	6.	UG/KG		TARG
75-00-3	CHLOROETHANE	6.	U	6.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	3.	J	6.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	6.	U	6.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
67-66-3	CHLOROFORM	6.	U	6.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	6.	U	6.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	6.	U	6.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	6.	U	6.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
98-82-8	CUMENE	6.	U	6.	UG/KG		TARG
108-86-1	BROMOBENZENE	6.	U	6.	UG/KG		TARG
96-18-4	1,2,3-TRICHLOROPROPANE	6.	U	6.	UG/KG		TARG
65-1	N-PROPYLBENZENE	6.	U	6.	UG/KG		TARG
75-01-5	1,2-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	6.	U	6.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10346220SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1167/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 206604
Retest: 1
Prep Date: 07/27/95
Prep Batch: 18765

Lab Method: 2932
Lab Method Blank: AG2701
Analysis Date: 07/27/95 23:59
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
43-2	BENZENE	6.	U	6.	UG/KG		TARG
43-01-5	CIS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
43-01-02-6	TRANS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
75-25-2	BROMOFORM	6.	U	6.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	6.	U	6.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
108-88-3	TOLUENE	2.	J	6.	UG/KG		TARG
108-90-7	CHLOROBENZENE	3.	J	6.	UG/KG		TARG
100-41-4	ETHYLBENZENE	6.	U	6.	UG/KG		TARG
100-42-5	STYRENE	6.	U	6.	UG/KG		TARG
95-47-6	O-XYLENE	6.	U	6.	UG/KG		TARG
108-88-3	M/P-XYLENE	11.	U	11	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
99-87-6	P-CYME	6.	U	6.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	6.	U	6.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
97-68-3	HEXACHLOROBUTADIENE	6.	U	6.	UG/KG		TARG
97-03	NAPHTHALENE	6.	U	6.	UG/KG		TARG
97-01-6	1,2,3-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
2037-26-5	TOLUENE-DB					94	SURR
460-00-4	P-BROMOFLUOROBENZENE					77	SURR
1868-53-7	DIBROMOFLUOROMETHANE					111	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10346220SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1167/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201717
Retest:
Prep Date: 07/27/95
Prep Batch: 18727

Lab Method: 2932
Lab Method Blank: AG2532
Analysis Date: 07/27/95 16:37
Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
7-3	CHLOROMETHANE	6.	U	6.	UG/KG		TARG
8	DICHLORODIFLUOROMETHANE	6.	U	6.	UG/KG		TARG
3-9	BROMOMETHANE	6.	U	6.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	6.	U	6.	UG/KG		TARG
75-00-3	CHLOROETHANE	6.	U	6.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	6.	U	6.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	6.	U	6.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
67-66-3	CHLOROFORM	6.	U	6.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	6.	U	6.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	6.	U	6.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	6.	U	6.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
98-82-8	CUMENE	6.	U	6.	UG/XG		TARG
108-86-1	BROMOBENZENE	6.	U	6.	UG/KG		TARG
18-4	1,2,3-TRICHLOROPROPANE	6.	U	6.	UG/KG		TARG
5-1	N-PROPYLBENZENE	6.	U	6.	UG/KG		TARG
7-5	1,2-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	6.	U	6.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10346220SVL0

Client Matrix: SOIL

Collection Date: 07/18/95

Lab Sample: AG1167/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/21/95

Test: 201717

Retest:

Prep Date: 07/27/95

Prep Batch: 18727

Lab Method: 2932

Lab Method Blank: AG2532

Analysis Date: 07/27/95 16:37

Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL.

EPA 8260

Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
71-43-2	BENZENE	6.	U	6.	UG/KG		TARG
71-01-5	CIS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
71-02-6	TRANS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
75-25-2	BROMOFORM	6.	U	6.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	6.	U	6.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
108-88-3	TOLUENE	1.	J	6.	UG/KG		TARG
108-90-7	CHLOROBENZENE	6.	U	6.	UG/KG		TARG
100-41-4	ETHYLBENZENE	6.	U	6.	UG/KG		TARG
100-42-5	STYRENE	6.	U	6.	UG/KG		TARG
95-47-6	O-XYLENE	6.	U	6.	UG/KG		TARG
108-88-3	M/P-XYLENE	11	U	11	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
99-87-6	P-CYMENE	6.	U	6.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	6.	U	6.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	6.	U	6.	UG/KG		TARG
70-3	NAPHTHALENE	2.	JB	6.	UG/KG		TARG
1-6	1,2,3-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
2037-26-5	TOLUENE-D8		*			75	SURR
460-00-4	P-BROMOFLUOROBENZENE		*			57	SURR
1868-53-7	DIBROMOFLUOROMETHANE					90	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10330331SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1170/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201737
Retest:
Prep Date: 07/27/95
Prep Batch: 18727

Lab Method: 2932
Lab Method Blank: AG2532
Analysis Date: 07/27/95 17:06
Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL. EPA 8260 Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
7-3	CHLOROMETHANE	6.	U	6.	UG/KG		TARG
1-8	DICHLORODIFLUOROMETHANE	6.	U	6.	UG/KG		TARG
3-9	BROMOMETHANE	6.	U	6.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	6.	U	6.	UG/KG		TARG
75-00-3	CHLOROETHANE	6.	U	6.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	6.	U	6.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	6.	U	6.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
67-66-3	CHLOROFORM	6.	U	6.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	6.	U	6.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	6.	U	6.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	6.	U	6.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
98-82-8	CUMENE	6.	U	6.	UG/KG		TARG
108-86-1	BROMOBENZENE	6.	U	6.	UG/KG		TARG
18-4	1,2,3-TRICHLOROPROPANE	6.	U	6.	UG/KG		TARG
65-1	N-PROPYLBENZENE	6.	U	6.	UG/KG		TARG
7-5	1,2-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	6.	U	6.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10330331SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1170/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201737
Retest:
Prep Date: 07/27/95
Prep Batch: 18727

Lab Method: 2932
Lab Method Blank: AG2532
Analysis Date: 07/27/95 17:06
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
3-2	BENZENE	6.	U	6.	UG/KG		TARG
-01-5	CIS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
1-02-6	TRANS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
75-25-2	BROMOFORM	6.	U	6.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	6.	U	6.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
108-88-3	TOLUENE	6.	U	6.	UG/KG		TARG
108-90-7	CHLOROBENZENE	6.	U	6.	UG/KG		TARG
100-41-4	ETHYLBENZENE	6.	U	6.	UG/KG		TARG
100-42-5	STYRENE	6.	U	6.	UG/KG		TARG
95-47-6	O-XYLENE	6.	U	6.	UG/KG		TARG
108-88-3	M/P-XYLENE	11	U	11	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
99-87-6	P-CYME	6.	U	6.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	6.	U	6.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
77-68-3	HEXACHLOROBUTADIENE	6.	U	6.	UG/KG		TARG
0-3	NAPHTHALENE	6.	U	6.	UG/KG		TARG
1-6	1,2,3-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
2037-26-5	TOLUENE-D8					108	SURR
460-00-4	P-BROMOFLUOROBENZENE					108	SURR
1868-53-7	DIBROMOFLUOROMETHANE					107	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10446220SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1173/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 206605
Retest: 1
Prep Date: 07/27/95
Prep Batch: 18765

Lab Method: 2932
Lab Method Blank: AG2701
Analysis Date: 07/27/95 00:28
Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL. EPA 8260 Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
7-3	CHLOROMETHANE	6.	U	6.	UG/KG		TARG
1-8	DICHLORODIFLUOROMETHANE	6.	U	6.	UG/KG		TARG
3-9	BROMOMETHANE	6.	U	6.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	6.	U	6.	UG/KG		TARG
75-00-3	CHLOROETHANE	6.	U	6.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	3.	J	6.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	6.	U	6.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
67-66-3	CHLOROFORM	6.	U	6.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	6.	U	6.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	6.	U	6.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	6.	U	6.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
98-82-8	CUMENE	6.	U	6.	UG/KG		TARG
108-86-1	BROMOBENZENE	6.	U	6.	UG/KG		TARG
18-4	1,2,3-TRICHLOROPROPANE	6.	U	6.	UG/KG		TARG
65-1	N-PROPYLBENZENE	6.	U	6.	UG/KG		TARG
7-5	1,2-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	6.	U	6.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10446220SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1173/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 206605
Retest: 1
Prep Date: 07/27/95
Prep Batch: 18765

Lab Method: 2932
Lab Method Blank: AG2701
Analysis Date: 07/27/95 00:28
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
5-2	BENZENE	6.	U	6.	UG/KG		TARG
1-01-5	CIS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
1-02-6	TRANS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
75-25-2	BROMOFORM	6.	U	6.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	6.	U	6.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
108-88-3	TOLUENE	6.	U	6.	UG/XG		TARG
108-90-7	CHLOROBENZENE	6.	U	6.	UG/KG		TARG
100-41-4	ETHYLBENZENE	6.	U	6.	UG/KG		TARG
100-42-5	STYRENE	6.	U	6.	UG/KG		TARG
95-47-6	O-XYLENE	6.	U	6.	UG/KG		TARG
108-88-3	M/P-XYLENE	11.	U	11	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	6.	U	6.	UG/XG		TARG
95-49-8	O-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
99-87-6	P-CYMENE	6.	U	6.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	6.	U	6.	UG/XG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	6.	U	6.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
8-3	HEXACHLOROBUTADIENE	6.	U	6.	UG/KG		TARG
3-3	NAPHTHALENE	6.	U	6.	UG/KG		TARG
1-6	1,2,3-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
2037-26-5	TOLUENE-D8					96	SURR
460-00-4	P-BROMOFLUOROBENZENE		*			58	SURR
1868-53-7	DIBROMOFLUOROMETHANE		*			132	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10446220SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1173/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201757
Retest:
Prep Date: 07/27/95
Prep Batch: 18727

Lab Method: 2932
Lab Method Blank: AG2532
Analysis Date: 07/27/95 17:35
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7-3	CHLOROMETHANE	6.	U	6.	UG/KG		TARG
8	DICHLORODIFLUOROMETHANE	6.	U	6.	UG/KG		TARG
3-9	BROMOMETHANE	6.	U	6.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	6.	U	6.	UG/KG		TARG
75-00-3	CHLOROETHANE	6.	U	6.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	6.	U	6.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	6.	U	6.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
67-66-3	CHLOROFORM	6.	U	6.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	6.	U	6.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	6.	U	6.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	6.	U	6.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
98-82-8	CUMENE	6.	U	6.	UG/KG		TARG
108-86-1	BROMOBENZENE	6.	U	6.	UG/KG		TARG
18-4	1,2,3-TRICHLOROPROPANE	6.	U	6.	UG/KG		TARG
65-1	N-PROPYLBENZENE	6.	U	6.	UG/KG		TARG
7-5	1,2-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	6.	U	6.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10446220SVL0

Client Matrix: SOIL

Collection Date: 07/18/95

Lab Sample: AG1173/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/21/95

Test: 201757

Retest:

Prep Date: 07/27/95

Prep Batch: 18727

Lab Method: 2932

Lab Method Blank: AG2532

Analysis Date: 07/27/95 17:35

Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL.

EPA 8260

Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
3-2	BENZENE	6.	U	6.	UG/KG		TARG
1-01-5	CIS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
1-02-6	TRANS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
75-25-2	BROMOFORM	6.	U	6.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	6.	U	6.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
108-88-3	TOLUENE	6.	U	6.	UG/KG		TARG
108-90-7	CHLOROBENZENE	6.	U	6.	UG/KG		TARG
100-41-4	ETHYLBENZENE	6.	U	6.	UG/KG		TARG
100-42-5	STYRENE	6.	U	6.	UG/KG		TARG
95-47-6	O-XYLENE	6.	U	6.	UG/KG		TARG
108-88-3	M/P-XYLENE	11.	U	11	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
99-87-6	P-CYMENE	6.	U	6.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	6.	U	6.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
68-3	HEXACHLOROBUTADIENE	6.	U	6.	UG/KG		TARG
0-3	NAPHTHALENE	1.	JB	6.	UG/KG		TARG
1-6	1,2,3-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
2037-26-5	TOLUENE-DB					114	SURR
460-00-4	P-BROMOFLUOROBENZENE					85	SURR
1868-53-7	DIBROMOFLUOROMETHANE		*			141	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10430331SVL0

Client Matrix: SOIL

Collection Date: 07/18/95

Lab Sample: AG1176/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/21/95

Test: 201777

Retest:

Prep Date: 07/27/95

Prep Batch: 18727

Lab Method: 2932

Lab Method Blank: AG2532

Analysis Date: 07/27/95 18:04

Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL.

EPA 8260

Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
74-87-3	CHLOROMETHANE	5.	U	5.	UG/KG		TARG
74-87-8	DICHLORODIFLUOROMETHANE	5.	U	5.	UG/KG		TARG
74-87-9	BROMOMETHANE	5.	U	5.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	5.	U	5.	UG/KG		TARG
75-00-3	CHLOROETHANE	5.	U	5.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	5.	U	5.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	5.	U	5.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	5.	U	5.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
67-66-3	CHLOROFORM	5.	U	5.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	5.	U	5.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	5.	U	5.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	5.	U	5.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	5.	U	5.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	5.	U	5.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	5.	U	5.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	5.	U	5.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	5.	U	5.	UG/KG		TARG
98-82-8	CUMENE	5.	U	5.	UG/KG		TARG
108-86-1	BROMOBENZENE	5.	U	5.	UG/KG		TARG
96-18-4	1,2,3-TRICHLOROPROPANE	5.	U	5.	UG/KG		TARG
65-1	N-PROPYLBENZENE	5.	U	5.	UG/KG		TARG
75-5	1,2-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
75-01-6	TRICHLOROETHENE	5.	U	5.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	5.	U	5.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	5.	U	5.	UG/KG		TARG



Environmental
Services

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10430331SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1176/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201777
Retest:
Prep Date: 07/27/95
Prep Batch: 18727

Lab Method: 2932
Lab Method Blank: AG2532
Analysis Date: 07/27/95 18:04
Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL. EPA 8260 Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
13-2	BENZENE	5.	U	5.	UG/KG		TARG
101-5	CIS-1,3-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
102-6	TRANS-1,3-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
75-25-2	BROMOFORM	5.	U	5.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	5.	U	5.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U	5.	UG/KG		TARG
108-88-3	TOLUENE	5.	U	5.	UG/KG		TARG
108-90-7	CHLOROBENZENE	5.	U	5.	UG/KG		TARG
100-41-4	ETHYLBENZENE	5.	U	5.	UG/KG		TARG
100-42-5	STYRENE	5.	U	5.	UG/KG		TARG
95-47-6	O-XYLENE	5.	U	5.	UG/KG		TARG
108-88-3	M/P-XYLENE	11.	U	11	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	5.	U	5.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	5.	U	5.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	5.	U	5.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	5.	U	5.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
99-87-6	P-CYME	5.	U	5.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	5.	U	5.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	5.	U	5.	UG/KG		TARG
77-68-3	HEXACHLOROBUTADIENE	5.	U	5.	UG/KG		TARG
100-1-3	NAPHTHALENE	5.	U	5.	UG/KG		TARG
100-1-6	1,2,3-TRICHLOROBENZENE	5.	U	5.	UG/KG		TARG
2037-26-5	TOLUENE-D8					109	SURR
460-00-4	P-BROMOFLUOROBENZENE					115	SURR
1868-53-7	DIBROMOFLUOROMETHANE					105	SURR



Environmental
Services

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SVL2
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1179/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 206606
Retest: 1
Prep Date: 07/28/95
Prep Batch: 18765

Lab Method: 2932
Lab Method Blank: AG2701
Analysis Date: 07/28/95 01:03
Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL. EPA 8260 Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
7-3	CHLOROMETHANE	5.	U	5.	UG/KG		TARG
1-8	DICHLORODIFLUOROMETHANE	5.	U	5.	UG/KG		TARG
3-9	BROMOMETHANE	5.	U	5.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	5.	U	5.	UG/KG		TARG
75-00-3	CHLOROETHANE	5.	U	5.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	2.	J	5.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	5.	U	5.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	5.	U	5.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
67-66-3	CHLOROFORM	5.	U	5.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	5.	U	5.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	5.	U	5.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	5.	U	5.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	5.	U	5.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	5.	U	5.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	5.	U	5.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	5.	U	5.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	5.	U	5.	UG/KG		TARG
98-82-8	CUMENE	5.	U	5.	UG/KG		TARG
108-86-1	BROMOBENZENE	5.	U	5.	UG/KG		TARG
18-4	1,2,3-TRICHLOROPROPANE	5.	U	5.	UG/KG		TARG
65-1	N-PROPYLBENZENE	5.	U	5.	UG/KG		TARG
7-5	1,2-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	5.	U	5.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	5.	U	5.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	5.	U	5.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SVL2
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1179/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 206606
Retest: 1
Prep Date: 07/28/95
Prep Batch: 18765

Lab Method: 2932
Lab Method Blank: AG2701
Analysis Date: 07/28/95 01:03
Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL. EPA 8260 Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
71-43-2	BENZENE	5.	U	5.	UG/KG		TARG
71-01-5	CIS-1,3-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
71-02-6	TRANS-1,3-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
75-25-2	BROMOFORM	5.	U	5.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	5.	U	5.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U	5.	UG/KG		TARG
108-88-3	TOLUENE	3.	J	5.	UG/KG		TARG
108-90-7	CHLOROBENZENE	5.	U	5.	UG/KG		TARG
100-41-4	ETHYLBENZENE	5.	U	5.	UG/KG		TARG
100-42-5	STYRENE	5.	U	5.	UG/KG		TARG
95-47-6	O-XYLENE	5.	U	5.	UG/KG		TARG
108-88-3	M/P-XYLENE	11.	U	11	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	5.	U	5.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	5.	U	5.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	5.	U	5.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	5.	U	5.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
99-87-6	P-CYME	5.	U	5.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	5.	U	5.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	5.	U	5.	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	5.	U	5.	UG/KG		TARG
100-3	NAPHTHALENE	5.	U	5.	UG/KG		TARG
100-6	1,2,3-TRICHLOROBENZENE	5.	U	5.	UG/KG		TARG
2037-26-5	TOLUENE-D8					99	SURR
460-00-4	P-BROMOFLUOROBENZENE					75	SURR
1868-53-7	DIBROMOFLUOROMETHANE					117	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SVL2
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1179/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201797
Retest:
Prep Date: 07/27/95
Prep Batch: 18727

Lab Method: 2932
Lab Method Blank: AG2532
Analysis Date: 07/27/95 18:33
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
75-27-3	CHLOROMETHANE	5.	U	5.	UG/KG		TARG
75-28-8	DICHLORODIFLUOROMETHANE	5.	U	5.	UG/KG		TARG
75-29-9	BROMOMETHANE	5.	U	5.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	5.	U	5.	UG/KG		TARG
75-00-3	CHLOROETHANE	5.	U	5.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	5.	U	5.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	5.	U	5.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	5.	U	5.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
67-66-3	CHLOROFORM	5.	U	5.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	5.	U	5.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	5.	U	5.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	5.	U	5.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	5.	U	5.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	5.	U	5.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	5.	U	5.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	5.	U	5.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	5.	U	5.	UG/KG		TARG
98-82-8	CUMENE	5.	U	5.	UG/KG		TARG
108-86-1	BROMOBENZENE	5.	U	5.	UG/KG		TARG
94-18-4	1,2,3-TRICHLOROPROPANE	5.	U	5.	UG/KG		TARG
94-15-1	N-PROPYLBENZENE	5.	U	5.	UG/KG		TARG
75-7-5	1,2-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	5.	U	5.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	5.	U	5.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	5.	U	5.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SVL2

Client Matrix: SOIL

Collection Date: 07/18/95

Lab Sample: AG1179/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/21/95

Test: 201797

Retest:

Prep Date: 07/27/95

Prep Batch: 18727

Lab Method: 2932

Lab Method Blank: AG2532

Analysis Date: 07/27/95 18:33

Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL.

EPA 8260

Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
71-43-2	BENZENE	1.	J	5.	UG/KG		TARG
1-01-5	CIS-1,3-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
1-02-6	TRANS-1,3-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
75-25-2	BROMOFORM	5.	U	5.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	5.	U	5.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U	5.	UG/KG		TARG
108-88-3	TOLUENE	4.	J	5.	UG/KG		TARG
108-90-7	CHLOROBENZENE	5.	U	5.	UG/KG		TARG
100-41-4	ETHYLBENZENE	5.	U	5.	UG/KG		TARG
100-42-5	STYRENE	5.	U	5.	UG/KG		TARG
95-47-6	O-XYLENE	5.	U	5.	UG/KG		TARG
108-88-3	M/P-XYLENE	11.	U	11	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	5.	U	5.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	5.	U	5.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	5.	U	5.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	5.	U	5.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
99-87-6	P-CYMENE	5.	U	5.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	5.	U	5.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	5.	U	5.	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	5.	U	5.	UG/KG		TARG
20-3	NAPHTHALENE	5.	U	5.	UG/KG		TARG
1-6	1,2,3-TRICHLOROBENZENE	5.	U	5.	UG/KG		TARG
2037-26-5	TOLUENE-D8					114	SURR
460-00-4	P-BROMOFLUOROBENZENE					100	SURR
1868-53-7	DIBROMOFLUOROMETHANE		*			122	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10146220SVL0
Client Matrix: SOIL
Collection Date: 07/17/95

Lab Sample: AG1185/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 206607
Retest: 1
Prep Date: 07/28/95
Prep Batch: 18765

Lab Method: 2932
Lab Method Blank: AG2701
Analysis Date: 07/28/95 01:31
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7-3	CHLOROMETHANE	6.	U	6.	UG/KG		TARG
8	DICHLORODIFLUOROMETHANE	6.	U	6.	UG/KG		TARG
9	BROMOMETHANE	6.	U	6.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	6.	U	6.	UG/KG		TARG
75-00-3	CHLOROETHANE	6.	U	6.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	3.	J	6.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	6.	U	6.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
67-66-3	CHLOROFORM	6.	U	6.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	6.	U	6.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	6.	U	6.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	6.	U	6.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
98-82-8	CUMENE	6.	U	6.	UG/KG		TARG
108-86-1	BROMOBENZENE	6.	U	6.	UG/KG		TARG
18-4	1,2,3-TRICHLOROPROPANE	6.	U	6.	UG/KG		TARG
5-1	N-PROPYLBENZENE	6.	U	6.	UG/KG		TARG
7-5	1,2-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	6.	U	6.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG



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CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10146220SVL0
Client Matrix: SOIL
Collection Date: 07/17/95

Lab Sample: AG1185/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 206607
Retest: 1
Prep Date: 07/28/95
Prep Batch: 18765

Lab Method: 2932
Lab Method Blank: AG2701
Analysis Date: 07/28/95 01:31
Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL. EPA 8260 Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
3-2	BENZENE	1.	J	6.	UG/KG		TARG
01-5	CIS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
1-02-6	TRANS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
75-25-2	BROMOFORM	6.	U	6.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	6.	U	6.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
108-88-3	TOLUENE	1.	J	6.	UG/KG		TARG
108-90-7	CHLOROBENZENE	6.	U	6.	UG/KG		TARG
100-41-4	ETHYLBENZENE	6.	U	6.	UG/KG		TARG
100-42-5	STYRENE	6.	U	6.	UG/KG		TARG
95-47-6	O-XYLENE	6.	U	6.	UG/KG		TARG
108-88-3	M/P-XYLENE	11.	U	11	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
99-87-6	P-CYME	6.	U	6.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	6.	U	6.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
58-3	HEXACHLOROBUTADIENE	6.	U	6.	UG/KG		TARG
3	NAPHTHALENE	6.	U	6.	UG/KG		TARG
1-6	1,2,3-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
2037-26-5	TOLUENE-D8					98	SURR
460-00-4	P-BROMOFLUOROBENZENE		*			62	SURR
1868-53-7	DIBROMOFLUOROMETHANE		*			132	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10146220SVL0
Client Matrix: SOIL
Collection Date: 07/17/95

Lab Sample: AG1185/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201837
Retest:
Prep Date: 07/27/95
Prep Batch: 18727

Lab Method: 2932
Lab Method Blank: AG2532
Analysis Date: 07/27/95 14:41
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

<u>Gas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
97-3	CHLOROMETHANE	6.	U	6.	UG/KG		TARG
98-8	DICHLORODIFLUOROMETHANE	6.	U	6.	UG/KG		TARG
99-9	BROMOMETHANE	6.	U	6.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	6.	U	6.	UG/KG		TARG
75-00-3	CHLOROETHANE	6.	U	6.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	6.	U	6.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	6.	U	6.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
67-66-3	CHLOROFORM	6.	U	6.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	6.	U	6.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	6.	U	6.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	6.	U	6.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
98-82-8	CUMENE	6.	U	6.	UG/KG		TARG
108-86-1	BROMOBENZENE	6.	U	6.	UG/KG		TARG
94-18-4	1,2,3-TRICHLOROPROPANE	6.	U	6.	UG/KG		TARG
65-1	N-PROPYLBENZENE	6.	U	6.	UG/KG		TARG
77-5	1,2-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	6.	U	6.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG



Environmental
Services

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10146220SVL0

Client Matrix: SOIL

Collection Date: 07/17/95

Lab Sample: AG1185/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/21/95

Test: 201837

Retest:

Prep Date: 07/27/95

Prep Batch: 18727

Lab Method: 2932

Lab Method Blank: AG2532

Analysis Date: 07/27/95 14:41

Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL.

EPA 8260

Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
3-2	BENZENE	1.	J	6.	UG/KG		TARG
1-01-5	CIS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
1-02-6	TRANS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
75-25-2	BROMOFORM	6.	U	6.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	6.	U	6.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
108-88-3	TOLUENE	6.	U	6.	UG/KG		TARG
108-90-7	CHLOROBENZENE	6.	U	6.	UG/KG		TARG
100-41-4	ETHYLBENZENE	6.	U	6.	UG/KG		TARG
100-42-5	STYRENE	6.	U	6.	UG/KG		TARG
95-47-6	O-XYLENE	6.	U	6.	UG/KG		TARG
108-88-3	M/P-XYLENE	11.	U	11	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
99-87-6	P-CYMENE	6.	U	6.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	6.	U	6.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
68-3	HEXACHLOROBUTADIENE	6.	U	6.	UG/KG		TARG
0-3	NAPHTHALENE	6.	U	6.	UG/KG		TARG
1-6	1,2,3-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
2037-26-5	TOLUENE-D8		*			74	SURR
460-00-4	P-BROMOFLUOROBENZENE		*			52	SURR
1868-53-7	DIBROMOFLUOROMETHANE					95	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1191/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 206608
Retest: 1
Prep Date: 07/28/95
Prep Batch: 18765

Lab Method: 2932
Lab Method Blank: AG2701
Analysis Date: 07/28/95 01:59
Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7-3	CHLOROMETHANE	6.	U	6.	UG/KG		TARG
1-8	DICHLORODIFLUOROMETHANE	6.	U	6.	UG/KG		TARG
3-9	BROMOMETHANE	6.	U	6.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	6.	U	6.	UG/KG		TARG
75-00-3	CHLOROETHANE	6.	U	6.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	3.	J	6.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	6.	U	6.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
67-66-3	CHLOROFORM	6.	U	6.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	6.	U	6.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	6.	U	6.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	6.	U	6.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
98-82-8	CUMENE	6.	U	6.	UG/KG		TARG
108-86-1	BROMOBENZENE	6.	U	6.	UG/KG		TARG
18-4	1,2,3-TRICHLOROPROPANE	6.	U	6.	UG/KG		TARG
5-1	N-PROPYLBENZENE	6.	U	6.	UG/KG		TARG
7-5	1,2-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	6.	U	6.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SVL0

Client Matrix: SOIL

Collection Date: 07/18/95

Lab Sample: AG1191/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/21/95

Test: 206608

Retest: 1

Prep Date: 07/28/95

Prep Batch: 18765

Lab Method: 2932

Lab Method Blank: AG2701

Analysis Date: 07/28/95 01:59

Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL.

EPA 8260

Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
5-2	BENZENE	6.	U	6.	UG/KG		TARG
01-5	CIS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
1-02-6	TRANS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
75-25-2	BROMOFORM	6.	U	6.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	6.	U	6.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
108-88-3	TOLUENE	2.	J	6.	UG/KG		TARG
108-90-7	CHLOROBENZENE	6.	U	6.	UG/KG		TARG
100-41-4	ETHYLBENZENE	6.	U	6.	UG/KG		TARG
100-42-5	STYRENE	6.	U	6.	UG/KG		TARG
95-47-6	O-XYLENE	6.	U	6.	UG/KG		TARG
108-88-3	M/P-XYLENE	12.	U	12	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
99-87-6	P-CYME	6.	U	6.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	6.	U	6.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
68-3	HEXACHLOROBUTADIENE	6.	U	6.	UG/KG		TARG
3	NAPHTHALENE	6.	U	6.	UG/KG		TARG
1-6	1,2,3-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
2037-26-5	TOLUENE-D8					91	SURR
460-00-4	P-BROMOFLUOROBENZENE		*			67	SURR
1868-53-7	DIBROMOFLUOROMETHANE					112	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1191/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201877
Retest:
Prep Date: 07/27/95
Prep Batch: 18727

Lab Method: 2932
Lab Method Blank: AG2532
Analysis Date: 07/27/95 19:02
Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL. EPA 8260 Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
75-87-3	CHLOROMETHANE	6.	U	6.	UG/KG		TARG
75-88-8	DICHLORODIFLUOROMETHANE	6.	U	6.	UG/KG		TARG
75-89-9	BROMOMETHANE	6.	U	6.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	6.	U	6.	UG/KG		TARG
75-00-3	CHLOROETHANE	6.	U	6.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	6.	U	6.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	6.	U	6.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
67-66-3	CHLOROFORM	6.	U	6.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	6.	U	6.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	6.	U	6.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	6.	U	6.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
98-82-8	CUMENE	6.	U	6.	UG/KG		TARG
108-86-1	BROMOBENZENE	6.	U	6.	UG/KG		TARG
96-18-4	1,2,3-TRICHLOROPROPANE	6.	U	6.	UG/KG		TARG
95-5-1	N-PROPYLBENZENE	6.	U	6.	UG/KG		TARG
75-5-5	1,2-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	6.	U	6.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1191/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201877
Retest:
Prep Date: 07/27/95
Prep Batch: 18727

Lab Method: 2932
Lab Method Blank: AG2532
Analysis Date: 07/27/95 19:02
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
3-2	BENZENE	1.	J	6.	UG/KG		TARG
1-01-5	CIS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
1-02-6	TRANS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
75-25-2	BROMOFORM	6.	U	6.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	6.	U	6.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
108-88-3	TOLUENE	2.	J	6.	UG/KG		TARG
108-90-7	CHLOROBENZENE	6.	U	6.	UG/KG		TARG
100-41-4	ETHYLBENZENE	6.	U	6.	UG/KG		TARG
100-42-5	STYRENE	6.	U	6.	UG/KG		TARG
95-47-6	O-XYLENE	6.	U	6.	UG/KG		TARG
108-88-3	M/P-XYLENE	12.	U	12	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
99-87-6	P-CYME	6.	U	6.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	6.	U	6.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
68-3	HEXACHLOROBUTADIENE	6.	U	6.	UG/KG		TARG
0-3	NAPHTHALENE	6.	U	6.	UG/KG		TARG
1-6	1,2,3-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
2037-26-5	TOLUENE-D8					103	SURR
460-00-4	P-BROMOFLUOROBENZENE					88	SURR
1868-53-7	DIBROMOFLUOROMETHANE					113	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10530330SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1194/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201897
Retest:
Prep Date: 07/27/95
Prep Batch: 18727

Lab Method: 2932
Lab Method Blank: AG2532
Analysis Date: 07/27/95 19:30
Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
74-87-3	CHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-88-8	DICHLORODIFLUOROMETHANE	6.	U	6.	UG/KG		TARG
74-89-9	BROMOMETHANE	6.	U	6.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	6.	U	6.	UG/KG		TARG
75-00-3	CHLOROETHANE	6.	U	6.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	6.	U	6.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	6.	U	6.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
67-66-3	CHLOROFORM	6.	U	6.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	6.	U	6.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	6.	U	6.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	6.	U	6.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
98-82-8	CUMENE	6.	U	6.	UG/KG		TARG
108-86-1	BROMOBENZENE	6.	U	6.	UG/KG		TARG
96-18-4	1,2,3-TRICHLOROPROPANE	6.	U	6.	UG/KG		TARG
65-1	N-PROPYLBENZENE	6.	U	6.	UG/KG		TARG
5	1,2-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	6.	U	6.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10530330SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1194/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201897
Retest:
Prep Date: 07/27/95
Prep Batch: 18727

Lab Method: 2932
Lab Method Blank: AG2532
Analysis Date: 07/27/95 19:30
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7-2	BENZENE	6.	U	6.	UG/KG		TARG
-01-5	CIS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
1-02-6	TRANS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
75-25-2	BROMOFORM	6.	U	6.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	6.	U	6.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
108-88-3	TOLUENE	6.	U	6.	UG/KG		TARG
108-90-7	CHLOROBENZENE	6.	U	6.	UG/KG		TARG
100-41-4	ETHYLBENZENE	6.	U	6.	UG/KG		TARG
100-42-5	STYRENE	6.	U	6.	UG/KG		TARG
95-47-6	O-XYLENE	6.	U	6.	UG/KG		TARG
108-88-3	M/P-XYLENE	11.	U	11	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
99-87-6	P-CYMENE	6.	U	6.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	6.	U	6.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
68-3	HEXACHLOROBUTADIENE	6.	U	6.	UG/KG		TARG
0-3	NAPHTHALENE	6.	U	6.	UG/KG		TARG
1-6	1,2,3-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
2037-26-5	TOLUENE-DB					101	SURR
460-00-4	P-BROMOFLUOROBENZENE					103	SURR
1868-53-7	DIBROMOFLUOROMETHANE					97	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10246220SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1197/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 210727
Retest: 1
Prep Date: 08/01/95
Prep Batch: 18823

Lab Method: 2932
Lab Method Blank: AG2864
Analysis Date: 08/01/95 00:19
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
77-3	CHLOROMETHANE	5.	U	5.	UG/KG		TARG
78-8	DICHLORODIFLUOROMETHANE	5.	U	5.	UG/KG		TARG
79-9	BROMOMETHANE	5.	U	5.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	5.	U	5.	UG/KG		TARG
75-00-3	CHLOROETHANE	5.	U	5.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	1.	J	5.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	5.	U	5.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	5.	U	5.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
67-66-3	CHLOROFORM	5.	U	5.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	5.	U	5.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	5.	U	5.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	5.	U	5.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	5.	U	5.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	1.	JB	5.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	5.	U	5.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	5.	U	5.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	5.	U	5.	UG/KG		TARG
98-82-8	CUMENE	5.	U	5.	UG/KG		TARG
108-86-1	BROMOBENZENE	5.	U	5.	UG/KG		TARG
79-18-4	1,2,3-TRICHLOROPROPANE	5.	U	5.	UG/KG		TARG
79-5-1	N-PROPYLBENZENE	5.	U	5.	UG/KG		TARG
79-7-5	1,2-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	5.	U	5.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	5.	U	5.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	5.	U	5.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10246220SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1197/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 210727
Retest: 1
Prep Date: 08/01/95
Prep Batch: 18823

Lab Method: 2932
Lab Method Blank: AG2864
Analysis Date: 08/01/95 00:19
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
43-2	BENZENE	5.	U	5.	UG/KG		TARG
101-5	CIS-1,3-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
102-6	TRANS-1,3-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
75-25-2	BROMOFORM	5.	U	5.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	5.	U	5.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U	5.	UG/KG		TARG
108-88-3	TOLUENE	1.	J	5.	UG/KG		TARG
108-90-7	CHLOROBENZENE	5.	U	5.	UG/KG		TARG
100-41-4	ETHYLBENZENE	5.	U	5.	UG/KG		TARG
100-42-5	STYRENE	5.	U	5.	UG/KG		TARG
95-47-6	O-XYLENE	5.	U	5.	UG/KG		TARG
108-88-3	M/P-XYLENE	11.	U	11	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	5.	U	5.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	5.	U	5.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	5.	U	5.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	5.	U	5.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
99-87-6	P-CYMENE	5.	U	5.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	5.	U	5.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	5.	U	5.	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	5.	U	5.	UG/KG		TARG
9-3	NAPHTHALENE	5.	U	5.	UG/KG		TARG
1-6	1,2,3-TRICHLOROBENZENE	5.	U	5.	UG/KG		TARG
2037-26-5	TOLUENE-D8					103	SURR
460-00-4	P-BROMOFLUOROBENZENE		*			71	SURR
1868-53-7	DIBROMOFLUOROMETHANE					118	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10246220SVL0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1197/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201917
Retest:
Prep Date: 07/28/95
Prep Batch: 18765

Lab Method: 2932
Lab Method Blank: AG2701
Analysis Date: 07/28/95 02:26
Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL. EPA 8260 Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
7-3	CHLOROMETHANE	5.	U	5.	UG/KG		TARG
7-8	DICHLORODIFLUOROMETHANE	5.	U	5.	UG/KG		TARG
7-9	BROMOMETHANE	5.	U	5.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	5.	U	5.	UG/KG		TARG
75-00-3	CHLOROETHANE	5.	U	5.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	1.	J	5.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	5.	U	5.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	5.	U	5.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	5.	U	5.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
67-66-3	CHLOROFORM	5.	U	5.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	5.	U	5.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	5.	U	5.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	5.	U	5.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	5.	U	5.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	5.	U	5.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	5.	U	5.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	5.	U	5.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	5.	U	5.	UG/KG		TARG
98-82-8	CUMENE	5.	U	5.	UG/KG		TARG
108-86-1	BROMOBENZENE	5.	U	5.	UG/KG		TARG
7-18-4	1,2,3-TRICHLOROPROPANE	5.	U	5.	UG/KG		TARG
7-5-1	N-PROPYLBENZENE	5.	U	5.	UG/KG		TARG
7-5	1,2-DICHLOROPROPANE	5.	U	5.	UG/KG		TARG
79-01-6	TRICHLOROETHENE	5.	U	5.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	5.	U	5.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	5.	U	5.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10246220SVL0

Client Matrix: SOIL

Collection Date: 07/18/95

Lab Sample: AG1197/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/21/95

Test: 201917

Retest:

Prep Date: 07/28/95

Prep Batch: 18765

Lab Method: 2932

Lab Method Blank: AG2701

Analysis Date: 07/28/95 02:26

Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL.

EPA 8260

Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
71-43-2	BENZENE	5.	U	5.	UG/KG		TARG
71-01-5	CIS-1,3-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
71-02-6	TRANS-1,3-DICHLOROPROPENE	5.	U	5.	UG/KG		TARG
75-25-2	BROMOFORM	5.	U	5.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	5.	U	5.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U	5.	UG/KG		TARG
108-88-3	TOLUENE	5.	U	5.	UG/KG		TARG
108-90-7	CHLOROBENZENE	2.	J	5.	UG/KG		TARG
100-41-4	ETHYLBENZENE	5.	U	5.	UG/KG		TARG
100-42-5	STYRENE	5.	U	5.	UG/KG		TARG
95-47-6	O-XYLENE	5.	U	5.	UG/KG		TARG
108-88-3	M/P-XYLENE	11.	U	11	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	5.	U	5.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	5.	U	5.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	5.	U	5.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	5.	U	5.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	5.	U	5.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
99-87-6	P-CYMENE	5.	U	5.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	5.	U	5.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	5.	U	5.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	5.	U	5.	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	5.	U	5.	UG/KG		TARG
123-00-3	NAPHTHALENE	5.	U	5.	UG/KG		TARG
123-01-6	1,2,3-TRICHLOROBENZENE	5.	U	5.	UG/KG		TARG
2037-26-5	TOLUENE-DB					95	SURR
460-00-4	P-BROMOFLUOROBENZENE		*			62	SURR
1868-53-7	DIBROMOFLUOROMETHANE					115	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 21136220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1164/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201703
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/01/95 22:19
Dilution: 1

**SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
208-96-8	ACENAPHTHYLENE	74.	U	74.	UG/KG		TARG
90-2	2,6-DINITROTOLUENE	370	U	370	UG/KG		TARG
90-2	3-NITROANILINE	900	U	900	UG/KG		TARG
83-32-9	ACENAPHTHENE	74.	U	74.	UG/KG		TARG
51-28-5	2,4-DINITROPHENOL	900	U	900	UG/KG		TARG
100-02-7	4-NITROPHENOL	900	U	900	UG/KG		TARG
132-64-9	DIBENZOFURAN	370	U	370	UG/KG		TARG
121-14-2	2,4-DINITROTOLUENE	370	U	370	UG/KG		TARG
84-66-2	DIETHYL PHTHALATE	370	U	370	UG/KG		TARG
7005-72-3	4-CHLOROPHENYLPHENYL ETHER	370	U	370	UG/KG		TARG
86-73-7	FLUORENE	74.	U	74.	UG/KG		TARG
100-01-6	4-NITROANILINE	900	U	900	UG/KG		TARG
534-52-1	4,6-DINITRO-2-METHYLPHENOL	900	U	900	UG/KG		TARG
86-30-6	N-NITROSODIPHENYLAMINE	370	U	370	UG/KG		TARG
101-55-3	4-BROMOPHENYL PHENYL ETHER	370	U	370	UG/KG		TARG
118-74-1	HEXACHLOROBENZENE	370	U	370	UG/KG		TARG
87-86-5	PENTACHLOROPHENOL	900	U	900	UG/KG		TARG
85-01-8	PHENANTHRENE	74.	U	74.	UG/KG		TARG
120-12-7	ANTHRACENE	74.	U	74.	UG/KG		TARG
86-74-8	CARBAZOLE	370	U	370	UG/KG		TARG
84-74-2	DI-N-BUTYL PHTHALATE	46.	J	370	UG/KG		TARG
206-44-0	FLUORANTHENE	74.	U	74.	UG/KG		TARG
129-00-0	PYRENE	74.	U	74.	UG/KG		TARG
85-68-7	BUTYL BENZYL PHTHALATE	370	U	370	UG/KG		TARG
91-94-1	3,3'-DICHLOROBENZIDINE	740	U	740	UG/KG		TARG
56-55-3	BENZO(A)ANTHRACENE	74.	U	74.	UG/KG		TARG
101-9	CHRYSENE	74.	U	74.	UG/KG		TARG
31-7	BIS(2-ETHYLHEXYL) PHTHALATE	88.	J	370	UG/KG		TARG
84-0	DI-N-OCTYL PHTHALATE	370	U	370	UG/KG		TARG
205-99-2	BENZO(B)FLUORANTHENE	74.	U	74.	UG/KG		TARG
207-08-9	BENZO(K)FLUORANTHENE	74.	U	74.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 21136220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1164/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201703
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/01/95 22:19
Dilution: 1

**SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
108-95-2	PHENOL	370	U	370	UG/KG		TARG
14-4	BIS(2-CHLOROETHYL)ETHER	370	U	370	UG/KG		TARG
7-8	2-CHLOROPHENOL	370	U	370	UG/KG		TARG
94-73-1	1,3-DICHLOROBENZENE	370	U	370	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	370	U	370	UG/KG		TARG
100-51-6	BENZYL ALCOHOL	370	U	370	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	370	U	370	UG/KG		TARG
95-48-7	2-METHYLPHENOL	370	U	370	UG/KG		TARG
108-60-1	BIS(2-CHLOROISOPROPYL) ETHER	370	U	370	UG/KG		TARG
106-44-5	4-METHYLPHENOL	370	U	370	UG/KG		TARG
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	370	U	370	UG/KG		TARG
67-72-1	HEXACHLOROETHANE	370	U	370	UG/KG		TARG
98-95-3	NITROBENZENE	370	U	370	UG/KG		TARG
78-59-1	ISOPHORONE	370	U	370	UG/KG		TARG
88-75-5	2-NITROPHENOL	370	U	370	UG/KG		TARG
105-67-9	2,4-DIMETHYLPHENOL	370	U	370	UG/KG		TARG
65-85-0	BENZOIC ACID	900	U	900	UG/KG		TARG
111-91-1	BIS(2-CHLOROETHOXY)METHANE	370	U	370	UG/KG		TARG
120-83-2	2,4-DICHLOROPHENOL	370	U	370	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	370	U	370	UG/KG		TARG
91-20-3	NAPHTHALENE	74.	U	74.	UG/KG		TARG
106-47-8	4-CHLOROANILINE	370	U	370	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	370	U	370	UG/KG		TARG
59-50-7	4-CHLORO-3-METHYLPHENOL	370	U	370	UG/KG		TARG
91-57-6	2-METHYLNAPHTHALENE	370	U	370	UG/KG		TARG
77-47-4	HEXACHLOROCYCLOPENTADIENE	370	U	370	UG/KG		TARG
106-2	2,4,6-TRICHLOROPHENOL	370	U	370	UG/KG		TARG
106-4	2,4,5-TRICHLOROPHENOL	900	U	900	UG/KG		TARG
108-7	2-CHLORONAPHTHALENE	370	U	370	UG/KG		TARG
88-74-4	2-NITROANILINE	900	U	900	UG/KG		TARG
131-11-3	DIMETHYL PHTHALATE	370	U	370	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 21136220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1164/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201703
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/01/95 22:19
Dilution: 1

**SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
50-32-8	BENZO(A)PYRENE	74.	U	74.	UG/KG		TARG
39-5	INDENO(1,2,3-CD)PYRENE	74.	U	74.	UG/KG		TARG
0-3	DIBENZO(A,H)ANTHRACENE	74.	U	74.	UG/KG		TARG
191-24-2	BENZO(G,H,I)PERYLENE	74.	U	74.	UG/KG		TARG
4165-60-0	NITROBENZENE-D5					83	SURR
321-60-8	2-FLUOROBIPHENYL					83	SURR
1718-51-0	P-TERPHENYL-D14					93	SURR
4165-62-2	PHENOL-D5					85	SURR
367-12-4	2-FLUOROPHENOL					105	SURR
118-79-6	2,4,6-TRIBROMOPHENOL					75	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10346220SOCO
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1168/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201725
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/01/95 23:00
Dilution: 1

**SEMIVOLATILES - GCMS - CAPIL. COLUMN
EPA 8270A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
108-95-2	PHENOL	370	U	370	UG/KG		TARG
4-4	BIS(2-CHLOROETHYL)ETHER	370	U	370	UG/KG		TARG
-8	2-CHLOROPHENOL	370	U	370	UG/KG		TARG
54-73-1	1,3-DICHLOROBENZENE	370	U	370	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	370	U	370	UG/KG		TARG
100-51-6	BENZYL ALCOHOL	370	U	370	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	370	U	370	UG/KG		TARG
95-48-7	2-METHYLPHENOL	370	U	370	UG/KG		TARG
108-60-1	BIS(2-CHLOROISOPROPYL) ETHER	370	U	370	UG/KG		TARG
106-44-5	4-METHYLPHENOL	370	U	370	UG/KG		TARG
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	370	U	370	UG/KG		TARG
67-72-1	HEXACHLOROETHANE	370	U	370	UG/KG		TARG
98-95-3	NITROBENZENE	370	U	370	UG/KG		TARG
78-59-1	ISOPHORONE	370	U	370	UG/KG		TARG
88-75-5	2-NITROPHENOL	370	U	370	UG/KG		TARG
105-67-9	2,4-DIMETHYLPHENOL	370	U	370	UG/KG		TARG
65-85-0	BENZOIC ACID	890	U	890	UG/KG		TARG
111-91-1	BIS(2-CHLOROETHOXY)METHANE	370	U	370	UG/KG		TARG
120-83-2	2,4-DICHLOROPHENOL	370	U	370	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	370	U	370	UG/KG		TARG
91-20-3	NAPHTHALENE	73.	U	73.	UG/KG		TARG
106-47-8	4-CHLOROANILINE	370	U	370	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	370	U	370	UG/KG		TARG
59-50-7	4-CHLORO-3-METHYLPHENOL	370	U	370	UG/KG		TARG
91-57-6	2-METHYLNAPHTHALENE	370	U	370	UG/KG		TARG
77-47-4	HEXACHLOROCYCLOPENTADIENE	370	U	370	UG/KG		TARG
8-76-2	2,4,6-TRICHLOROPHENOL	370	U	370	UG/KG		TARG
4	2,4,5-TRICHLOROPHENOL	890	U	890	UG/KG		TARG
8-7	2-CHLORONAPHTHALENE	370	U	370	UG/KG		TARG
88-74-4	2-NITROANILINE	890	U	890	UG/KG		TARG
131-11-3	DIMETHYL PHTHALATE	370	U	370	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10346220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1168/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201725
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/01/95 23:00
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
208-96-8	ACENAPHTHYLENE	73.	U	73.	UG/KG		TARG
70-2	2,6-DINITROTOLUENE	370	U	370	UG/KG		TARG
9-2	3-NITROANILINE	890	U	890	UG/KG		TARG
85-32-9	ACENAPHTHENE	73.	U	73.	UG/KG		TARG
51-28-5	2,4-DINITROPHENOL	890	U	890	UG/KG		TARG
100-02-7	4-NITROPHENOL	890	U	890	UG/KG		TARG
132-64-9	DIBENZOFURAN	370	U	370	UG/KG		TARG
121-14-2	2,4-DINITROTOLUENE	370	U	370	UG/KG		TARG
84-66-2	DIETHYL PHTHALATE	370	U	370	UG/KG		TARG
7005-72-3	4-CHLOROPHENYLPHENYL ETHER	370	U	370	UG/KG		TARG
86-73-7	FLUORENE	73.	U	73.	UG/KG		TARG
100-01-6	4-NITROANILINE	890	U	890	UG/KG		TARG
534-52-1	4,6-DINITRO-2-METHYLPHENOL	890	U	890	UG/KG		TARG
86-30-6	N-NITROSODIPHENYLAMINE	370	U	370	UG/KG		TARG
101-55-3	4-BROMOPHENYL PHENYL ETHER	370	U	370	UG/KG		TARG
118-74-1	HEXACHLOROBENZENE	370	U	370	UG/KG		TARG
87-86-5	PENTACHLOROPHENOL	890	U	890	UG/KG		TARG
85-01-8	PHENANTHRENE	73.	U	73.	UG/KG		TARG
120-12-7	ANTHRACENE	73.	U	73.	UG/KG		TARG
86-74-8	CARBAZOLE	370	U	370	UG/KG		TARG
84-74-2	DI-N-BUTYL PHTHALATE	47.	J	370	UG/KG		TARG
206-44-0	FLUORANTHENE	73.	U	73.	UG/KG		TARG
129-00-0	PYRENE	73.	U	73.	UG/KG		TARG
85-68-7	BUTYL BENZYL PHTHALATE	370	U	370	UG/KG		TARG
91-94-1	3,3'-DICHLOROBENZIDINE	730	U	730	UG/KG		TARG
56-55-3	BENZO(A)ANTHRACENE	73.	U	73.	UG/KG		TARG
01-9	CHRYSENE	73.	U	73.	UG/KG		TARG
31-7	BIS(2-ETHYLHEXYL) PHTHALATE	120	J	370	UG/KG		TARG
7-84-0	DI-N-OCTYL PHTHALATE	370	U	370	UG/KG		TARG
205-99-2	BENZO(B)FLUORANTHENE	73.	U	73.	UG/KG		TARG
207-08-9	BENZO(K)FLUORANTHENE	73.	U	73.	UG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10346220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1168/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201725
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/01/95 23:00
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
50-32-8	BENZO(A)PYRENE	73.	U	73.	UG/KG		TARG
39-5	INDENO(1,2,3-CD)PYRENE	73.	U	73.	UG/KG		TARG
0-3	DIBENZO(A,H)ANTHRACENE	73.	U	73.	UG/KG		TARG
191-24-2	BENZO(G,H,I)PERYLENE	73.	U	73.	UG/KG		TARG
4165-60-0	NITROBENZENE-D5					65	SURR
321-60-8	2-FLUOROBIPHENYL					72	SURR
1718-51-0	P-TERPHENYL-D14					92	SURR
4165-62-2	PHENOL-D5					80	SURR
367-12-4	2-FLUOROPHENOL					97	SURR
118-79-6	2,4,6-TRIBROMOPHENOL					81	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10330331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1171/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201745
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/01/95 23:41
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
108-95-2	PHENOL	370	U	370	UG/KG		TARG
4-4	BIS(2-CHLOROETHYL)ETHER	370	U	370	UG/KG		TARG
7-8	2-CHLOROPHENOL	370	U	370	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	370	U	370	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	370	U	370	UG/KG		TARG
100-51-6	BENZYL ALCOHOL	370	U	370	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	370	U	370	UG/KG		TARG
95-48-7	2-METHYLPHENOL	370	U	370	UG/KG		TARG
108-60-1	BIS(2-CHLOROISOPROPYL) ETHER	370	U	370	UG/KG		TARG
106-44-5	4-METHYLPHENOL	370	U	370	UG/KG		TARG
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	370	U	370	UG/KG		TARG
67-72-1	HEXACHLOROETHANE	370	U	370	UG/KG		TARG
98-95-3	NITROBENZENE	370	U	370	UG/KG		TARG
78-59-1	ISOPHORONE	370	U	370	UG/KG		TARG
88-75-5	2-NITROPHENOL	370	U	370	UG/KG		TARG
105-67-9	2,4-DIMETHYLPHENOL	370	U	370	UG/KG		TARG
65-85-0	BENZOIC ACID	890	U	890	UG/KG		TARG
111-91-1	BIS(2-CHLOROETHOXY)METHANE	370	U	370	UG/KG		TARG
120-83-2	2,4-DICHLOROPHENOL	370	U	370	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	370	U	370	UG/KG		TARG
91-20-3	NAPHTHALENE	73.	U	73.	UG/KG		TARG
106-47-8	4-CHLOROANILINE	370	U	370	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	370	U	370	UG/KG		TARG
59-50-7	4-CHLORO-3-METHYLPHENOL	370	U	370	UG/KG		TARG
91-57-6	2-METHYLNAPHTHALENE	370	U	370	UG/KG		TARG
77-47-4	HEXACHLOROCYCLOPENTADIENE	370	U	370	UG/KG		TARG
76-2	2,4,6-TRICHLOROPHENOL	370	U	370	UG/KG		TARG
5-4	2,4,5-TRICHLOROPHENOL	890	U	890	UG/KG		TARG
58-7	2-CHLORONAPHTHALENE	370	U	370	UG/KG		TARG
88-74-4	2-NITROANILINE	890	U	890	UG/KG		TARG
131-11-3	DIMETHYL PHTHALATE	370	U	370	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10330331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1171/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201745
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/01/95 23:41
Dilution: 1

**SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
208-96-8	ACENAPHTHYLENE	73.	U	73.	UG/KG		TARG
70-2	2,6-DINITROTOLUENE	370	U	370	UG/KG		TARG
7-2	3-NITROANILINE	890	U	890	UG/KG		TARG
85-32-9	ACENAPHTHENE	73.	U	73.	UG/KG		TARG
51-28-5	2,4-DINITROPHENOL	890	U	890	UG/KG		TARG
100-02-7	4-NITROPHENOL	890	U	890	UG/KG		TARG
132-64-9	DIBENZOFURAN	370	U	370	UG/KG		TARG
121-14-2	2,4-DINITROTOLUENE	370	U	370	UG/KG		TARG
84-66-2	DIETHYL PHTHALATE	370	U	370	UG/KG		TARG
7005-72-3	4-CHLOROPHENYLPHENYL ETHER	370	U	370	UG/KG		TARG
86-73-7	FLUORENE	73.	U	73.	UG/KG		TARG
100-01-6	4-NITROANILINE	890	U	890	UG/KG		TARG
534-52-1	4,6-DINITRO-2-METHYLPHENOL	890	U	890	UG/KG		TARG
86-30-6	N-NITROSODIPHENYLAMINE	370	U	370	UG/KG		TARG
101-55-3	4-BROMOPHENYL PHENYL ETHER	370	U	370	UG/KG		TARG
118-74-1	HEXACHLOROBENZENE	370	U	370	UG/KG		TARG
87-86-5	PENTACHLOROPHENOL	890	U	890	UG/KG		TARG
85-01-8	PHENANTHRENE	73.	U	73.	UG/KG		TARG
120-12-7	ANTHRACENE	73.	U	73.	UG/KG		TARG
86-74-8	CARBAZOLE	370	U	370	UG/KG		TARG
84-74-2	DI-N-BUTYL PHTHALATE	47.	J	370	UG/KG		TARG
206-44-0	FLUORANTHENE	73.	U	73.	UG/KG		TARG
129-00-0	PYRENE	73.	U	73.	UG/KG		TARG
85-68-7	BUTYL BENZYL PHTHALATE	370	U	370	UG/KG		TARG
91-94-1	3,3'-DICHLOROBENZIDINE	730	U	730	UG/KG		TARG
56-55-3	BENZO(A)ANTHRACENE	73.	U	73.	UG/KG		TARG
101-9	CHRYSENE	73.	U	73.	UG/KG		TARG
11-7	BIS(2-ETHYLHEXYL) PHTHALATE	89.	J	370	UG/KG		TARG
84-0	DI-N-OCTYL PHTHALATE	370	U	370	UG/KG		TARG
205-99-2	BENZO(B)FLUORANTHENE	73.	U	73.	UG/KG		TARG
207-08-9	BENZO(K)FLUORANTHENE	73.	U	73.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10330331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1171/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201745
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/01/95 23:41
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
50-32-8	BENZO(A)PYRENE	73.	U	73.	UG/KG		TARG
19-5	INDENO(1,2,3-CD)PYRENE	73.	U	73.	UG/KG		TARG
0-3	DIBENZO(A,H)ANTHRACENE	73.	U	73.	UG/KG		TARG
174-24-2	BENZO(G,H,I)PERYLENE	73.	U	73.	UG/KG		TARG
4165-60-0	NITROBENZENE-D5					88	SURR
321-60-8	2-FLUOROBIPHENYL					86	SURR
1718-51-0	P-TERPHENYL-D14					113	SURR
4165-62-2	PHENOL-D5					87	SURR
367-12-4	2-FLUOROPHENOL					105	SURR
118-79-6	2,4,6-TRIBROMOPHENOL					71	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10446220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1174/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201765
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/02/95 00:23
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
108-95-2	PHENOL	370	U	370	UG/KG		TARG
4-4	BIS(2-CHLOROETHYL)ETHER	370	U	370	UG/KG		TARG
8	2-CHLOROPHENOL	370	U	370	UG/KG		TARG
54-73-1	1,3-DICHLOROBENZENE	370	U	370	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	370	U	370	UG/KG		TARG
100-51-6	BENZYL ALCOHOL	370	U	370	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	370	U	370	UG/KG		TARG
95-48-7	2-METHYLPHENOL	370	U	370	UG/KG		TARG
108-60-1	BIS(2-CHLOROISOPROPYL) ETHER	370	U	370	UG/KG		TARG
106-44-5	4-METHYLPHENOL	370	U	370	UG/KG		TARG
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	370	U	370	UG/KG		TARG
67-72-1	HEXACHLOROETHANE	370	U	370	UG/KG		TARG
98-95-3	NITROBENZENE	370	U	370	UG/KG		TARG
78-59-1	ISOPHORONE	370	U	370	UG/KG		TARG
88-75-5	2-NITROPHENOL	370	U	370	UG/KG		TARG
105-67-9	2,4-DIMETHYLPHENOL	370	U	370	UG/KG		TARG
65-85-0	BENZOIC ACID	900	U	900	UG/KG		TARG
111-91-1	BIS(2-CHLOROETHOXY)METHANE	370	U	370	UG/KG		TARG
120-83-2	2,4-DICHLOROPHENOL	370	U	370	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	370	U	370	UG/KG		TARG
91-20-3	NAPHTHALENE	74.	U	74.	UG/KG		TARG
106-47-8	4-CHLOROANILINE	370	U	370	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	370	U	370	UG/KG		TARG
59-50-7	4-CHLORO-3-METHYLPHENOL	370	U	370	UG/KG		TARG
91-57-6	2-METHYLNAPHTHALENE	370	U	370	UG/KG		TARG
77-47-4	HEXACHLOROCYCLOPENTADIENE	370	U	370	UG/KG		TARG
5-2	2,4,6-TRICHLOROPHENOL	370	U	370	UG/KG		TARG
4	2,4,5-TRICHLOROPHENOL	900	U	900	UG/KG		TARG
8-7	2-CHLORONAPHTHALENE	370	U	370	UG/KG		TARG
88-74-4	2-NITROANILINE	900	U	900	UG/KG		TARG
131-11-3	DIMETHYL PHTHALATE	370	U	370	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10446220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1174/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201765
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/02/95 00:23
Dilution: 1

**SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
208-96-8	ACENAPHTHYLENE	74.	U	74.	UG/KG		TARG
10-2	2,6-DINITROTOLUENE	370	U	370	UG/KG		TARG
1-2	3-NITROANILINE	900	U	900	UG/KG		TARG
85-32-9	ACENAPHTHENE	74.	U	74.	UG/KG		TARG
51-28-5	2,4-DINITROPHENOL	900	U	900	UG/KG		TARG
100-02-7	4-NITROPHENOL	900	U	900	UG/KG		TARG
132-64-9	DIBENZOFURAN	370	U	370	UG/KG		TARG
121-14-2	2,4-DINITROTOLUENE	370	U	370	UG/KG		TARG
84-66-2	DIETHYL PHTHALATE	370	U	370	UG/KG		TARG
7005-72-3	4-CHLOROPHENYLPHENYL ETHER	370	U	370	UG/KG		TARG
86-73-7	FLUORENE	74.	U	74.	UG/KG		TARG
100-01-6	4-NITROANILINE	900	U	900	UG/KG		TARG
534-52-1	4,6-DINITRO-2-METHYLPHENOL	900	U	900	UG/KG		TARG
86-30-6	N-NITROSODIPHENYLAMINE	370	U	370	UG/KG		TARG
101-55-3	4-BROMOPHENYL PHENYL ETHER	370	U	370	UG/KG		TARG
118-74-1	HEXACHLOROBENZENE	370	U	370	UG/KG		TARG
87-86-5	PENTACHLOROPHENOL	900	U	900	UG/KG		TARG
85-01-8	PHENANTHRENE	74.	U	74.	UG/KG		TARG
120-12-7	ANTHRACENE	74.	U	74.	UG/KG		TARG
86-74-8	CARBAZOLE	370	U	370	UG/KG		TARG
84-74-2	DI-N-BUTYL PHTHALATE	72.	J	370	UG/KG		TARG
206-44-0	FLUORANTHENE	74.	U	74.	UG/KG		TARG
129-00-0	PYRENE	74.	U	74.	UG/KG		TARG
85-68-7	BUTYL BENZYL PHTHALATE	370	U	370	UG/KG		TARG
91-94-1	3,3'-DICHLOROBENZIDINE	740	U	740	UG/KG		TARG
56-55-3	BENZO(A)ANTHRACENE	74.	U	74.	UG/KG		TARG
1-9	CHRYSENE	74.	U	74.	UG/KG		TARG
1-7	BIS(2-ETHYLHEXYL) PHTHALATE	130	J	370	UG/KG		TARG
1-0	DI-N-OCTYL PHTHALATE	370	U	370	UG/KG		TARG
205-99-2	BENZO(B)FLUORANTHENE	74.	U	74.	UG/KG		TARG
207-08-9	BENZO(K)FLUORANTHENE	74.	U	74.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10430331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1177/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201785
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/02/95 21:07
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
108-95-2	PHENOL	360	U	360	UG/KG		TARG
44-4	BIS(2-CHLOROETHYL)ETHER	360	U	360	UG/KG		TARG
7-8	2-CHLOROPHENOL	360	U	360	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	360	U	360	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	360	U	360	UG/KG		TARG
100-51-6	BENZYL ALCOHOL	360	U	360	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	360	U	360	UG/KG		TARG
95-48-7	2-METHYLPHENOL	360	U	360	UG/KG		TARG
108-60-1	BIS(2-CHLOROISOPROPYL) ETHER	360	U	360	UG/KG		TARG
106-44-5	4-METHYLPHENOL	360	U	360	UG/KG		TARG
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	360	U	360	UG/KG		TARG
67-72-1	HEXACHLOROETHANE	360	U	360	UG/KG		TARG
98-95-3	NITROBENZENE	360	U	360	UG/KG		TARG
78-59-1	ISOPHORONE	360	U	360	UG/KG		TARG
88-75-5	2-NITROPHENOL	360	U	360	UG/KG		TARG
105-67-9	2,4-DIMETHYLPHENOL	360	U	360	UG/KG		TARG
65-85-0	BENZOIC ACID	880	U	880	UG/KG		TARG
111-91-1	BIS(2-CHLOROETHOXY)METHANE	360	U	360	UG/KG		TARG
120-83-2	2,4-DICHLOROPHENOL	360	U	360	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	360	U	360	UG/KG		TARG
91-20-3	NAPHTHALENE	72.	U	72.	UG/KG		TARG
106-47-8	4-CHLOROANILINE	360	U	360	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	360	U	360	UG/KG		TARG
59-50-7	4-CHLORO-3-METHYLPHENOL	360	U	360	UG/KG		TARG
91-57-6	2-METHYLNAPHTHALENE	360	U	360	UG/KG		TARG
77-47-4	HEXACHLOROCYCLOPENTADIENE	360	U	360	UG/KG		TARG
76-2	2,4,6-TRICHLOROPHENOL	360	U	360	UG/KG		TARG
5-4	2,4,5-TRICHLOROPHENOL	880	U	880	UG/KG		TARG
58-7	2-CHLORONAPHTHALENE	360	U	360	UG/KG		TARG
88-74-4	2-NITROANILINE	880	U	880	UG/KG		TARG
131-11-3	DIMETHYL PHTHALATE	360	U	360	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10446220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1174/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201765
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/02/95 00:23
Dilution: 1

**SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
50-32-8	BENZO(A)PYRENE	74.	U	74.	UG/KG		TARG
19-5	INDENO(1,2,3-CD)PYRENE	74.	U	74.	UG/KG		TARG
-3	DIBENZO(A,H)ANTHRACENE	74.	U	74.	UG/KG		TARG
191-24-2	BENZO(G,H,I)PERYLENE	74.	U	74.	UG/KG		TARG
4165-60-0	NITROBENZENE-D5					83	SURR
321-60-8	2-FLUOROBIPHENYL					93	SURR
1718-51-0	P-TERPHENYL-D14					109	SURR
4165-62-2	PHENOL-D5					94	SURR
367-12-4	2-FLUOROPHENOL					113	SURR
118-79-6	2,4,6-TRIBROMOPHENOL					101	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10430331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1177/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201785
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/02/95 21:07
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
208-96-8	ACENAPHTHYLENE	72.	U	72.	UG/KG		TARG
10-2	2,6-DINITROTOLUENE	360	U	360	UG/KG		TARG
9-2	3-NITROANILINE	880	U	880	UG/KG		TARG
83-32-9	ACENAPHTHENE	72.	U	72.	UG/KG		TARG
51-28-5	2,4-DINITROPHENOL	880	U	880	UG/KG		TARG
100-02-7	4-NITROPHENOL	880	U	880	UG/KG		TARG
132-64-9	DIBENZOFURAN	360	U	360	UG/KG		TARG
121-14-2	2,4-DINITROTOLUENE	360	U	360	UG/KG		TARG
84-66-2	DIETHYL PHTHALATE	360	U	360	UG/KG		TARG
7005-72-3	4-CHLOROPHENYLPHENYL ETHER	360	U	360	UG/KG		TARG
86-73-7	FLUORENE	72.	U	72.	UG/KG		TARG
100-01-6	4-NITROANILINE	880	U	880	UG/KG		TARG
534-52-1	4,6-DINITRO-2-METHYLPHENOL	880	U	880	UG/KG		TARG
86-30-6	N-NITROSODIPHENYLAMINE	360	U	360	UG/KG		TARG
101-55-3	4-BROMOPHENYL PHENYL ETHER	360	U	360	UG/KG		TARG
118-74-1	HEXACHLOROBENZENE	360	U	360	UG/KG		TARG
87-86-5	PENTACHLOROPHENOL	880	U	880	UG/KG		TARG
85-01-8	PHENANTHRENE	72.	U	72.	UG/KG		TARG
120-12-7	ANTHRACENE	72.	U	72.	UG/KG		TARG
86-74-8	CARBAZOLE	360	U	360	UG/KG		TARG
84-74-2	DI-N-BUTYL PHTHALATE	40.	J	360	UG/KG		TARG
206-44-0	FLUORANTHENE	72.	U	72.	UG/KG		TARG
129-00-0	PYRENE	72.	U	72.	UG/KG		TARG
85-68-7	BUTYL BENZYL PHTHALATE	360	U	360	UG/KG		TARG
91-94-1	3,3'-DICHLOROBENZIDINE	720	U	720	UG/KG		TARG
56-55-3	BENZO(A)ANTHRACENE	72.	U	72.	UG/KG		TARG
11-9	CHRYSENE	72.	U	72.	UG/KG		TARG
11-7	BIS(2-ETHYLHEXYL) PHTHALATE	56.	J	360	UG/KG		TARG
84-0	DI-N-OCTYL PHTHALATE	360	U	360	UG/KG		TARG
205-99-2	BENZO(B)FLUORANTHENE	72.	U	72.	UG/KG		TARG
207-08-9	BENZO(K)FLUORANTHENE	72.	U	72.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10430331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1177/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201785
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/02/95 21:07
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
50-32-8	BENZO(A)PYRENE	72.	U	72.	UG/KG		TARG
19-5	INDENO(1,2,3-CD)PYRENE	72.	U	72.	UG/KG		TARG
-3	DIBENZO(A,H)ANTHRACENE	72.	U	72.	UG/KG		TARG
191-24-2	BENZO(G,H,I)PERYLENE	72.	U	72.	UG/KG		TARG
4165-60-0	NITROBENZENE-D5					71	SURR
321-60-8	2-FLUOROBIPHENYL					75	SURR
1718-51-0	P-TERPHENYL-D14					85	SURR
4165-62-2	PHENOL-D5					80	SURR
367-12-4	2-FLUOROPHENOL					83	SURR
118-79-6	2,4,6-TRIBROMOPHENOL					71	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC2
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1180/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201805
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/02/95 21:47
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
108-95-2	PHENOL	350	U	350	UG/KG		TARG
14-4	BIS(2-CHLOROETHYL)ETHER	350	U	350	UG/KG		TARG
106-46-7	2-CHLOROPHENOL	350	U	350	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	350	U	350	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	350	U	350	UG/KG		TARG
100-51-6	BENZYL ALCOHOL	350	U	350	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	350	U	350	UG/KG		TARG
95-48-7	2-METHYLPHENOL	350	U	350	UG/KG		TARG
108-60-1	BIS(2-CHLOROISOPROPYL) ETHER	350	U	350	UG/KG		TARG
106-44-5	4-METHYLPHENOL	350	U	350	UG/KG		TARG
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	350	U	350	UG/KG		TARG
67-72-1	HEXACHLOROETHANE	350	U	350	UG/KG		TARG
98-95-3	NITROBENZENE	350	U	350	UG/KG		TARG
78-59-1	ISOPHORONE	350	U	350	UG/KG		TARG
88-75-5	2-NITROPHENOL	350	U	350	UG/KG		TARG
105-67-9	2,4-DIMETHYLPHENOL	350	U	350	UG/KG		TARG
65-85-0	BENZOIC ACID	850	U	850	UG/KG		TARG
111-91-1	BIS(2-CHLOROETHOXY)METHANE	350	U	350	UG/KG		TARG
120-83-2	2,4-DICHLOROPHENOL	350	U	350	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	350	U	350	UG/KG		TARG
91-20-3	NAPHTHALENE	70.	U	70.	UG/KG		TARG
106-47-8	4-CHLOROANILINE	350	U	350	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	350	U	350	UG/KG		TARG
59-50-7	4-CHLORO-3-METHYLPHENOL	350	U	350	UG/KG		TARG
91-57-6	2-METHYLNAPHTHALENE	350	U	350	UG/KG		TARG
77-47-4	HEXACHLOROCYCLOPENTADIENE	350	U	350	UG/KG		TARG
106-2	2,4,6-TRICHLOROPHENOL	350	U	350	UG/KG		TARG
106-2	2,4,5-TRICHLOROPHENOL	850	U	850	UG/KG		TARG
106-2	2-CHLORONAPHTHALENE	350	U	350	UG/KG		TARG
88-74-4	2-NITROANILINE	850	U	850	UG/KG		TARG
131-11-3	DIMETHYL PHTHALATE	350	U	350	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC2
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1180/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201805
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/02/95 21:47
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
208-96-8	ACENAPHTHYLENE	70.	U	70.	UG/KG		TARG
100-2	2,6-DINITROTOLUENE	350	U	350	UG/KG		TARG
100-2	3-NITROANILINE	850	U	850	UG/KG		TARG
83-32-9	ACENAPHTHENE	70.	U	70.	UG/KG		TARG
51-28-5	2,4-DINITROPHENOL	850	U	850	UG/KG		TARG
100-02-7	4-NITROPHENOL	850	U	850	UG/KG		TARG
132-64-9	DIBENZOFURAN	350	U	350	UG/KG		TARG
121-14-2	2,4-DINITROTOLUENE	350	U	350	UG/KG		TARG
84-66-2	DIETHYL PHTHALATE	350	U	350	UG/KG		TARG
7005-72-3	4-CHLOROPHENYLPHENYL ETHER	350	U	350	UG/KG		TARG
86-73-7	FLUORENE	70.	U	70.	UG/KG		TARG
100-01-6	4-NITROANILINE	850	U	850	UG/KG		TARG
534-52-1	4,6-DINITRO-2-METHYLPHENOL	850	U	850	UG/KG		TARG
86-30-6	N-NITROSODIPHENYLAMINE	350	U	350	UG/KG		TARG
101-55-3	4-BROMOPHENYL PHENYL ETHER	350	U	350	UG/KG		TARG
118-74-1	HEXACHLOROBENZENE	350	U	350	UG/KG		TARG
87-86-5	PENTACHLOROPHENOL	850	U	850	UG/KG		TARG
85-01-8	PHENANTHRENE	70.	U	70.	UG/KG		TARG
120-12-7	ANTHRACENE	70.	U	70.	UG/KG		TARG
86-74-8	CARBAZOLE	350	U	350	UG/KG		TARG
84-74-2	DI-N-BUTYL PHTHALATE	62.	J	350	UG/KG		TARG
206-44-0	FLUORANTHENE	70.	U	70.	UG/KG		TARG
129-00-0	PYRENE	70.	U	70.	UG/KG		TARG
85-68-7	BUTYL BENZYL PHTHALATE	350	U	350	UG/KG		TARG
91-94-1	3,3'-DICHLOROBENZIDINE	700	U	700	UG/KG		TARG
56-55-3	BENZO(A)ANTHRACENE	70.	U	70.	UG/KG		TARG
11-9	CHRYSENE	70.	U	70.	UG/KG		TARG
11-7	BIS(2-ETHYLHEXYL) PHTHALATE	90.	J	350	UG/KG		TARG
84-0	DI-N-OCTYL PHTHALATE	350	U	350	UG/KG		TARG
205-99-2	BENZO(B)FLUORANTHENE	70.	U	70.	UG/KG		TARG
207-08-9	BENZO(K)FLUORANTHENE	70.	U	70.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC2

Client Matrix: SOIL

Collection Date: 07/18/95

Lab Sample: AG1180/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/21/95

Test: 201805

Retest:

Prep Date: 07/24/95

Prep Batch: 18419

Lab Method: 2935

Lab Method Blank: AG1426

Analysis Date: 08/02/95 21:47

Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN

EPA 8270A

Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
50-32-8	BENZO(A)PYRENE	70.	U	70.	UG/KG		TARG
19-5	INDENO(1,2,3-CD)PYRENE	70.	U	70.	UG/KG		TARG
124-3	DIBENZO(A,H)ANTHRACENE	70.	U	70.	UG/KG		TARG
191-24-2	BENZO(G,H,I)PERYLENE	70.	U	70.	UG/KG		TARG
4165-60-0	NITROBENZENE-D5					84	SURR
321-60-8	2-FLUOROBIPHENYL					87	SURR
1718-51-0	P-TERPHENYL-D14					93	SURR
4165-62-2	PHENOL-D5					96	SURR
367-12-4	2-FLUOROPHENOL					97	SURR
118-79-6	2,4,6-TRIBROMOPHENOL					84	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10146220SOC0
Client Matrix: SOIL
Collection Date: 07/17/95

Lab Sample: AG1186/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201845
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/02/95 23:08
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN EPA 8270A Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
108-95-2	PHENOL	370	U	370	UG/KG		TARG
14-4	BIS(2-CHLOROETHYL)ETHER	370	U	370	UG/KG		TARG
7-8	2-CHLOROPHENOL	370	U	370	UG/KG		TARG
54-73-1	1,3-DICHLOROBENZENE	370	U	370	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	370	U	370	UG/KG		TARG
100-51-6	BENZYL ALCOHOL	370	U	370	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	370	U	370	UG/KG		TARG
95-48-7	2-METHYLPHENOL	370	U	370	UG/KG		TARG
108-60-1	BIS(2-CHLOROISOPROPYL) ETHER	370	U	370	UG/KG		TARG
106-44-5	4-METHYLPHENOL	370	U	370	UG/KG		TARG
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	370	U	370	UG/KG		TARG
67-72-1	HEXACHLOROETHANE	370	U	370	UG/KG		TARG
98-95-3	NITROBENZENE	370	U	370	UG/KG		TARG
78-59-1	ISOPHORONE	370	U	370	UG/KG		TARG
88-75-5	2-NITROPHENOL	370	U	370	UG/KG		TARG
105-67-9	2,4-DIMETHYLPHENOL	370	U	370	UG/KG		TARG
65-85-0	BENZOIC ACID	900	U	900	UG/KG		TARG
111-91-1	BIS(2-CHLOROETHOXY)METHANE	370	U	370	UG/KG		TARG
120-83-2	2,4-DICHLOROPHENOL	370	U	370	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	370	U	370	UG/KG		TARG
91-20-3	NAPHTHALENE	74.	U	74.	UG/KG		TARG
106-47-8	4-CHLOROANILINE	370	U	370	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	370	U	370	UG/KG		TARG
59-50-7	4-CHLORO-3-METHYLPHENOL	370	U	370	UG/KG		TARG
91-57-6	2-METHYLNAPHTHALENE	370	U	370	UG/KG		TARG
77-47-4	HEXACHLOROCYCLOPENTADIENE	370	U	370	UG/KG		TARG
76-2	2,4,6-TRICHLOROPHENOL	370	U	370	UG/KG		TARG
5-4	2,4,5-TRICHLOROPHENOL	900	U	900	UG/KG		TARG
8-7	2-CHLORONAPHTHALENE	370	U	370	UG/KG		TARG
88-74-4	2-NITROANILINE	900	U	900	UG/KG		TARG
131-11-3	DIMETHYL PHTHALATE	370	U	370	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10146220SOCO

Client Matrix: SOIL

Collection Date: 07/17/95

Lab Sample: AG1186/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/21/95

Test: 201845

Retest:

Prep Date: 07/24/95

Prep Batch: 18419

Lab Method: 2935

Lab Method Blank: AG1426

Analysis Date: 08/02/95 23:08

Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN

EPA 8270A

Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
208-96-8	ACENAPHTHYLENE	74.	U	74.	UG/KG		TARG
70-2	2,6-DINITROTOLUENE	370	U	370	UG/KG		TARG
7-2	3-NITROANILINE	900	U	900	UG/KG		TARG
83-32-9	ACENAPHTHENE	74.	U	74.	UG/KG		TARG
51-28-5	2,4-DINITROPHENOL	900	U	900	UG/KG		TARG
100-02-7	4-NITROPHENOL	900	U	900	UG/KG		TARG
132-64-9	DIBENZOFURAN	370	U	370	UG/KG		TARG
121-14-2	2,4-DINITROTOLUENE	370	U	370	UG/KG		TARG
84-66-2	DIETHYL PHTHALATE	370	U	370	UG/KG		TARG
7005-72-3	4-CHLOROPHENYLPHENYL ETHER	370	U	370	UG/KG		TARG
86-73-7	FLUORENE	74.	U	74.	UG/KG		TARG
100-01-6	4-NITROANILINE	900	U	900	UG/KG		TARG
534-52-1	4,6-DINITRO-2-METHYLPHENOL	900	U	900	UG/KG		TARG
86-30-6	N-NITROSODIPHENYLAMINE	370	U	370	UG/KG		TARG
101-55-3	4-BROMOPHENYL PHENYL ETHER	370	U	370	UG/KG		TARG
118-74-1	HEXACHLOROBENZENE	370	U	370	UG/KG		TARG
87-86-5	PENTACHLOROPHENOL	900	U	900	UG/KG		TARG
85-01-8	PHENANTHRENE	74.	U	74.	UG/KG		TARG
120-12-7	ANTHRACENE	74.	U	74.	UG/KG		TARG
86-74-8	CARBAZOLE	370	U	370	UG/KG		TARG
84-74-2	DI-N-BUTYL PHTHALATE	60.	J	370	UG/KG		TARG
206-44-0	FLUORANTHENE	74.	U	74.	UG/KG		TARG
129-00-0	PYRENE	74.	U	74.	UG/KG		TARG
85-68-7	BUTYL BENZYL PHTHALATE	370	U	370	UG/KG		TARG
91-94-1	3,3'-DICHLOROBENZIDINE	740	U	740	UG/KG		TARG
56-55-3	BENZO(A)ANTHRACENE	74.	U	74.	UG/KG		TARG
117-01-9	CHRYSENE	74.	U	74.	UG/KG		TARG
117-84-0	BIS(2-ETHYLHEXYL) PHTHALATE	81.	J	370	UG/KG		TARG
205-99-2	DI-N-OCTYL PHTHALATE	370	U	370	UG/KG		TARG
207-08-9	BENZO(B)FLUORANTHENE	74.	U	74.	UG/KG		TARG
	BENZO(K)FLUORANTHENE	74.	U	74.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10146220SOC0
Client Matrix: SOIL
Collection Date: 07/17/95

Lab Sample: AG1186/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201845
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/02/95 23:08
Dilution: 1

**SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
50-32-8	BENZO(A)PYRENE	74.	U	74.	UG/KG		TARG
'9-5	INDENO(1,2,3-CD)PYRENE	74.	U	74.	UG/KG		TARG
-3	DIBENZO(A,H)ANTHRACENE	74.	U	74.	UG/KG		TARG
191-24-2	BENZO(G,H,I)PERYLENE	74.	U	74.	UG/KG		TARG
4165-60-0	NITROBENZENE-D5					91	SURR
321-60-8	2-FLUOROBIPHENYL					94	SURR
1718-51-0	P-TERPHENYL-D14					94	SURR
4165-62-2	PHENOL-D5					100	SURR
367-12-4	2-FLUOROPHENOL					100	SURR
118-79-6	2,4,6-TRIBROMOPHENOL					78	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1192/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201885
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/03/95 00:29
Dilution: 1

**SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
108-95-2	PHENOL	390	U	390	UG/KG		TARG
4-4	BIS(2-CHLOROETHYL)ETHER	390	U	390	UG/KG		TARG
-8	2-CHLOROPHENOL	390	U	390	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	390	U	390	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	390	U	390	UG/KG		TARG
100-51-6	BENZYL ALCOHOL	390	U	390	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	390	U	390	UG/KG		TARG
95-48-7	2-METHYLPHENOL	390	U	390	UG/KG		TARG
108-60-1	BIS(2-CHLOROISOPROPYL) ETHER	390	U	390	UG/KG		TARG
106-44-5	4-METHYLPHENOL	390	U	390	UG/KG		TARG
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	390	U	390	UG/KG		TARG
67-72-1	HEXACHLOROETHANE	390	U	390	UG/KG		TARG
98-95-3	NITROBENZENE	390	U	390	UG/KG		TARG
78-59-1	ISOPHORONE	390	U	390	UG/KG		TARG
88-75-5	2-NITROPHENOL	390	U	390	UG/KG		TARG
105-67-9	2,4-DIMETHYLPHENOL	390	U	390	UG/KG		TARG
65-85-0	BENZOIC ACID	950	U	950	UG/KG		TARG
111-91-1	BIS(2-CHLOROETHOXY)METHANE	390	U	390	UG/KG		TARG
120-83-2	2,4-DICHLOROPHENOL	390	U	390	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	390	U	390	UG/KG		TARG
91-20-3	NAPHTHALENE	78.	U	78.	UG/KG		TARG
106-47-8	4-CHLOROANILINE	390	U	390	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	390	U	390	UG/KG		TARG
59-50-7	4-CHLORO-3-METHYLPHENOL	390	U	390	UG/KG		TARG
91-57-6	2-METHYLNAPHTHALENE	390	U	390	UG/KG		TARG
77-47-4	HEXACHLOROCYCLOPENTADIENE	390	U	390	UG/KG		TARG
6-2	2,4,6-TRICHLOROPHENOL	390	U	390	UG/KG		TARG
5-4	2,4,5-TRICHLOROPHENOL	950	U	950	UG/KG		TARG
8-7	2-CHLORONAPHTHALENE	390	U	390	UG/KG		TARG
88-74-4	2-NITROANILINE	950	U	950	UG/KG		TARG
131-11-3	DIMETHYL PHTHALATE	390	U	390	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOCO
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1192/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201885
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/03/95 00:29
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
208-96-8	ACENAPHTHYLENE	78.	U	78.	UG/KG		TARG
0-2	2,6-DINITROTOLUENE	390	U	390	UG/KG		TARG
0-2	3-NITROANILINE	950	U	950	UG/KG		TARG
83-32-9	ACENAPHTHENE	78.	U	78.	UG/KG		TARG
51-28-5	2,4-DINITROPHENOL	950	U	950	UG/KG		TARG
100-02-7	4-NITROPHENOL	950	U	950	UG/KG		TARG
132-64-9	DIBENZOFURAN	390	U	390	UG/KG		TARG
121-14-2	2,4-DINITROTOLUENE	390	U	390	UG/KG		TARG
84-66-2	DIETHYL PHTHALATE	390	U	390	UG/KG		TARG
7005-72-3	4-CHLOROPHENYLPHENYL ETHER	390	U	390	UG/KG		TARG
86-73-7	FLUORENE	78.	U	78.	UG/KG		TARG
100-01-6	4-NITROANILINE	950	U	950	UG/KG		TARG
534-52-1	4,6-DINITRO-2-METHYLPHENOL	950	U	950	UG/KG		TARG
86-30-6	N-NITROSODIPHENYLAMINE	390	U	390	UG/KG		TARG
101-55-3	4-BROMOPHENYL PHENYL ETHER	390	U	390	UG/KG		TARG
118-74-1	HEXACHLOROBENZENE	390	U	390	UG/KG		TARG
87-86-5	PENTACHLOROPHENOL	950	U	950	UG/KG		TARG
85-01-8	PHENANTHRENE	78.	U	78.	UG/KG		TARG
120-12-7	ANTHRACENE	78.	U	78.	UG/KG		TARG
86-74-8	CARBAZOLE	390	U	390	UG/KG		TARG
84-74-2	DI-N-BUTYL PHTHALATE	66.	J	390	UG/KG		TARG
206-44-0	FLUORANTHENE	78.	U	78.	UG/KG		TARG
129-00-0	PYRENE	78.	U	78.	UG/KG		TARG
85-68-7	BUTYL BENZYL PHTHALATE	390	U	390	UG/KG		TARG
91-94-1	3,3'-DICHLOROBENZIDINE	780	U	780	UG/KG		TARG
56-55-3	BENZO(A)ANTHRACENE	78.	U	78.	UG/KG		TARG
01-9	CHRYSENE	78.	U	78.	UG/KG		TARG
01-7	BIS(2-ETHYLHEXYL) PHTHALATE	95.	J	390	UG/KG		TARG
84-0	DI-N-OCTYL PHTHALATE	390	U	390	UG/KG		TARG
205-99-2	BENZO(B)FLUORANTHENE	78.	U	78.	UG/KG		TARG
207-08-9	BENZO(K)FLUORANTHENE	78.	U	78.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1192/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201885
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/03/95 00:29
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
50-32-8	BENZO(A)PYRENE	78.	U	78.	UG/KG		TARG
123-5	INDENO(1,2,3-CD)PYRENE	78.	U	78.	UG/KG		TARG
123-3	DIBENZO(A,H)ANTHRACENE	78.	U	78.	UG/KG		TARG
191-24-2	BENZO(G,H,I)PERYLENE	78.	U	78.	UG/KG		TARG
4165-60-0	NITROBENZENE-D5					81	SURR
321-60-8	2-FLUOROBIPHENYL					84	SURR
1718-51-0	P-TERPHENYL-D14					83	SURR
4165-62-2	PHENOL-D5					92	SURR
367-12-4	2-FLUOROPHENOL					93	SURR
118-79-6	2,4,6-TRIBROMOPHENOL					76	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10530330SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1195/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201905
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/03/95 01:10
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
108-95-2	PHENOL	370	U	370	UG/KG		TARG
14-4	BIS(2-CHLOROETHYL)ETHER	370	U	370	UG/KG		TARG
-8	2-CHLOROPHENOL	370	U	370	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	370	U	370	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	370	U	370	UG/KG		TARG
100-51-6	BENZYL ALCOHOL	370	U	370	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	370	U	370	UG/KG		TARG
95-48-7	2-METHYLPHENOL	370	U	370	UG/KG		TARG
108-60-1	BIS(2-CHLOROISOPROPYL) ETHER	370	U	370	UG/KG		TARG
106-44-5	4-METHYLPHENOL	370	U	370	UG/KG		TARG
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	370	U	370	UG/KG		TARG
67-72-1	HEXACHLOROETHANE	370	U	370	UG/KG		TARG
98-95-3	NITROBENZENE	370	U	370	UG/KG		TARG
78-59-1	ISOPHORONE	370	U	370	UG/KG		TARG
88-75-5	2-NITROPHENOL	370	U	370	UG/KG		TARG
105-67-9	2,4-DIMETHYLPHENOL	370	U	370	UG/KG		TARG
65-85-0	BENZOIC ACID	900	U	900	UG/KG		TARG
111-91-1	BIS(2-CHLOROETHOXY)METHANE	370	U	370	UG/KG		TARG
120-83-2	2,4-DICHLOROPHENOL	370	U	370	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	370	U	370	UG/KG		TARG
91-20-3	NAPHTHALENE	74.	U	74.	UG/KG		TARG
106-47-8	4-CHLOROANILINE	370	U	370	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	370	U	370	UG/KG		TARG
59-50-7	4-CHLORO-3-METHYLPHENOL	370	U	370	UG/KG		TARG
91-57-6	2-METHYLNAPHTHALENE	370	U	370	UG/KG		TARG
77-47-4	HEXACHLOROCYCLOPENTADIENE	370	U	370	UG/KG		TARG
76-2	2,4,6-TRICHLOROPHENOL	370	U	370	UG/KG		TARG
5-4	2,4,5-TRICHLOROPHENOL	900	U	900	UG/KG		TARG
58-7	2-CHLORONAPHTHALENE	370	U	370	UG/KG		TARG
88-74-4	2-NITROANILINE	900	U	900	UG/KG		TARG
131-11-3	DIMETHYL PHTHALATE	370	U	370	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10530330SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1195/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201905
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/03/95 01:10
Dilution: 1

**SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
208-96-8	ACENAPHTHYLENE	74.	U	74.	UG/KG		TARG
10-2	2,6-DINITROTOLUENE	370	U	370	UG/KG		TARG
-2	3-NITROANILINE	900	U	900	UG/KG		TARG
83-32-9	ACENAPHTHENE	74.	U	74.	UG/KG		TARG
51-28-5	2,4-DINITROPHENOL	900	U	900	UG/KG		TARG
100-02-7	4-NITROPHENOL	900	U	900	UG/KG		TARG
132-64-9	DIBENZOFURAN	370	U	370	UG/KG		TARG
121-14-2	2,4-DINITROTOLUENE	370	U	370	UG/KG		TARG
84-66-2	DIETHYL PHTHALATE	370	U	370	UG/KG		TARG
7005-72-3	4-CHLOROPHENYLPHENYL ETHER	370	U	370	UG/KG		TARG
86-73-7	FLUORENE	74.	U	74.	UG/KG		TARG
100-01-6	4-NITROANILINE	900	U	900	UG/KG		TARG
534-52-1	4,6-DINITRO-2-METHYLPHENOL	900	U	900	UG/KG		TARG
86-30-6	N-NITROSODIPHENYLAMINE	370	U	370	UG/KG		TARG
101-55-3	4-BROMOPHENYL PHENYL ETHER	370	U	370	UG/KG		TARG
118-74-1	HEXACHLOROBENZENE	370	U	370	UG/KG		TARG
87-86-5	PENTACHLOROPHENOL	900	U	900	UG/KG		TARG
85-01-8	PHENANTHRENE	74.	U	74.	UG/KG		TARG
120-12-7	ANTHRACENE	74.	U	74.	UG/KG		TARG
86-74-8	CARBAZOLE	370	U	370	UG/KG		TARG
84-74-2	DI-N-BUTYL PHTHALATE	68.	J	370	UG/KG		TARG
206-44-0	FLUORANTHENE	74.	U	74.	UG/KG		TARG
129-00-0	PYRENE	74.	U	74.	UG/KG		TARG
85-68-7	BUTYL BENZYL PHTHALATE	370	U	370	UG/KG		TARG
91-94-1	3,3'-DICHLOROBENZIDINE	740	U	740	UG/KG		TARG
56-55-3	BENZO(A)ANTHRACENE	74.	U	74.	UG/KG		TARG
01-9	CHRYSENE	74.	U	74.	UG/KG		TARG
81-7	BIS(2-ETHYLHEXYL) PHTHALATE	72.	J	370	UG/KG		TARG
84-0	DI-N-OCTYL PHTHALATE	370	U	370	UG/KG		TARG
205-99-2	BENZO(B)FLUORANTHENE	74.	U	74.	UG/KG		TARG
207-08-9	BENZO(K)FLUORANTHENE	74.	U	74.	UG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10530330SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1195/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201905
Retest:
Prep Date: 07/24/95
Prep Batch: 18419

Lab Method: 2935
Lab Method Blank: AG1426
Analysis Date: 08/03/95 01:10
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
50-32-8	BENZO(A)PYRENE	74.	U	74.	UG/KG		TARG
9-5	INDENO(1,2,3-CD)PYRENE	74.	U	74.	UG/KG		TARG
J-3	DIBENZO(A,H)ANTHRACENE	74.	U	74.	UG/KG		TARG
171-24-2	BENZO(G,H,I)PERYLENE	74.	U	74.	UG/KG		TARG
4165-60-0	NITROBENZENE-D5					89	SURR
321-60-8	2-FLUOROBIPHENYL					92	SURR
1718-51-0	P-TERPHENYL-D14					102	SURR
4165-62-2	PHENOL-D5					98	SURR
367-12-4	2-FLUOROPHENOL					96	SURR
118-79-6	2,4,6-TRIBROMOPHENOL					77	SURR

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10246220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1198/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201925
Retest:
Prep Date: 07/25/95
Prep Batch: 18489

Lab Method: 2935
Lab Method Blank: AG1557
Analysis Date: 08/03/95 07:12
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN EPA 8270A Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
108-95-2	PHENOL	360	U	360	UG/KG		TARG
4-4	BIS(2-CHLOROETHYL)ETHER	360	U	360	UG/KG		TARG
-8	2-CHLOROPHENOL	360	U	360	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	360	U	360	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	360	U	360	UG/KG		TARG
100-51-6	BENZYL ALCOHOL	360	U	360	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	360	U	360	UG/KG		TARG
95-48-7	2-METHYLPHENOL	360	U	360	UG/KG		TARG
108-60-1	BIS(2-CHLOROISOPROPYL) ETHER	360	U	360	UG/KG		TARG
106-44-5	4-METHYLPHENOL	360	U	360	UG/KG		TARG
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	360	U	360	UG/KG		TARG
67-72-1	HEXACHLOROETHANE	360	U	360	UG/KG		TARG
98-95-3	NITROBENZENE	360	U	360	UG/KG		TARG
78-59-1	ISOPHORONE	360	U	360	UG/KG		TARG
88-75-5	2-NITROPHENOL	360	U	360	UG/KG		TARG
105-67-9	2,4-DIMETHYLPHENOL	360	U	360	UG/KG		TARG
65-85-0	BENZOIC ACID	880	U	880	UG/KG		TARG
111-91-1	BIS(2-CHLOROETHOXY)METHANE	360	U	360	UG/KG		TARG
120-83-2	2,4-DICHLOROPHENOL	360	U	360	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	360	U	360	UG/KG		TARG
91-20-3	NAPHTHALENE	72.	U	72.	UG/KG		TARG
106-47-8	4-CHLOROANILINE	360	U	360	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	360	U	360	UG/KG		TARG
59-50-7	4-CHLORO-3-METHYLPHENOL	360	U	360	UG/KG		TARG
91-57-6	2-METHYLNAPHTHALENE	360	U	360	UG/KG		TARG
77-47-4	HEXACHLOROCYCLOPENTADIENE	360	U	360	UG/KG		TARG
5-5-2	2,4,6-TRICHLOROPHENOL	360	U	360	UG/KG		TARG
-4	2,4,5-TRICHLOROPHENOL	880	U	880	UG/KG		TARG
58-7	2-CHLORONAPHTHALENE	360	U	360	UG/KG		TARG
88-74-4	2-NITROANILINE	880	U	880	UG/KG		TARG
131-11-3	DIMETHYL PHTHALATE	360	U	360	UG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10246220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1198/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201925
Retest:
Prep Date: 07/25/95
Prep Batch: 18489

Lab Method: 2935
Lab Method Blank: AG1557
Analysis Date: 08/03/95 07:12
Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN EPA 8270A Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
208-96-8	ACENAPHTHYLENE	72.	U	72.	UG/KG		TARG
10-2	2,6-DINITROTOLUENE	360	U	360	UG/KG		TARG
1-2	3-NITROANILINE	880	U	880	UG/KG		TARG
85-32-9	ACENAPHTHENE	72.	U	72.	UG/KG		TARG
51-28-5	2,4-DINITROPHENOL	880	U	880	UG/KG		TARG
100-02-7	4-NITROPHENOL	880	U	880	UG/KG		TARG
132-64-9	DIBENZOFURAN	360	U	360	UG/KG		TARG
121-14-2	2,4-DINITROTOLUENE	360	U	360	UG/KG		TARG
84-66-2	DIETHYL PHTHALATE	360	U	360	UG/KG		TARG
7005-72-3	4-CHLOROPHENYLPHENYL ETHER	360	U	360	UG/KG		TARG
86-73-7	FLUORENE	72.	U	72.	UG/KG		TARG
100-01-6	4-NITROANILINE	880	U	880	UG/KG		TARG
534-52-1	4,6-DINITRO-2-METHYLPHENOL	880	U	880	UG/KG		TARG
86-30-6	N-NITROSODIPHENYLAMINE	360	U	360	UG/KG		TARG
101-55-3	4-BROMOPHENYL PHENYL ETHER	360	U	360	UG/KG		TARG
118-74-1	HEXACHLOROBENZENE	360	U	360	UG/KG		TARG
87-86-5	PENTACHLOROPHENOL	880	U	880	UG/KG		TARG
85-01-8	PHENANTHRENE	72.	U	72.	UG/KG		TARG
120-12-7	ANTHRACENE	72.	U	72.	UG/KG		TARG
86-74-8	CARBAZOLE	360	U	360	UG/KG		TARG
84-74-2	DI-N-BUTYL PHTHALATE	61.	J	360	UG/KG		TARG
206-44-0	FLUORANTHENE	72.	U	72.	UG/KG		TARG
129-00-0	PYRENE	72.	U	72.	UG/KG		TARG
85-68-7	BUTYL BENZYL PHTHALATE	360	U	360	UG/KG		TARG
91-94-1	3,3'-DICHLOROBENZIDINE	720	U	720	UG/KG		TARG
56-55-3	BENZO(A)ANTHRACENE	72.	U	72.	UG/KG		TARG
11-9	CHRYSENE	72.	U	72.	UG/KG		TARG
11-7	BIS(2-ETHYLHEXYL) PHTHALATE	200	J	360	UG/KG		TARG
1-84-0	DI-N-OCTYL PHTHALATE	360	U	360	UG/KG		TARG
205-99-2	BENZO(B)FLUORANTHENE	72.	U	72.	UG/KG		TARG
207-08-9	BENZO(K)FLUORANTHENE	72.	U	72.	UG/KG		TARG

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10246220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1198/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201925
Retest:
Prep Date: 07/25/95
Prep Batch: 18489

Lab Method: 2935
Lab Method Blank: AG1557
Analysis Date: 08/03/95 07:12
Dilution: 1

**SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
50-32-8	BENZO(A)PYRENE	72.	U	72.	UG/KG		TARG
19-5	INDENO(1,2,3-CD)PYRENE	72.	U	72.	UG/KG		TARG
17-3	DIBENZO(A,H)ANTHRACENE	72.	U	72.	UG/KG		TARG
191-24-2	BENZO(G,H,I)PERYLENE	72.	U	72.	UG/KG		TARG
4165-60-0	NITROBENZENE-D5					84	SURR
321-60-8	2-FLUOROBIPHENYL					94	SURR
1718-51-0	P-TERPHENYL-D14					102	SURR
4165-62-2	PHENOL-D5					87	SURR
367-12-4	2-FLUOROPHENOL					71	SURR
118-79-6	2,4,6-TRIBROMOPHENOL					81	SURR

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 21136220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1164/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201699
Retest:
Prep Date: 07/24/95
Prep Batch: 18421

Lab Method: 3170
Lab Method Blank: AG1428
Analysis Date: 07/29/95 02:16
Dilution: 1

ORGANOCHLOR. PCB-GC/EC, CAP&PACK
EPA 8080
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
11104-28-2	AROCLOR-1221	23.	U	23.	UG/KG		TARG
74-11-2	AROCLOR-1016	23.	U	23.	UG/KG		TARG
1-16-5	AROCLOR-1232	23.	U	23.	UG/KG		TARG
3469-21-9	AROCLOR-1242	23.	U	23.	UG/KG		TARG
12672-29-6	AROCLOR-1248	23.	U	23.	UG/KG		TARG
11097-69-1	AROCLOR-1254	45.	U	45.	UG/KG		TARG
11096-82-5	AROCLOR-1260	45.	U	45.	UG/KG		TARG
877-09-8	2,4,5,6-TETRACHLORO-M-XYLENE					104	SURR
1770-80-5	DIBUTYL CHLORENDATE					94	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10346220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1168/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201721
Retest:
Prep Date: 07/24/95
Prep Batch: 18421

Lab Method: 3170
Lab Method Blank: AG1428
Analysis Date: 07/29/95 02:42
Dilution: 1

ORGANOCHLOR. PCB-GC/EC, CAP&PACK
EPA 8080
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
11104-28-2	AROCLOR-1221	22.	U	22.	UG/KG		TARG
74-11-2	AROCLOR-1016	22.	U	22.	UG/KG		TARG
41-16-5	AROCLOR-1232	22.	U	22.	UG/KG		TARG
53469-21-9	AROCLOR-1242	22.	U	22.	UG/KG		TARG
12672-29-6	AROCLOR-1248	22.	U	22.	UG/KG		TARG
11097-69-1	AROCLOR-1254	45.	U	45.	UG/KG		TARG
11096-82-5	AROCLOR-1260	45.	U	45.	UG/KG		TARG
877-09-8	2,4,5,6-TETRACHLORO-M-XYLENE					99	SURR
1770-80-5	DIBUTYL CHLORENDATE					96	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10330331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1171/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201741
Retest:
Prep Date: 07/24/95
Prep Batch: 18421

Lab Method: 3170
Lab Method Blank: AG1428
Analysis Date: 07/29/95 03:07
Dilution: 1

ORGANOCHLOR. PCB-GC/EC, CAP&PACK
EPA 8080
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
11104-28-2	AROCLOR-1221	23.	U	23.	UG/KG		TARG
14-11-2	AROCLOR-1016	23.	U	23.	UG/KG		TARG
41-16-5	AROCLOR-1232	23.	U	23.	UG/KG		TARG
53469-21-9	AROCLOR-1242	23.	U	23.	UG/KG		TARG
12672-29-6	AROCLOR-1248	23.	U	23.	UG/KG		TARG
11097-69-1	AROCLOR-1254	45.	U	45.	UG/KG		TARG
11096-82-5	AROCLOR-1260	45.	U	45.	UG/KG		TARG
877-09-8	2,4,5,6-TETRACHLORO-M-XYLENE					102	SURR
1770-80-5	DIBUTYL CHLORENDATE					76	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10446220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1174/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201761
Retest:
Prep Date: 07/24/95
Prep Batch: 18421

Lab Method: 3170
Lab Method Blank: AG1428
Analysis Date: 08/01/95 07:58
Dilution: 1

ORGANOCHLOR.PCB-GC/EC, CAP&PACK
EPA 8080
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
11104-28-2	AROCLOR-1221	23.	U	23.	UG/KG		TARG
14-11-2	AROCLOR-1016	23.	U	23.	UG/KG		TARG
14-16-5	AROCLOR-1232	23.	U	23.	UG/KG		TARG
33469-21-9	AROCLOR-1242	23.	U	23.	UG/KG		TARG
12672-29-6	AROCLOR-1248	23.	U	23.	UG/KG		TARG
11097-69-1	AROCLOR-1254	45.	U	45.	UG/KG		TARG
11096-82-5	AROCLOR-1260	45.	U	45.	UG/KG		TARG
877-09-8	2,4,5,6-TETRACHLORO-M-XYLENE					94	SURR
1770-80-5	DIBUTYL CHLORENDATE					77	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10430331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1177/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201781
Retest:
Prep Date: 07/24/95
Prep Batch: 18421

Lab Method: 3170
Lab Method Blank: AG1428
Analysis Date: 08/01/95 08:24
Dilution: 1

ORGANOCHLOR. PCB-GC/EC, CAP&PACK
EPA 8080
Primary Result

<u>Gas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
11104-28-2	AROCLOR-1221	22.	U	22.	UG/KG		TARG
74-11-2	AROCLOR-1016	22.	U	22.	UG/KG		TARG
1-16-5	AROCLOR-1232	22.	U	22.	UG/KG		TARG
13469-21-9	AROCLOR-1242	22.	U	22.	UG/KG		TARG
12672-29-6	AROCLOR-1248	22.	U	22.	UG/KG		TARG
11097-69-1	AROCLOR-1254	44.	U	44.	UG/KG		TARG
11096-82-5	AROCLOR-1260	44.	U	44.	UG/KG		TARG
877-09-8	2,4,5,6-TETRACHLORO-M-XYLENE					95	SURR
1770-80-5	DIBUTYL CHLORENDATE					78	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10146220SOC0
Client Matrix: SOIL
Collection Date: 07/17/95

Lab Sample: AG1186/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201841
Retest:
Prep Date: 07/24/95
Prep Batch: 18421

Lab Method: 3170
Lab Method Blank: AG1428
Analysis Date: 08/01/95 09:40
Dilution: 1

ORGANOCHLOR. PCB-GC/EC, CAP&PACK
EPA 8080
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
11104-28-2	AROCLOR-1221	23.	U	23.	UG/KG		TARG
74-11-2	AROCLOR-1016	23.	U	23.	UG/KG		TARG
41-16-5	AROCLOR-1232	23.	U	23.	UG/KG		TARG
33469-21-9	AROCLOR-1242	23.	U	23.	UG/KG		TARG
12672-29-6	AROCLOR-1248	23.	U	23.	UG/KG		TARG
11097-69-1	AROCLOR-1254	45.	U	45.	UG/KG		TARG
11096-82-5	AROCLOR-1260	45.	U	45.	UG/KG		TARG
877-09-8	2,4,5,6-TETRACHLORO-M-XYLENE					88	SURR
1770-80-5	DIBUTYL CHLORENDATE					38	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC2
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1180/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201801
Retest:
Prep Date: 07/24/95
Prep Batch: 18421

Lab Method: 3170
Lab Method Blank: AG1428
Analysis Date: 08/01/95 08:49
Dilution: 5

ORGANOCHLOR. PCB-GC/EC, CAP&PACK
EPA 8080
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
11104-28-2	AROCLOR-1221	110	U	110	UG/KG		TARG
74-11-2	AROCLOR-1016	110	U	110	UG/KG		TARG
41-16-5	AROCLOR-1232	110	U	110	UG/KG		TARG
53469-21-9	AROCLOR-1242	110	U	110	UG/KG		TARG
12672-29-6	AROCLOR-1248	110	U	110	UG/KG		TARG
11097-69-1	AROCLOR-1254	290		210	UG/KG		TARG
11096-82-5	AROCLOR-1260	210	U	210	UG/KG		TARG
877-09-8	2,4,5,6-TETRACHLORO-M-XYLENE					88	SURR
1770-80-5	DIBUTYL CHLORENDATE					70	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1192/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201881
Retest:
Prep Date: 07/24/95
Prep Batch: 18421

Lab Method: 3170
Lab Method Blank: AG1428
Analysis Date: 07/29/95 06:56
Dilution: 5

ORGANOCHLOR.PCB-GC/EC, CAP&PACK
EPA 8080
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
11104-28-2	AROCLOR-1221	120	U	120	UG/KG		TARG
74-11-2	AROCLOR-1016	120	U	120	UG/KG		TARG
41-16-5	AROCLOR-1232	120	U	120	UG/KG		TARG
33469-21-9	AROCLOR-1242	120	U	120	UG/KG		TARG
12672-29-6	AROCLOR-1248	120	U	120	UG/KG		TARG
11097-69-1	AROCLOR-1254	270		240	UG/KG		TARG
11096-82-5	AROCLOR-1260	240	U	240	UG/KG		TARG
877-09-8	2,4,5,6-TETRACHLORO-M-XYLENE					84	SURR
1770-80-5	DIBUTYL CHLORENDATE					103	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10530330SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1195/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201901
Retest:
Prep Date: 07/24/95
Prep Batch: 18421

Lab Method: 3170
Lab Method Blank: AG1428
Analysis Date: 07/29/95 07:21
Dilution: 1

ORGANOCHLOR.PCB-GC/EC,CAP&PACK
EPA 8080
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
11104-28-2	AROCLOR-1221	23.	U	23.	UG/KG		TARG
74-11-2	AROCLOR-1016	23.	U	23.	UG/KG		TARG
1-16-5	AROCLOR-1232	23.	U	23.	UG/KG		TARG
93469-21-9	AROCLOR-1242	23.	U	23.	UG/KG		TARG
12672-29-6	AROCLOR-1248	23.	U	23.	UG/KG		TARG
11097-69-1	AROCLOR-1254	46.	U	46.	UG/KG		TARG
11096-82-5	AROCLOR-1260	46.	U	46.	UG/KG		TARG
877-09-8	2,4,5,6-TETRACHLORO-M-XYLENE					93	SURR
1770-80-5	DIBUTYL CHLORENDATE					92	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10246220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1198/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201921
Retest:
Prep Date: 07/25/95
Prep Batch: 18491

Lab Method: 3170
Lab Method Blank: AG1561
Analysis Date: 07/29/95 07:46
Dilution: 1

ORGANOCHLOR.PCB-GC/EC, CAP&PACK
EPA 8080
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
11104-28-2	AROCLOR-1221	22.	U	22.	UG/KG		TARG
74-11-2	AROCLOR-1016	22.	U	22.	UG/KG		TARG
41-16-5	AROCLOR-1232	22.	U	22.	UG/KG		TARG
53469-21-9	AROCLOR-1242	22.	U	22.	UG/KG		TARG
12672-29-6	AROCLOR-1248	22.	U	22.	UG/KG		TARG
11097-69-1	AROCLOR-1254	44.	U	44.	UG/KG		TARG
11096-82-5	AROCLOR-1260	44.	U	44.	UG/KG		TARG
877-09-8	2,4,5,6-TETRACHLORO-M-XYLENE					105	SURR
1770-80-5	DIBUTYL CHLORENDATE					60	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 21136220SMM0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1166/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 203439
Retest:
Prep Date: 07/25/95
Prep Batch: 18503

Lab Method: 3276
Lab Method Blank: AG1573
Analysis Date: 07/26/95 13:21
Dilution: 1

METALS BY ICP-SUPER TRACE INSTRUMNT
EPA 6010A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7440-38-2	ARSENIC	4.80		1.05	MG/KG		TARG
7440-47-3	CHROMIUM	22.0		.0526	MG/KG		TARG
7440-50-8	COPPER	15.6		.158	MG/KG		TARG
7439-92-1	LEAD	9.60		.316	MG/KG		TARG
7440-02-0	NICKEL	15.3		.316	MG/KG		TARG
7440-66-6	ZINC	60.4		2.11	MG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10346220SMM0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1169/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 203440
Retest:
Prep Date: 07/25/95
Prep Batch: 18503

Lab Method: 3276
Lab Method Blank: AG1573
Analysis Date: 07/26/95 13:26
Dilution: 1

METALS BY ICP-SUPER TRACE INSTRUMNT
EPA 6010A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7440-38-2	ARSENIC	5.40		1.10	MG/KG		TARG
7440-47-3	CHROMIUM	25.2		.0549	MG/KG		TARG
7440-50-8	COPPER	16.2		.165	MG/KG		TARG
7439-92-1	LEAD	8.20		.330	MG/KG		TARG
7440-02-0	NICKEL	16.5		.330	MG/KG		TARG
7440-66-6	ZINC	64.0		2.20	MG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10330331SMMO
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1172/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 203441
Retest:
Prep Date: 07/25/95
Prep Batch: 18503

Lab Method: 3276
Lab Method Blank: AG1573
Analysis Date: 07/26/95 13:31
Dilution: 1

**METALS BY ICP-SUPER TRACE INSTRUMNT
EPA 6010A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7440-38-2	ARSENIC	4.50		1.08	MG/KG		TARG
7440-47-3	CHROMIUM	25.8		.0538	MG/KG		TARG
7440-50-8	COPPER	20.3		.161	MG/KG		TARG
7440-39-92-1	LEAD	9.50		.323	MG/KG		TARG
7440-02-0	NICKEL	15.6		.323	MG/KG		TARG
7440-66-6	ZINC	61.9		2.15	MG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10446220SMM0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1175/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 203442
Retest:
Prep Date: 07/25/95
Prep Batch: 18503

Lab Method: 3276
Lab Method Blank: AG1573
Analysis Date: 07/26/95 13:36
Dilution: 1

METALS BY ICP-SUPER TRACE INSTRUMNT
EPA 6010A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7440-38-2	ARSENIC	5.30		1.12	MG/KG		TARG
7440-47-3	CHROMIUM	26.3		.0562	MG/KG		TARG
7440-50-8	COPPER	16.0		.169	MG/KG		TARG
7440-39-92-1	LEAD	9.60		.337	MG/KG		TARG
7440-02-0	NICKEL	17.7		.337	MG/KG		TARG
7440-66-6	ZINC	70.2		2.25	MG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10430331SMM0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1178/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 203443
Retest:
Prep Date: 07/25/95
Prep Batch: 18503

Lab Method: 3276
Lab Method Blank: AG1573
Analysis Date: 07/26/95 13:41
Dilution: 1

METALS BY ICP-SUPER TRACE INSTRUMNT
EPA 6010A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7440-38-2	ARSENIC	4.20		1.12	MG/KG		TARG
7440-47-3	CHROMIUM	18.0		.0562	MG/KG		TARG
7440-50-8	COPPER	11.3		.169	MG/KG		TARG
7439-92-1	LEAD	6.70		.337	MG/KG		TARG
7440-02-0	NICKEL	12.0		.337	MG/KG		TARG
7440-66-6	ZINC	44.0		2.25	MG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SMM2
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1181/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 203444
Retest:
Prep Date: 07/25/95
Prep Batch: 18503

Lab Method: 3276
Lab Method Blank: AG1573
Analysis Date: 07/26/95 13:46
Dilution: 1

METALS BY ICP-SUPER TRACE INSTRUMNT
EPA 6010A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7440-38-2	ARSENIC	4.00		1.10	MG/KG		TARG
7440-47-3	CHROMIUM	17.4		.0549	MG/KG		TARG
7440-50-8	COPPER	12.5		.165	MG/KG		TARG
7439-92-1	LEAD	8.20		.330	MG/KG		TARG
7440-02-0	NICKEL	12.2		.330	MG/KG		TARG
7440-66-6	ZINC	47.9		2.20	MG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10146220SMM0
Client Matrix: SOIL
Collection Date: 07/17/95

Lab Sample: AG1187/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 203446
Retest:
Prep Date: 07/25/95
Prep Batch: 18503

Lab Method: 3276
Lab Method Blank: AG1573
Analysis Date: 07/26/95 14:40
Dilution: 1

**METALS BY ICP-SUPER TRACE INSTRUMNT
EPA 6010A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7440-38-2	ARSENIC	5.10		1.11	MG/KG		TARG
7440-47-3	CHROMIUM	25.3		.0556	MG/KG		TARG
7440-50-8	COPPER	15.9		.167	MG/KG		TARG
7439-92-1	LEAD	12.2		.333	MG/KG		TARG
7440-02-0	NICKEL	17.8		.333	MG/KG		TARG
7440-66-6	ZINC	69.1		2.22	MG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SMM0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1193/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 203448
Retest:
Prep Date: 07/25/95
Prep Batch: 18503

Lab Method: 3276
Lab Method Blank: AG1573
Analysis Date: 07/26/95 14:10
Dilution: 1

METALS BY ICP-SUPER TRACE INSTRUMNT
EPA 6010A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7440-38-2	ARSENIC	4.10		1.06	MG/KG		TARG
7440-47-3	CHROMIUM	20.7		.0532	MG/KG		TARG
7440-50-8	COPPER	12.8		.160	MG/KG		TARG
7439-92-1	LEAD	7.80		.319	MG/KG		TARG
7440-02-0	NICKEL	13.2		.319	MG/KG		TARG
7440-66-6	ZINC	52.4		2.13	MG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10530330SMM0
Client Matrix: SOIL
Collection Date: 07/18/95Lab Sample: AG1196/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95Test: 203449
Retest:
Prep Date: 07/25/95
Prep Batch: 18503Lab Method: 3276
Lab Method Blank: AG1573
Analysis Date: 07/26/95 14:30
Dilution: 1**METALS BY ICP-SUPER TRACE INSTRUMNT**
EPA 6010A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7440-38-2	ARSENIC	3.80		1.20	MG/KG		TARG
-47-3	CHROMIUM	20.0		.0602	MG/KG		TARG
J-50-8	COPPER	11.4		.181	MG/KG		TARG
7439-92-1	LEAD	5.20		.361	MG/KG		TARG
7440-02-0	NICKEL	13.7		.361	MG/KG		TARG
7440-66-6	ZINC	56.1		2.41	MG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10246220SMM0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AG1199/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 203450
Retest:
Prep Date: 07/25/95
Prep Batch: 18505

Lab Method: 3276
Lab Method Blank: AG1575
Analysis Date: 07/26/95 15:05
Dilution: 1

METALS BY ICP-SUPER TRACE INSTRUMNT
EPA 6010A
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7440-38-2	ARSENIC	5.40		1.11	MG/KG		TARG
7440-47-3	CHROMIUM	26.1		.0556	MG/KG		TARG
7440-50-8	COPPER	16.2		.167	MG/KG		TARG
7439-92-1	LEAD	9.30		.333	MG/KG		TARG
7440-02-0	NICKEL	17.5		.333	MG/KG		TARG
7440-66-6	ZINC	64.3		2.22	MG/KG		TARG

00047934

WM #4237

**ICF KAISER
ENGINEERS**

CHAIN OF CUSTODY RECORD

Nº 0566

Laboratory Project No.: _____ Secured: _____
Storage Refrigerator ID: _____ Yes _____
Storage Freezer ID: _____ No _____

Project Name: ROCKSTAR FS FT Project #: 682800200

Sampler: 1/10/2017 PM (Printed Name)

Date: 7/21/95 Time: 08:30

Date: _____ Time: _____

Date: _____ Time: _____

Date: _____ Time: _____

SHIP TO LAB:

Method of Shipment

Shipment ID:

Sample Description

Date	Time	Description
------	------	-------------

Time

1	1054620	7/8	5/1	water
---	---------	-----	-----	-------

2

210546322	814	71
05762501		
1384		
02674		
1		



and

6	6
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1

[illegible]

9				
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1

Special Instructions/Comments:

Sample Archive/Disposal:

☐ Laboratory Standard☐ Other

660

SEND DOCUMENTATION AND RESULTS TO:

ATTENTION: Jim W. T. S. v. 2

ICE KAISER ENGINEERS

10 | UNIVERSAL CITY PLAZA

SUITE 2400

UNIVERSAL CITY, CALIFORNIA 91608

(818) 509-3100 FAX (818) 509-3137

FOR LABORATORY USE ONLY Sample Condition Upon Receipt

ICF KAISER ENGINEERS

CHAIN OF CUSTODY RECORD

COC NO.



No 0118

FOR LABORATORY USE ONLY

Laboratory Project No.:
Storage Refrigerator ID: Yes
Storage Freezer ID: No

Project Name: NESTOR FSCF Project #: 66490-00200

Sampler: MANLY JON

Received by: MANLY JON

Received by: Ben Anderson

Relinquished by: MANLY JON

Relinquished by: Ben Anderson

Relinquished by: MANLY JON

Relinquished by: Ben Anderson

Relinquished by: MANLY JON

Relinquished by: Ben Anderson

SHIP TO LAB:

Method of Shipment: FEB 87

Shipment ID: 12/21/95

UPONTON 0
ROCKVILLE, TN

Circle or Add Analysis(es) Requested

a-Identify specific metals requested under Special Instructions

Sample ID Number	Date	Time	Description	Circle or Add Analysis(es) Requested	FOR LAB USE ONLY									
					Container(s)	Type	TAT	Specific Conductivity (EC)	TDS/Percent Solid	Chloride (Cl)	Fluoride (F)	Mercury (Hg)	8015 Modified (GC)	8015 (TPH-IR)
1 21546220	7/20	838	SOIL		1 B	B	306	X						
2 21546220	8/21	951			1 B	B								
3 21546220	8/21	954			1 B	B		X						
4 22030331	1/34	1345			1 B	B		X						
5 22030331	1/25	1405			1 B	B		X						
6 22030331	1/34	1345			1 B	B		X						
7 22030331	8/14	814			1 B	B		X						
8 22030331	8/31	831			1 B	B		X						
9 22030331	8/20	820			1 B	B		X						
10 20830331	1/20	1720			1 B	B		X						

Special Instructions/Comments: WARNING: PASSIVE

Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other

TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks
Container Types: B=Brass Tube V=VOA Vial A=1-Liter Amber G=Glass Jar C=Cassette
O=Other

SEND DOCUMENTATION AND RESULTS TO:
ATTENTION: MANLY JON

ICF KAISER ENGINEERS
10 UNIVERSAL CITY PLAZA
SUITE 2400
UNIVERSAL CITY, CALIFORNIA 91608
(818) 509-3100 FAX (818) 509-3137

FOR LABORATORY USE ONLY: Sample Condition Upon Receipt: _____

FOR MERCURY IN SOIL ANALYSIS
RESULTS FOR USE ONLY: ICF dated 12/21/95

ICF KAISER ENGINEERS

CHAIN OF CUSTODY RECORD

COC NO.



0004805

No 0119

FOR LABORATORY USE ONLY

Laboratory Project No.:
Storage Refrigerator ID:
Storage Freezer ID:

Secured:
Yes
No

Project Name: Project 66280-002-00

Sampler: Monica Tan

Relinquished By: [Signature]

Received By: [Signature]

Date: 7/21/95

Time: 08:30

Relinquished By: [Signature]

Received By: [Signature]

Date: 7/21/95

Time: 08:30

Relinquished By: [Signature]

Received By: [Signature]

Date: 7/21/95

Time: 08:30

Relinquished By: [Signature]

Received By: [Signature]

Date: 7/21/95

Time: 08:30

SHIP TO LAB:

Method of Shipment: FEDEX

Shipment ID: 66280-002-00

QUANTARO
KUUX VILK, TN

a=Identify specific metals requested under Special Instructions

Sample ID Number	Sample Description		Analysis(es) Requested		Circle or Add		Container(s)		FOR LAB USE ONLY	
	Date	Time	Description	Time	Analysis(es)	Requested	#	Type	TAT	Lab ID
1 22030531	7/20/95	9:03	SOIL				1	AS	3.2h	Rec'd at 50C
2 22030531	7/20/95	9:03	J				1	B	J	with custody
3 22030531	7/20/95	9:03	J				1	B	J	Seals intact.
4 22030531	7/20/95	9:03	WATER				2	V	B	BEA 7/21/95
5										
6										
7										
8										
9										
10										

Special Instructions/Comments: WARNING: POSSIBLE

Sample Archive/Disposal:

☐ Laboratory Standard

☐ Other

12/28/94

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt:

SEND DOCUMENTATION AND RESULTS TO:

ATTENTION: Don WATSON

ICF KAISER ENGINEERS
10 UNIVERSAL CITY PLAZA

SUITE 2400
UNIVERSAL CITY, CALIFORNIA 91608
(818) 509-3100 FAX (818) 509-3137

TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks
Container Types: B=Brass Tube V=VOA Vial A=1-Liter Amber G=Glass Jar C=Cassette
O=Other

COC NO.



0004792

W0 #4237

**ICF KAISER
ENGINEERS**

CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY

 Laboratory Project No.: _____ Secured: _____
 Storage Refrigerator ID: _____ Yes _____ No _____
 Storage Freezer ID: _____ Yes _____ No _____

Nº 0564

Project Name: Remediation Project #: 6628000200 Sampler: monwytm (Printed Name)Relinquished by: [Signature] (Signature and Printed Name) Received by: Ben Anderson (Signature and Printed Name) Date: 7/21/95 Time: 08:30Relinquished by: [Signature] (Signature and Printed Name) Received by: [Signature] (Signature and Printed Name) Date: _____ Time: _____Relinquished by: [Signature] (Signature and Printed Name) Received by: [Signature] (Signature and Printed Name) Date: _____ Time: _____Relinquished by: [Signature] (Signature and Printed Name) Received by: [Signature] (Signature and Printed Name) Date: _____ Time: _____Relinquished by: [Signature] (Signature and Printed Name) Received by: [Signature] (Signature and Printed Name) Date: _____ Time: _____

SHIP TO LAB:

Method of Shipment:

FED EX

Shipment ID:

44403000KW44VUSJTNCircle or Add
Analysis(es)
Requested
 801/8010 (Halogenated Volatiles-GC)
 802/8020 (Aromatic Volatiles-GC)
 804/8040 (Phenols-GC)
 806/8060 (Pesticides-GC)
 808/8080 (PMA-GC)
 825/8250 (Nitrates-GC/MS)
 826/8260 (PMA-GC)
 827/8270 (BMA-GC/MS)
 828/8280 (BMA-GC/MS)
 829/8290 (PMA-GC/MS)
 830/8300 (PMA-GC/MS)
 831/8310 (PMA-GC/MS)
 832/8320 (PMA-GC/MS)
 833/8330 (PMA-GC/MS)
 834/8340 (PMA-GC/MS)
 835/8350 (PMA-GC/MS)
 836/8360 (PMA-GC/MS)
 837/8370 (PMA-GC/MS)
 838/8380 (PMA-GC/MS)
 839/8390 (PMA-GC/MS)
 840/8400 (PMA-GC/MS)
 841/8410 (PMA-GC/MS)
 842/8420 (PMA-GC/MS)
 843/8430 (PMA-GC/MS)
 844/8440 (PMA-GC/MS)
 845/8450 (PMA-GC/MS)
 846/8460 (PMA-GC/MS)
 847/8470 (PMA-GC/MS)
 848/8480 (PMA-GC/MS)
 849/8490 (PMA-GC/MS)
 850/8500 (PMA-GC/MS)
 851/8510 (PMA-GC/MS)
 852/8520 (PMA-GC/MS)
 853/8530 (PMA-GC/MS)
 854/8540 (PMA-GC/MS)
 855/8550 (PMA-GC/MS)
 856/8560 (PMA-GC/MS)
 857/8570 (PMA-GC/MS)
 858/8580 (PMA-GC/MS)
 859/8590 (PMA-GC/MS)
 860/8600 (PMA-GC/MS)
 861/8610 (PMA-GC/MS)
 862/8620 (PMA-GC/MS)
 863/8630 (PMA-GC/MS)
 864/8640 (PMA-GC/MS)
 865/8650 (PMA-GC/MS)
 866/8660 (PMA-GC/MS)
 867/8670 (PMA-GC/MS)
 868/8680 (PMA-GC/MS)
 869/8690 (PMA-GC/MS)
 870/8700 (PMA-GC/MS)
 871/8710 (PMA-GC/MS)
 872/8720 (PMA-GC/MS)
 873/8730 (PMA-GC/MS)
 874/8740 (PMA-GC/MS)
 875/8750 (PMA-GC/MS)
 876/8760 (PMA-GC/MS)
 877/8770 (PMA-GC/MS)
 878/8780 (PMA-GC/MS)
 879/8790 (PMA-GC/MS)
 880/8800 (PMA-GC/MS)
 881/8810 (PMA-GC/MS)
 882/8820 (PMA-GC/MS)
 883/8830 (PMA-GC/MS)
 884/8840 (PMA-GC/MS)
 885/8850 (PMA-GC/MS)
 886/8860 (PMA-GC/MS)
 887/8870 (PMA-GC/MS)
 888/8880 (PMA-GC/MS)
 889/8890 (PMA-GC/MS)
 890/8900 (PMA-GC/MS)
 891/8910 (PMA-GC/MS)
 892/8920 (PMA-GC/MS)
 893/8930 (PMA-GC/MS)
 894/8940 (PMA-GC/MS)
 895/8950 (PMA-GC/MS)
 896/8960 (PMA-GC/MS)
 897/8970 (PMA-GC/MS)
 898/8980 (PMA-GC/MS)
 899/8990 (PMA-GC/MS)
 900/9000 (PMA-GC/MS)

Sample Description

Date Time Description

1 10546220 7/18 1700 W052N

2 10546220 7/18 1650 W052N

3 10546220 7/18 1750 W052N

4 10546220 7/18 1650 W052N

5 10546220 7/18 1750 W052N

6 10546220 7/18 1750 W052N

7 10546220 7/18 1750 W052N

8

9

10

a-Identify specific metals
requested under Special
Instructions

Container(s)

Type

Lab ID

TAT #

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

3 2 1

Special Instructions/Comments: _____

Sample Archive/Disposal:
☐ Laboratory Standard
☐ OtherTAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks
Container Types: B=Brass Tube V=VOA Vial A=1-Liter Amber G=Cassette
O=OtherSEND DOCUMENTATION AND RESULTS TO:
ATTENTION: [Signature]
 ICF KAISER ENGINEERS
 10 UNIVERSAL CITY PLAZA
 SUITE 2400
 UNIVERSAL CITY, CALIFORNIA 91608
 (818) 509-3100 FAX (818) 509-3137

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt: _____

ICF KAISER ENGINEERS

CHAIN OF CUSTODY RECORD

COC NO
#0004791*

Nº 0663

W04237 RL# 4174

FOR LABORATORY USE ONLY

Laboratory Project No.:
Storage Refrigerator ID: Yes
Storage Freezer ID: No

Project Name: PROJECT 1500 Project # 66280-002-00 Sampler: MANUEL J. TORRES
 Relinquished By: [Signature] Date: 7/11/95 Time: 08:30
 Relinquished By: [Signature] Date: 7/11/95 Time: 08:30
 Relinquished By: [Signature] Date: 7/11/95 Time: 08:30
 Relinquished By: [Signature] Date: 7/11/95 Time: 08:30

SHIP TO LAB:

Method of Shipment: BY AIR
 Shipment ID: QV00000000
KNOXVILLE, TN

a=Identify specific metals requested under Special Instructions

Sample Description				FOR LAB USE ONLY																					
Sample ID Number	Description			Date	Time	TAT	Container(s)		Specific Conductivity	TDS/Percent Solids	Chloride / pH	Fluoride / Nitrate	Metal-Sulfide	Metal-Total	0015 Modified (GC)	418.1 (TPH-R)	TPH/0 (Calcine-GC)	TPH/0 (Distill-GC)	025 (GC/MS)	024 (GC/MS)	010 (GC/MS)	008 (GC/MS)	004 (GC/MS)	002 (GC/MS)	001 (GC/MS)
	#	Type																							
1 21720331 5000	7/18	10:14	SDIL	30k	1	B			X																
2 21720331 5000		10:30			1	B			X																
3 21720331 5000		10:30			1	B			X																
4 21720331 5000		9:45			1	B			X																
5 21720331 5000		9:05			1	B			X																
6 21720331 5000		9:45			1	B			X																
7 21046220 5000		15:02			1	B			X																
8 21046220 5000		14:55			1	B			X																
9 21046220 5000		14:50			1	B			X																
10																									

TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks
 Container Types: B=Brass Tube V=VOA Vial A=1-Liter Amber G=Glass Jar C=Cassette
 O=Other

SEND DOCUMENTATION AND RESULTS TO:
 ATTENTION: ICF KAISER ENGINEERS

ICF KAISER ENGINEERS
 10 UNIVERSAL CITY PLAZA
 SUITE 2400
 UNIVERSAL CITY, CALIFORNIA 91608
 (818) 509-3100 FAX (818) 509-3137

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt:

Handwritten notes:
 7/18/95
 Analysis for
 [Signature]

Special Instructions/Comments: MTOL PEN LIST
FROM ICF KE TO QUANTERO BOSTON
12/23/94

Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other

0004796

Nº 0590

Laboratory Project No.: _____
Storage Refrigerator ID: _____
Storage Freezer ID: _____
Secured: _____
Yes _____
No _____

**ICF KAISER
ENGINEERS**

CHAIN OF CUSTODY RECORD

Project Name: NIKESTWNC FSD F Project #: 6628 D00200 Sampler: 14 Nov 71

Received by: (Signature and Printed Name)

Delivered to: (Signature and Printed Name)

Ar. J. S.

Received by: Signature and Printed Name

Received by: Signature and Printed Name

Received by: Signature and Printed Name

SHIP TO LAB:

Method of Shipment

www.ETBDA

Y 2022

Knoxville, TN

Shipment ID:

Sample ID Number	Sample Description		
	Date	Time	Description
1 121136220 505.2	7/18	16 ¹⁵	5010
2 21136220 505.0	7/18	16 ⁰⁵	↓
3 21136220 505.0	7/18	16 ²⁵	
4			
5			
6			
7			
8			
9			
10			

**Circle or Add
Analysis(es)
Requested**

[illegible]

a=Identify specific metals requested under Special Instructions

Container(s)		TAT		FOR LAB USE ONLY	
#	Type	#	Type	Lab ID	
326	1 SS	326	1 SS	Rec'd at S	
1	1 SS	1	1 SS	with custody	
1	1 SS	1	1 SS	seals intact.	
				BEA 7/21	

51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510
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☐ Laboratory Standard☐ Labor ☐ Other

12/28/59

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt

TAT (Analytical Turn-Around Times) 1-24 hours 2-48 hours 3-1 week 4-2 weeks
Container Types: B=Brass Tube V=VOA Vial A=1-Liter Amber G=Glass Jar C=Cassette
O=Other

SEND DOCUMENTATION AND RESULTS TO:

ATTENTION: Don Wang

**ICF KAISER ENGINEERS
10 UNIVERSAL CITY PLAZA
SUITE 2400
UNIVERSAL CITY, CALIFORNIA 91608
(818) 509-3100 FAX (818) 509-3137**

0004799

0563
Nº

Laboratory Project No.:

Secured: _____
Yes _____
No _____

**ICF KAISER
ENGINEERS**

CHAIN OF CUSTODY RECORD

Project Name: <u>Mr. KSTWNS FDSF</u>	Project #: <u>6628020200</u>	Sampler: <u>manley dm</u>	Signature: <u>[Signature]</u>
Relinquished by: <u>[Signature]</u>	Received by: <u>manley dm</u>	Date: <u>7/21/05</u>	Time: <u>08:30</u>
Relinquished by: <u>[Signature]</u>	Received by: <u>[Signature]</u>	Date: _____	Time: _____
Relinquished by: <u>[Signature]</u>	Received by: <u>[Signature]</u>	Date: _____	Time: _____
Relinquished by: <u>[Signature]</u>	Received by: <u>[Signature]</u>	Date: _____	Time: _____

SHIP TO LAB:

Method of Shipment: FBO EX

Shipment ID:

Shipment ID:

a=Identify specific metals requested under Special Instructions

Sample Description				FOR LAB USE ONLY	
Sample ID Number	Date	Time	Description	Container(s)	Lab ID
1 10546220 SVL2	7/17	1541	501~	3wk 1 SS	Rec'd at 5°C
2 10546220 SVL2	7/17	1541	↓	3wk 1 SS	with custody so
3 10546220 SVL2	7/17	1543	↓	3wk 1 SS	intact.
4					
5					BET 7/01
6 10446220 SVL2	7/17	1333	501~	3wk 1 SS	
7 10446220 SVL2	↓	1334	↓	3wk 1 SS	
8 10446220 SVL2	↓	1337	↓	3wk 1 SS	
9				3wk 1 SS	
10				3wk 1 SS	

TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks
Container Types: B=Brass Tube V=VOA Vial A=1-Liter Amber G=Glass Jar C=Cassette
O=Other _____

Special Instructions/Comments: metals per list from C.F.R.E.

SEND DOCUMENTATION AND RESULTS TO:
ATTENTION: 16m Watson

**ICF KAISER ENGINEERS
10 UNIVERSAL CITY PLAZA
SUITE 2400
UNIVERSAL CITY, CALIFORNIA 91608
(818) 509-3100 FAX (818) 509-3137**

FOR LABORATORY USE ONLY Sample Condition Upon Receipt

ICF KAISER ENGINEERS

CHAIN OF CUSTODY RECORD

COC NO.



000-4800-0

No 0698

W0 #4237

CHEM

1-01, 10/15/95

FOR LABORATORY USE ONLY

Laboratory Project No.: _____ Secured: _____
Storage Refrigerator ID: _____ Yes _____ No _____
Storage Freezer ID: _____

Project Name: Rockabyne FSDP Project #: 66280-002-00 Sampler: _____

Relinquished By: _____ Received By: _____ Signature and Printed Name
Relinquished By: _____ Received By: _____ Signature and Printed Name
Relinquished By: _____ Received By: _____ Signature and Printed Name
Relinquished By: _____ Received By: _____ Signature and Printed Name

Date: _____ Time: _____
Date: _____ Time: _____
Date: _____ Time: _____
Date: _____ Time: _____

SHIP TO LAB:

QUANTERRA
KNOXVILLE, TN

Method of Shipment:
1-800-EX

Shipment ID: _____

615/588-6401

Circle or Add
Analysis(es)
Requested

a=Identify specific metals
requested under Special
Instructions

Sample ID Number	Date	Time	Description	Circle or Add Analysis(es) Requested												Container(s) # Type	FOR LAB USE ONLY Lab ID
				801/802 (Reagent Grade Volatiles-GC)	802/803 (Aromatic Volatiles-GC)	803/804 (Phenols-GC)	804/805 (Phenols-GC)	805/806 (Phenols-GC)	806/807 (Phenols-GC)	807/808 (Phenols-GC)	808/809 (Phenols-GC)	809/810 (Phenols-GC)	810/811 (Phenols-GC)	811/812 (Phenols-GC)	812/813 (Phenols-GC)		
1 10130331	7/17/95	16:00	SDIL													3wk 1 B	
2 10130331	7/17/95	16:00	SDIL													3wk 1 B	
3 10130331	7/17/95	16:00	SDIL													3wk 1 B	
4 10130331	7/17/95	16:00	SDIL													3wk 1 B	
5 10130331	7/17/95	16:00	SDIL													3wk 1 B	
6 10130331	7/17/95	16:00	SDIL													3wk 1 B	
7 10130331	7/17/95	16:00	SDIL													3wk 1 B	
8 10130331	7/17/95	16:00	SDIL													3wk 1 B	
9 10130331	7/17/95	16:00	SDIL													3wk 1 B	
10 10130331	7/17/95	16:00	SDIL													3wk 1 B	

Special Instructions/Comments: Metals per list on report from ICFUE to Quanterra dated 12/28/94.
(To be, Title 22 Metals: Arsenic, Chromium, Copper, Lead, Mercury, Nickel, and Zinc).

Sample Archive/Disposal: ☐ Laboratory Standard ☐ Other

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt: _____

SEND DOCUMENTATION AND RESULTS TO:

ATTENTION: Tom W. S.
ICF KAISER ENGINEERS
10 UNIVERSAL CITY PLAZA
SUITE 2400
UNIVERSAL CITY, CALIFORNIA 91608
(818) 509-3100 FAX (818) 509-3137

TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks
Container Types: B=Brass Tube V=VOA Vial A=1-Liter Amber G=Glass Jar C=Cassette
O=Other

CHAIN OF CUSTODY RECORD

Project Name: Rockeddyne F5DF Project #: 66280-002-00

Sampler: MA-287

1

Signature

Requisitioned by: [Signature] in
 Received by: [Signature] in
 Date: 7/21/55 Time: 08:30

Received by: Ben A. B. 2 Date: 11-1-82 Time: 11:00
 Requisitioned by: Ben A. B. 2 Signature and Printed Name
 Requisitioned by: Ben A. B. 2 Signature and Printed Name

Received by: _____ Signature and Printed Name	Delivered by: _____ Signature and Printed Name
Time: _____	

Relinquished by: _____	Signature and Printed Name

Date: _____	
Time: _____	
Received by: _____	Signature and Printed Name

SHIP TO LAB: _____

[illegible][illegible]

Shipment ID:

[illegible]

Sample ID	Sample Description	Lab ID
1101001	1101001	1101001
1101002	1101002	1101002
1101003	1101003	1101003
1101004	1101004	1101004
1101005	1101005	1101005
1101006	1101006	1101006
1101007	1101007	1101007
1101008	1101008	1101008
1101009	1101009	1101009
1101010	1101010	1101010
1101011	1101011	1101011
1101012	1101012	1101012
1101013	1101013	1101013
1101014	1101014	1101014
1101015	1101015	1101015
1101016	1101016	1101016
1101017	1101017	1101017
1101018	1101018	1101018
1101019	1101019	1101019
1101020	1101020	1101020
1101021	1101021	1101021
1101022	1101022	1101022
1101023	1101023	1101023
1101024	1101024	1101024
1101025	1101025	1101025
1101026	1101026	1101026
1101027	1101027	1101027
1101028	1101028	1101028
1101029	1101029	1101029
1101030	1101030	1101030
1101031	1101031	1101031
1101032	1101032	1101032
1101033	1101033	1101033
1101034	1101034	1101034
1101035	1101035	1101035
1101036	1101036	1101036
1101037	1101037	1101037
1101038	1101038	1101038
1101039	1101039	1101039
1101040	1101040	1101040
1101041	1101041	1101041
1101042	1101042	1101042
1101043	1101043	1101043
1101044	1101044	1101044
1101045	1101045	1101045
1101046	1101046	1101046
1101047	1101047	1101047
1101048	1101048	1101048
1101049	1101049	1101049
1101050	1101050	1101050
1101051	1101051	1101051
1101052	1101052	1101052
1101053	1101053	1101053
1101054	1101054	1101054
1101055	1101055	1101055
1101056	1101056	1101056
1101057	1101057	1101057
1101058	1101058	1101058
1101059	1101059	1101059
1101060	1101060	1101060
1101061	1101061	1101061
1101062	1101062	1101062
1101063	1101063	1101063
1101064	1101064	1101064
1101065	1101065	1101065
1101066	1101066	1101066
1101067	1101067	1101067
1101068	1101068	1101068
1101069	1101069	1101069
1101070	1101070	1101070
1101071	1101071	1101071
1101072	1101072	1101072
1101073	1101073	1101073
1101074	1101074	1101074
1101075	1101075	1101075
1101076	1101076	1101076
1101077	1101077	1101077
1101078	1101078	1101078
1101079	1101079	1101079
1101080	1101080	1101080
1101081	1101081	1101081
1101082	1101082	1101082
1101083	1101083	1101083
1101084	1101084	1101084
1101085	1101085	1101085
1101086	1101086	1101086
1101087	1101087	1101087
1101088	1101088	1101088

[illegible][illegible][illegible][illegible][illegible][illegible]

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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6	SVLØ	7/18	9012		X	3wk	1 B
10530330		7/18	9012				

[illegible][illegible]

5m	0	13	0
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[illegible][illegible]

Sample Archive/Disposal:

TAT (Analytical Turn-Around Times) = 124 hours
TAT (Chemical Turn-Around Times) = 248 hours

Special Instructions/Comments:

C=Car C=Cas G=Glass Jar A=1-liter Amber V=Vial
C=Cap T=Tissue B=Boiler Tube V=Vial

Special instructions for container:
Heated per list on sample from C F K E
Heated per list on sample from 12/2/07

☐ Laboratory Standard

Container types: B=Glass tubes V=VCR vials A=1 Liter bottles
 0=Other _____

☐ *Quartermaster dated 11/28/44.*

SEND DOCUMENTATION AND RESULTS TO:
ATTENTION: WATSON
7200 WA TSON

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt _____

TO UNIVERSAL CITY PLAZA
SUITE 2400

UNIVERSAL CITY, CALIFORNIA 91608
(818) 509-3100 FAX (818) 509-3137

1

COC NO. 0004802

W0#4237

**ICF KAISER
ENGINEERS**

CHAIN OF CUSTODY RECORD

Project Name: <u>Rocketdyne FSDF</u>	Project #: <u>66280-002-00</u>	Sampler: <u>Mar 15 Y BR</u>	Signature: <u>[Signature]</u>
Relinquished by: <u>[Signature]</u>	Received by: <u>[Signature]</u>	Date: <u>7/21/56</u>	Time: <u>08:30</u>
Relinquished by: <u>[Signature]</u>	Received by: <u>[Signature]</u>	Date: _____	Time: _____
Relinquished by: <u>[Signature]</u>	Received by: <u>[Signature]</u>	Date: _____	Time: _____
Relinquished by: <u>[Signature]</u>	Received by: <u>[Signature]</u>	Date: _____	Time: _____

SHIP TO LAB:
QUANTERA

615/588-6401

Sample ID Number	Sample Description		
	Date	Time	Description
1 10246220 SVLØ	7/18	10 ⁰²	501~
2 10246220 SOCØ	↓	10 ⁰²	↓
3 10246220 SMHØ	↓	10 ⁴⁶	↓
4			
5 1023033Ø SVLØ	7/18	8 ⁰²	501~
6 10230331 SOCØ	↓	8 ⁰²	↓
7 10230331 SMHØ	↓	8 ⁰⁰	↓
8			
9			
10			

**Circle or Add
Analysis(es)
Requested**

[illegible]

TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks
Container Types: B=Brass Tube V=VOA Vial A=1-Liter Amber G=Glass Jar C=Cassette
O=Other _____

Special Instructions/Comments:
He July per list on sample from 1CFKE to
Quantifera dated 12/28/94

SEND DOCUMENTATION AND RESULTS TO:
ATTENTION: Timothy S. Dow

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt

ICF KAISER ENGINEERS
10 UNIVERSAL CITY PLAZA
SUITE 2400
UNIVERSAL CITY, CALIFORNIA 91608
(818) 509-3100 FAX (818) 509-3137

ICF KAISER ENGINEERS

CHAIN OF CUSTODY RECORD

Project Name: PAKISTAN BDF Project # 66280-002-00

Sampler: MANLEY JPM

Relinquished by: [Signature] Date: 7/2/95 Received by: [Signature] Date: 7/2/95

Relinquished by: [Signature] Date: 7/2/95 Received by: [Signature] Date: 7/2/95

Relinquished by: [Signature] Date: 7/2/95 Received by: [Signature] Date: 7/2/95

Relinquished by: [Signature] Date: 7/2/95 Received by: [Signature] Date: 7/2/95

SHIP TO LAB: QUANTERA

Method of Shipment: FED EX

Shipment ID: KWXMU3TN

Sample ID Number

Date

Time

Description

1 21885210 7/2/95 1425 S01L

2 21885210 7/2/95 1525 S01L

3 21885210 7/2/95 1425 S01L

4 22085190 7/2/95 1130 S01L

5 22085190 7/2/95 1125 S01L

6 22085190 7/2/95 825 S01L

7 22085190 7/2/95 825 S01L

8 22085190 7/2/95 825 S01L

9 22085190 7/2/95 825 S01L

10 22085190 7/2/95 1525 S01L

Circle or Add Analysis(es) Requested

801/802 (Halogenated Volatiles-GC)

804/805 (Aromatic Volatiles-GC)

806/807 (Phenols-GC)

808/809 (Monocyclic PCBs-GC)

810/811 (Polycyclic PCBs-GC)

812/813 (PAHs-GC)

820/821 (Organic Acids-GC)

822/823 (Organic Nitriles-GC)

824/825 (Organic Sulfides-GC)

826/827 (Organic Amines-GC)

828/829 (Organic Phosphates-GC)

830/831 (Organic Chlorides-GC)

832/833 (Organic Bromides-GC)

834/835 (Organic Iodides-GC)

836/837 (Organic Fluorides-GC)

838/839 (Organic Silicones-GC)

840/841 (Organic Tin Compounds-GC)

842/843 (Organic Lead Compounds-GC)

844/845 (Organic Cadmium Compounds-GC)

846/847 (Organic Mercury Compounds-GC)

848/849 (Organic Arsenic Compounds-GC)

850/851 (Organic Antimony Compounds-GC)

852/853 (Organic Bismuth Compounds-GC)

854/855 (Organic Tellurium Compounds-GC)

856/857 (Organic Selenium Compounds-GC)

858/859 (Organic Manganese Compounds-GC)

860/861 (Organic Iron Compounds-GC)

862/863 (Organic Cobalt Compounds-GC)

864/865 (Organic Nickel Compounds-GC)

866/867 (Organic Copper Compounds-GC)

868/869 (Organic Zinc Compounds-GC)

870/871 (Organic Barium Compounds-GC)

COC NO. W0#4237

No. 0117

FOR LABORATORY USE ONLY

Laboratory Project No.: Secured:

Storage Refrigerator ID: Yes

Storage Freezer ID: No

Date: 7/2/95 Time: 08:30

Date: 7/2/95 Time: 08:30

Date: 7/2/95 Time: 08:30

Date: 7/2/95 Time: 08:30

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Date: 7/2/95 Time: 08:30

Date: 7/2/95 Time: 08:30

Date: 7/2/95 Time: 08:30

a=Identify specific metals requested under Special Instructions

Container(s)

Type

Lab ID

TAT

Specific Conductivity (EC)

TDS (Percent) Solid

Chloride/Pt

Fluoride/Nitrate

Metals-Soluble

Metals-Totals

8015 Modified (GC)

418 (TPH-M)

8015 (Dioxin-GC)

8015 (Baseline-GC)

8015 (PAHs-GC/MS)

8015 (Organic Acids-GC)

8015 (Organic Nitriles-GC)

8015 (Organic Sulfides-GC)

8015 (Organic Amines-GC)

8015 (Organic Phosphates-GC)

8015 (Organic Chlorides-GC)

8015 (Organic Bromides-GC)

8015 (Organic Iodides-GC)

8015 (Organic Fluorides-GC)

8015 (Organic Silicones-GC)

8015 (Organic Tin Compounds-GC)

8015 (Organic Lead Compounds-GC)

8015 (Organic Cobalt Compounds-GC)

8015 (Organic Nickel Compounds-GC)

8015 (Organic Copper Compounds-GC)

8015 (Organic Zinc Compounds-GC)

Special Instructions/Comments: WARNING: POSSIBLE FATE HAZARDOUS IN SOIL MATERIALS

Sample Archive/Disposal: Sample Archive/Disposal

Laboratory Standard: Laboratory Standard

Other: Other

SEND DOCUMENTATION AND RESULTS TO: ICF KAISER ENGINEERS

ATTENTION: 10 UNIVERSAL CITY PLAZA

SUITE 2400

UNIVERSAL CITY, CALIFORNIA 91608

(818) 509-3100 FAX (818) 509-3137

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt

DATE: 7/2/95 TIME: 1425



COC NO.



0004870

W0 # 7

0819

RL # 4222

CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY

Laboratory Project No.:
Storage Refrigerator ID: Secured: Yes
Storage Freezer ID: NoProject Name: Nickelmine Project # 58280 0020Sampler: MANLEY JONReceived by: MANLEY JON Received by: MANLEY JONReceived by: MANLEY JON Received by: MANLEY JONDate: 7/27/95 Time: 08:45Received by: MANLEY JONReceived by: MANLEY JONDate: 7/27/95 Time: 08:45Received by: MANLEY JONReceived by: MANLEY JONDate: 7/27/95 Time: 08:45

SHIP TO LAB:

Method of Shipment: QUANTALSMethod of Shipment: QUANTALSShipment ID: 636353900Shipment ID: 636353900

Sample ID Number

Date

Time

Description

1 121846220 7/26 9:25 SDC

2 21846220 7/26 9:33 SDC

3 21846220 7/26 9:13 SDC

4 41455090 7/26 12:16 SDC

5 41455090 7/26 12:11 SDC

6 41455090 7/26 12:15 SDC

7 10146220 10/27 10:27 SDC

8 10146220 10/27 10:23 SDC

9 10146220 7/26 9:42 SDC

10 10146220 7/26 9:42 SDC

11 10146220 7/26 9:42 SDC

12 10146220 7/26 9:42 SDC

13 10146220 7/26 9:42 SDC

14 10146220 7/26 9:42 SDC

15 10146220 7/26 9:42 SDC

16 10146220 7/26 9:42 SDC

17 10146220 7/26 9:42 SDC

18 10146220 7/26 9:42 SDC

19 10146220 7/26 9:42 SDC

20 10146220 7/26 9:42 SDC

Special Instructions/Comments:

Sample Archive/Disposal:

Laboratory Standard

Other

FOR LABORATORY USE ONLY: Sample Condition Upon Receipt:

MATRIX SPIKE DUPLICATION

SEND DOCUMENTATION AND RESULTS TO:

ATTENTION: DM WATSON

ICF KAISER ENGINEERS

10 UNIVERSAL CITY PLAZA

SUITE 2400

UNIVERSAL CITY, CALIFORNIA 91608

(818) 508-3100 FAX (818) 508-3137

Circle or Add Analyte(s) Requested

Circle or Add Analyte(s) Requested

Circle or Add Analyte(s) Requested

a-Identify specific metals requested under Special Instructions

FOR LAB USE ONLY

Container(s)

Type

Lab ID

1 BS

1 SS

1 SS

1 SS

1 SS

1 SS

1 SS

1 SS

1 SS

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1 SS

1 SS

TAT (Analytical Turn-Around Times) 1-24 hours 2-48 hours 3-1 week 4-2 weeks

Container Types: B-Brass Tube V-VOA Vial A-1-Liter Amber G-Glass Jar C-Cassette

O-Other

Quanterra Incorporated
5815 Middlebrook Pike
Knoxville, Tennessee 37921

615 588-6401 Telephone
615 584-4315 Fax

24-Aug-95
Revised 31-Aug-95

Ruth Custance
ICF Kaiser Environmental And Energy Group
10 Universal City Plaza, Suite 2400
Universal City, CA 91608-1097

RE: Dioxin/Furan Report
Work Order No: 2326 & 2334

Dear Ms. Custance:

Enclosed please find one copy of our final Dioxin/Furan report for twenty-eight soil samples, two designated A/QC soil samples and one water sample received 21-Jul-95 & 27-Jul-95.

Quanterra Environmental Services appreciates your business and looks forward to working with you in the future. Please call if you have any questions about our report or services.

Sincerely,


Patricia M. Parsly
Project Manager

Quanterra Incorporated
5815 Middlebrook Pike
Knoxville, Tennessee 37921

615 588-6401 Telephone
615 584-4315 Fax

CERTIFICATE OF ANALYSIS

Ruth Custance
ICF Kaiser Environmental And Energy Group
10 Universal City Plaza, Suite 2400
Universal City, CA 91608-1097

24-Aug-95
Revised 31-Aug-95

WORK ORDER NUMBER: 2326 & 2334

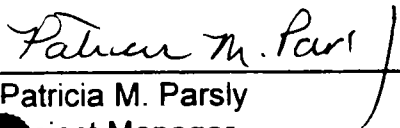
This is the Certificate of Analysis for the following samples:

Client Project ID:	Rocketdyne
Date Received by Lab:	21-Jul-95 & 27-Jul-95
Number of Samples:	Thirty-One (31)
Sample Matrix:	Soil and Water

Introduction/Case Narrative

Twenty-eight (28) soil samples, two (2) designated soil samples and one (1) water sample were received 21-Jul-95 & 27-Jul-95 for the analysis of 2,3,7,8-TCDD/TCDF and total tetra through octa (Cl₄-Cl₈) dioxin and furan homologs (See Appendix A, Cross Reference List and Appendix E, Chain-of-Custody and Request for Analysis records). An estimation of all 2,3,7,8-substituted isomers was also requested. The samples and the blanks were spiked with an internal standard mixture containing 1.0 ng each of ¹³C-TCDD, ¹³C-TCDF, ¹³C-PeCDD, ¹³C-PeCDF, ¹³C-HxCDD, ¹³C-HxCDF, ¹³C-HpCDD, ¹³C-HpCDF and 2.0 ng of ¹³C-OCDD. The samples and the blanks were analyzed using the EPA reference method described in RCRA SW-846, Method 8290. Extracts were analyzed by GC/MS operating in the selected ion monitoring mode for enhanced sensitivity. The results reported herein are applicable to the samples submitted for analysis only. It is recommended that if this report is reproduced, it is reproduced in its entirety.

Reviewed and Approved:


Patricia M. Parsly

Project Manager

458/dll

I. Introduction/Case Narrative (Continued)

This report was originally issued on 24-Aug-95 without the results from the confirmation analysis for the 2,3,7,8-TCDF. This report includes the previously reported results and the results from the 2,3,7,8-TCDF confirmation analysis.

The soil samples are reported on a dry weight basis.

Many of the 2,3,7,8-TCDF results from the DB-225 column were higher than the results from the DB-5 column. Most of the samples exhibited a possible polychlorinated diphenyl interference.

Due to matrix interferences which caused ion suppression, the specified results for the samples listed below were obtained from the dilution:

<u>Sample</u>	<u>Dilution Factor</u>	<u>Result (s) obtained from the dilution</u>
21646220SOC0	1:10	All
10430331SOC0	1:10	¹³ C-HpCDD, HpCDD
10546220SOC0	1:10	¹³ C-HpCDD, HpCDD
10130331SOC0	1:10	¹³ C-HpCDD, HpCDD
10230331SOC0	1:2	TCDD/TCDF, ¹³ C-TCDD, ¹³ C-TCDF
218BS210SOC0	1:10	All
220BS190SOC0	1:10	All
20946220SOC0	1:10	All
21546220SOC0	1:10	All
22130331SOC0	1:10	All
22236220SOC2	1:10	All
10146220SOC5	1:10	All
10146220SOC5MS	1:10	All
10146220SOC5MSD	1:10	All

The OCDD recoveries and relative percent difference (RPD) of the MS/MSD pair were outside QA/QC limits. This was due to the high concentration of the analyte present in the original sample and the non-homogeneity of the sample. However, the laboratory control sample was within QA/QC limits.

II. Analytical Results/Methodology

SAMPLE PREPARATION

Soil - A 10 gram (wet weight) aliquot of each sample and 10 grams of quartz sand (for the blanks) were weighed into separate Soxhlet thimbles. The samples and the blanks were spiked with the internal standard mixture, followed by a Soxhlet extraction with toluene for sixteen hours. The resulting extracts were filtered into a KD flask and the volume reduced to approximately 1 ml.

Water - Approximately 1000 ml of the sample and 1000 ml distilled water (for the blank) were transferred into individual separatory funnels. The sample and the blank were spiked with the internal standard mixture, and then triple-extracted with methylene chloride. The resulting extracts were filtered into a KD flask and the volume reduced to approximately 1 ml.

SAMPLE CLEANUP

The sample and blank extracts were washed with 20% KOH and distilled water followed by three concentrated H₂SO₄ washes. Further cleanup consisted of a dual column system utilizing acid-modified silica gel followed by neutral alumina. Final extracts were concentrated to near dryness and reconstituted to 20 µl with 2.0 ng ¹³C-1,2,3,4-TCDD and 2.0 ng ¹³C-1,2,3,7,8,9-HxCDD which were used as recovery standards.

GC/MS ANALYSIS

Total Dioxin and Furan - The samples and the blanks were analyzed for total dioxin and furan homologs from Cl₄-Cl₈. The standard analyzed each shift consisted of:

Dioxins

¹³C-2,3,7,8-TCDD
¹³C-1,2,3,4-TCDD
¹³C-1,2,3,7,8-PeCDD
¹³C-1,2,3,6,7,8-HxCDD
¹³C-1,2,3,7,8,9-HxCDD
¹³C-1,2,3,4,6,7,8-HpCDD
¹³C-OCDD
2,3,7,8-TCDD
1,2,3,7,8-PeCDD
1,2,3,4,7,8-HxCDD
1,2,3,6,7,8-HxCDD
1,2,3,7,8,9-HxCDD
1,2,3,4,6,7,8-HpCDD
OCDD

Dibenzofurans

¹³C-2,3,7,8-TCDF
¹³C-1,2,3,7,8-PeCDF
¹³C-1,2,3,4,7,8-HxCDF
¹³C-1,2,3,4,6,7,8-HpCDF
2,3,7,8-TCDF
1,2,3,7,8-PeCDF
2,3,4,7,8-PeCDF
1,2,3,4,7,8-HxCDF
1,2,3,6,7,8-HxCDF
2,3,4,6,7,8-HxCDF
1,2,3,7,8,9-HxCDF
1,2,3,4,6,7,8-HpCDF
1,2,3,4,7,8,9-HpCDF
OCDF

II. Analytical Results/Methodology (Continued)

Response factors were calculated for each compound in the standard relative to its ^{13}C labeled homolog. Native OCDF is calculated against ^{13}C -OCDD. A five-point calibration plot was analyzed. The mean response factors obtained from this five-point calibration were used for all subsequent calculations. The daily calibration standards, analyzed on the same day as the samples, met the method criteria for all native analytes.

The extracts were analyzed using HRGC/HRMS scanning in the selected ion monitoring mode for enhanced sensitivity. The column used for the analysis was a 60 m DB-5 type fused silica capillary column.

GC/MS RESULTS

Totals - The results for the totals analysis, shown in Appendix C, are reported in pg/g for the soil samples and pg/L for the water sample with the total amount of each homologous group calculated. For any homologous series of dioxins or furans that contain more than one 2,3,7,8-substituted isomer, the total result for that series is the sum of the individual 2,3,7,8-substituted isomers (calculated using their specific Response Factors) and all other non-2,3,7,8-substituted isomers (calculated using the average Response Factor of the individual 2,3,7,8-substituted isomers in that homologous series).

The results from the confirmation analysis are in Appendix D.

Detection Limits - When an analyte is not detected, a sample specific detection limit is calculated for that analyte. This is done by first determining the GC/MS peak height of the noise or interferent in the expected region of the analyte signal. This value is multiplied by the number 2.5 which serves as a safety factor. The 2.5 safety factor is disregarded if the noise present in the analyte region is a result of chemical interferences. The resulting signal response value is then used to estimate the minimum detectable analyte amount. The result is the estimated sample detection limit.

When an analyte is not detected, a "U" is reported in the qualifier column. The value in the result column is the estimated detection limit for the analyte in that particular sample.

III. Quality Control

Laboratory project specific QA/QC was followed. Appendix B lists the results of the QA/QC samples. The internal standard recoveries are presented within the sample result sections.

APPENDIX A

APPENDIX A

Page 1 of 1

Ruth Custance**ICF KAISER ENVIRONMENTAL ENERGY AND GROUP**

Date: 24-Aug-95

Work Order No.: 2326 & 2334

*Environmental
Services*

Revised 31-Aug-95

CROSS REFERENCE LIST

QUANTERRA SAMPLE NO.	CLIENT SAMPLE NO.	MATRIX
AA5734	21720331SOC0	Soil
AA5735	21130331SOC0	Soil
AA5736	21046220SOC0	Soil
AA5738	21030331SOC0	Soil
AA5740	21646220SOC0	Soil
AA5741	22236220SOC0	Soil
AA5742	21736220SOC0	Soil
AA5743	22146220SOC0	Soil
AA5744	21136220SOC0	Soil
AA5745	10346220SOC0	Soil
AA5746	10330331SOC0	Soil
AA5747	10446220SOC0	Soil
AA5748	10430331SOC0	Soil
AA5749	10546220SOC0	Soil
AA5752	10130331SOC0	Soil
AA5753	10546220SOC2	Soil
AA5754	10530330SOC0	Soil
AA5755	10246220SOC0	Soil
AA5756	10230331SOC0	Soil
AA5757	218BS210SOC0	Soil
AA5758	220BS190SOC0	Soil
AA5759	20946220SOC0	Soil
AA5760	21546220SOC0	Soil
AA5761	21930331SOC0	Soil
AA5762	22130331SOC0	Soil
AA5763	22030331SOC0	Soil
AA5773	22236220SOC2	Soil
AA5797	10146220SOC5	Soil
AA5797MS	10146220SOC5	Soil
AA5797MSD	10146220SOC5	Soil
AA5737	10546220WOC1	Water

APPENDIX B

APPENDIX B

Page 1 of 5

Ruth Custance

ICF KAISER ENVIRONMENTAL ENERGY AND GROUP

Date: 24-Aug-95

Work Order No.: 2326 & 2334

Environmental
Services

Revised 31-Aug-95

QA/QC REPORT

HRMS

Sample Number: AA5797, AA5797MS, AA5797MSD
 Extraction Method: SOXHLET
 Sample Matrix: SOLID

Extraction Date: 8/4/95

Totals Analysis Date: 8/16/95

COMPOUND	Amt.	Sample	Conc.	%	Conc.	%	EPA %	
	Added	Amt.	MS	Recovery	MSD	Recovery	% RPD	% RPD
	(pg/g)	(pg/g)	(pg/g)	MS	(pg/g)	MSD	Range	Range

Totals Analysis

2,3,7,8-TCDD	22.4	ND	24.8	111	24.8	111	0.0	a	b
1,2,3,7,8-PeCDD	112	ND	118	105	120	107	-1.7	a	b
1,2,3,6,7,8-HxCDD	112	6.3	117	99	118	100	-0.9	a	b
1,2,3,4,6,7,8-HpCDD	112	135	216	72	245	98	-12.6	a	b
OCDD	224	1120	1100	-9	1410	129	-24.7	a	b
2,3,7,8-TCDF	22.4	6.5	32.4	116	36.8	135	-12.7	a	b
1,2,3,7,8-PeCDF	112	ND	106	95	101	90	4.8	a	b
1,2,3,4,7,8-HxCDF	112	2.4	111	97	114	100	-2.7	a	b
1,2,3,4,6,7,8-HpCDF	112	18.7	127	97	134	103	-5.4	a	b
OCDF	224	25.9	221	87	231	92	-4.4	a	b

% Recovery = (Conc. MS or MSD) - Sample Amt. / Amt. Added) x 100

RPD (Relative Percent Difference) = ((Conc. MS - Conc. MSD) / (Conc. MS + Conc. MSD) / 2) x 100

(a) No EPA Range has been established for these analytes. Laboratory QA/QC limits are 60% - 140%.

(b) No EPA Range has been established for these analytes. Laboratory QA/QC limits are +/- 50%.

msqc.xlt/pbc/2-27-92

dit458/dll

LABORATORY CONTROL SAMPLE

QA/QC REPORT HRMS

LCS Number: BLC521
Extraction Method:
Matrix: SOLID

Extraction Date: 7/25/95
Totals Analysis Date: 8/3/95

COMPOUND	Amt.	Conc.	%	EPA %
	Added	LCS	Recovery	Recovery
	pg/g	pg/g	LCS	Range

Totals Analysis

2,3,7,8-TCDD	20.0	20.1	101	a
1,2,3,7,8-PeCDD	100.	102	102	a
1,2,3,6,7,8-HxCDD	100.	95.2	95	a
1,2,3,4,6,7,8-HpCDD	100.	90.6	91	a
OCDD	200.	168	84	a
2,3,7,8-TCDF	20.0	20.8	104	a
1,2,3,7,8-PeCDF	100.	87.6	88	a
1,2,3,4,7,8-HxCDF	100.	89.9	90	a
1,2,3,4,6,7,8-HpCDF	100.	91.2	91	a
OCDF	200.	159	80	a

% Recovery = (Conc. LCS) / Amt. Added) x 100

(a) No EPA Range has been established for these analytes. ITAS-TDL QA/QC limits are 60% - 140%.

LABORATORY CONTROL SAMPLE

QA/QC REPORT

HRMS

LCS Number: BLCS522

Sample Matrix: Water

Extraction Date: 7/31/95

Totals Analysis Date: 8/3/95

Extraction Method: Liquid/Liquid

COMPOUND	Amt.	Conc.	%	EPA %
	Added	LCS	Recovery	Recovery
	pg/L	pg/L	LCS	Range
Totals Analysis				
2,3,7,8-TCDD	200	215	108	a
1,2,3,7,8-PeCDD	1000	1070	107	a
1,2,3,6,7,8-HxCDD	1000	1030	103	a
1,2,3,4,6,7,8-HpCDD	1000	1020	102	a
OCDD	2000	1800	90	a
2,3,7,8-TCDF	200	226	113	a
1,2,3,7,8-PeCDF	1000	925	93	a
1,2,3,4,7,8-HxCDF	1000	958	96	a
1,2,3,4,6,7,8-HpCDF	1000	966	97	a
OCDF	2000	1680	84	a

$$\% \text{ Recovery} = (\text{Conc. LCS} / \text{Amt. Added}) \times 100$$

(a) No EPA Range has been established for these analytes. ITAS-TDL QA/QC advisory limits are 60% - 140%.

APPENDIX B

Page 4 of 5

Ruth Custance

ICF KAISER ENVIRONMENTAL ENERGY AND GROUP

Date: 24-Aug-95

Work Order No.: 2326 & 2334

Environmental
Services

Revised 31-Aug-95

LABORATORY CONTROL SAMPLE**QA/QC REPORT****HRMS**

LCS Number: BLCS523

Extraction Method: SOXHLET

Matrix: SOLID

Extraction Date: 7/31/95

Totals Analysis Date: 8/12/95

COMPOUND	Amt.	Conc.	%	EPA %
	Added	LCS	Recovery	Recovery
	pg/g	pg/g	LCS	Range

Totals Analysis

2,3,7,8-TCDD	20.0	19.7	99	a
1,2,3,7,8-PeCDD	100.	105	105	a
1,2,3,6,7,8-HxCDD	100.	100	100	a
1,2,3,4,6,7,8-HpCDD	100.	97.7	98	a
OCDD	200.	182	91	a
2,3,7,8-TCDF	20.0	21.5	108	a
1,2,3,7,8-PeCDF	100.	93.6	94	a
1,2,3,4,7,8-HxCDF	100.	97.4	97	a
1,2,3,4,6,7,8-HpCDF	100.	101	101	a
OCDF	200.	181	91	a

% Recovery = (Conc. LCS) / Amt. Added) x 100

(a) No EPA Range has been established for these analytes. ITAS-TDL QA/QC limits are 60% - 140%.

LCS.XLS/pbc/2-25-92 rev. 0

LABORATORY CONTROL SAMPLE

QA/QC REPORT

HRMS

LCS Number: BLCS528
Extraction Method: SOXHLET
Matrix: SOLID

Extraction Date: 8/4/95
Isomer-Specific Analysis Date:
Totals Analysis Date: 8/13/95

COMPOUND	Amt.	Conc.	%	EPA %
	Added	LCS	Recovery	Recovery
	pg/g	pg/g	LCS	Range

Totals Analysis

2,3,7,8-TCDD	20.0	19.5	98	a
1,2,3,7,8-PeCDD	100.	105	105	a
1,2,3,6,7,8-HxCDD	100.	99.6	100	a
1,2,3,4,6,7,8-HpCDD	100.	96.2	96	a
OCDD	200.	181	91	a
2,3,7,8-TCDF	20.0	21.5	108	a
1,2,3,7,8-PeCDF	100.	94.4	94	a
1,2,3,4,7,8-HxCDF	100.	96.4	96	a
1,2,3,4,6,7,8-HpCDF	100.	98.8	99	a
OCDF	200.	183	92	a

% Recovery = (Conc. LCS) / Amt. Added) x 100

(a) No EPA Range has been established for these analytes. ITAS-TDL QA/QC limits are 60% - 140%.

APPENDIX C

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 21136220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5744 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201708
Retest:
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/11/95 08:45
Dilution: 1

**PCDD/F, HRMS
EPA 8290
Primary Result**

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
1746-01-6	2,3,7,8-TCDD	.36	U	.36	PG/G		TARG
3-57-5	TOTAL TCDD	.36	U	.36	PG/G		TARG
21-76-4	1,2,3,7,8-PECDD	.20	U	.20	PG/G		TARG
36088-22-9	TOTAL PECDD	.20	U	.20	PG/G		TARG
39227-28-6	1,2,3,4,7,8-HXCDD	.10	U	.10	PG/G		TARG
57653-85-7	1,2,3,6,7,8-HXCDD	.095	QJ	5.7	PG/G		TARG
19408-74-3	1,2,3,7,8,9-HXCDD	.21	QJ	5.7	PG/G		TARG
34465-46-8	TOTAL HXCDD	.31	QJ	5.7	PG/G		TARG
35822-46-9	1,2,3,4,6,7,8-HPCDD	.12	QJ	5.7	PG/G		TARG
37871-00-4	TOTAL HPCDD	.19	QJ	5.7	PG/G		TARG
3268-87-9	TOTAL OCDD	.49	J	11.	PG/G		TARG
51207-31-9	2,3,7,8-TCDF	.56	U	.56	PG/G		TARG
55722-27-5	TOTAL TCDF	.56	U	.56	PG/G		TARG
57117-41-6	1,2,3,7,8-PECDF	.22	U	.22	PG/G		TARG
57117-31-4	2,3,4,7,8-PECDF	.21	U	.21	PG/G		TARG
30402-15-4	TOTAL PECDF	.23	U	.23	PG/G		TARG
70648-26-9	1,2,3,4,7,8-HXCDF	.13	U	.13	PG/G		TARG
57117-44-9	1,2,3,6,7,8-HXCDF	.11	U	.11	PG/G		TARG
60851-34-5	2,3,4,6,7,8-HXCDF	.16	QJ	5.7	PG/G		TARG
72918-21-9	1,2,3,7,8,9-HXCDF	.14	J	5.7	PG/G		TARG
55684-94-1	TOTAL HXCDF	.30	QJ	5.7	PG/G		TARG
67562-39-4	1,2,3,4,6,7,8-HPCDF	.22	U	.22	PG/G		TARG
55673-89-7	1,2,3,4,7,8,9-HPCDF	.058	U	.058	PG/G		TARG
38998-75-3	TOTAL HPCDF	.24	U	.24	PG/G		TARG
39001-02-0	TOTAL OCDF	.088	J	11.	PG/G		TARG
76523-40-5	13C-2,3,7,8-TCDD					89	SURR
719-79-1	13C-1,2,3,7,8-PECDD					79	SURR
19-81-5	13C-1,2,3,6,7,8-HXCDD					69	SURR
109719-83-7	13C-1,2,3,4,6,7,8-HPCDD					103	SURR
114423-97-1	13C-OCDD					78	SURR
89059-46-1	13C-2,3,7,8-TCDF					78	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 21136220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5744 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201708
Retest:
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/11/95 08:45
Dilution: 1

PCDD/F, HRMS
EPA 8290
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
109719-77-9	13C-1,2,3,7,8-PECDF					85	SURR
123-98-2	13C-1,2,3,4,7,8-HXCDF					73	SURR
719-84-8	13C-1,2,3,4,6,7,8-HPCDF					71	SURR

CERTIFICATE OF ANALYSIS

Page 23 C of 70 C

ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10346220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5745 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201730
Retest:
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/15/95 09:03
Dilution: 1

**PCDD/F, HRMS
EPA 8290
Primary Result**

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
1746-01-6	2,3,7,8-TCDD	.43	U	.43	PG/G		TARG
3-57-5	TOTAL TCDD	.12	J	1.1	PG/G		TARG
21-76-4	1,2,3,7,8-PECDD	.14	J	5.6	PG/G		TARG
36088-22-9	TOTAL PECDD	.39	JQ	5.6	PG/G		TARG
39227-28-6	1,2,3,4,7,8-HXCDD	.16	J	5.6	PG/G		TARG
57653-85-7	1,2,3,6,7,8-HXCDD	.47	J	5.6	PG/G		TARG
19408-74-3	1,2,3,7,8,9-HXCDD	.60	J	5.6	PG/G		TARG
34465-46-8	TOTAL HXCDD	4.0	JQ	5.6	PG/G		TARG
35822-46-9	1,2,3,4,6,7,8-HPCDD	7.0	S	5.6	PG/G		TARG
37871-00-4	TOTAL HPCDD	16.6	S	5.6	PG/G		TARG
3268-87-9	TOTAL OCDD	49.1		11.	PG/G		TARG
51207-31-9	2,3,7,8-TCDF	.90	J	1.1	PG/G		TARG
55722-27-5	TOTAL TCDF	26.2	IQ	1.1	PG/G		TARG
57117-41-6	1,2,3,7,8-PECDF	.25	J	5.6	PG/G		TARG
57117-31-4	2,3,4,7,8-PECDF	.29	J	5.6	PG/G		TARG
30402-15-4	TOTAL PECDF	14.9	IQ	5.6	PG/G		TARG
70648-26-9	1,2,3,4,7,8-HXCDF	.39	J	5.6	PG/G		TARG
57117-44-9	1,2,3,6,7,8-HXCDF	.40	JI	5.6	PG/G		TARG
60851-34-5	2,3,4,6,7,8-HXCDF	.29	J	5.6	PG/G		TARG
72918-21-9	1,2,3,7,8,9-HXCDF	.065	JQ	5.6	PG/G		TARG
55684-94-1	TOTAL HXCDF	6.2	IQ	5.6	PG/G		TARG
67562-39-4	1,2,3,4,6,7,8-HPCDF	1.3	JS	5.6	PG/G		TARG
55673-89-7	1,2,3,4,7,8,9-HPCDF	.17	JS	5.6	PG/G		TARG
38998-75-3	TOTAL HPCDF	2.9	JS	5.6	PG/G		TARG
39001-02-0	TOTAL OCDF	1.8	J	11.	PG/G		TARG
76523-40-5	13C-2,3,7,8-TCDD					84	SURR
719-79-1	13C-1,2,3,7,8-PECDD					81	SURR
19-81-5	13C-1,2,3,6,7,8-HXCDD					69	SURR
109719-83-7	13C-1,2,3,4,6,7,8-HPCDD		S			69	SURR
114423-97-1	13C-OCDD					62	SURR
89059-46-1	13C-2,3,7,8-TCDF					71	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10346220SOC0

Client Matrix: SOIL

Collection Date: 07/18/95

Lab Sample: AA5745 /ORIGINAL

Lab Matrix: SOIL

Received Date: 07/21/95

Test: 201730

Retest:

Prep Date: 07/25/95

Prep Batch: 3247

Lab Method: 1012

Lab Method Blank: BLK3247

Analysis Date: 08/15/95 09:03

Dilution: 1

PCDD/F, HRMS
EPA 8290
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
105719-77-9	13C-1,2,3,7,8-PECDF					84	SURR
23-98-2	13C-1,2,3,4,7,8-HXCDF					70	SURR
19-84-8	13C-1,2,3,4,6,7,8-HPCDF		S			66	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10330331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5746 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201750
Retest:
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/11/95 15:40
Dilution: 1

PCDD/F, HRMS EPA 8290 Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
1746-01-6	2,3,7,8-TCDD	.50	U	.50	PG/G		TARG
1746-03-57-5	TOTAL TCDD	.51	U	.51	PG/G		TARG
1746-21-76-4	1,2,3,7,8-PECDD	.38	U	.38	PG/G		TARG
36088-22-9	TOTAL PECDD	.38	U	.38	PG/G		TARG
39227-28-6	1,2,3,4,7,8-HXCDD	.16	U	.16	PG/G		TARG
57653-85-7	1,2,3,6,7,8-HXCDD	.12	J	5.6	PG/G		TARG
19408-74-3	1,2,3,7,8,9-HXCDD	.28	J	5.6	PG/G		TARG
34465-46-8	TOTAL HXCDD	.40	J	5.6	PG/G		TARG
35822-46-9	1,2,3,4,6,7,8-HPCDD	.26	J	5.6	PG/G		TARG
37871-00-4	TOTAL HPCDD	.26	J	5.6	PG/G		TARG
3268-87-9	TOTAL OCDD	1.1	J	11.	PG/G		TARG
51207-31-9	2,3,7,8-TCDF	.52	U	.52	PG/G		TARG
55722-27-5	TOTAL TCDF	.52	U	.52	PG/G		TARG
57117-41-6	1,2,3,7,8-PECDF	.17	U	.17	PG/G		TARG
57117-31-4	2,3,4,7,8-PECDF	.16	U	.16	PG/G		TARG
30402-15-4	TOTAL PECDF	.16	U	.16	PG/G		TARG
70648-26-9	1,2,3,4,7,8-HXCDF	.15	U	.15	PG/G		TARG
57117-44-9	1,2,3,6,7,8-HXCDF	.13	U	.13	PG/G		TARG
60851-34-5	2,3,4,6,7,8-HXCDF	.22	JQ	5.6	PG/G		TARG
72918-21-9	1,2,3,7,8,9-HXCDF	.25	JQ	5.6	PG/G		TARG
55684-94-1	TOTAL HXCDF	.47	JQ	5.6	PG/G		TARG
67562-39-4	1,2,3,4,6,7,8-HPCDF	.14	J	5.6	PG/G		TARG
55673-89-7	1,2,3,4,7,8,9-HPCDF	.11	J	5.6	PG/G		TARG
38998-75-3	TOTAL HPCDF	.25	J	5.6	PG/G		TARG
39001-02-0	TOTAL OCDF	.38	J	11.	PG/G		TARG
76523-40-5	13C-2,3,7,8-TCDD					86	SURR
10719-79-1	13C-1,2,3,7,8-PECDD					77	SURR
10719-81-5	13C-1,2,3,6,7,8-HXCDD					68	SURR
109719-83-7	13C-1,2,3,4,6,7,8-HPCDD					97	SURR
114423-97-1	13C-OCDD					68	SURR
89059-46-1	13C-2,3,7,8-TCDF					77	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10330331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5746 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201750
Retest:
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/11/95 15:40
Dilution: 1

PCDD/F, HRMS
EPA 8290
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
109719-77-9	13C-1,2,3,7,8-PECDF					82	SURR
23-98-2	13C-1,2,3,4,7,8-HXCDF					68	SURR
719-84-8	13C-1,2,3,4,6,7,8-HPCDF					64	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10446220SOCO
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5747 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201770
Retest:
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/14/95 20:37
Dilution: 1

PCDD/F, HRMS EPA 8290 Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
1746-01-6	2,3,7,8-TCDD	.76	U	.76	PG/G		TARG
1746-01-6	TOTAL TCDD	.76	U	.76	PG/G		TARG
1746-01-6	1,2,3,7,8-PECDD	.42	U	.42	PG/G		TARG
36088-22-9	TOTAL PECDD	.98	U	.98	PG/G		TARG
39227-28-6	1,2,3,4,7,8-HXCDD	.29	JQ	5.6	PG/G		TARG
57653-85-7	1,2,3,6,7,8-HXCDD	.86	J	5.6	PG/G		TARG
19408-74-3	1,2,3,7,8,9-HXCDD	.90	J	5.6	PG/G		TARG
34465-46-8	TOTAL HXCDD	5.9	QJ	5.6	PG/G		TARG
35822-46-9	1,2,3,4,6,7,8-HPCDD	10.5		5.6	PG/G		TARG
37871-00-4	TOTAL HPCDD	22.1		5.6	PG/G		TARG
3268-87-9	TOTAL OCDD	72.7		11.	PG/G		TARG
51207-31-9	2,3,7,8-TCDF	1.1		1.1	PG/G		TARG
55722-27-5	TOTAL TCDF	22.2	IQ	1.1	PG/G		TARG
57117-41-6	1,2,3,7,8-PECDF	.54	U	.54	PG/G		TARG
57117-31-4	2,3,4,7,8-PECDF	.27	J	5.6	PG/G		TARG
30402-15-4	TOTAL PECDF	13.1	IJQ	5.6	PG/G		TARG
70648-26-9	1,2,3,4,7,8-HXCDF	.42	J	5.6	PG/G		TARG
57117-44-9	1,2,3,6,7,8-HXCDF	.51	JQI	5.6	PG/G		TARG
60851-34-5	2,3,4,6,7,8-HXCDF	.34	J	5.6	PG/G		TARG
72918-21-9	1,2,3,7,8,9-HXCDF	.20	JQ	5.6	PG/G		TARG
55684-94-1	TOTAL HXCDF	8.2	IQJ	5.6	PG/G		TARG
67562-39-4	1,2,3,4,6,7,8-HPCDF	1.8	J	5.6	PG/G		TARG
55673-89-7	1,2,3,4,7,8,9-HPCDF	.33	U	.33	PG/G		TARG
38998-75-3	TOTAL HPCDF	4.2	J	5.6	PG/G		TARG
39001-02-0	TOTAL OCDF	2.7	J	11.	PG/G		TARG
76523-40-5	13C-2,3,7,8-TCDD					83	SURR
76523-40-5	13C-1,2,3,7,8-PECDD					76	SURR
76523-40-5	13C-1,2,3,6,7,8-HXCDD					66	SURR
109719-83-7	13C-1,2,3,4,6,7,8-HPCDD					81	SURR
114423-97-1	13C-OCDD					72	SURR
89059-46-1	13C-2,3,7,8-TCDF					72	SURR

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10446220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5747 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201770
Retest:
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/14/95 20:37
Dilution: 1

**PCDD/F, HRMS
EPA 8290
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
109719-77-9	13C-1,2,3,7,8-PECDF					84	SURR
23-98-2	13C-1,2,3,4,7,8-HXCDF					70	SURR
19-84-8	13C-1,2,3,4,6,7,8-HPCDF					69	SURR

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10430331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5748 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 214529
Retest: 1
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/12/95 13:01
Dilution: 10

PCDD/F, HRMS
EPA 8290
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
35822-46-9	1,2,3,4,6,7,8-HPCDD	20.3	J	55.	PG/G		TARG
71-00-4	TOTAL HPCDD	40.4	J	55.	PG/G		TARG
719-83-7	13C-1,2,3,4,6,7,8-HPCDD					116	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10430331SOCO
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5748 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201790
Retest:
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/14/95 22:45
Dilution: 1

**PCDD/F, HRMS
EPA 8290
Primary Result**

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
1746-01-6	2,3,7,8-TCDD	.64	U	.64	PG/G		TARG
13-57-5	TOTAL TCDD	.30	JQ	1.1	PG/G		TARG
1-76-4	1,2,3,7,8-PECDD	.29	U	.29	PG/G		TARG
36088-22-9	TOTAL PECDD	1.9	JQ	5.5	PG/G		TARG
39227-28-6	1,2,3,4,7,8-HXCDD	.35	JQ	5.5	PG/G		TARG
57653-85-7	1,2,3,6,7,8-HXCDD	2.2	J	5.5	PG/G		TARG
19408-74-3	1,2,3,7,8,9-HXCDD	1.6	J	5.5	PG/G		TARG
34465-46-8	TOTAL HXCDD	14.9	Q	5.5	PG/G		TARG
3268-87-9	TOTAL OCDD	148.		11.	PG/G		TARG
51207-31-9	2,3,7,8-TCDF	3.3		1.1	PG/G		TARG
55722-27-5	TOTAL TCDF	86.9	IQ	1.1	PG/G		TARG
57117-41-6	1,2,3,7,8-PECDF	.83	J	5.5	PG/G		TARG
57117-31-4	2,3,4,7,8-PECDF	.98	J	5.5	PG/G		TARG
30402-15-4	TOTAL PECDF	55.4	I	5.5	PG/G		TARG
70648-26-9	1,2,3,4,7,8-HXCDF	1.2	J	5.5	PG/G		TARG
57117-44-9	1,2,3,6,7,8-HXCDF	1.5	JI	5.5	PG/G		TARG
60851-34-5	2,3,4,6,7,8-HXCDF	.60	J	5.5	PG/G		TARG
72918-21-9	1,2,3,7,8,9-HXCDF	.25	J	5.5	PG/G		TARG
55684-94-1	TOTAL HXCDF	23.8	I	5.5	PG/G		TARG
67562-39-4	1,2,3,4,6,7,8-HPCDF	4.3	J	5.5	PG/G		TARG
55673-89-7	1,2,3,4,7,8,9-HPCDF	.65	J	5.5	PG/G		TARG
38998-75-3	TOTAL HPCDF	15.1	I	5.5	PG/G		TARG
39001-02-0	TOTAL OCDF	5.5	J	11.	PG/G		TARG
76523-40-5	13C-2,3,7,8-TCDD					97	SURR
109719-79-1	13C-1,2,3,7,8-PECDD					102	SURR
109719-81-5	13C-1,2,3,6,7,8-HXCDD					83	SURR
109719-83-7	13C-1,2,3,4,6,7,8-HPCDD					0	SURR
109719-83-7	13C-OCDD					65	SURR
109719-83-7	13C-2,3,7,8-TCDF					80	SURR
109719-77-9	13C-1,2,3,7,8-PECDF					104	SURR
114423-98-2	13C-1,2,3,4,7,8-HXCDF					81	SURR

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10430331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5748 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201790
Retest:
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/14/95 22:45
Dilution: 1

**PCDD/F, HRMS
EPA 8290
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
109719-84-8	13C-1,2,3,4,6,7,8-HPCDF					70	SURR

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC2
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5749 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 214538
Retest: 1
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/11/95 17:53
Dilution: 10

**PCDD/F, HRMS
EPA 8290
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
35822-46-9	1,2,3,4,6,7,8-HPCDD	11.4	J	53.	PG/G		TARG
1-00-4	TOTAL HPCDD	24.6	J	53.	PG/G		TARG
19-83-7	13C-1,2,3,4,6,7,8-HPCDD					74	SURR

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC2
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5749 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201810
Retest:
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/15/95 15:47
Dilution: 1

**PCDD/F, HRMS
EPA 8290
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
1746-01-6	2,3,7,8-TCDD	.70	U	.70	PG/G		TARG
13-57-5	TOTAL TCDD	.70	U	.70	PG/G		TARG
1-76-4	1,2,3,7,8-PECDD	.47	U	.47	PG/G		TARG
36088-22-9	TOTAL PECDD	.31	JQ	5.3	PG/G		TARG
39227-28-6	1,2,3,4,7,8-HXCDD	.48	U	.48	PG/G		TARG
57653-85-7	1,2,3,6,7,8-HXCDD	.85	JQ	5.3	PG/G		TARG
19408-74-3	1,2,3,7,8,9-HXCDD	.78	J	5.3	PG/G		TARG
34465-46-8	TOTAL HXCDD	5.1	JQ	5.3	PG/G		TARG
3268-87-9	TOTAL OCDD	110		11.	PG/G		TARG
51207-31-9	2,3,7,8-TCDF	4.7	J	1.1	PG/G		TARG
55722-27-5	TOTAL TCDF	40.4	I	1.1	PG/G		TARG
57117-41-6	1,2,3,7,8-PECDF	.56	J	5.3	PG/G		TARG
57117-31-4	2,3,4,7,8-PECDF	2.0	JI	5.3	PG/G		TARG
30402-15-4	TOTAL PECDF	26.6	QI	5.3	PG/G		TARG
70648-26-9	1,2,3,4,7,8-HXCDF	2.2	J	5.3	PG/G		TARG
57117-44-9	1,2,3,6,7,8-HXCDF	1.0	JI	5.3	PG/G		TARG
60851-34-5	2,3,4,6,7,8-HXCDF	.61	J	5.3	PG/G		TARG
72918-21-9	1,2,3,7,8,9-HXCDF	.30	J	5.3	PG/G		TARG
55684-94-1	TOTAL HXCDF	14.2	QJI	5.3	PG/G		TARG
67562-39-4	1,2,3,4,6,7,8-HPCDF	1.9	U	1.9	PG/G		TARG
55673-89-7	1,2,3,4,7,8,9-HPCDF	.56	J	5.3	PG/G		TARG
38998-75-3	TOTAL HPCDF	6.4	I	5.3	PG/G		TARG
39001-02-0	TOTAL OCDF	5.2	J	11.	PG/G		TARG
76523-40-5	13C-2,3,7,8-TCDD					74	SURR
109719-79-1	13C-1,2,3,7,8-PECDD					70	SURR
109719-81-5	13C-1,2,3,6,7,8-HXCDD					55	SURR
114423-97-1	13C-OCDD					55	SURR
109719-46-1	13C-2,3,7,8-TCDF					61	SURR
109719-77-9	13C-1,2,3,7,8-PECDF					72	SURR
114423-98-2	13C-1,2,3,4,7,8-HXCDF					55	SURR
109719-84-8	13C-1,2,3,4,6,7,8-HPCDF					55	SURR

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10146220SOC0
Client Matrix: SOIL
Collection Date: 07/17/95

Lab Sample: AA5797 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201850
Retest:
Prep Date: 08/04/95
Prep Batch: 3254

Lab Method: 1012
Lab Method Blank: BLK3254
Analysis Date: 08/16/95 20:08
Dilution: 10

**PCDD/F, HRMS
EPA 8290
Primary Result**

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
1746-01-6	2,3,7,8-TCDD	4.8	U	4.8	PG/G		TARG
1746-01-6	TOTAL TCDD	4.8	U	4.8	PG/G		TARG
1746-01-6	1,2,3,7,8-PECDD	5.2	U	5.2	PG/G		TARG
1746-01-6	TOTAL PECDD	5.2	U	5.2	PG/G		TARG
1746-01-6	1,2,3,4,7,8-HXCDD	3.5	JQ	56.	PG/G		TARG
1746-01-6	1,2,3,6,7,8-HXCDD	6.3	J	56.	PG/G		TARG
1746-01-6	1,2,3,7,8,9-HXCDD	6.4	J	56.	PG/G		TARG
1746-01-6	TOTAL HXCDD	57.1	JQ	56.	PG/G		TARG
1746-01-6	1,2,3,4,6,7,8-HPCDD	135.		56.	PG/G		TARG
1746-01-6	TOTAL HPCDD	424.		56.	PG/G		TARG
1746-01-6	TOTAL OCDD	1120		110	PG/G		TARG
1746-01-6	2,3,7,8-TCDF	6.5	JQ	11.	PG/G		TARG
1746-01-6	TOTAL TCDF	60.4	JQI	11.	PG/G		TARG
1746-01-6	1,2,3,7,8-PECDF	2.8	U	2.8	PG/G		TARG
1746-01-6	2,3,4,7,8-PECDF	3.7	U	3.7	PG/G		TARG
1746-01-6	TOTAL PECDF	50.7	JQI	56.	PG/G		TARG
1746-01-6	1,2,3,4,7,8-HXCDF	2.4	JQ	56.	PG/G		TARG
1746-01-6	1,2,3,6,7,8-HXCDF	3.0	J1	56.	PG/G		TARG
1746-01-6	2,3,4,6,7,8-HXCDF	2.1	U	2.1	PG/G		TARG
1746-01-6	1,2,3,7,8,9-HXCDF	1.2	U	1.2	PG/G		TARG
1746-01-6	TOTAL HXCDF	50.2	JQI	56.	PG/G		TARG
1746-01-6	1,2,3,4,6,7,8-HPCDF	18.7	J	56.	PG/G		TARG
1746-01-6	1,2,3,4,7,8,9-HPCDF	2.5	JQ	56.	PG/G		TARG
1746-01-6	TOTAL HPCDF	61.1	JQ	56.	PG/G		TARG
1746-01-6	TOTAL OCDF	25.9	J	110	PG/G		TARG
1746-01-6	13C-2,3,7,8-TCDD					63	SURR
1746-01-6	13C-1,2,3,7,8-PECDD					60	SURR
1746-01-6	13C-1,2,3,6,7,8-HXCDD					54	SURR
1746-01-6	13C-1,2,3,4,6,7,8-HPCDD					73	SURR
1746-01-6	13C-OCDD					76	SURR
1746-01-6	13C-2,3,7,8-TCDF					52	SURR

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10146220SOC0
Client Matrix: SOIL
Collection Date: 07/17/95

Lab Sample: AA5797 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201850
Retest:
Prep Date: 08/04/95
Prep Batch: 3254

Lab Method: 1012
Lab Method Blank: BLK3254
Analysis Date: 08/16/95 20:08
Dilution: 10

**PCDD/F, HRMS
EPA 8290
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
109719-77-9	13C-1,2,3,7,8-PECDF					62	SURR
23-98-2	13C-1,2,3,4,7,8-HXCDF					52	SURR
719-84-8	13C-1,2,3,4,6,7,8-HPCDF					55	SURR

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5753 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201890
Retest:
Prep Date: 07/31/95
Prep Batch: 3249

Lab Method: 1012
Lab Method Blank: BLK3249
Analysis Date: 08/15/95 06:57
Dilution: 1

**PCDD/F, HRMS
EPA 8290
Primary Result**

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
1746-01-6	2,3,7,8-TCDD	.85	U	.85	PG/G		TARG
3-57-5	TOTAL TCDD	1.1	U	1.1	PG/G		TARG
1-76-4	1,2,3,7,8-PECDD	.55	U	.55	PG/G		TARG
36088-22-9	TOTAL PECDD	.94	U	.94	PG/G		TARG
39227-28-6	1,2,3,4,7,8-HXCDD	.51	U	.51	PG/G		TARG
57653-85-7	1,2,3,6,7,8-HXCDD	1.1	J	6.0	PG/G		TARG
19408-74-3	1,2,3,7,8,9-HXCDD	.86	J	6.0	PG/G		TARG
34465-46-8	TOTAL HXCDD	4.9	J	6.0	PG/G		TARG
35822-46-9	1,2,3,4,6,7,8-HPCDD	10.8		6.0	PG/G		TARG
37871-00-4	TOTAL HPCDD	21.9		6.0	PG/G		TARG
3268-87-9	TOTAL OCDD	108.		12.	PG/G		TARG
51207-31-9	2,3,7,8-TCDF	4.0		1.2	PG/G		TARG
55722-27-5	TOTAL TCDF	34.6	QI	1.2	PG/G		TARG
57117-41-6	1,2,3,7,8-PECDF	.43	J	6.0	PG/G		TARG
57117-31-4	2,3,4,7,8-PECDF	1.6	J	6.0	PG/G		TARG
30402-15-4	TOTAL PECDF	22.2	IQ	6.0	PG/G		TARG
70648-26-9	1,2,3,4,7,8-HXCDF	1.8	J	6.0	PG/G		TARG
57117-44-9	1,2,3,6,7,8-HXCDF	.98	J	6.0	PG/G		TARG
60851-34-5	2,3,4,6,7,8-HXCDF	.46	J	6.0	PG/G		TARG
72918-21-9	1,2,3,7,8,9-HXCDF	.33	J	6.0	PG/G		TARG
55684-94-1	TOTAL HXCDF	14.0	IJ	6.0	PG/G		TARG
67562-39-4	1,2,3,4,6,7,8-HPCDF	4.7	J	6.0	PG/G		TARG
55673-89-7	1,2,3,4,7,8,9-HPCDF	.41	J	6.0	PG/G		TARG
38998-75-3	TOTAL HPCDF	10.4		6.0	PG/G		TARG
39001-02-0	TOTAL OCDF	6.3	J	12.	PG/G		TARG
76523-40-5	13C-2,3,7,8-TCDD					80	SURR
719-79-1	13C-1,2,3,7,8-PECDD					86	SURR
19-81-5	13C-1,2,3,6,7,8-HXCDD					68	SURR
109719-83-7	13C-1,2,3,4,6,7,8-HPCDD					77	SURR
114423-97-1	13C-OCDD					68	SURR
89059-46-1	13C-2,3,7,8-TCDF					64	SURR

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5753 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201890
Retest:
Prep Date: 07/31/95
Prep Batch: 3249

Lab Method: 1012
Lab Method Blank: BLK3249
Analysis Date: 08/15/95 06:57
Dilution: 1

**PCDD/F, HRMS
EPA 8290
Primary Result.**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
109719-77-9	13C-1,2,3,7,8-PECDF					86	SURR
13-98-2	13C-1,2,3,4,7,8-HXCDF					72	SURR
19-84-8	13C-1,2,3,4,6,7,8-HPCDF					65	SURR

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ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10530330SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5754 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201910
Retest:
Prep Date: 07/31/95
Prep Batch: 3249

Lab Method: 1012
Lab Method Blank: BLK3249
Analysis Date: 08/12/95 04:28
Dilution: 1

**PCDD/F, HRMS
EPA 8290
Primary Result**

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
1746-01-6	2,3,7,8-TCDD	.76	U	.76	PG/G		TARG
3-57-5	TOTAL TCDD	.76	U	.76	PG/G		TARG
-76-4	1,2,3,7,8-PECDD	.53	U	.53	PG/G		TARG
36088-22-9	TOTAL PECDD	.53	U	.53	PG/G		TARG
39227-28-6	1,2,3,4,7,8-HXCDD	.57	U	.57	PG/G		TARG
57653-85-7	1,2,3,6,7,8-HXCDD	.53	U	.53	PG/G		TARG
19408-74-3	1,2,3,7,8,9-HXCDD	.53	U	.53	PG/G		TARG
34465-46-8	TOTAL HXCDD	.54	U	.54	PG/G		TARG
35822-46-9	1,2,3,4,6,7,8-HPCDD	.42	U	.42	PG/G		TARG
37871-00-4	TOTAL HPCDD	.33	J	5.7	PG/G		TARG
3268-87-9	TOTAL OCDD	2.5	J	11.	PG/G		TARG
51207-31-9	2,3,7,8-TCDF	.71	U	.71	PG/G		TARG
55722-27-5	TOTAL TCDF	.71	U	.71	PG/G		TARG
57117-41-6	1,2,3,7,8-PECDF	.20	U	.20	PG/G		TARG
57117-31-4	2,3,4,7,8-PECDF	.19	U	.19	PG/G		TARG
30402-15-4	TOTAL PECDF	.19	U	.19	PG/G		TARG
70648-26-9	1,2,3,4,7,8-HXCDF	.19	U	.19	PG/G		TARG
57117-44-9	1,2,3,6,7,8-HXCDF	.16	U	.16	PG/G		TARG
60851-34-5	2,3,4,6,7,8-HXCDF	.18	J	5.7	PG/G		TARG
72918-21-9	1,2,3,7,8,9-HXCDF	.22	U	.22	PG/G		TARG
55684-94-1	TOTAL HXCDF	.18	J	5.7	PG/G		TARG
67562-39-4	1,2,3,4,6,7,8-HPCDF	.15	J	5.7	PG/G		TARG
55673-89-7	1,2,3,4,7,8,9-HPCDF	.18	U	.18	PG/G		TARG
38998-75-3	TOTAL HPCDF	.15	J	5.7	PG/G		TARG
39001-02-0	TOTAL OCDF	.36	J	11.	PG/G		TARG
76523-40-5	13C-2,3,7,8-TCDD					59	SURR
719-79-1	13C-1,2,3,7,8-PECDD					61	SURR
9-81-5	13C-1,2,3,6,7,8-HXCDD					52	SURR
109719-83-7	13C-1,2,3,4,6,7,8-HPCDD					72	SURR
114423-97-1	13C-OCDD					59	SURR
89059-46-1	13C-2,3,7,8-TCDF					52	SURR

CERTIFICATE OF ANALYSIS

Page 41 C of 70 C

ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10530330SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5754 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201910
Retest:
Prep Date: 07/31/95
Prep Batch: 3249

Lab Method: 1012
Lab Method Blank: BLK3249
Analysis Date: 08/12/95 04:28
Dilution: 1

PCDD/F, HRMS
EPA 8290
Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
109719-77-9	13C-1,2,3,7,8-PECDF					66	SURR
23-98-2	13C-1,2,3,4,7,8-HXCDF					55	SURR
19-84-8	13C-1,2,3,4,6,7,8-HPCDF					51	SURR

CERTIFICATE OF ANALYSIS

Page 42 C of 70 C

ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10246220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5755 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201930
Retest:
Prep Date: 07/31/95
Prep Batch: 3249

Lab Method: 1012
Lab Method Blank: BLK3249
Analysis Date: 08/14/95 21:40
Dilution: 1

PCDD/F, HRMS EPA 8290 Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
1746-01-6	2,3,7,8-TCDD	.72	U	.72	PG/G		TARG
3-57-5	TOTAL TCDD	.72	U	.72	PG/G		TARG
1-76-4	1,2,3,7,8-PECOD	.68	U	.68	PG/G		TARG
36088-22-9	TOTAL PECDD	1.0	U	1.0	PG/G		TARG
39227-28-6	1,2,3,4,7,8-HXCDD	.45	J	5.4	PG/G		TARG
57653-85-7	1,2,3,6,7,8-HXCDD	2.3	J	5.4	PG/G		TARG
19408-74-3	1,2,3,7,8,9-HXCDD	2.0	J	5.4	PG/G		TARG
34465-46-8	TOTAL HXCDD	20.4		5.4	PG/G		TARG
35822-46-9	1,2,3,4,6,7,8-HPCDD	39.8		5.4	PG/G		TARG
37871-00-4	TOTAL HPCDD	123.		5.4	PG/G		TARG
3268-87-9	TOTAL OCDD	257.		11.	PG/G		TARG
51207-31-9	2,3,7,8-TCDF	.89	J	1.1	PG/G		TARG
55722-27-5	TOTAL TCDF	13.0	I	1.1	PG/G		TARG
57117-41-6	1,2,3,7,8-PECDF	.28	J	5.4	PG/G		TARG
57117-31-4	2,3,4,7,8-PECDF	.26	J	5.4	PG/G		TARG
30402-15-4	TOTAL PECDF	10.8	I	5.4	PG/G		TARG
70648-26-9	1,2,3,4,7,8-HXCDF	.56	J	5.4	PG/G		TARG
57117-44-9	1,2,3,6,7,8-HXCDF	.47	J	5.4	PG/G		TARG
60851-34-5	2,3,4,6,7,8-HXCDF	.26	J	5.4	PG/G		TARG
72918-21-9	1,2,3,7,8,9-HXCDF	.15	J	5.4	PG/G		TARG
55684-94-1	TOTAL HXCDF	11.4	I	5.4	PG/G		TARG
67562-39-4	1,2,3,4,6,7,8-HPCDF	3.8	J	5.4	PG/G		TARG
55673-89-7	1,2,3,4,7,8,9-HPCDF	.37	JQ	5.4	PG/G		TARG
38998-75-3	TOTAL HPCDF	12.9	Q	5.4	PG/G		TARG
39001-02-0	TOTAL OCDF	6.9	J	11.	PG/G		TARG
76523-40-5	13C-2,3,7,8-TCDD					81	SURR
719-79-1	13C-1,2,3,7,8-PECOD					81	SURR
9-81-5	13C-1,2,3,6,7,8-HXCDD					73	SURR
9719-83-7	13C-1,2,3,4,6,7,8-HPCDD					85	SURR
114423-97-1	13C-OCDD					68	SURR
89059-46-1	13C-2,3,7,8-TCDF					70	SURR

CERTIFICATE OF ANALYSIS

Page 43 C of 70 C

ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10246220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5755 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 201930
Retest:
Prep Date: 07/31/95
Prep Batch: 3249

Lab Method: 1012
Lab Method Blank: BLK3249
Analysis Date: 08/14/95 21:40
Dilution: 1

**PCDD/F, HRMS
EPA 8290
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
109719-77-9	13C-1,2,3,7,8-PECDF					85	SURR
23-98-2	13C-1,2,3,4,7,8-HXCDF					74	SURR
19-84-8	13C-1,2,3,4,6,7,8-HPCDF					67	SURR

APPENDIX D

CERTIFICATE OF ANALYSIS
ROCKETDYNE

Page 7 D of 19 D
August 31, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10346220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5745 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 217395
Retest:
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/08/95 20:27
Dilution: 10

PCDD/F, HRMS
EPA 8290
Second Column Confirmation Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
51207-31-9	2,3,7,8-TCDF	11.	J1	11.0	PG/G		TARG

CERTIFICATE OF ANALYSIS
ROCKETDYNE

Page 8 D of 19 D

August 31, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10446220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5747 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 217396
Retest:
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/08/95 21:28
Dilution: 10

PCDD/F, HRMS
EPA 8290
Second Column Confirmation Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
51207-31-9	2,3,7,8-TCDF	11.	JIC	11.0	PG/G		TARG

CERTIFICATE OF ANALYSIS
ROCKETDYNE

Page 9 D of 19 D
August 31, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10430331SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5748 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 217397
Retest:
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/08/95 21:59
Dilution: 10

PCDD/F, HRMS
EPA 8290
Second Column Confirmation Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
51207-31-9	2,3,7,8-TCDF	25.6	I	11.0	PG/G		TARG

CERTIFICATE OF ANALYSIS

Page 10 D of 19 D

ROCKETDYNE

August 31, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC2
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5749 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 217398
Retest:
Prep Date: 07/25/95
Prep Batch: 3247

Lab Method: 1012
Lab Method Blank: BLK3247
Analysis Date: 08/08/95 22:29
Dilution: 10

**PCDD/F, HRMS
EPA 8290
Second Column Confirmation Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
51207-31-9	2,3,7,8-TCDF	11.7	I	11.0	PG/G		TARG

CERTIFICATE OF ANALYSIS

Page 11 D of 19 D

ROCKETDYNE

August 31, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10146220SOC0
Client Matrix: SOIL
Collection Date: 07/17/95

Lab Sample: AA5797 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 217399
Retest:
Prep Date: 08/03/95
Prep Batch: 3254

Lab Method: 1012
Lab Method Blank: BLK3254
Analysis Date: 08/30/95 03:29
Dilution: 1

**PCDD/F, HRMS
EPA 8290
Second Column Confirmation Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
51207-31-9	2,3,7,8-TCDF	12.4	CI	1.1	PG/G		TARG

CERTIFICATE OF ANALYSIS

Page 13 D of 19 D

ROCKETDYNE

August 31, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10546220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5753 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 217402
Retest:
Prep Date: 07/31/95
Prep Batch: 3249

Lab Method: 1012
Lab Method Blank: BLK3249
Analysis Date: 08/09/95 03:40
Dilution: 1

**PCDD/F, HRMS
EPA 8290
Second Column Confirmation Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
51207-31-9	2,3,7,8-TCDF	9.1	JI	1.2	PG/G		TARG

CERTIFICATE OF ANALYSIS

Page 14 D of 19 D

ROCKETDYNE

August 31, 1995

Sample Delivery Group: 42374287

Report Batch: 19228

Client Sample: 10246220SOC0
Client Matrix: SOIL
Collection Date: 07/18/95

Lab Sample: AA5755 /ORIGINAL
Lab Matrix: SOIL
Received Date: 07/21/95

Test: 217403
Retest:
Prep Date: 07/31/95
Prep Batch: 3249

Lab Method: 1012
Lab Method Blank: BLK3249
Analysis Date: 08/09/95 13:33
Dilution: 1

**PCDD/F, HRMS
EPA 8290
Second Column Confirmation Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
51207-31-9	2,3,7,8-TCDF	3.9	JI	1.1	PG/G		TARG

WORK ORDER NO: 4240 & 4288

Quanterra Incorporated
5815 Middlebrook Pike
Knoxville, Tennessee 37921

615 588-6401 Telephone
615 584-4315 Fax

ICF Kaiser Environment and Energy Group
10 Universal City Plaza, Suite 2400
Universal City, CA 91608-1097
Attn: Tom Watson

October 3, 1995

Job Numbers: 4240 & 4288 (Corrected Certificate)

This is the Certificate of Analysis for the following samples:

Client Project ID:	Rocketdyne FSDF / 66280-002-00
Date Received by Lab:	July 22 and July 27, 1995
Number of Samples:	Eleven (11)
Sample Type:	Soil - nine (9); Water - two (2)

I. Introduction

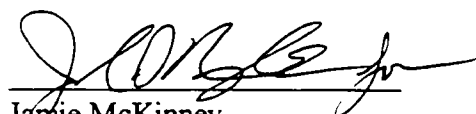
On July 22 and July 27, 1995, nine (9) soil samples and two (2) water samples arrived at Quanterra Environmental Services, Knoxville, Tennessee, from ICF Kaiser Environment and Energy Group, Universal City, California. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

II. Analytical Results/Methodology

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results.

The samples were analyzed for volatile and semivolatile organic compounds by gas chromatography/mass spectroscopy (GC/MS) based on EPA SW-846 3rd edition methods 8260 and 8270, respectively.

Reviewed and Approved:



Jamie McKinney
Project Manager

Client Project ID: Rocketdyne FSDF / 66280-002-00

Job Number: 4240 & 4288 (Corrected Certificate)

II. Analytical Results/Methodology (Continued)

The samples were analyzed for requested metals by cold vapor atomic absorption spectroscopy (CVAA), inductively coupled argon plasma spectroscopy (ICP) and supertrace by ICP based on EPA methods 7471 and 6010.

The samples were analyzed for PCBs by gas chromatography/electron capture detection (GC/ECD) based on EPA SW-846 3rd edition method 8080.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel fuel by gas chromatography/flame ionization detection (GC/FID) using California LUFT method 8015.

The samples were analyzed for total low boiling petroleum hydrocarbons as gasoline by gas chromatography/flame ionization detection (GC/FID) based on California LUFT method 8015.

The samples were analyzed for dioxins by Quanterra Environmental Services, Knoxville, Tennessee, and will be reported separately.

III. Quality Control

Metals

Spike recovery (accuracy) results for sample 20746220SMMO were outside acceptance limits for chromium and copper, and duplicate RPD (precision) results were outside acceptance limits for copper. The laboratory control samples prepared with these samples were within acceptance limits for all parameters suggesting that those analytes outside acceptance criteria are attributable to matrix interferences and/or lack of sample homogeneity. Spike recovery (accuracy) results for sample 218462205MM5 were outside acceptance limits for mercury and copper on both spikes. Duplicate RPD (precision) results were within acceptance limits which indicate that poor spike recoveries for mercury and copper are attributable to matrix interferences. The laboratory control sample was in control for those elements.

Total Low Boiling Petroleum Hydrocarbons

No problems were encountered during the analysis of these samples.

Total High Boiling Petroleum Hydrocarbons

Samples 21346220SOC0, 20630331SOC0, 21846220SOC0, and 20746220SOC0 had high surrogate recoveries due to matrix interferences present in the sample. This is not unusual for this analysis. The data should be unaffected.

ICF Kaiser Environment and Energy Group
October 3, 1995



Client Project ID: Rocketdyne FSDF / 66280-002-00

Job Number: 4240 & 4288 (Corrected Certificate)

IV. Comments

The following samples were placed on hold per the client's request:

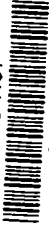
21246220SVL5
21246220SMM5
21246220SOC5

ICF KAISER ENGINEERS

CHAIN OF CUSTODY RECORD

W0#420

COC NO.



0004810

No 0822

FOR LABORATORY USE ONLY

Laboratory Project No: _____ Secured: _____
Storage Refrigerator ID: _____ Yes _____
Storage Freezer ID: _____ No _____

Project Name: MANUFACTURE FOR Project #: 66280001-00 Sampler: MANUFACTURE (Printed Name)
Relinquished by: [Signature] Date: 7/2/95 Time: 09:15
Relinquished by: [Signature] Date: _____ Time: _____
Relinquished by: [Signature] Date: _____ Time: _____
Relinquished by: [Signature] Date: _____ Time: _____
Relinquished by: [Signature] Date: _____ Time: _____

SHIP TO LAB: QUANTRO Method of Shipment: FRAIGHT
KUNXVINGTON Shipment ID: 63637392
1101 5086401

Sample ID Number			Sample Description		FOR LAB USE ONLY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Sample ID Number	Date	Time	Description	Container(s)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
				#	Type	TAT	Specific Cond.	TDS/Percent	Chloride/Ph	Fluoride/Nit	Metals-Sol	Metals-Tot	8015 Modified	418.1 TPH-1	TPH/TPH-1	TPH/TPH-1	625/6250 (N)	624/6240 (P)	610/6100 (P)	604/6040 (P)	607/6070 (P)	601/6010 (H)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
1 21246220	7/1/95	907	SDIL	1	B	322	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	

Special Instructions/Comments: _____ Sample Archive/Disposal: _____
☐ Laboratory Standard ☐ Other _____

SEND DOCUMENTATION AND RESULTS TO: _____
ATTENTION: [Signature]
ICF KAISER ENGINEERS
10 UNIVERSAL CITY PLAZA
SUITE 2400
UNIVERSAL CITY, CALIFORNIA 91608
(818) 509-3100 FAX (818) 509-3137

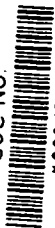
FOR LABORATORY USE ONLY. Sample Condition Upon Receipt:
Samples received at 306 with custody seals intact. BEA 7/22/95

W0 # 4240

ICF KAISER ENGINEERS

CHAIN OF CUSTODY RECORD

COC NO.



No 0821

FOR LABORATORY USE ONLY

Laboratory Project No: _____
Storage Refrigerator ID: _____
Storage Freezer ID: _____

Secured: Yes _____ No _____

Project Name: Project 1234 Project #: 66280-00250 Sampler: Man 1234

Relinquished by: [Signature] Date: 7/21/95 Time: 09:15
Relinquished by: [Signature] Date: _____ Time: _____
Relinquished by: [Signature] Date: _____ Time: _____
Relinquished by: [Signature] Date: _____ Time: _____

SHIP TO LAB: Quantitative
Method of Shipment: FBA BX
Shipment ID: 636 3753 930
(615) 558-6401

Sample ID Number	Date	Time	Description	Circle or Add Analysis(es) Requested	Received by: Signature and Printed Name									
					601/6010 (Halogens)	602/6020 (Aromatic Volatiles)	603/6030 (Pesticides)	604/6040 (Phenols)	605/6050 (Nitriles)	606/6060 (Aldehydes)	607/6070 (Ketones)	608/6080 (Alcohols)	609/6090 (Acids)	610/6100 (Esters)
1 21446220	7/20/95	12:36	501L											
2 21446220	7/20/95	12:41												
3 21446220	7/20/95	12:46												
4 21446220	7/20/95	8:42												
5 21446220	7/20/95	8:40												
6 21446220	7/20/95	8:42												
7 21446220	7/20/95	8:51												
8 21446220	7/20/95	8:42												
9 21446220	7/20/95	8:40												
10 21446220	7/20/95	6:41	W05BR											

Special Instructions/Comments: _____
Sample Archive/Disposal: ☐ Laboratory Standard ☐ Other _____
TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks
Container Types: B=Brass Tube V=VOA Tube A=1-Liter Amber G=Cassette
O=Other _____

SEND DOCUMENTATION AND RESULTS TO:

ATTENTION: [Signature]
ICF KAISER ENGINEERS
10 UNIVERSAL CITY PLAZA
SUITE 2400
UNIVERSAL CITY, CALIFORNIA 91608
(818) 509-3100 FAX (818) 509-3137

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt: _____

Sample received at 30C with custody
seals intact. BFA 7/22/95

ICF KAISER ENGINEERS

CHAIN OF CUSTODY RECORD

W0#4240
RL 4177

COC NO.



0004808

Nº 0819

FOR LABORATORY USE ONLY

Laboratory Project No.:
Storage Refrigerator ID: Secured: Yes
Storage Freezer ID: No

Project Name: W04240 F50F Project # 6270-002-00 Sampler: MANLY J

Relinquished by: Ben Anderson Date: 7/21/95 Time: 09:13
Relinquished by: Ben Anderson Date: 7/21/95 Time: 09:13

Relinquished by: Ben Anderson Date: 7/21/95 Time: 09:13
Relinquished by: Ben Anderson Date: 7/21/95 Time: 09:13

SHIP TO LAB: 615/558-6401 Method of Shipment: F&P EX
KUJY VUL3, T2 Shipment ID: 6363753927
615/558-6401

Sample Description				Container(s)	FOR LAB USE ONLY																			
Sample ID Number	Date	Time	Description		#	Type	TAT	Specific Conduct	TDS/Percent	Chloride/PH	Fluoride/Nitrate	Metals-Solids	Metals-Total	8015 Modified	418.1 (TPH-IR)	(TPH) (Case)	(TPH) (20/20)	624/8240 Nit	610/8100 (PMA)	608/8080 (PMA)	604/8040 (PMA)	602/8020 (PMA)	601/8010 (PMA)	
1 21345230 SVLD	7/21	10:58	SOL			B	3V21	X																
2 21345230 SMAID		10:46				B							X											
3 21345230 SOD		10:16				B		X																
4 21230331 SOD		12:50				B		X																
5 21230331 SVLD		12:11				B		X																
6 21230331 SMAID		12:50				B							X											
7 20630331 SMAID		11:25				B							X											
8 20630331 SVLD		11:25				B		X																
9 20630331 SOD		11:25				B																		
10						B		X																

a=Identify specific metals requested under Special Instructions

TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks
Container Types: B=Brass Tube V=VOA Vial A=1-Liter Amber G=Glass Jar C=Cassette
O=Other

Special Instructions/Comments: Metals per 4157
To Quantify per 12/28/74
Sample Archive/Disposal: ☐ Laboratory Standard ☐ Other

SEND DOCUMENTATION AND RESULTS TO:

ATTENTION: Ben Anderson
ICF KAISER ENGINEERS
10 UNIVERSAL CITY PLAZA
SUITE 2400
UNIVERSAL CITY, CALIFORNIA 91808
(818) 509-3100 FAX (818) 509-3137

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt: Samples received

at 30C with custody seals intact. BEA 7/21/95

W0 # 4240

COC NO.



FOR LABORATORY USE ONLY

Laboratory Project No.:
Storage Refrigerator ID: Secured: Yes
Storage Freezer ID: No

ICF KAISER ENGINEERS

No 0821

CHAIN OF CUSTODY RECORD

Project Name: Rockaway TSPF Project #: 66280-00200 Sampler: Mar 18/95

Relinquished by: [Signature] Date: 7/21/95 Time: 09:15
Relinquished by: [Signature] Date: 7/21/95 Time: 09:15
Relinquished by: [Signature] Date: 7/21/95 Time: 09:15
Relinquished by: [Signature] Date: 7/21/95 Time: 09:15

Relinquished by: [Signature] Date: 7/21/95 Time: 09:15
Relinquished by: [Signature] Date: 7/21/95 Time: 09:15
Relinquished by: [Signature] Date: 7/21/95 Time: 09:15
Relinquished by: [Signature] Date: 7/21/95 Time: 09:15

SHIP TO LAB: Quantitative Method of Shipment: FBO BA
Knoxville, TN Shipment ID: 6363753920
(615) 558-6401

Sample ID Number		Sample Description		Date		Time	Description	FOR LAB USE ONLY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
								Container(s)	Type	TAT	#	Type	Lab ID																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
1	21946220 SVL0	7/21/95	12:36	501L																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									

Special Instructions/Comments: Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other

SEND DOCUMENTATION AND RESULTS TO:
ATTENTION: [Signature]

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt: Sample received at 30C with custody seals intact. BGA 7/22/95

ICF KAISER ENGINEERS
10 UNIVERSAL CITY PLAZA
SUITE 2400
UNIVERSAL CITY, CALIFORNIA 91608
(818) 509-3100 FAX (818) 509-3137

ICF KAISER ENGINEERS

CHAIN OF CUSTODY RECORD

W0#4240
R 4177

COC NO.



0004808

No 0819

FOR LABORATORY USE ONLY

Laboratory Project No.:
Storage Refrigerator ID:
Storage Freezer ID:

Secured:
Yes
No

Project Name: W04240 F50F Project #: 6270-002-00

Sampler: Mawby Jm

(Printed Name)

Received by (Signature and Printed Name)

Ben Anderson

Date: 7/21/95

Time: 09:13

Relinquished by (Signature and Printed Name)

Received by (Signature and Printed Name)

Date:

Time:

Relinquished by (Signature and Printed Name)

Received by (Signature and Printed Name)

Date:

Time:

Relinquished by (Signature and Printed Name)

Received by (Signature and Printed Name)

Date:

Time:

SHIP TO LAB:

Method of Shipment: FEDEX
Shipment ID: 6363953902
615/558-6401

Circle or Add Analysis(es) Requested

a=Identify specific metals requested under Special Instructions

Sample ID Number	Date	Time	Description	Circle or Add Analysis(es) Requested	FOR LAB USE ONLY									
					Container(s) #	Type	TAT	Specific Conductivity (EC)	TDS/Percent Solid	Chloride (ppm)	Fluoride (ppm)	Metals (ppm)	Metals (ppm)	Lab ID
1 21343220	7/21	10:58	SOL		3VLA	B		X						
2 21344220		10:46												
3 21346220		10:16												
4 21350331		12:50												
5 21230331		12:21												
6 21230331		12:50												
7 20630331		11:25												
8 20630331		11:25												
9 20630331		11:25												
10														

Special Instructions/Comments: MTS Ben L15
To PHOTON BARR 12/28/94

TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks
Container Types: B=Brass Tube V=VOA Vial A=1-Liter Amber G=Cassette
O=Other

SEND DOCUMENTATION AND RESULTS TO:
ATTENTION: Jm Mawby

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt: Samples received
at 30C with custody seals intact. BEA 7/21/95

ICF KAISER ENGINEERS
10 UNIVERSAL CITY PLAZA
SUITE 2400
UNIVERSAL CITY, CALIFORNIA 91608
(818) 509-3100 FAX (818) 509-3137

ICF KAISER ENGINEERS

CHAIN OF CUSTODY RECORD

COC NO.



0004870

W01288
RL #4222 0819

FOR LABORATORY USE ONLY

Laboratory Project No.: Secured:
Storage Refrigerator ID: Yes
Storage Freezer ID: No

Project Name: Project #58280 00220 Sampler: MANLEY TOM (Printed Name)
Relinquished by: MANLEY TOM (Signature and Printed Name) Date: 7/27/05 Time: 08:45
Relinquished by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time:

SHIP TO LAB:

Method of Shipment: 9845X
Shipment ID: 6363453900

Sample ID Number	Date	Time	Description	Circle or Add Analytes(s) Requested										a-Identify specific metals requested under Special Instructions		
				681/6810 (Halogenated Volatiles-GC)	684/6840 (Phenolic Volatiles-GC)	681/6810 (Phenolic-GC)	682/6820 (Phenolic-GC/MS)	683/6830 (Phenolic-GC/MS)	684/6840 (Phenolic-GC/MS)	685/6850 (Phenolic-GC/MS)	686/6860 (Phenolic-GC/MS)	687/6870 (Phenolic-GC/MS)	688/6880 (Phenolic-GC/MS)	689/6890 (Phenolic-GC/MS)	Container(s) #	FOR LAB USE ONLY
1 21846220	7/26	9:25	501 L	X		X	X	X							1 55	
2 21846220	7/26	9:33													1 55	Rec'd at 20c
3 21846220	7/26	9:43													1 55	with custody seals
4 41455090	7/26	12:06													1 55	intact
5 41455090	7/26	12:11													1 55	BEA 7/27/05
6 41455090	7/26	12:15													1 55	
7 10146220	7/26	10:08													1 55	
8 10146220	7/26	10:03													1 55	
9 10146220	7/26	9:42													1 55	
10 10146220	7/26	9:42													1 55	
11 10146220	7/26	9:42													1 55	

TAT (Analytical Turn-Around Times) 1-24 hours 2-48 hours 3-1 week 4-2 weeks
Container Types: B-Brass Tube V-VOA Vial A-1-Liter Amber G-Glass Jar C-Cassette
O=Other

Special Instructions/Comments: Matrix spikes dupl
Sample Archive/Disposal:
☐ Laboratory Standard ☐ Other

SEND DOCUMENTATION AND RESULTS TO:
ATTENTION: ICF KAISER ENGINEERS
10 UNIVERSAL CITY PLAZA
SUITE 2400
UNIVERSAL CITY, CALIFORNIA 91608
(818) 508-3100 FAX (818) 508-3137



Environmental
Services

CERTIFICATE OF ANALYSIS

ROCKETDYNE

Page 2 B of 165 B

August 17, 1995

Sample Delivery Group: 42404288

Report Batch: 19311

Client Sample: 21230331SMM0

Client Matrix: SOIL

Collection Date: 07/21/95

Lab Sample: AG1262/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/22/95

Test: 202251

Retest:

Prep Date: 07/24/95

Prep Batch: 18443

Lab Method: 176

Lab Method Blank: AG1451

Analysis Date: 07/24/95 14:53

Dilution: 1

MERCURY (HG) BY CVAAS-SOLID

EPA 7471

Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7439-97-6	MERCURY	.12	U	.12	MG/KG		TARG

CERTIFICATE OF ANALYSIS

Page 34 B of 165 B

ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42404288

Report Batch: 19311

Client Sample: 21230331SOC0

Client Matrix: SOIL

Collection Date: 07/21/95

Test: 202242

Retest:

Prep Date: 07/28/95

Prep Batch: 18697

Lab Sample: AG1260/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/22/95

Lab Method: 2922

Lab Method Blank: AG2475

Analysis Date: 07/28/95 18:56

Dilution: 1

NONHALOGENATED VOA'S BY P&T GC/FID

EPA 8015A

Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
1115-52-3 78-8	LOW BOILING PETROLEUM HYDROCAR A,A,A-TRIFLUOROTOLUENE	5.8	U	5.8	MG/KG	95	TARG SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42404288

Report Batch: 19311

Client Sample: 21230331SOC0

Client Matrix: SOIL

Collection Date: 07/21/95

Test: 202244

Retest:

Prep Date: 07/25/95

Prep Batch: 18490

Lab Sample: AG1260/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/22/95

Lab Method: 2924

Lab Method Blank: AG1559

Analysis Date: 07/31/95 11:58

Dilution: 1

NONHALOG.VOA MOD.FOR H.BOIL PET.HYD

EPA 8015M

Primary Result

Cas. Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
IT15-47-3	HIGH BOILING PETROLEUM HYDROCA	5.8	U	5.8	MG/KG		TARG
67-5	TRICOSANE					98	SURR

CERTIFICATE OF ANALYSIS

Page 66 B of 165 B

ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42404288

Report Batch: 19311

Client Sample: 21230331SVL0
Client Matrix: SOIL
Collection Date: 07/21/95

Lab Sample: AG1261/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/22/95

Test: 202248
Retest:
Prep Date: 08/01/95
Prep Batch: 18823

Lab Method: 2932
Lab Method Blank: AG2864
Analysis Date: 08/01/95 02:38
Dilution: 1

**VOLATILES (VOA) - P&T GCMS-CAPIL.COL.
EPA 8260
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
74-87-3	CHLOROMETHANE	6.	U	6.	UG/KG		TARG
71-8	DICHLORODIFLUOROMETHANE	6.	U	6.	UG/KG		TARG
3-9	BROMOMETHANE	6.	U	6.	UG/KG		TARG
75-01-4	VINYL CHLORIDE	6.	U	6.	UG/KG		TARG
75-00-3	CHLOROETHANE	6.	U	6.	UG/KG		TARG
75-09-2	METHYLENE CHLORIDE	1.	J	6.	UG/KG		TARG
75-69-4	TRICHLOROFLUOROMETHANE	6.	U	6.	UG/KG		TARG
75-35-4	1,1-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
75-34-3	1,1-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
156-59-2	CIS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
156-60-5	TRANS-1,2-DICHLOROETHENE	6.	U	6.	UG/KG		TARG
594-20-7	SEC-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
67-66-3	CHLOROFORM	6.	U	6.	UG/KG		TARG
563-58-6	1,1-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
107-06-2	1,2-DICHLOROETHANE	6.	U	6.	UG/KG		TARG
71-55-6	1,1,1-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG
56-23-5	CARBON TETRACHLORIDE	6.	U	6.	UG/KG		TARG
75-27-4	BROMODICHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-97-5	BROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
74-95-3	DIBROMOMETHANE	6.	U	6.	UG/KG		TARG
142-28-9	1,3-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
106-93-4	1,2-DIBROMOETHANE	6.	U	6.	UG/KG		TARG
630-20-6	1,1,1,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
98-82-8	CUMENE	6.	U	6.	UG/KG		TARG
108-86-1	BROMOBENZENE	6.	U	6.	UG/KG		TARG
96-18-4	1,2,3-TRICHLOROPROPANE	6.	U	6.	UG/KG		TARG
103-65-1	N-PROPYLBENZENE	6.	U	6.	UG/KG		TARG
7-5	1,2-DICHLOROPROPANE	6.	U	6.	UG/KG		TARG
77-01-6	TRICHLOROETHENE	6.	U	6.	UG/KG		TARG
124-48-1	DIBROMOCHLOROMETHANE	6.	U	6.	UG/KG		TARG
79-00-5	1,1,2-TRICHLOROETHANE	6.	U	6.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42404288

Report Batch: 19311

Client Sample: 21230331SVL0

Client Matrix: SOIL

Collection Date: 07/21/95

Lab Sample: AG1261/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/22/95

Test: 202248

Retest:

Prep Date: 08/01/95

Prep Batch: 18823

Lab Method: 2932

Lab Method Blank: AG2864

Analysis Date: 08/01/95 02:38

Dilution: 1

VOLATILES (VOA) - P&T GCMS-CAPIL.COL.

EPA 8260

Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
71-43-2	BENZENE	6.	U	6.	UG/KG		TARG
61-01-5	CIS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
71-02-6	TRANS-1,3-DICHLOROPROPENE	6.	U	6.	UG/KG		TARG
75-25-2	BROMOFORM	6.	U	6.	UG/KG		TARG
127-18-4	TETRACHLOROETHENE	6.	U	6.	UG/KG		TARG
79-34-5	1,1,2,2-TETRACHLOROETHANE	6.	U	6.	UG/KG		TARG
108-88-3	TOLUENE	6.	U	6.	UG/KG		TARG
108-90-7	CHLOROBENZENE	6.	U	6.	UG/KG		TARG
100-41-4	ETHYLBENZENE	6.	U	6.	UG/KG		TARG
100-42-5	STYRENE	6.	U	6.	UG/KG		TARG
95-47-6	O-XYLENE	6.	U	6.	UG/KG		TARG
108-88-3	M/P-XYLENE	12.	U	12	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	6.	U	6.	UG/KG		TARG
95-49-8	O-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
106-43-4	P-CHLOROTOLUENE	6.	U	6.	UG/KG		TARG
108-67-8	1,3,5-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
98-06-6	TERT-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
95-63-6	1,2,4-TRIMETHYLBENZENE	6.	U	6.	UG/KG		TARG
135-98-8	SEC-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
99-87-6	P-CYME	6.	U	6.	UG/KG		TARG
104-51-8	N-BUTYLBENZENE	6.	U	6.	UG/KG		TARG
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	6.	U	6.	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	6.	U	6.	UG/KG		TARG
82-20-3	NAPHTHALENE	6.	U	6.	UG/KG		TARG
11-6	1,2,3-TRICHLOROBENZENE	6.	U	6.	UG/KG		TARG
2057-26-5	TOLUENE-D8					102	SURR
460-00-4	P-BROMOFLUOROBENZENE					99	SURR
1868-53-7	DIBROMOFLUOROMETHANE					101	SURR

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42404288

Report Batch: 19311

Client Sample: 21230331SOC0

Client Matrix: SOIL

Collection Date: 07/21/95

Lab Sample: AG1260/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/22/95

Test: 202241

Retest:

Prep Date: 07/25/95

Prep Batch: 18489

Lab Method: 2935

Lab Method Blank: AG1557

Analysis Date: 07/29/95 08:34

Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN

EPA 8270A

Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
108-95-2	PHENOL	380	U	380	UG/KG		TARG
44-4	BIS(2-CHLOROETHYL)ETHER	380	U	380	UG/KG		TARG
7-8	2-CHLOROPHENOL	380	U	380	UG/KG		TARG
541-73-1	1,3-DICHLOROBENZENE	380	U	380	UG/KG		TARG
106-46-7	1,4-DICHLOROBENZENE	380	U	380	UG/KG		TARG
100-51-6	BENZYL ALCOHOL	380	U	380	UG/KG		TARG
95-50-1	1,2-DICHLOROBENZENE	380	U	380	UG/KG		TARG
95-48-7	2-METHYLPHENOL	380	U	380	UG/KG		TARG
108-60-1	BIS(2-CHLOROISOPROPYL) ETHER	380	U	380	UG/KG		TARG
106-44-5	4-METHYLPHENOL	380	U	380	UG/KG		TARG
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	380	U	380	UG/KG		TARG
67-72-1	HEXACHLOROETHANE	380	U	380	UG/KG		TARG
98-95-3	NITROBENZENE	380	U	380	UG/KG		TARG
78-59-1	ISOPHORONE	380	U	380	UG/KG		TARG
88-75-5	2-NITROPHENOL	380	U	380	UG/KG		TARG
105-67-9	2,4-DIMETHYLPHENOL	380	U	380	UG/KG		TARG
65-85-0	BENZOIC ACID	930	U	930	UG/KG		TARG
111-91-1	BIS(2-CHLOROETHOXY)METHANE	380	U	380	UG/KG		TARG
120-83-2	2,4-DICHLOROPHENOL	380	U	380	UG/KG		TARG
120-82-1	1,2,4-TRICHLOROBENZENE	380	U	380	UG/KG		TARG
91-20-3	NAPHTHALENE	76.	U	76.	UG/KG		TARG
106-47-8	4-CHLOROANILINE	380	U	380	UG/KG		TARG
87-68-3	HEXACHLOROBUTADIENE	380	U	380	UG/KG		TARG
59-50-7	4-CHLORO-3-METHYLPHENOL	380	U	380	UG/KG		TARG
91-57-6	2-METHYLNAPHTHALENE	380	U	380	UG/KG		TARG
77-47-4	HEXACHLOROCYCLOPENTADIENE	380	U	380	UG/KG		TARG
99-06-2	2,4,6-TRICHLOROPHENOL	380	U	380	UG/KG		TARG
5-4	2,4,5-TRICHLOROPHENOL	930	U	930	UG/KG		TARG
58-7	2-CHLORONAPHTHALENE	380	U	380	UG/KG		TARG
88-74-4	2-NITROANILINE	930	U	930	UG/KG		TARG
131-11-3	DIMETHYL PHTHALATE	380	U	380	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42404288

Report Batch: 19311

Client Sample: 21230331SOCO

Client Matrix: SOIL

Collection Date: 07/21/95

Lab Sample: AG1260/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/22/95

Test: 202241

Retest:

Prep Date: 07/25/95

Prep Batch: 18489

Lab Method: 2935

Lab Method Blank: AG1557

Analysis Date: 07/29/95 08:34

Dilution: 1

SEMIVOLATILES-GCMS-CAPIL.COLUMN

EPA 8270A

Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
208-96-8	ACENAPHTHYLENE	76.	U	76.	UG/KG		TARG
20-2	2,6-DINITROTOLUENE	380	U	380	UG/KG		TARG
7-2	3-NITROANILINE	930	U	930	UG/KG		TARG
85-32-9	ACENAPHTHENE	76.	U	76.	UG/KG		TARG
51-28-5	2,4-DINITROPHENOL	930	U	930	UG/KG		TARG
100-02-7	4-NITROPHENOL	930	U	930	UG/KG		TARG
132-64-9	DIBENZOFURAN	380	U	380	UG/KG		TARG
121-14-2	2,4-DINITROTOLUENE	380	U	380	UG/KG		TARG
84-66-2	DIETHYL PHTHALATE	380	U	380	UG/KG		TARG
7005-72-3	4-CHLOROPHENYLPHENYL ETHER	380	U	380	UG/KG		TARG
86-73-7	FLUORENE	76.	U	76.	UG/KG		TARG
100-01-6	4-NITROANILINE	930	U	930	UG/KG		TARG
534-52-1	4,6-DINITRO-2-METHYLPHENOL	930	U	930	UG/KG		TARG
86-30-6	N-NITROSODIPHENYLAMINE	380	U	380	UG/KG		TARG
101-55-3	4-BROMOPHENYL PHENYL ETHER	380	U	380	UG/KG		TARG
118-74-1	HEXACHLOROBENZENE	380	U	380	UG/KG		TARG
87-86-5	PENTACHLOROPHENOL	930	U	930	UG/KG		TARG
85-01-8	PHENANTHRENE	76.	U	76.	UG/KG		TARG
120-12-7	ANTHRACENE	76.	U	76.	UG/KG		TARG
86-74-8	CARBAZOLE	380	U	380	UG/KG		TARG
84-74-2	DI-N-BUTYL PHTHALATE	380	U	380	UG/KG		TARG
206-44-0	FLUORANTHENE	76.	U	76.	UG/KG		TARG
129-00-0	PYRENE	76.	U	76.	UG/KG		TARG
85-68-7	BUTYL BENZYL PHTHALATE	380	U	380	UG/KG		TARG
91-94-1	3,3'-DICHLOROBENZIDINE	760	U	760	UG/KG		TARG
56-55-3	BENZO(A)ANTHRACENE	76.	U	76.	UG/KG		TARG
78-01-9	CHRYSENE	76.	U	76.	UG/KG		TARG
81-7	BIS(2-ETHYLHEXYL) PHTHALATE	55.	J	380	UG/KG		TARG
7-84-0	DI-N-OCTYL PHTHALATE	380	U	380	UG/KG		TARG
205-99-2	BENZO(B)FLUORANTHENE	76.	U	76.	UG/KG		TARG
207-08-9	BENZO(K)FLUORANTHENE	76.	U	76.	UG/KG		TARG

CERTIFICATE OF ANALYSIS

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ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42404288

Report Batch: 19311

Client Sample: 21230331SOC0
Client Matrix: SOIL
Collection Date: 07/21/95

Lab Sample: AG1260/ORIGINAL
Lab Matrix: SOIL
Received Date: 07/22/95

Test: 202241
Retest:
Prep Date: 07/25/95
Prep Batch: 18489

Lab Method: 2935
Lab Method Blank: AG1557
Analysis Date: 07/29/95 08:34
Dilution: 1

**SEMIVOLATILES-GCMS-CAPIL.COLUMN
EPA 8270A
Primary Result**

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
50-32-8	BENZO(A)PYRENE	76.	U	76.	UG/KG		TARG
39-5	INDENO(1,2,3-CD)PYRENE	76.	U	76.	UG/KG		TARG
U-3	DIBENZO(A,H)ANTHRACENE	76.	U	76.	UG/KG		TARG
191-24-2	BENZO(G,H,I)PERYLENE	76.	U	76.	UG/KG		TARG
4165-60-0	NITROBENZENE-D5					64	SURR
321-60-8	2-FLUOROBIPHENYL					69	SURR
1718-51-0	P-TERPHENYL-D14					75	SURR
4165-62-2	PHENOL-D5					62	SURR
367-12-4	2-FLUOROPHENOL					66	SURR
118-79-6	2,4,6-TRIBROMOPHENOL					71	SURR

CERTIFICATE OF ANALYSIS

Page 136 B of 165

ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42404288

Report Batch: 19311

Client Sample: 21230331SOC0

Client Matrix: SOIL

Collection Date: 07/21/95

Lab Sample: AG1260/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/22/95

Test: 202237

Retest:

Prep Date: 07/25/95

Prep Batch: 18491

Lab Method: 3170

Lab Method Blank: AG1561

Analysis Date: 08/02/95 15:51

Dilution: 1

ORGANOCHLOR. PCB-GC/EC, CAP&PACK

EPA 8080

Primary Result

Cas Number	Analyte	Result	Qualifier	Report Limit	Units	% Rec	Type
11104-28-2	AROCLOR-1221	24.	U	24.	UG/KG		TARG
1174-11-2	AROCLOR-1016	24.	U	24.	UG/KG		TARG
1-16-5	AROCLOR-1232	24.	U	24.	UG/KG		TARG
35469-21-9	AROCLOR-1242	24.	U	24.	UG/KG		TARG
12672-29-6	AROCLOR-1248	24.	U	24.	UG/KG		TARG
11097-69-1	AROCLOR-1254	47.	U	47.	UG/KG		TARG
11096-82-5	AROCLOR-1260	47.	U	47.	UG/KG		TARG
877-09-8	2,4,5,6-TETRACHLORO-M-XYLENE	47.	U	47.	UG/KG		TARG
1770-80-5	DIBUTYL CHLORENDATE					98	SURR
						85	SURR

CERTIFICATE OF ANALYSIS

Page 150 B of 165 F

ROCKETDYNE

August 17, 1995

Sample Delivery Group: 42404288

Report Batch: 19311

Client Sample: 21230331SMM0

Client Matrix: SOIL

Collection Date: 07/21/95

Lab Sample: AG1262/ORIGINAL

Lab Matrix: SOIL

Received Date: 07/22/95

Test: 203647

Retest:

Prep Date: 07/25/95

Prep Batch: 18505

Lab Method: 3276

Lab Method Blank: AG1575

Analysis Date: 08/02/95 11:56

Dilution: 1

METALS BY ICP-SUPER TRACE INSTRUMNT

EPA 6010A

Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
7440-38-2	ARSENIC	3.80		1.16	MG/KG		TARG
7440-47-3	CHROMIUM	22.2	N	.0581	MG/KG		TARG
7440-50-8	COPPER	13.8	N*	.174	MG/KG		TARG
7439-92-1	LEAD	4.60		.349	MG/KG		TARG
7440-02-0	NICKEL	12.9		.349	MG/KG		TARG
7440-66-6	ZINC	55.0		2.33	MG/KG		TARG

Quanterra Incorporated
5815 Middlebrook Pike
Knoxville, Tennessee 37921

615 588-6401 Telephone
615 584-4315 Fax

24-Aug-95
Revised 31-Aug-95

Ruth Custance
ICF Kaiser Environmental And Energy Group
10 Universal City Plaza
Suite 2400
Universal City, CA 91608-1097

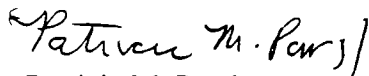
RE: Dioxin/Furan Report
Work Order No: 2327 & 2335

Dear Ms. Custance:

Enclosed please find one copy of our final Dioxin/Furan report for eight soil samples and two designated QA/QC soil samples received 22-Jul-95 & 27-Jul-95.

Quanterra Environmental Services appreciates your business and looks forward to working with you in the future. Please call if you have any questions about our report or services.

Sincerely,



Patricia M. Parsly
Project Manager

Quanterra Incorporated
5815 Middlebrook Pike
Knoxville, Tennessee 37921

615 588-6401 Telephone
615 584-4315 Fax

CERTIFICATE OF ANALYSIS

Ruth Custance
ICF Kaiser Environmental And Energy Group
10 Universal City Plaza
Suite 2400
Universal City, CA 91608-1097

24-Aug-95
Revised 31-Aug-95

WORK ORDER NUMBER: 2327 & 2335

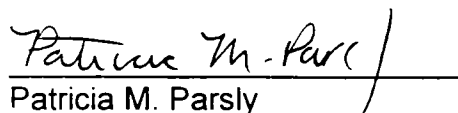
This is the Certificate of Analysis for the following samples:

Client Project ID:	Rocketdyne
Date Received by Lab:	22-Jul-95 & 27-Jul-95
Number of Samples:	Ten (10)
Sample Matrix:	Soil

Introduction/Case Narrative

Eight (8) soil samples and two (2) designated QA/QC soil samples were received 22-Jul-95 & 27-Jul-95 for the analysis of 2,3,7,8-TCDD/TCDF and total tetra through octa (Cl₄-Cl₈) dioxin and furan homologs (See Appendix A, Cross Reference List and Appendix E, Chain-of-Custody and Request for Analysis records). An estimation of all 2,3,7,8-substituted isomers was also requested. The samples and the blanks were spiked with an internal standard mixture containing 1.0 ng each of ¹³C-TCDD, ¹³C-TCDF, ¹³C-PeCDD, ¹³C-PeCDF, ¹³C-HxCDD, ¹³C-HxCDF, ¹³C-HpCDD, ¹³C-HpCDF and 2.0 ng of ¹³C-OCDD. The samples and the blanks were analyzed using the EPA reference method described in RCRA SW-846, Method 8290. Extracts were analyzed by GC/MS operating in the selected ion monitoring mode for enhanced sensitivity. The results reported herein are applicable to the samples submitted for analysis only. It is recommended that if this report is reproduced, it is reproduced in its entirety.

Reviewed and Approved:


Patricia M. Parsly
Project Manager
59/dll

I. Introduction/Case Narrative (Continued)

This report was originally issued on 24-Aug-95 without the results from the confirmation analysis for the 2,3,7,8-TCDF. This report includes the previously reported results and the results from the 2,3,7,8-TCDF confirmation analysis.

The soil samples are reported on a dry weight basis.

Many of the 2,3,7,8-TCDF results from the DB-225 column were higher than the results from the DB-5 column. Most of the samples exhibited a possible polychlorinated diphenyl interference.

Due to matrix interferences which caused ion suppression, the specified results for the samples listed below were obtained from a dilution:

<u>Sample</u>	<u>Dilution Factor</u>	<u>Results obtained for the dilution</u>
20630331SOC0	1:10	All
20746220SOC0	1:10	All

II. Analytical Results/Methodology

SAMPLE PREPARATION

A 10 gram (wet weight) aliquot of each sample and 10 grams of quartz sand (for the blanks) were weighed into separate Soxhlet thimbles. The samples and the blanks were spiked with the internal standard mixture, followed by a Soxhlet extraction with toluene for sixteen hours. The resulting extracts were filtered into a KD flask and the volume reduced to approximately 1 ml.

SAMPLE CLEANUP

The sample and blank extracts were washed with 20% KOH and distilled water followed by three concentrated H₂SO₄ washes. Further cleanup consisted of a dual column system utilizing acid-modified silica gel followed by neutral alumina. Final extracts were concentrated to near dryness and raised to 20 µl with 2.0 ng ¹³C-1,2,3,4-TCDD and 2.0 ng ¹³C-1,2,3,7,8,9-HxCDD which were used as recovery standards.

II. Analytical Results/Methodology (Continued)

GC/MS ANALYSIS

Total Dioxin and Furan - The samples and the blanks were analyzed for total dioxin and furan homologs from Cl₄-Cl₈. The standard analyzed each shift consisted of:

Dioxins

¹³C-2,3,7,8-TCDD
¹³C-1,2,3,4-TCDD
¹³C-1,2,3,7,8-PeCDD
¹³C-1,2,3,6,7,8-HxCDD
¹³C-1,2,3,7,8,9-HxCDD
¹³C-1,2,3,4,6,7,8-HpCDD
¹³C-OCDD
2,3,7,8-TCDD
1,2,3,7,8-PeCDD
1,2,3,4,7,8-HxCDD
1,2,3,6,7,8-HxCDD
1,2,3,7,8,9-HxCDD
1,2,3,4,6,7,8-HpCDD
OCDD

Dibenzofurans

¹³C-2,3,7,8-TCDF
¹³C-1,2,3,7,8-PeCDF
¹³C-1,2,3,4,7,8-HxCDF
¹³C-1,2,3,4,6,7,8-HpCDF
2,3,7,8-TCDF
1,2,3,7,8-PeCDF
2,3,4,7,8-PeCDF
1,2,3,4,7,8-HxCDF
1,2,3,6,7,8-HxCDF
2,3,4,6,7,8-HxCDF
1,2,3,7,8,9-HxCDF
1,2,3,4,6,7,8-HpCDF
1,2,3,4,7,8,9-HpCDF
OCDF

Response factors were calculated for each compound in the standard relative to its ¹³C labeled homolog. Native OCDF is calculated against ¹³C-OCDD. A five-point calibration plot was analyzed. The mean response factors obtained from this five-point calibration were used for all subsequent calculations. The daily calibration standards, analyzed on the same day as the samples, met the method criteria for all native analytes.

The extracts were analyzed using HRGC/HRMS scanning in the selected ion monitoring mode for enhanced sensitivity. The column used for the analysis was a 60 m DB-5 type fused silica capillary column.

GC/MS RESULTS

Totals - The results for the totals analysis, shown in Appendix C, are reported in pg/g with the total amount of each homologous group calculated. For any homologous series of dioxins or furans that contain more than one 2,3,7,8-substituted isomer, the total result for that series is the sum of the individual 2,3,7,8-substituted isomers (calculated using their specific Response Factors) and all other non-2,3,7,8-substituted isomers (calculated using the average Response Factor of the individual 2,3,7,8-substituted isomers in that homologous series).

II. Analytical Results/Methodology (Continued)

GC/MS RESULTS (Continued)

The results from the confirmation analysis are in Appendix D.

Detection Limits - When an analyte is not detected, a sample specific detection limit is calculated for that analyte. This is done by first determining the GC/MS peak height of the noise or interferent in the expected region of the analyte signal. This value is multiplied by the number 2.5 which serves as a safety factor. The 2.5 safety factor is disregarded if the noise present in the analyte region is a result of chemical interferences. The resulting signal response value is then used to estimate the minimum detectable analyte amount. The result is the estimated sample detection limit.

When an analyte is not detected, a "U" is reported in the qualifier column. The value in the result column is the estimated detection limit for the analyte in that particular sample.

III. Quality Control

Laboratory project specific QA/QC was followed. Appendix B lists the results of the QA/QC samples. In all cases, precision and accuracy are within the limits established for acceptance of dioxin/dibenzofuran data.

APPENDIX A

APPENDIX A

Page 1 of 1

Ruth Custance**ICF KAISER ENVIRONMENTAL AND ENERGY GROUP**

Date: 24-Aug-95

Work Order No.: 2327 & 2335

*Environmental
Services*

Revised 31-Aug-95

CROSS REFERENCE LIST

QUANTERRA SAMPLE NO.	CLIENT SAMPLE NO.	MATRIX
AA5764	21346220SOC0	Soil
AA5765	21230331SOC0	Soil
AA5766	20630331SOC0	Soil
AA5767	21946220SOC0	Soil
AA5768	21246220SOC0	Soil
AA5771	20630331SOC0	Soil
AA5772	20746220SOC0	Soil
AA5798	21846220SOC5	Soil
AA5798MS	21846220SOC5	Soil
AA5798MSD	21846220SOC5	Soil

APPENDIX B

APPENDIX B

Page 1 of 4

Ruth Custance

ICF KAISER ENVIRONMENTAL AND ENERGY GROUP

Date: 24-Aug-95

Work Order No.: 2327 & 2335

Environmental
Services

Revised 31-Aug-95

QA/QC REPORT HRMS

Sample Number: AA5798, AA5798MS, AA5798MSD
 Extraction Method: SOXHLET
 Sample Matrix: SOLID

Extraction Date: 8/2/95

Totals Analysis Date: 8/16/95
 8/17/95

COMPOUND	Amt. Added (pg/g)	Sample Amt. (pg/g)	Conc. MS (pg/g)	% Recovery MS	Conc. MSD (pg/g)	% Recovery MSD	% RPD	EPA % Recovery Range	EPA % RPD Range
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Totals Analysis

2,3,7,8-TCDD	20.6	ND	21.5	105	21.3	104	0.9	a	b
1,2,3,7,8-PeCDD	103	ND	114	111	113	110	0.9	a	b
1,2,3,6,7,8-HxCDD	103	0.90	110	106	110	106	0.0	a	b
1,2,3,4,6,7,8-HpCDD	103	19.7	122	100	124	101	-1.6	a	b
OCDD	206	172	446	133	432	127	3.2	a	b
2,3,7,8-TCDF	20.6	ND	23.9	116	24.4	119	-2.1	a	b
1,2,3,7,8-PeCDF	103	ND	102	99	102	99	0.0	a	b
1,2,3,4,7,8-HxCDF	103	1.0	107	103	107	103	0.0	a	b
1,2,3,4,6,7,8-HpCDF	103	1.9	112	107	112	107	0.0	a	b
OCDF	206	4.2	203	97	201	96	1.0	a	b

% Recovery = (Conc. MS or MSD) - Sample Amt. / Amt. Added) x 100

RPD (Relative Percent Difference) = ((Conc. MS - Conc. MSD) / (Conc. MS + Conc. MSD) / 2) x 100

(a) No EPA Range has been established for these analytes. Laboratory QA/QC limits are 60% - 140%.

(b) No EPA Range has been established for these analytes. Laboratory QA/QC limits are +/- 50%.

msqc.xlt/pbc/2-27-92

dit459/dll

LABORATORY CONTROL SAMPLE

QA/QC REPORT

HRMS

LCS Number: BLCS523

Extraction Method:

Matrix: SOLID

Extraction Date: 7/31/95

Totals Analysis Date: 8/12/95

COMPOUND	Amt. Added pg/g	Conc. LCS pg/g	% Recovery LCS	EPA % Recovery Range
----------	-----------------------	----------------------	----------------------	----------------------------

Totals Analysis

2,3,7,8-TCDD	20.0	19.7	99	a
1,2,3,7,8-PeCDD	100.	105	105	a
1,2,3,6,7,8-HxCDD	100.	100	100	a
1,2,3,4,6,7,8-HpCDD	100.	97.7	98	a
OCDD	200.	182	91	a
2,3,7,8-TCDF	20.0	21.5	108	a
1,2,3,7,8-PeCDF	100.	93.6	94	a
1,2,3,4,7,8-HxCDF	100.	97.4	97	a
1,2,3,4,6,7,8-HpCDF	100.	101	101	a
OCDF	200.	181	91	a

$$\% \text{ Recovery} = (\text{Conc. LCS}) / (\text{Amt. Added}) \times 100$$

(a) No EPA Range has been established for these analytes. ITAS-TDL QA/QC limits are 60% - 140%.

APPENDIX B

Page 3 of 4

Ruth Custance

ICF KAISER ENVIRONMENTAL AND ENERGY GROUP

Date: 24-Aug-95

Work Order No.: 2327 & 2335

Environmental
Services

Revised 31-Aug-95

LABORATORY CONTROL SAMPLE**QA/QC REPORT****HRMS**

LCS Number: BLCS528

Extraction Method: SOXHLET

Matrix: SOLID

Extraction Date: 8/4/95

Isomer-Specific Analysis Date:

Totals Analysis Date: 8/13/95

COMPOUND	Amt.	Conc.	%	EPA %
	Added	LCS	Recovery	Recovery
	pg/g	pg/g	LCS	Range

Totals Analysis

2,3,7,8-TCDD	20.0	19.5	98	a
1,2,3,7,8-PeCDD	100.	105	105	a
1,2,3,6,7,8-HxCDD	100.	99.6	100	a
1,2,3,4,6,7,8-HpCDD	100.	96.2	96	a
OCDD	200.	181	91	a
2,3,7,8-TCDF	20.0	21.5	108	a
1,2,3,7,8-PeCDF	100.	94.4	94	a
1,2,3,4,7,8-HxCDF	100.	96.4	96	a
1,2,3,4,6,7,8-HpCDF	100.	98.8	99	a
OCDF	200.	183	92	a

% Recovery = (Conc. LCS) / Amt. Added) x 100

(a) No EPA Range has been established for these analytes. ITAS-TDL QA/QC limits are 60% - 140%.

LCS.XLS/pbc/2-25-92 rev. 0

APPENDIX B

Page 4 of 4

Ruth Custance

ICF KAISER ENVIRONMENTAL AND ENERGY GROUP

Date: 24-Aug-95

Work Order No.: 2327 & 2335

Environmental
Services

Revised 31-Aug-95

LABORATORY CONTROL SAMPLE**QA/QC REPORT****HRMS**

LCS Number: BLC530

Extraction Method: SOXHLET

Matrix: SOLID

Extraction Date: 8/2/95

Isomer-Specific Analysis Date:

Totals Analysis Date: 8/13/95

COMPOUND	Amt.	Conc.	%	EPA %
	Added	LCS	Recovery	Recovery
	pg/g	pg/g	LCS	Range

Totals Analysis

2,3,7,8-TCDD	20.0	21.1	106	a
1,2,3,7,8-PeCDD	100.	107	107	a
1,2,3,6,7,8-HxCDD	100.	104	104	a
1,2,3,4,6,7,8-HpCDD	100.	101	101	a
OCDD	200.	189	95	a
2,3,7,8-TCDF	20.0	25.0	125	a
1,2,3,7,8-PeCDF	100.	98.0	98	a
1,2,3,4,7,8-HxCDF	100.	101	101	a
1,2,3,4,6,7,8-HpCDF	100.	106	106	a
OCDF	200.	185	93	a

% Recovery = (Conc. LCS) / Amt. Added) x 100

(a) No EPA Range has been established for these analytes. ITAS-TDL QA/QC limits are 60% - 140%.

LCS.XLS/pbc/2-25-92 rev. 0

APPENDIX C



Environmental
Services

CERTIFICATE OF ANALYSIS

Page 3 C of 27 C

ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42404288

Report Batch: 19311

Client Sample: 21230331SOC0

Client Matrix: SOIL

Collection Date: 07/21/95

Lab Sample: AA5765 /ORIGINAL

Lab Matrix: SOIL

Received Date: 07/22/95

Test: 202246

Retest:

Prep Date: 07/31/95

Prep Batch: 3249

Lab Method: 1012

Lab Method Blank: BLK3249

Analysis Date: 08/13/95 14:31

Dilution: 1

PCDD/F, HRMS EPA 8290 Primary Result

<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
1746-01-6	2,3,7,8-TCDD	.62	U	.62	PG/G		TARG
13-57-5	TOTAL TCDD	.62	U	.62	PG/G		TARG
1-76-4	1,2,3,7,8-PECDD	.26	U	.26	PG/G		TARG
36088-22-9	TOTAL PECDD	.26	U	.26	PG/G		TARG
39227-28-6	1,2,3,4,7,8-HXCDD	.49	U	.49	PG/G		TARG
57653-85-7	1,2,3,6,7,8-HXCDD	.46	U	.46	PG/G		TARG
19408-74-3	1,2,3,7,8,9-HXCDD	.46	U	.46	PG/G		TARG
34465-46-8	TOTAL HXCDD	.47	U	.47	PG/G		TARG
35822-46-9	1,2,3,4,6,7,8-HPCDD	1.1	J	5.8	PG/G		TARG
37871-00-4	TOTAL HPCDD	2.0	J	5.8	PG/G		TARG
3268-87-9	TOTAL OCDD	17.6		12.	PG/G		TARG
51207-31-9	2,3,7,8-TCDF	.44	U	.44	PG/G		TARG
55722-27-5	TOTAL TCDF	.44	U	.44	PG/G		TARG
57117-41-6	1,2,3,7,8-PECDF	.099	U	.099	PG/G		TARG
57117-31-4	2,3,4,7,8-PECDF	.17	U	.17	PG/G		TARG
30402-15-4	TOTAL PECDF	.31	U	.31	PG/G		TARG
70648-26-9	1,2,3,4,7,8-HXCDF	.12	U	.12	PG/G		TARG
57117-44-9	1,2,3,6,7,8-HXCDF	.10	U	.10	PG/G		TARG
60851-34-5	2,3,4,6,7,8-HXCDF	.14	U	.14	PG/G		TARG
72918-21-9	1,2,3,7,8,9-HXCDF	.14	U	.14	PG/G		TARG
55684-94-1	TOTAL HXCDF	.60	JIQ	5.8	PG/G		TARG
67562-39-4	1,2,3,4,6,7,8-HPCDF	.12	U	.12	PG/G		TARG
55673-89-7	1,2,3,4,7,8,9-HPCDF	.10	U	.10	PG/G		TARG
38998-75-3	TOTAL HPCDF	.22	JQ	5.8	PG/G		TARG
39001-02-0	TOTAL OCDF	.70	J	12.	PG/G		TARG
76523-40-5	13C-2,3,7,8-TCDD					71	SURR
7719-79-1	13C-1,2,3,7,8-PECDD					87	SURR
9-81-5	13C-1,2,3,6,7,8-HXCDD					68	SURR
7719-83-7	13C-1,2,3,4,6,7,8-HPCDD					73	SURR
114423-97-1	13C-OCDD					68	SURR
89059-46-1	13C-2,3,7,8-TCDF					62	SURR



Environmental
Services

CERTIFICATE OF ANALYSIS

Page 4 C of 27 C

ROCKETDYNE

August 24, 1995

Sample Delivery Group: 42404288

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Prep Date: 07/31/95

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Lab Method: 1012

Lab Method Blank: BLK3249

Analysis Date: 08/13/95 14:31

Dilution: 1

PCDD/F, HRMS EPA 8290 Primary Result

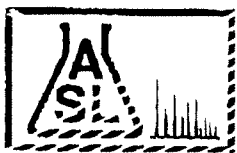
<u>Cas Number</u>	<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Report Limit</u>	<u>Units</u>	<u>% Rec</u>	<u>Type</u>
109719-77-9	13C-1,2,3,7,8-PECDF					84	SURR
23-98-2	13C-1,2,3,4,7,8-HXCDF					67	SURR
9-84-8	13C-1,2,3,4,6,7,8-HPCDF					61	SURR

SOIL DTSC SAMPLES

Table 10: DTSC-Supplied Data

DTSC Split Samples					
Analyte and Units	Date Sampled	DTSC Split Sample Number			
		CAC-100BE	PC-16B	PCS-29	PCS-31
Mercury (mg/kg)	6/28/2000		<0.20		
PCBs (Aroclor-1016) (µg/kg)	6/28/2000		<33		
California Assessment Manual (CAM) Metals					
Mercury (mg/kg)	9/15/2000	<0.20		<0.10	<0.10
Antimony (mg/kg)	9/15/2000			<0.15	<0.15
Barium (mg/kg)	9/15/2000			132	120
Beryllium (mg/kg)	9/15/2000			0.72	0.69
Cadmium (mg/kg)	9/15/2000			<0.05	<0.05
Chromium (mg/kg)	9/15/2000			24.2	23.1
Cobalt (mg/kg)	9/15/2000			9.48	8.75
Copper (mg/kg)	9/15/2000			15.2	12.1
Lead (mg/kg)	9/15/2000			6.79	5.77
Molybdenum (mg/kg)	9/15/2000			<0.05	<0.05
Nickel (mg/kg)	9/15/2000			17.1	16.3
Selenium (mg/kg)	9/15/2000			<0.20	<0.20
Silver (mg/kg)	9/15/2000			<0.40	<0.40
Thallium (mg/kg)	9/15/2000			<0.20	<0.20
Vanadium (mg/kg)	9/15/2000			40.1	38.1
Zinc (mg/kg)	9/15/2000			61.5	51.0
Arsenic (mg/kg)	9/15/2000			<0.10	<0.10

DTSC Samples			
Sample No.	Date Sampled	Mercury (mg/kg)	Notes
DTSC-A	9/27/2000	ND	Method detection limit = 0.2 mg/kg
DTSC-B	9/27/2000	ND	Method detection limit = 0.2 mg/kg
DTSC-C	9/27/2000	ND	Method detection limit = 0.2 mg/kg
DTSC-D	10/3/2000	0.21	Method detection limit = 0.2 mg/kg
DTSC-E	10/3/2000	0.26	Method detection limit = 0.2 mg/kg
DTSC-F	10/3/2000	0.2	Method detection limit = 0.2 mg/kg
DTSC-G	10/3/2000	0.28	Method detection limit = 0.2 mg/kg



AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

Fax

To: Chris

From: Molky

Fax: 818/551-2901

Pages: 4

Company: Dept. of Toxic

Date: 07-13-00 Time: 6:40 pm

Re: #8445

CC: _____

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

• Comments: Please check the report and call us with any additional request as soon as possible.

FSDF / CTH-5

BLAP No.: 1838

American Scientific Laboratories
3225 San Fernando Road
Los Angeles, CA 90065

ATTN: Moly Brar

Client's Project: 8445
Lab No.: 45095-001/002

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (562) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

Cheryl De Los Reyes
Technical Operations Manager
CDR/ra

Date: _____

Enclosures

This cover letter is an integral part of this analytical report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of the Laboratory's name for advertising or publicity purposes without authorization is prohibited.



Advanced Technology
Laboratories

1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Client: American Scientific Laboratories
 Attn: Minky Brar

Client's Project: 8445
 Date Received: 06/30/00
 Extraction Method: 3510H
 Matrix: Soil
 Units: ug/kg

FSDP

GAPD
ETLS
CTL-5

EPA Method 8082

PC-163

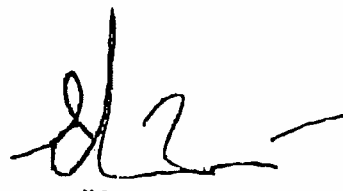
SS 004

Lab No.	Method Blank	45095-001	45095-002										
Client Sample ID:		83748	83748	83751									
Date Sampled:		06/28/00	06/28/00	06/26/00									
QC Batch #:		C0080805273	C0080805273	C0080805273									
Date Extracted:		07/03/00	07/03/00	07/03/00									
Date Analyzed:		07/05/00	07/06/00	07/06/00									
Analyst Initials:		IG	IG	IG									
Dilution Factor:		1	1	1									
ANALYTE	MDL	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results
Aroclor-1016	33	33	ND	33	ND	33	ND						
Aroclor-1221	67	67	ND	67	ND	67	ND						
Aroclor-1232	33	33	ND	33	ND	33	ND						
Aroclor-1242	33	33	ND	33	ND	33	ND						
Aroclor-1248	33	33	ND	33	ND	33	ND						
Aroclor-1254	33	33	ND	33	ND	33	ND						
Aroclor-1260	33	33	ND	33	ND	33	ND						
Aroclor-1262	33	33	ND	33	ND	33	ND						
Aroclor-1268	33	33	ND	33	ND	33	ND						

Surrogate	%Rec.	Limits	%Rec.	Limits	%Rec.	Limits							
Tetraethyloxy-m-xylene	93	30-150	103	30-150	106	30-150							
Decachlorobiphenyl	93	30-150	102	30-150	96	30-150							

MDL = Method Detection Limit
 ND = Not Detected (Below DLCL)
 DLR = MDL X Dilution Factor
 NA = Not Analyzed

Reviewed/Approved By:



Edgar Morrison

Organics Supervisor

Date: 7/13/00

This certificate is an integral part of this analytical report

Advanced Technology
Laboratories

1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Spike Recovery and RPD Summary Report - SOIL (ug/Kg)

Method : C:\HPCHEM\1\METHODS\CHLO0710.M (Chemstation Integrator)
Title :
Last Update : Mon Jul 10 14:21:59 2000
Response via : Continuing Calibration

Non-Spiked Sample: C0705008.D

Spike Sample	Spike Duplicate Sample
File ID : C0705033.D	C0705034.D
Sample : 000703BLKS1,MS,	000703BLKS1,MSD,
Acq Time: 6 Jul 0200 6:52 am	6 Jul 0200 7:26 am

Compound	Sample		Spike		Dup		Spike		Dup		RPD	QC Limits	
	Conc	Added	Res	Res	Res	Res	Res	Res	Res	Res		RPD	Res
AR1016-1	0.0	1000	950	930	95	93	2	16	55-149				
AR1016-2	0.0	1000	975	961	98	96	1	16	55-149				
AR1016-3	0.0	1000	859	873	86	87	2	16	55-149				
AR1016-4	0.0	1000	938	944	94	94	1	16	55-149				
AR1016-5	0.0	1000	989	1000	99	100	1	16	55-149				
AR1260-1	0.0	1000	1063	1072	106	107	1	16	55-149				
AR1260-2	0.0	1000	1119	1115	112	112	0	16	55-149				
AR1260-3	0.0	1000	1083	1083	108	108	0	16	55-149				
AR1260-4	0.0	1000	1123	1109	112	111	1	16	55-149				
AR1260-5	0.0	1000	1172	1151	117	115	2	16	55-149				

QC BATCH#:C008080S273

REVIEWED/APPROVED BY:

Edgar Morrison
Organics Supervisor

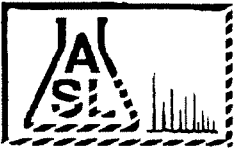
DATE:

7/10/00



Advanced Technology
Laboratories

1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040



AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

Fax

To: Chris

From: Molky

Fax: 818/551-2901

Pages: 4

Company: DTSC

Date: 08-02-00 Time: 2:50pm

Re: _____

CC: _____

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

• **Comments:** Please check the report and call us with any additional request as soon as possible.

FSDF / CMPOA

WEST COAST ANALYTICAL SERVICE, INC.
Analytical Chemists
9840 Alburdis Avenue Santa Fe Springs, CA 90670
562-948-2225 Fax 562-948-5850
<http://www.wcaslab.com>

FAX REPORT

Date: Wednesday, July 12, 2000

Fax No: 323.254.7799

Company: American Scientific Laboratories

Location: Los Angeles

Attn: Molky Brar 8445

REFERENCE: Data - WCAS job number 47795

Here is the data that you requested. Please give me a call if you have any questions.

From: Elena Orozco

Time: __11:40am__

Faxed pages: __2__

West Coast Analytical Service, Inc. is not responsible for fax transmission errors. Unless otherwise noted, this data is preliminary and has not had final quality control review.

Client: American Scientific Laboratories
 Job no.: 47795

Perchlorate by Ion Chromatography

IC Method -

Column: AS16 (4 X 250 mm)
 Guard: AG16 (4 X 50 mm)
 Eluent: 35 mM sodium hydroxide, 1.2 mL/min
 Injection: 1200 microliters (µL)
 Detection: Suppressed Conductivity

Soil samples were extracted in 20 mM NaOH at 1 g/50 mL with sonication for 15 min. The samples were then filtered and analyzed. A matrix spike and a duplicate were prepared for one sample (Batch QC).

To PC-168
PC-178

Sample ID	Parts Per Billion (µg/Kg)
53748	ND
53749	ND

Detection Limit: 100

Date Analyzed: 07-07-00

Quality Control Summary

Sample: Batch QC

Analyte	Sample Result	Duplicate Result	Amount RPD	MS Spiked	MS Result	% Rec MS
Perchlorate	ND	ND	N/A	5000	4770	95
QC Guidelines			20			50 - 150

N/A - Not Applicable

Client: American Scientific Laboratories
Job no.: 47803

Perchlorate by Ion Chromatography

IC Method -

Column: AS16 (4 X 250 mm)
Guard: AG16 (4 X 50 mm)
Eluent: 35 mM sodium hydroxide, 1.2 mL/min
Injection: 1200 microliters (µL)
Detection: Suppressed Conductivity

Soil samples were extracted in 20 mM NaOH at 1 g/50 mL with sonication for 15 min. The samples were then filtered and analyzed. A matrix spike and a duplicate were prepared for one sample.

55003

<u>Sample ID</u>	<u>Parts Per Billion (µg/Kg)</u>
53750	ND
53750 (duplicate)	ND
Detection Limit:	100

Date Analyzed: 07-07-00

Quality Control Summary

Sample: 53750

<u>Analyte</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>Amount RPD</u>	<u>MS Spiked</u>	<u>MS Result</u>	<u>% Rec MS</u>
Perchlorate	ND	ND	N/A	5000	4770	95
QC Guidelines			20			50 - 150

N/A - Not Applicable



AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

Fax

To: Chris Borck

From: Molky

Fax: 818-551-8901

Pages: 8

Company: DTSC

Date: 7/31/00 Time: 6:00 PM

Re: ASL# 8445

CC: _____

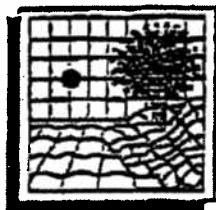
☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

• Comments: Please check the report and call us with any additional request as soon as possible.

CMPD A
FSD/F

FAX

COVER SHEET



Southwest
Laboratory
of
Oklahoma,
Inc.

1700 W. Albany

Broken Arrow,

OK 74012-1421

Office: 918-251-2858

FAX: 918-251-2599

DATE: 7-31-00 # PAGES: 7
(Including Cover)

TO: Molky Brown

FROM: Jayant Shringarpure

COMMENTS:

CMP & A
FSDF

PRIVILEGE AND CONFIDENTIALITY NOTICE

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[AD008-1293-02]

Form 1

Page 10 of 13

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.

53748

PG-14 B (FSDF)

Lab Name: Southwest Lab. of Oklahoma Episode No.: 43475

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 43475.01

Client Name: ASL-CA Sample Wt/Vol: 8.8 g or mL: G

Matrix (aqueous/solid/leachate): SOLID Initial Calibration Date: 07-13-00

Sample Receipt Date: 07-01-00 Instrument ID: Autospec-U1f

Ext. Date: 07-03-00 GC Column: DB-5

Ext. Vol (ul): 20 Inj. Vol (ul): 1 Sample Data Filename: U101199#11

Analysis Date: 26-JUL-00 Time: 17:53 Blank Data Filename: U101170#3

Dilution Factor: 1 Cal. Ver. Data Filename: U101199#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 13.57

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.056	U	*	*	1.25
1,2,3,7,8-PeCDD	*	0.096	U	*	*	1.08
1,2,3,4,7,8-HxCDD	*	0.074	U	*	*	0.99
1,2,3,6,7,8-HxCDD	*	0.071	U	*	*	1.03
1,2,3,7,8,9-HxCDD	0.073	0.070	X	1.47	1.008	1.05
1,2,3,4,6,7,8-HpCDD	2.508	0.133		0.93	1.000	1.03
OCDD	21.965	0.060		0.83	1.000	1.17
2,3,7,8-TCDF	0.252	0.079		0.72	1.002	0.99
1,2,3,7,8-PeCDF	*	0.034	U	*	*	0.87
2,3,4,7,8-PeCDF	*	0.033	U	*	*	0.89
1,2,3,4,7,8-HxCDF	0.174	0.046	X	1.65	1.001	1.28
1,2,3,6,7,8-HxCDF	*	0.046	U	*	*	1.28
1,2,3,7,8,9-HxCDF	*	0.059	U	*	*	1.00
2,3,4,6,7,8-HxCDF	*	0.046	U	*	*	1.28
1,2,3,4,6,7,8-HpCDF	0.375	0.071		1.04	1.000	1.89
1,2,3,4,7,8,9-HpCDF	*	0.099		*	*	1.37
OCDF	0.303	0.077		0.91	1.004	1.31
Total Tetra-Dioxins	*	0.056	U			
Total Penta-Dioxins	*	0.096	U			
Total Hexa-Dioxins	0.692	0.071				
Total Hepta-Dioxins	7.368	0.133				
Total Tetra-Furans	0.670	0.079				
Total Penta-Furans	0.914	0.033				
Total Hexa-Furans	0.199	0.046				
Total Hepta-Furans	0.582	0.071				

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

USEPA, ITD
IDFB

Page 10 of 13

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

EPA SAMPLE NO.

53748

PC-14B

Lab Name: SOUTHWEST LAB. OF OKLAHOMA Episode No.: 43475
Client Name: ASL-CA Lab Sample ID: 43475.01
Matrix (aqueous/solid/leachate): SOLID Sample Wt/Vol: 8.8 g or mL: G
Sample Receipt Date: 07-01-00 Initial Calibration Date: 07-13-00
Ext. Date: 07-03-00 Shift: Instrument ID: Autospec-U1f
Analysis Date: 26-JUL-00 Time: 17:53 GC Column ID: DB-5
Extract Volume (ul): 20.0 Sample Data Filename: U101199#11
Injection Volume (ul): 2.00 Blank Data Filename: U101170#3
Dilution Factor: 1 Cal. Ver. Data Filename: U101199#2
Concentration Units (pg/L or ng/Kg dry weight): ng/Kg * Moisture: 13.57

CONCENTRATION	TEF (1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD *	X 1.0	*
1,2,3,7,8-PeCDD *	X 0.5	*
1,2,3,4,7,8-HxCDD *	X 0.1	*
1,2,3,6,7,8-HxCDD *	X 0.1	*
1,2,3,7,8,9-HxCDD 0.07-	X 0.1	7.28e-03
1,2,3,4,6,7,8-HpCDD 2.51-	X 0.01	2.51e-02
OCDD 21.97	X 0.001	2.20e-02
2,3,7,8-TCDF 0.25-	X 0.1	2.52e-02
1,2,3,7,8-PeCDF *	X 0.05	*
2,3,4,7,8-PeCDF *	X 0.5	*
1,2,3,4,7,8-HxCDF 0.17-	X 0.1	1.74e-02
1,2,3,6,7,8-HxCDF *	X 0.1	*
1,2,3,7,8,9-HxCDF *	X 0.1	*
2,3,4,6,7,8-HxCDF *	X 0.1	*
1,2,3,4,6,7,8-HpCDF 0.37-	X 0.01	3.75e-03
1,2,3,4,7,8,9-HpCDF *	X 0.01	*
OCDF 0.30	X 0.001	3.03e-04

Total: 1.010e-01

- (1) Taken from 'Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update (EPA/625/3-89/016, March 1989.'

Page 10 of 13

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

53748 *PC 16 B*

Lab Name: Southwest Lab. of Oklahoma Episode No.: 43475

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 43475.01

Client Name: ASL-CA Sample Wt/Vol: 8.8 g or mL: G

Matrix (aqueous/solid/leachate): SOLID Initial Calibration Date: 07-13-00

Sample Receipt Date: 07-01-00 Instrument ID: Autospec-Ulf

Ext. Date: 07-03-00 GC Column: DB-5

Ext. Vol (ul): 20 Inj. Vol (ul): 1 Sample Data Filename: U101199#11

Analysis Date: 26-JUL-00 Time: 17:53 Blank Data Filename: U101170#3

Dilution Factor: 1 Cal. Var. Data Filename: U101199#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 13.57

LABELED COMPOUNDS	SPIKE CONC. (pg)	CONCENT. FOUND (pg)	RECOV. %	ION		MEAN RRF
				ABUND. RATIO (2)	RRT (2)	
13C-2,3,7,8-TCDD	1000	747.04	74.70	0.76	1.012	1.08
13C-1,2,3,7,8-PeCDD	1000	861.41	86.14	1.77	1.236	0.86
13C-1,2,3,6,7,8-HxCDD	2500	1777.82	71.11	1.18	0.991	1.02
13C-1,2,3,4,6,7,8-HpCDD	2500	1722.94	68.92	1.08	1.076	0.98
13C-OCDD	5000	4254.73	85.09	0.89	1.160	0.68
13C-2,3,7,8-TCDF	1000	678.24	67.82	0.80	0.968	1.49
13C-1,2,3,7,8-PeCDF	1000	736.55	73.65	1.61	1.185	1.33
13C-1,2,3,4,7,8-HxCDF	2500	1493.26	59.73	0.48	0.966	1.27
13C-1,2,3,4,6,7,8-HpCDF	2500	1580.40	63.22	0.45	1.049	0.95

CLEANUP STANDARD

37Cl-2,3,7,8-TCDD	800	756.82	94.60		1.013	0.99
-------------------	-----	--------	-------	--	-------	------

(1) Contract-required limits for percent recovery are 40+-135%
(section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are
specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

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Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.

53750

Lab Name: Southwest Lab. of Oklahoma Episode No.: 43475

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 43475.02

Client Name: ASL-CA Sample Wt/Vol: 10 g or mL: G

Matrix (aqueous/solid/leachate): SOLID Initial Calibration Date: 07-13-00

Sample Receipt Date: 07-01-00 Instrument ID: Autospec-U1f

Ext. Date: 07-03-00 GC Column: DB-5

Ext. Vol (ul): 20 Inj. Vol (ul): 1 Sample Data Filename: U101199#12

Analysis Date: 26-JUL-00 Time: 18:42 Blank Data Filename: u101170#3

Dilution Factor: 1 Cal. Ver. Data Filename: u101199#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 3.78

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual.	ION ABUND. RATIO (2)	RRT (2)	MEAN RRP
2,3,7,8-TCDD	1.305	0.079		0.66	1.001	1.25
1,2,3,7,8-PeCDD	1.171	0.096		1.76	1.000	1.08
1,2,3,4,7,8-HxCDD	0.618	0.064	x	0.99	0.998	0.99
1,2,3,6,7,8-HxCDD	2.407	0.061		1.32	1.000	1.03
1,2,3,7,8,9-HxCDD	2.779	0.060		1.18	1.009	1.05
1,2,3,4,6,7,8-HpCDD	53.964	0.070		1.07	1.000	1.03
OCDD	472.249	0.067		0.83	1.000	1.17
2,3,7,8-TCDF	13.613	0.155		0.74	1.002	0.99
1,2,3,7,8-PeCDF	3.135	0.115		1.66	1.001	0.87
2,3,4,7,8-PeCDF	5.611	0.112		1.71	1.030	0.89
1,2,3,4,7,8-HxCDF	20.095	0.205		1.39	1.000	1.28
1,2,3,6,7,8-HxCDF	7.783	0.206		1.38	1.003	1.28
1,2,3,7,8,9-HxCDF	2.532	0.264		1.21	1.043	1.00
2,3,4,6,7,8-HxCDF	7.717	0.207		1.23	1.019	1.28
1,2,3,4,6,7,8-HpCDF	56.002	0.227		1.11	1.000	1.89
1,2,3,4,7,8,9-HpCDF	6.253	0.314		1.05	1.036	1.37
OCDF	95.928	0.101		0.89	1.003	1.31
Total Tetra-Dioxins	13.733	0.079				
Total Penta-Dioxins	13.598	0.096				
Total Hexa-Dioxins	26.677	0.061				
Total Hepta-Dioxins	127.105	0.070				
Total Tetra-Furans	72.510	0.155				
Total Penta-Furans	62.760	0.112				
Total Hexa-Furans	82.073	0.206				
Total Hepta-Furans	50.063	0.237				

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

55003
CMPD A

USEPA, ITD
IDFB

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PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

EPA SAMPLE NO.
53750

53053

Lab Name: SOUTHWEST LAB. OF OKLAHOMA Episode No.: 43475
Client Name: ABL-CA Lab Sample ID: 43475.02
Matrix (aqueous/solid/leachate): SOLID Sample Wt/Vol: 10 g or mL: G
Sample Receipt Date: 07-01-00 Initial Calibration Date: 07-13-00
Ext. Date: 07-03-00 Shift: Instrument ID: Autospec-Ulf
Analysis Date: 26-JUL-00 Time: 18:42 GC Column ID: DB-5
Extract Volume(uL): 20.0 Sample Data Filename: U101199#12
Injection Volume(uL): 2.00 Blank Data Filename: u101170#3
Dilution Factor: 1 Cal. Ver. Data Filename: u101199#2
Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 3.78

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	1.30	X 1.0	1.30e+00
1,2,3,7,8-PeCDD	1.17	X 0.5	5.85e-01
1,2,3,4,7,8-HxCDD	0.62	X 0.1	6.18e-02
1,2,3,6,7,8-HxCDD	2.41	X 0.1	2.41e-01
1,2,3,7,8,9-HxCDD	2.78	X 0.1	2.78e-01
1,2,3,4,6,7,8-HpCDD	53.96	X 0.01	5.40e-01
OCDD	472.25	X 0.001	4.72e-01
2,3,7,8-TCDF	13.61	X 0.1	1.36e+00
1,2,3,7,8-PeCDF	3.14	X 0.05	1.57e-01
2,3,4,7,8-PeCDF	5.61	X 0.5	2.81e+00
1,2,3,4,7,8-HxCDF	20.09	X 0.1	2.01e+00
1,2,3,6,7,8-HxCDF	7.78	X 0.1	7.78e-01
1,2,3,7,8,9-HxCDF	2.53	X 0.1	2.53e-01
2,3,4,6,7,8-HxCDF	7.72	X 0.1	7.72e-01
1,2,3,4,6,7,8-HpCDF	56.00	X 0.01	5.60e-01
1,2,3,4,7,8,9-HpCDF	6.25	X 0.01	6.25e-02
OCDF	95.93	X 0.001	9.59e-02

Total: 1.234e+01

- (1) Taken from 'Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update(EPA/625/3-89/016, March 1989.'

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

53750

55003

Lab Name: Southwest Lab. of Oklahoma Episode No.: 43475

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 43475.02

Client Name: ASL-CA Sample Wt/Vol: 10 g or mL: G

Matrix (aqueous/solid/leachate): SOLID Initial Calibration Date: 07-13-00

Sample Receipt Date: 07-01-00 Instrument ID: Autospec-UIE

Ext. Date: 07-03-00 GC Column: DB-5

Ext. Vol(ul): 20 Inj. Vol(ul): 1 Sample Data Filename: U101199#12

Analysis Date: 26-JUL-00 Time: 18:42 Blank Data Filename: u101170#3

Dilution Factor: 1 Cal. Ver. Data Filename: u101199#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 3.78

LABELED COMPOUNDS	SPIKE CONC. (pg)	CONCENT. FOUND (pg)	RECOV. %	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
13C-2,3,7,8-TCDD	1000	617.21	61.72	0.76	1.012	1.08
13C-1,2,3,7,8-PeCDD	1000	675.26	67.53	1.77	1.236	0.86
13C-1,2,3,6,7,8-HxCDD	2500	1491.48	59.66	1.21	0.991	1.02
13C-1,2,3,4,6,7,8-HpCDD	2500	1347.05	53.88	1.08	1.076	0.98
13C-OCDD	5000	3219.84	64.40	0.89	1.160	0.68
13C-2,3,7,8-TCDF	1000	524.31	52.43	0.80	0.968	1.49
13C-1,2,3,7,8-PeCDF	1000	600.78	60.08	1.59	1.185	1.33
13C-1,2,3,4,7,8-HxCDF	2500	1276.28	51.05	0.48	0.967	1.27
13C-1,2,3,4,6,7,8-HpCDF	2500	1251.95	50.08	0.44	1.049	0.95

CLEANUP STANDARD

37Cl-2,3,7,8-TCDD 800 727.10 90.89 1.013 0.99

- (1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).
- (2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).



AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

Fax

To: Chris From: Molky

Fax: 818/551-2901 Pages: 5

Company: Dep. of Poxie Subst. Date: 07-12-00 Time: 4:05pm

Re: # 8445 CC: _____

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

• Comments: Please check the report and call us with any additional request as soon as possible.

CMPD A



AMERICAN SCIENTIFIC LABORATORIES, LLC

Environmental Testing Services

ANALYTICAL RESULTS

Ordered By

Department of Toxic Substances Control
10151 Croydon Way
Suite 3
Sacramento, CA 95827-2106

Telephone: (818)551-2199

Attn: Richard McJunkin

Page: 2

Project ID: SANTA SUSANA F.LAB

Project Name:

Site

Chatsworth, CA

Job Number	Order Date	Client
6445	06/29/2000	DTSC

Method: 6010B/7471A, CCR Title 22 Metals

Batch No:

Our Lab ID	53750		
Sample ID	CMPD A "ash"	SJ 003	
Date Sampled	06/28/2000		
Date Extracted	07/06/2000		
Preparation Method			
Date Analyzed	07/06/2000		
Matrix	Soil		
Units	mg/Kg		
Detection Limit Multiplier	1		
Analytes	POL	Results	
AA Metals	0.20	2.51	0.3
Mercury			
ICP Metals	0.50	49.5	8.7
Antimony	0.50	7.84	
Arsenic	0.50	830	162
Barium	0.50	ND	
Beryllium	0.50	3.75	
Cadmium	0.50	101	37.1
Chromium	0.50	22.5	18.4
Cobalt	0.50	303	68.4
Copper	0.25	1,350	19.9
Lead	0.50	3.89	
Molybdenum	0.50	52.6	
Nickel	0.50	ND	
Selenium	0.50	214	1.1
Silver	0.50	ND	
Thallium	0.50	6.89	
Vanadium	0.50	8,500	370
Zinc			

ND - Not Detected at The Detection Limit. MS - Matrix Spike. MSD - Matrix Spike Duplicate. SM - Sample. SMD - Sample Duplicate.

3225 San Fernando Road, Los Angeles, California 90065 • (323) 254-7700. Fax: (323) 254-7799



Page: 3
Project ID: SANTA SUSANA F.LAB
Project Name: _____

Job Number	Order Date	Client
8445	06/29/2000	DTSC

Method: 6010B/7471A, CCR Title 22 Metals
QUALITY CONTROL REPORT

Batch No:	
Analytes	LCS % REC LCS/LCSD % Limit
AA Metals	115 80-120
Mercury	
ICP Metals	90 80-120
Antimony	91 80-120
Arsenic	85 80-120
Barium	93 80-120
Beryllium	91 80-120
Cadmium	91 80-120
Chromium	91 80-120
Cobalt	93 80-120
Copper	92 80-120
Lead	66 80-120
Molybdenum	90 80-120
Nickel	90 80-120
Selenium	84 80-120
Silver	92 80-120
Thallium	69 80-120
Vanadium	94 80-120
Zinc	

ND - Not Detected at The Detection Limit. MS - Matrix Spike. MSD - Matrix Spike Duplicate. SM - Sample. SMD - Sample Duplicate.

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AMERICAN SCIENTIFIC LABORATORIES, LLC

Environmental Testing Services

ANALYTICAL RESULTS

Ordered By

Department of Toxic Substances Control
10151 Croydon Way
Suite 3
Sacramento, CA 95827-2106

Telephone: (818)551-2199

Attn: Richard McJunkin

Page: 4
Project ID: SANTA SUSANA F. LAB
Project Name:

Site

Chatsworth, CA

Job Number	Order Date	Client
8445	06/29/2000	DTSC

Method: 7471A, Mercury (CVAA)

Our Lab ID	53748				
Sample ID	PC-16B				
Date Sampled	06/28/2000				
Date Extracted	07/06/2000				
Preparation Method					
Date Analyzed	07/06/2000				
Matrix	Soil				
Units	mg/kg				
Detection Limit Multiplier	1				
Analytes	POL	Results			
AA Metals					
Mercury	0.20	ND			

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % LIMIT							
AA Metals									
Mercury	115	70-130							

ND - Not Detected at The Detection Limit. MS - Matrix Spike. MSD - Matrix Spike Duplicate. SM - Sample. SMD - Sample Duplicate.

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ent By: West Coast Analytical Service; 5628485850;

Jul-12-00 12:01PM;

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Client: American Scientific Laboratories
Job no.: 47803

Perchlorate by Ion Chromatography

IC Method -

Column: AS16 (4 X 250 mm)
Guard: AG16 (4 X 50 mm)
Eluent: 35 mM sodium hydroxide, 1.2 mL/min
Injection: 1200 microliters (µL)
Detection: Suppressed Conductivity

Soil samples were extracted in 20 mM NaOH at 1 g/50 mL with sonication for 15 min. The samples were then filtered and analyzed. A matrix spike and a duplicate were prepared for one sample.

Sample ID	Parts Per Billion (µg/Kg)
53750 ~ 55003	ND
53750 (duplicate)	ND

Detection Limit: 100

Date Analyzed: 07-07-00

Quality Control Summary

Sample: 53750

Analyte	Sample Duplicate		RPD	Amount Spiked	MS	% Rec
	Result	Result			Result	MS
Perchlorate	ND	ND	N/A	5000	4770	95
QC Guidelines			20			50 - 150

N/A - Not Applicable



AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

Fax

To: Chris Bonds

From: MOLKY

Fax: 818 551-2901

Pages: 16

Company: QTS C

Date: 9/28/00 Time: 12:25 p.m.

Re: ASL # 9040

CC: _____

South west Lab Reports.

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

• Comments: _____

FSDP
CMPD-A

AATS/SWL OK 28-SEP-2000

Page 1

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Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

57091

PLS-29

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44374

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 44374.01

Client Name: ASL-CA Sample Wt/Vol: 10.23 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 05-06-00

Sample Receipt Date: 09-19-00 Instrument ID: Autospec-U1>

Ext. Date: 09-20-00 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U101416#9

Analysis Date: 27-SEP-00 Time: 16:23:05 Blank Data Filename: U101416#3

Dilution Factor: 1 Cal. Ver. Data Filename: U101416#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg * Moisture: 6.26

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual.	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.450	U	*	*	1.25
1,2,3,7,8-PeCDD	*	1.152	U	*	*	1.08
1,2,3,4,7,8-HxCDD	*	1.078	U	*	*	0.99
1,2,3,6,7,8-HxCDD	*	1.032	U	*	*	1.03
1,2,3,7,8,9-HxCDD	*	1.014	U	*	*	1.05
1,2,3,4,6,7,8-HpCDD	*	0.486	U	*	*	1.03
OCDD	1.908	1.069	X	0.60	1.000	1.17
2,3,7,8-TCDF	*	0.425	U	*	*	0.99
1,2,3,7,8-PeCDF	*	0.729	U	*	*	0.87
2,3,4,7,8-PeCDF	*	0.715	U	*	*	0.89
1,2,3,4,7,8-HxCDF	*	0.659	U	*	*	1.28
1,2,3,6,7,8-HxCDF	*	0.662	U	*	*	1.28
1,2,3,7,8,9-HxCDF	*	0.847	U	*	*	1.00
2,3,4,6,7,8-HxCDF	*	0.663	U	*	*	1.28
1,2,3,4,6,7,8-HpCDF	*	0.542	U	*	*	1.89
1,2,3,4,7,8,9-HpCDF	*	0.750	U	*	*	1.37
OCDF	*	0.938	U	*	*	1.31
Total Tetra-Dioxins	*	0.450	U			
Total Penta-Dioxins	*	1.152	U			
Total Hexa-Dioxins	*	1.032	U			
Total Hepta-Dioxins	*	0.486	U			
Total Tetra-Furans	*	0.425	U			
Total Penta-Furans	*	0.715	U			
Total Hexa-Furans	*	0.662	U			
Total Hepta-Furans	*	0.542	U			

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

09/28/2000 14:38 FAX 918 251 2599

SOUTHWEST LAB

0003

AATS/SWL OK

28-SEP-2000

Page 1

USEPA, ITD
IDFB

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PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

EPA SAMPLE NO.

57091

Lab Name: SOUTHWEST LAB. OF OKLAHOMA

Episode No.: 44374

Client Name: ASL-CA

Lab Sample ID: 44374.01

Matrix (aqueous/solid/leachate): solid

Sample Wt/Vol: 10.23 g or mL: g

Sample Receipt Date: 09-19-00

Initial Calibration Date: 05-06-00

Ext. Date: 09-20-00 Shift:

Instrument ID: Autospec-U1

Analysis Date: 27-SEP-00 Time: 16:23:05

GC Column ID: DB-5

Extract Volume(ul): 20.0

Sample Data Filename: U101416#9

Injection Volume(ul): 2.00

Blank Data Filename: U101416#3

Dilution Factor: 1

Cal. Ver. Data Filename: U101416#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg * Moisture: 6.26

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	*	X 0.01	*
OCDD	1.91	X 0.001	1.91e-03
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.001	*

Total: 1.908e-03

(1) Taken from 'Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update(EPA/625/3-89/016, March 1989.'

6/90

AATS/SWL OK

28-SEP-2000

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FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

57091

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44374

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 44374.01

Client Name: ASL-CA Sample Wt/Vol: 10.23 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 05-06-00

Sample Receipt Date: 09-19-00 Instrument ID: Autospec-UL*

Ext. Date: 09-20-00 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U101416#9

Analysis Date: 27-SEP-00 Time: 16:23:05 Blank Data Filename: U101416#3

Dilution Factor: 1 Cal. Ver. Data Filename: U101416#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg * Moisture: 6.26

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	1000	684.04	68.40	0.69	1.012	1.08
13C-1,2,3,7,8-PeCDD	1000	761.20	76.12	1.58	1.261	0.86
13C-1,2,3,6,7,8-HxCDD	2500	1870.25	74.81	1.42	0.991	1.02
13C-1,2,3,4,6,7,8-HpCDD	2500	1609.10	64.36	1.10	1.076	0.98
13C-OCDD	5000	3497.03	69.94	0.85	1.159	0.68
13C-2,3,7,8-TCDF	1000	707.07	70.71	0.73	0.970	1.49
13C-1,2,3,7,8-PeCDF	1000	653.14	65.31	1.60	1.205	1.33
13C-1,2,3,4,7,8-HxCDF	2500	1706.02	68.24	0.54	0.965	1.27
13C-1,2,3,4,6,7,8-HpCDF	2500	1428.35	57.13	0.45	1.050	0.95

CLEANUP STANDARD

37Cl-2,3,7,8-TCDD	800	796.22	99.53		1.014	0.99
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(1) Contract-required limits for percent recovery are 40%-135%
(section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are
specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

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Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

57092

905-31

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44374

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 44374.02

Client Name: ASL-CA Sample Wt/Vol: 10.02 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 05-06-00

Sample Receipt Date: 09-19-00 Instrument ID: Autospec-U1

Ext. Date: 09-20-00 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U101416#10

Analysis Date: 27-SEP-00 Time: 17:12:24 Blank Data Filename: U101416#3

Dilution Factor: 1 Cal. Ver. Data Filename: U101416#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 4.48

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.298	U	*	*	1.25
1,2,3,7,8-PeCDD	*	0.717	U	*	*	1.08
1,2,3,4,7,8-HxCDD	*	0.444	U	*	*	0.99
1,2,3,6,7,8-HxCDD	*	0.425	U	*	*	1.03
1,2,3,7,8,9-HxCDD	*	0.418	U	*	*	1.05
1,2,3,4,6,7,8-HpCDD	*	0.788	U	*	*	1.03
OCDD	*	1.020	U	*	*	1.17
2,3,7,8-TCDF	*	0.241	U	*	*	0.99
1,2,3,7,8-PeCDF	*	0.325	U	*	*	0.87
2,3,4,7,8-PeCDF	*	0.319	U	*	*	0.89
1,2,3,4,7,8-HxCDF	*	0.388	U	*	*	1.28
1,2,3,6,7,8-HxCDF	*	0.390	U	*	*	1.28
1,2,3,7,8,9-HxCDF	*	0.498	U	*	*	1.00
2,3,4,6,7,8-HxCDF	*	0.390	U	*	*	1.28
1,2,3,4,6,7,8-HpCDF	*	0.619	U	*	*	1.89
1,2,3,4,7,8,9-HpCDF	*	0.857	U	*	*	1.37
OCDF	*	1.526	U	*	*	1.31

Total Tetra-Dioxins * 0.298 U

Total Penta-Dioxins * 0.717 U

Total Hexa-Dioxins * 0.425 U

Total Hepta-Dioxins * 0.788 U

Total Tetra-Furans * 0.241 U

Total Penta-Furans * 0.319 U

Total Hexa-Furans * 0.390 U

Total Hepta-Furans * 0.619 U

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value
from second column analysis. B - possible blank contamination.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

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PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

EPA SAMPLE NO.

57092

Lab Name: SOUTHWEST LAB. OF OKLAHOMA

Episode No.: 44374

Client Name: ASL-CA

Lab Sample ID: 44374.02

Matrix (aqueous/solid/leachate): solid

Sample Wt/Vol: 10.02 g or mL: g

Sample Receipt Date: 09-19-00

Initial Calibration Date: 05-06-00

Ext. Date: 09-20-00 Shift:

Instrument ID: Autospec-U1a

Analysis Date: 27-SEP-00 Time: 17:12:24

GC Column ID: DB-5

Extract Volume(ul): 20.0

Sample Data Filename: U101416#10

Injection Volume(ul): 2.00

Blank Data Filename: U101416#3

Dilution Factor: 1

Cal. Ver. Data Filename: U101416#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 4.48

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	*	X 0.01	*
OCDD	*	X 0.001	*
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.001	*

Total: 0.000e+00

(1) Taken from 'Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update(EPA/625/3-89/016, March 1989.'

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FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

57092

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44374

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 44374.02

Client Name: ASL-CA Sample Wt/Vol: 10.02 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 05-06-00

Sample Receipt Date: 09-19-00 Instrument ID: Autospec-U1*

Ext. Date: 09-20-00 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U101416#10

Analysis Date: 27-SEP-00 Time: 17:12:24 Blank Data Filename: U101416#3

Dilution Factor: 1 Cal. Ver. Data Filename: U101416#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 4.48

	SPIKE CONC. (pg)	CONCENT. FOUND (pg)	RECOV. %	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	1000	600.81	60.08	0.71	1.013	1.08
13C-1,2,3,7,8-PeCDD	1000	517.51	51.75	1.62	1.261	0.86
13C-1,2,3,6,7,8-HxCDD	2500	1560.56	62.42	1.42	0.991	1.02
13C-1,2,3,4,6,7,8-HpCDD	2500	1353.84	54.15	1.10	1.076	0.98
13C-OCDD	5000	2838.46	56.77	0.85	1.159	0.68
13C-2,3,7,8-TCDF	1000	626.95	62.69	0.72	0.970	1.49
13C-1,2,3,7,8-PeCDF	1000	468.76	46.88	1.55	1.205	1.33
13C-1,2,3,4,7,8-HxCDF	2500	1326.21	53.05	0.56	0.965	1.27
13C-1,2,3,4,6,7,8-HpCDF	2500	1203.53	48.14	0.47	1.050	0.95

CLEANUP STANDARD

37Cl-2,3,7,8-TCDD	800	657.27	82.16		1.014	0.99
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(1) Contract-required limits for percent recovery are 40%-135%
(section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are
specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290P2

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Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

57093

CAL-100 BE

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44374

Lab Code: SWL Case No.:

SDG No.:

Lab Sample ID: 44374.03

Client Name: ASL-CA

Sample Wt/Vol: 10.36 g or mL: g

Matrix (aqueous/solid/leachate): solid

Initial Calibration Date: 05-06-00

Sample Receipt Date: 09-19-00

Instrument ID: Autospec-UI*

Ext. Date: 09-20-00

GC Column: DB-5

Ext. Vol(ul): 20.0

Inj. Vol(ul): 1.0

Sample Data Filename: U101416#11

Analysis Date: 27-SEP-00 Time: 18:01:42

Blank Data Filename: U101416#3

Dilution Factor: 1

Cal. Ver. Data Filename: U101416#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg

* Moisture: 11.76

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.398	U	*	*	1.25
1,2,3,7,8-PeCDD	*	0.713	U	*	*	1.08
1,2,3,4,7,8-HxCDD	*	0.375	U	*	*	0.99
1,2,3,6,7,8-HxCDD	*	0.359	U	*	*	1.03
1,2,3,7,8,9-HxCDD	*	0.352	U	*	*	1.05
1,2,3,4,6,7,8-HpCDD	*	0.690	U	*	*	1.03
OCDD	301.101	0.620		0.81	1.000	1.17
2,3,7,8-TCDF	*	0.341	U	*	*	0.99
1,2,3,7,8-PeCDF	*	0.405	U	*	*	0.87
2,3,4,7,8-PeCDF	*	0.398	U	*	*	0.89
1,2,3,4,7,8-HxCDF	*	0.264	U	*	*	1.28
1,2,3,6,7,8-HxCDF	*	0.265	U	*	*	1.28
1,2,3,7,8,9-HxCDF	*	0.339	U	*	*	1.00
2,3,4,6,7,8-HxCDF	*	0.265	U	*	*	1.28
1,2,3,4,6,7,8-HpCDF	*	0.414	U	*	*	1.89
1,2,3,4,7,8,9-HpCDF	*	0.572	U	*	*	1.37
OCDF	*	0.900	U	*	*	1.31
Total Tetra-Dioxins	*	0.398	U			
Total Penta-Dioxins	*	0.713	U			
Total Hexa-Dioxins	*	0.359	U			
Total Hepta-Dioxins	*	0.690	U			
Total Tetra-Furans	*	0.341	U			
Total Penta-Furans	*	0.398	U			
Total Hexa-Furans	0.995	0.265				
Total Hepta-Furans	*	0.414	U			

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

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FORM 2

CLIENT ID.

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

57093

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44374

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 44374.03

Client Name: ASL-CA

Sample Wt/Vol: 10.36 g or mL: g

Matrix (aqueous/solid/leachate): solid

Initial Calibration Date: 05-06-00

Sample Receipt Date: 09-19-00

Instrument ID: Autospec-U1

Ext. Date: 09-20-00

GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0

Sample Data Filename: U101416#11

Analysis Date: 27-SEP-00 Time: 18:01:42

Blank Data Filename: U101416#3

Dilution Factor: 1

Cal. Ver. Data Filename: U101416#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 11.76

	SPIKE CONC. (pg)	CONCENT. FOUND (pg)	RECOV. %	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	1000	701.87	70.19	0.67	1.012	1.08
13C-1,2,3,7,8-PeCDD	1000	745.26	74.53	1.58	1.261	0.86
13C-1,2,3,6,7,8-HxCDD	2500	1854.01	74.16	1.39	0.991	1.02
13C-1,2,3,4,6,7,8-HpCDD	2500	1754.18	70.17	1.08	1.076	0.98
13C-OCDD	5000	3937.12	78.74	0.85	1.159	0.68
13C-2,3,7,8-TCDF	1000	716.37	71.64	0.73	0.970	1.49
13C-1,2,3,7,8-PeCDF	1000	663.20	66.32	1.58	1.205	1.33
13C-1,2,3,4,7,8-HxCDF	2500	1523.13	60.93	0.56	0.965	1.27
13C-1,2,3,4,6,7,8-HpCDF	2500	1580.07	63.20	0.47	1.050	0.95
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	800	774.99	96.87		1.014	0.99

(1) Contract-required limits for percent recovery are 40%-135%
(section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are
specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

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Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

57094

55605

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44374

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 44374.04

Client Name: ASL-CA Sample Wt/Vol: 10.24 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 05-06-00

Sample Receipt Date: 09-19-00 Instrument ID: Autospec-U1*

Ext. Date: 09-20-00 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U101416#12

Analysis Date: 27-SEP-00 Time: 18:51:00 Blank Data Filename: U101416#3

Dilution Factor: 1 Cal. Ver. Data Filename: U101416#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 3.79

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual.	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.320	U	*	*	1.25
1,2,3,7,8-PeCDD	*	1.306	U	*	*	1.08
1,2,3,4,7,8-HxCDD	0.788	0.589	X	2.21	0.998	0.99
1,2,3,6,7,8-HxCDD	5.760	0.564	X	1.45	1.000	1.03
1,2,3,7,8,9-HxCDD	1.661	0.554	X	1.89	1.009	1.05
1,2,3,4,6,7,8-HpCDD	166.970	0.484		1.11	1.000	1.03
OCDD	2566.725	0.590		0.80	1.000	1.17
2,3,7,8-TCDF	*	0.660	U	*	*	0.99
1,2,3,7,8-PeCDF	*	0.550	U	*	*	0.87
2,3,4,7,8-PeCDF	*	0.539	U	*	*	0.89
1,2,3,4,7,8-HxCDF	3.999	1.290	X	1.44	1.000	1.28
1,2,3,6,7,8-HxCDF	*	1.296	U	*	*	1.28
1,2,3,7,8,9-HxCDF	*	1.657	U	*	*	1.00
2,3,4,6,7,8-HxCDF	*	1.298	U	*	*	1.28
1,2,3,4,6,7,8-HpCDF	19.557	2.000		1.17	1.000	1.89
1,2,3,4,7,8,9-HpCDF	*	2.767	U	*	*	1.37
OCDF	46.893	1.142		0.90	1.003	1.31
Total Tetra-Dioxins	*	0.320	U			
Total Penta-Dioxins	*	1.306	U			
Total Hexa-Dioxins	14.123	0.564				
Total Hepta-Dioxins	166.970	0.484				
Total Tetra-Furans	1.270	0.660				
Total Penta-Furans	8.613	0.539				
Total Hexa-Furans	13.233	1.296				
Total Hepta-Furans	22.729	2.000				

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

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SOUTHWEST LAB

U12

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PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank ResultsEPA SAMPLE NO.
57094

Lab Name: SOUTHWEST LAB. OF OKLAHOMA

Episode No.: 44374

Client Name: ASL-CA

Lab Sample ID: 44374.04

Matrix (aqueous/solid/leachate): solid

Sample Wt/Vol: 10.24 g or mL: g

Sample Receipt Date: 09-19-00

Initial Calibration Date: 05-06-00

Ext. Date: 09-20-00 Shift:

Instrument ID: Autospec-U1>

Analysis Date: 27-SEP-00 Time: 18:51:00

GC Column ID: DB-5

Extract Volume(ul): 20.0

Sample Data Filename: U101416#12

Injection Volume(ul): 2.00

Blank Data Filename: U101416#3

Dilution Factor: 1

Cal. Ver. Data Filename: U101416#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 3.79

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	0.79	X 0.1	7.88e-02
1,2,3,6,7,8-HxCDD	5.76	X 0.1	5.76e-01
1,2,3,7,8,9-HxCDD	1.66	X 0.1	1.66e-01
1,2,3,4,6,7,8-HpCDD	166.97	X 0.01	1.67e+00
OCDD	2566.72	X 0.001	2.57e+00
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	4.00	X 0.1	4.00e-01
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	19.56	X 0.01	1.96e-01
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	46.89	X 0.001	4.69e-02

Total: 5.700e+00

(1) Taken from 'Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update(EPA/625/3-89/016, March 1989.'

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FORM 2

CLIENT ID.

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

57094

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44374
 Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 44374.04
 Client Name: ASL-CA Sample Wt/Vol: 10.24 g or mL: g
 Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 05-06-00
 Sample Receipt Date: 09-19-00 Instrument ID: Autospec-U1
 Ext. Date: 09-20-00 GC Column: DB-5
 Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U101416#12
 Analysis Date: 27-SEP-00 Time: 18:51:00 Blank Data Filename: U101416#3
 Dilution Factor: 1 Cal. Ver. Data Filename: U101416#2
 Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 3.79

	SPIKE CONC. (pg)	CONCENT. FOUND (pg)	RECOV. %	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	1000	731.31	73.13	0.76	1.013	1.08
13C-1,2,3,7,8-PeCDD	1000	702.11	70.21	1.63	1.261	0.86
13C-1,2,3,6,7,8-HxCDD	2500	1778.11	71.12	1.36	0.991	1.02
13C-1,2,3,4,6,7,8-HpCDD	2500	1711.89	68.48	1.09	1.076	0.98
13C-OCDD	5000	4334.52	86.69	0.85	1.159	0.68
13C-2,3,7,8-TCDF	1000	726.96	72.70	0.74	0.969	1.49
13C-1,2,3,7,8-PeCDF	1000	640.52	64.05	1.52	1.205	1.33
13C-1,2,3,4,7,8-HxCDF	2500	1573.11	62.92	0.56	0.965	1.27
13C-1,2,3,4,6,7,8-HpCDF	2500	1564.95	62.60	0.47	1.050	0.95
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	800	869.68	108.71		1.013	0.99

(1) Contract-required limits for percent recovery are 40%-135%
(section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are
specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

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Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

57095

53606

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44374

Lab Code: SWL Case No.:

SDG No.:

Lab Sample ID: 44374.05

Client Name: ASL-CA

Sample Wt/Vol: 10.19 g or mL: g

Matrix (aqueous/solid/leachate): solid

Initial Calibration Date: 05-06-00

Sample Receipt Date: 09-19-00

Instrument ID: Autospec-U1

Ext. Date: 09-20-00

GC Column: DB-5

Ext. Vol(ul): 20.0

Inj. Vol(ul): 1.0

Sample Data Filename: U101416#13

Analysis Date: 27-SEP-00 Time: 19:40:18

Blank Data Filename: U101416#3

Dilution Factor: 1

Cal. Ver. Data Filename: U101416#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg

% Moisture: 1.82

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.388	U	*	*	1.25
1,2,3,7,8-PeCDD	*	1.039	U	*	*	1.08
1,2,3,4,7,8-HxCDD	*	0.650	U	*	*	0.99
1,2,3,6,7,8-HxCDD	4.692	0.622	X	1.43	1.000	1.03
1,2,3,7,8,9-HxCDD	1.743	0.611		1.34	1.009	1.05
1,2,3,4,6,7,8-HpCDD	162.975	1.130		1.10	1.000	1.03
OCDD	1896.722	0.745		0.81	1.000	1.17
2,3,7,8-TCDF	1.753	0.464	C	0.77	1.001	0.99
1,2,3,7,8-PeCDF	*	0.652	U	*	*	0.87
2,3,4,7,8-PeCDF	*	0.640	U	*	*	0.89
1,2,3,4,7,8-HxCDF	4.022	1.203	I	1.20	1.000	1.28
1,2,3,6,7,8-HxCDF	*	1.209	U	*	*	1.28
1,2,3,7,8,9-HxCDF	*	1.546	U	*	*	1.00
2,3,4,6,7,8-HxCDF	*	1.211	U	*	*	1.28
1,2,3,4,6,7,8-HpCDF	18.395	1.500		1.14	1.000	1.89
1,2,3,4,7,8,9-HpCDF	*	2.076	U	*	*	1.37
OCDF	35.449	1.437		0.95	1.003	1.31
Total Tetra-Dioxins	*	0.388	U			
Total Penta-Dioxins	*	1.039	U			
Total Hexa-Dioxins	15.407	0.622				
Total Hepta-Dioxins	162.975	1.130				
Total Tetra-Furans	8.045	0.464				
Total Penta-Furans	5.950	0.640				
Total Hexa-Furans	12.099	1.209				
Total Hepta-Furans	21.356	1.500				

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

09/28/2000 14:45 FAX 918 251 2399

SOUTHWEST LAB

09/28/2000

AATS/SWL OK 28-SEP-2000

Page 1

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USEPA, ITD
1DFB

EPA SAMPLE NO.

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

57095

Lab Name: SOUTHWEST LAB. OF OKLAHOMA

Episode No.: 44374

Client Name: ASL-CA

Lab Sample ID: 44374.05

Matrix (aqueous/solid/leachate): solid

Sample Wt/Vol: 10.19 g or mL: g

Sample Receipt Date: 09-19-00

Initial Calibration Date: 05-06-00

Ext. Date: 09-20-00 Shift:

Instrument ID: Autospec-U1

Analysis Date: 27-SEP-00 Time: 19:40:18

GC Column ID: DB-5

Extract Volume(ul): 20.0

Sample Data Filename: U101416#13

Injection Volume(ul): 2.00

Blank Data Filename: U101416#3

Dilution Factor: 1

Cal. Ver. Data Filename: U101416#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 1.82

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	4.69	X 0.1	4.69e-01
1,2,3,7,8,9-HxCDD	1.74	X 0.1	1.74e-01
1,2,3,4,6,7,8-HpCDD	162.98	X 0.01	1.63e+00
OCDD	1896.72	X 0.001	1.90e+00
2,3,7,8-TCDF	1.75	X 0.1	1.75e-01
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	4.02	X 0.1	4.02e-01
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	18.40	X 0.01	1.84e-01
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	35.45	X 0.001	3.54e-02
			Total: 4.967e+00

- (1) Taken from 'Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update (EPA/625/3-89/016, March 1989.'

09/28/2000 14:45 FAX 918 251 2599

AATS/SWL OK

28-SEP-2000

Page 1

Page 12 of 13

FORM 2

CLIENT ID.

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

57095

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44374

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 44374.05

Client Name: ASL-CA

Sample Wt/Vol: 10.19 g or mL: g

Matrix (aqueous/solid/leachate): solid

Initial Calibration Date: 05-06-00

Sample Receipt Date: 09-19-00

Instrument ID: Autospec-U1*

Ext. Date: 09-20-00

GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0

Sample Data Filename: U101416#13

Analysis Date: 27-SEP-00 Time: 19:40:18

Blank Data Filename: U101416#3

Dilution Factor: 1

Cal. Ver. Data Filename: U101416#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 1.82

	SPIKE CONC. (pg)	CONCENT. FOUND (pg)	RECOV. %	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	1000	652.67	65.27	0.67	1.012	1.08
13C-1,2,3,7,8-PeCDD	1000	648.47	64.85	1.61	1.261	0.86
13C-1,2,3,6,7,8-HxCDD	2500	1723.62	68.94	1.38	0.991	1.02
13C-1,2,3,4,6,7,8-HpCDD	2500	1485.04	59.40	1.12	1.076	0.98
13C-OCDD	5000	3398.66	67.97	0.87	1.159	0.68
13C-2,3,7,8-TCDF	1000	692.83	69.28	0.72	0.969	1.49
13C-1,2,3,7,8-PeCDF	1000	577.10	57.71	1.55	1.205	1.33
13C-1,2,3,4,7,8-HxCDF	2500	1481.00	59.24	0.54	0.965	1.27
13C-1,2,3,4,6,7,8-HpCDF	2500	1430.91	57.24	0.46	1.050	0.95
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	800	898.52	112.31		1.014	0.99

(1) Contract-required limits for percent recovery are 40%-135%
(section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are
specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl-2378-TCDD (cleanup standard).

8290F2



AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

Fax

To: Chris Bonds

From: Molky

Fax: 818 551-2901

Pages: 7

Company: DTSC

Date: 9/25/00 Time: 3:40pm

Re: ASL # 9040

CC: _____

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

• Comments: Please check the report and call us with any additional request as soon as possible.

Duplicate?
F5DF + CMPO-A
SVOCs + PCBs



*Advanced Technology
Laboratories*

Advanced Technology Laboratories, Inc.
1510 E. 33rd St.
Signal Hill, CA 90807
(562) 989-4045 Phone
(562) 989-4040 Fax

FACSIMILE TRANSMITTAL

To: MOLLY BRAR

Total Pages (incl. cover):

Company: ASL

From: PACHELLE

Subject: RESULTS

Phone:

Comments: ☒ Urgent

☐ As requested

☐ Please respond

Message:

RESULTS FOR PROT. # 9040. THANKS

This message is intended for the use of the individual or entity to which it is addressed. This may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the address above. Thank you.

Client: American Scientific Laboratories
 Attn: Melky Brar

Page 1 of 2

Client's Project: 9040
 Date Received: 09/18/00
 Matrix: Soil
 Units: µg/kg
 Extraction Method: 3550A

PCS-29 PCS-31

55405

55406

EPA Method 8270C

EPA Method 8270C															
Lab No.:		Method Blank		46733-001		46733-002		46733-003		46733-004		T.C.S.			
Client Sample ID.:		---		57091		57092		57094		57095		---			
Date Sampled:		---		09/15/00		09/15/00		09/15/00		09/15/00		---			
QC Batch #:		5008270S255		5008270S255		5008270S255		5008270S255		5008270S255		5008270S255			
Date Extracted:		09/18/00		09/18/00		09/18/00		09/18/00		09/18/00		09/18/00			
Date Analyzed:		09/19/00		09/19/00		09/19/00		09/19/00		09/19/00		09/19/00			
Analyst Initials:		MH		MH		MH		MH		MH		MH			
Dilution Factor:		1		1		1		1		1		1			
ANALYTE		MDL	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results	Limits	%Rec	
1	Phenol	330	330	ND	330	ND	330	ND	330	ND	330	ND	30-130	87	
2	bis (2-Chloroethyl) ether	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	123	
3	2-Chlorophenol	330	330	ND	330	ND	330	ND	330	ND	330	ND	30-130	87	
4	1,2-Dichlorobenzene	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	75	
5	1,4-Dichlorobenzene	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	81	
6	Benzyl Alcohol	660	660	ND	660	ND	660	ND	660	ND	660	ND	40-130	81	
7	1,2-Dichlorobenzene	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	69	
8	2-Methylphenol	330	330	ND	330	ND	330	ND	330	ND	330	ND	30-130	102	
9	bis(2-Chloroisopropyl) ether	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	99	
10	p-Nitroso-di-n-propylamine	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	117	
11	4-Methylphenol	330	330	ND	330	ND	330	ND	330	ND	330	ND	30-130	111	
12	Hexachlorocyclopentadiene	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	84	
13	Nitrobenzene	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	90	
14	Isophorone	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	23	
15	2-Nitrophenol	330	330	ND	330	ND	330	ND	330	ND	330	ND	30-130	26	
16	2,4-Dimethylphenol	330	330	ND	330	ND	330	ND	330	ND	330	ND	30-130	20	
17	bis(2-Chloroethoxy)methane	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	93	
18	2,4-Dichlorophenol	1700	1700	ND	1700	ND	1700	ND	1700	ND	1700	ND	30-130	87	
19	Benzoic Acid	1700	1700	ND	1700	ND	1700	ND	1700	ND	1700	ND	35-140	49	
20	1,2,4-Trichlorobenzene	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	93	
21	Naphthalene	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	87	
22	4-Chloroaniline	660	660	ND	660	ND	660	ND	660	ND	660	ND	30-130	81	
23	Hexachlorobutadiene	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	102	
24	4-Chloro-3-methylphenol	660	660	ND	660	ND	660	ND	660	ND	660	ND	30-130	96	
25	2-Methylnaphthalene	330	330	ND	330	ND	330	ND	330	ND	330	ND	30-130	108	
26	Hexachlorocyclopentadiene	660	660	ND	660	ND	660	ND	660	ND	660	ND	35-140	93	
27	2,4,6-Trichlorophenol	330	330	ND	330	ND	330	ND	330	ND	330	ND	30-130	129	
28	2,4,5-Trichlorophenol	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	93	
29	2-Chloronaphthalene	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	102	
30	2-Nitroaniline	1700	1700	ND	1700	ND	1700	ND	1700	ND	1700	ND	35-140	96	
31	Dimethylnitrobenzene	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	105	
32	Acenaphthylene	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	96	
33	2,6-Dinitrophenol	330	330	ND	330	ND	330	ND	330	ND	330	ND	35-140	96	
34	3-Nitroaniline	1700	1700	ND	1700	ND	1700	ND	1700	ND	1700	ND	35-140	105	
MDL = Method Detection Limit															

MDL = Method Detection Limit
 ND = Not Detected (Below DLR)
 DLR = MDL x Dilution Factor
 NA = Not Analyzed

The cover letter is an integral part of this analytical report.



Advanced Technology
 Laboratories

1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Client:
Attn:

American Scientific Laboratories
Molky Bar

Client's Project:

9040

Date Received:

09/18/00

Matrix:

Soil

Units:

µg/kg

Extraction Method:

3550B

FAX NO. 5628884040

Page 2 of 2

EPA Method 8270C

Lab No.:		Method Blank		46733-001		46733-002		46733-003		46733-004		LCS	
Client Sample I.D.:		---		57091		57092		57094		57095		---	
ANALYTE		MDL	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results	% Rec
Acenaphthene		330	330	ND	330	ND	330	ND	330	ND	330	ND	
2,4-Dinitrophenol		1700	1700	ND	1700	ND	1700	ND	1700	ND	1700	ND	90
Dibenzofuran		330	330	ND	330	ND	330	ND	330	ND	330	ND	120
4-Nitrophenol		1700	1700	ND	1700	ND	1700	ND	1700	ND	1700	ND	87
2,4-Dinitrotoluene		330	330	ND	330	ND	330	ND	330	ND	330	ND	87
Fluorene		330	330	ND	330	ND	330	ND	330	ND	330	ND	81
Diethylphthalate		330	330	ND	330	ND	330	ND	330	ND	330	ND	84
4-Chlorophenyl-phenyl ether		330	330	ND	330	ND	330	ND	330	ND	330	ND	90
4-Nitroaniline		1700	1700	ND	1700	ND	1700	ND	1700	ND	1700	ND	102
4,6-Dinitro-2-methylphenol		1700	1700	ND	1700	ND	1700	ND	1700	ND	1700	ND	138
N-Nitrosodibenzylamine		330	330	ND	330	ND	330	ND	330	ND	330	ND	117
4-Bromophenyl-phenyl ether		330	330	ND	330	ND	330	ND	330	ND	330	ND	123
Hexachlorobenzene		330	330	ND	330	ND	330	ND	330	ND	330	ND	108
Fenachlorophenol		1700	1700	ND	1700	ND	1700	ND	1700	ND	1700	ND	84
Phenanthrene		330	330	ND	330	ND	330	ND	330	ND	330	ND	123
Anthracene		330	330	ND	330	ND	330	ND	330	ND	330	ND	108
Di-n-butylphthalate		330	330	ND	330	ND	330	ND	330	ND	330	ND	108
Fluoranthene		330	330	ND	330	ND	330	ND	330	ND	330	ND	108
Pyrene		330	330	ND	330	ND	330	ND	330	ND	330	ND	108
Nonylbenzylphthalate		330	330	ND	330	ND	330	ND	330	ND	330	ND	96
Benz[a]anthracene		330	330	ND	330	ND	330	ND	330	ND	330	ND	117
3,3'-Dichlorobenzidine		660	660	ND	660	ND	660	ND	660	ND	660	ND	111
Chrysene		330	330	ND	330	ND	330	ND	330	ND	330	ND	122
bis(2-Ethylhexyl)phthalate		330	330	ND	330	ND	330	ND	330	ND	330	ND	117
Di-n-octylphthalate		330	330	ND	330	ND	330	ND	330	ND	330	ND	102
Benz[a]fluoranthene		330	330	ND	330	ND	330	ND	330	ND	330	ND	105
Benz[a]fluoranthene		330	330	ND	330	ND	330	ND	330	ND	330	ND	114
Benz[a]pyrene		330	330	ND	330	ND	330	ND	330	ND	330	ND	69
Indeno[1,2,3-cd]pyrene		330	330	ND	330	ND	330	ND	330	ND	330	ND	106
N-Benz[a,h]anthracene		330	330	ND	330	ND	330	ND	330	ND	330	ND	105
Benz[a,g,h]perylene		330	330	ND	330	ND	330	ND	330	ND	330	ND	99

Surrogate Recovery		% Rec	Limit	Surrogate Recovery		% Rec	Limit	Surrogate Recovery		% Rec	Limit	Surrogate Recovery		% Rec	Limit
2-Fluorophenol		57	25-121	Phenol-d6		60	24-113	1-Chlorophenol-d5		57	24-113	1,2-Dichlorobenzene-d6		73	20-130
Phenol-d6		60	24-113	1-Chlorophenol-d5		57	24-113	1,2-Dichlorobenzene-d6		73	20-130	Nitrobenzene-d5		71	23-120
1-Chlorophenol-d5		57	24-113	1,2-Dichlorobenzene-d6		73	20-130	Nitrobenzene-d5		71	23-120	2-Fluorobiphenyl		67	30-115
1,2-Dichlorobenzene-d6		73	20-130	Nitrobenzene-d5		71	23-120	2-Fluorobiphenyl		67	30-115	2,4,6-Trichlorophenol		65	19-122
Nitrobenzene-d5		71	23-120	2-Fluorobiphenyl		67	30-115	2,4,6-Trichlorophenol		65	19-122	Ternphenyl-d14		71	18-137
2-Fluorobiphenyl		67	30-115	2,4,6-Trichlorophenol		65	19-122	Ternphenyl-d14		71	18-137				
2,4,6-Trichlorophenol		65	19-122	Ternphenyl-d14		71	18-137								
Ternphenyl-d14		71	18-137												

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL x Dilution Factor
NA = Not Analyzed

Approved/Reviewed By:

Edgar Morrison
Organics Supervisor

Date:

9/22/00

The cover letter is an integral part of this analytical report.



Advanced Technology
Laboratories

1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Spike Recovery and RPD Summary Report - SOIL (µg/kg)

Method : D:\HPCHEM\1\METHODS\S000914.M (RTE Integrator)
 Title : EPA 8270C Advanced Technology Laboratory
 Last Update : Fri Sep 15 13:10:45 2000
 Response via : Initial Calibration

Non-Spiked Sample: S0919003.D

	Spike Sample	Spike Duplicate Sample
File ID :	S0919005.D	S0919006.D
Sample :	,MBLK-1441,MS,S008270S255,SOIL,	,MBLK-1441,MSD,S008270S255,SOIL,
Acq Time:	19 Sep 2000 10:54 am	19 Sep 2000 11:32 am

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	Limits % Rec
Phenol	0.0	100	63	66	63	66	5	35	26- 90
2-Chlorophenol	0.0	100	65	69	65	69	6	50	25-102
1,4-Dichlorobenzene	0.0	50	36	36	71	73	2	27	28-104
N-Nitroso-di-n-propy	0.0	50	45	45	89	91	2	38	41-126
1,2,4-Trichlorobenze	0.0	50	40	40	81	81	0	23	38-107
4-Chloro-3-methylphe	0.0	100	78	80	78	80	2	33	26-103
Acenaphthene	0.0	50	43	44	85	88	4	19	31-137
4-Nitrophenol	0.0	100	74	70	74	70	5	50	11-114
2,4-Dinitrotoluene	0.0	50	47	50	95#	99#	4	47	28- 89
Pentachlorophenol	0.0	100	86	88	86	88	2	47	17-109
Pyrene	0.0	50	47	48	94	97	3	36	35-142

- Fails Limit Check. Does not meet QC requirements. Batch is validated by the LCS. The LCS meets all QC requirements.

QCBATCH#S008270S255

Reviewed / Approved by:

Edgar Morrison
 Organic Supervisor

Date: 9/20/00



Advanced Technology
 Laboratories

1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Client: American Scientific Laboratories
Attn: Moly Bray

Client's Project:	9048
Date Received:	09/18/00
Extraction Method:	3510B
Matrix:	Soil
Unit(s):	116/Lg

KFA Method B012

Lab No.:	Method Blank	46733-983	46733-984	LC5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													</
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Surrogate		% Rec.	Limit	Surrogate Recovery					
		% Rec.	Limit	% Rec.	Limit	% Rec.	Limit	% Rec.	Limit
Tetrachloro-m-xylene		70	30-150	102	30-150	103	30-150	68	30-150
Dibenz(h,i)phenyl		88	30-150	99	30-150	97	30-150	86	30-150

NY - Not Spilled

MDL - Method Detection Limit
ND - Not Detected (Below MDL)
D.R. - MDL X Dilution Factor
NA - Not Analyzed

Reviewed/Approved By:

Date: 09.22.00

Edgar Morrison
Organics Supervisor

The curve below is an integral part of this analytical report.



Advanced Technology
Laboratories

1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Spike Recovery and RPD Summary Report - SOIL (ug/Kg)

Method : C:\HPCHEM\1\METHODS\16600821.M (Chemstation Integrator)
 Title : 8080/608 PCB 1660
 Last Update : Fri Sep 15 12:31:51 2000
 Response via : Initial Calibration

Non-Spiked Sample: H0918009.D

Spike Sample	Spike Duplicate Sample
File ID : H0918011.D	
Sample : 000918BLKS1,MS,	H0918012.D
Acq Time: 18 Sep 2000 10:54 pm	000918BLKS1,MSD, 18 Sep 2000 11:20 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
AROCLOR 1016-1	0.0	1000	705	704	71	70	0	50	50-150
AROCLOR 1016-2	0.0	1000	705	768	70	77	9	50	50-150
AROCLOR 1016-3	0.0	1000	775	803	78	80	4	50	50-150
AROCLOR 1016-4	0.0	1000	771	788	77	79	2	50	50-150
AROCLOR 1016-5	0.0	1000	801	827	80	83	3	50	50-150
AROCLOR 1260-1	0.0	1000	1035	1033	103	103	0	50	50-150
AROCLOR 1260-2	0.0	1000	1107	1093	111	109	1	50	50-150
AROCLOR 1260-3	0.0	1000	1108	1120	111	112	1	50	50-150
AROCLOR 1260-4	0.0	1000	1080	1118	108	112	3	50	50-150
AROCLOR 1260-5	0.0	1000	1145	1181	115	118	3	50	50-150

QC BATCH #:H008080S359

REVIEWED/APPROVED BY:

Edgar Morrison

Edgar Morrison
Organics Supervisor

DATE: 09-19-00

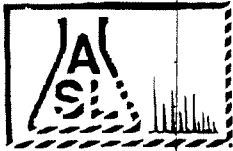


Advanced Technology
Laboratories

1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

CHAIN OF CUSTODY RECORD

- TAT starts 8 a.m. following day if samples received after 5 p.m.



AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

Fax

To: Chris Bonds

From: Molky

Fax: 818 551-2901

Pages: 8

Company: D.T.S.C.

Date: 9/20/00 Time: 3:03 p.m.

Re: ASL # 9040

CC: _____

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

• Comments: Please check the report and call us with any additional request as soon as possible.

CHMS - pls. disregard previous fax for 8270, + 8082

F S D F

[Handwritten signature]

~~ES~~
SUOLS + PCBs

PLS-31

EPA Method 8082

Surrogate Recovery							
Surrogate	%Rec.	Limits	%Rec.	Limits	%Rec.	Limits	
Tetramethyl-n-ylene	70	30-150	103	30-150	68	30-150	
Dibenzodibenzophenyl	88	30-150	94	30-150	86	30-150	

The cover letter is an integral part of this analytical report



Spike Recovery and RPD Summary Report - SOIL (ug/Kg)

Method : C:\HPCHEM\1\METHODS\16600821.M (Chemstation Integrator)
 Title : 8080/608 PCB 1660
 Last Update : Fri Sep 15 12:31:51 2000
 Response via : Initial Calibration

Non-Spiked Sample: H0918009.D

Spike Sample	Spike Duplicate Sample
File ID : H0918011.D	H0918012.D
Sample : 000918BLKS1,MS,	000918BLKS1,MSD,
Acq Time: 18 Sep 2000 10:54 pm	18 Sep 2000 11:20 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
AROCLOR 1016-1	0.0	1000	705	704	71	70	0	50	50-150
AROCLOR 1016-2	0.0	1000	705	768	70	77	9	50	50-150
AROCLOR 1016-3	0.0	1000	775	803	78	80	4	50	50-150
AROCLOR 1016-4	0.0	1000	771	788	77	79	2	50	50-150
AROCLOR 1016-5	0.0	1000	801	827	80	83	3	50	50-150
AROCLOR 1260-1	0.0	1000	1035	1033	103	103	0	50	50-150
AROCLOR 1260-2	0.0	1000	1107	1093	111	109	1	50	50-150
AROCLOR 1260-3	0.0	1000	1108	1120	111	112	1	50	50-150
AROCLOR 1260-4	0.0	1000	1080	1118	108	112	3	50	50-150
AROCLOR 1260-5	0.0	1000	1145	1181	115	118	3	50	50-150

QC BATCH #:H008080S359

REVIEWED/APPROVED BY: Edgar Morrison DATE: 09-19-00
 Edgar Morrison
 Organics Supervisor



Client:
Attn:American Scientific Laboratories
Molky BrarClient's Project:
Date Received:
Matrix:
Units:
Extraction Method:9040
09/18/00
Soil
µg/kg
3550B

EPA Method 8270C

Lab No.:	Method Blank	46733-001	46733-002				
Client Sample I.D.:	-	57091	57092				
Date Sampled:	-	09/15/00	09/15/00				
QC Batch #:	80082708255	80082708255	80082708255				
Date Extracted:	09/18/00	09/18/00	09/18/00				
Date Analyzed:	09/19/00	09/19/00	09/19/00				
Analyst Initials:	MH	MH	MTI				
Dilution Factor:	1	1	1				
ANALYTE	MDL	DLR	Results	DLR	Results	DLR	Results
Phenol	330	330	ND	330	ND	330	ND
bis(2-Chloroethyl)ether	330	330	ND	330	ND	330	ND
2-Chlorophenol	330	330	ND	330	ND	330	ND
1,3-Dichlorobenzene	330	330	ND	330	ND	330	ND
1,4-Dichlorobenzene	330	330	ND	330	ND	330	ND
Benzyl Alcohol	660	660	ND	660	ND	660	ND
1,2-Dichlorobenzene	330	330	ND	330	ND	330	ND
2-Methylphenol	330	330	ND	330	ND	330	ND
bis(2-chloroisopropyl)ether	330	330	ND	330	ND	330	ND
n-Nitroso-di-n-propylamine	330	330	ND	330	ND	330	ND
4-Methylphenol	330	330	ND	330	ND	330	ND
Hexachloroethane	330	330	ND	330	ND	330	ND
Nitrobenzene	330	330	ND	330	ND	330	ND
Isophorone	330	330	ND	330	ND	330	ND
2-Nitrophenol	330	330	ND	330	ND	330	ND
2,4-Dimethylphenol	330	330	ND	330	ND	330	ND
bis(2-Chloroethoxy)methane	330	330	ND	330	ND	330	ND
2,4-Dichlorophenol	1700	1700	ND	1700	ND	1700	ND
Benzoic Acid	1700	1700	ND	1700	ND	1700	ND
1,2,4-Trichlorobenzene	330	330	ND	330	ND	330	ND
Naphthalene	330	330	ND	330	ND	330	ND
4-Chloronitrobenzene	660	660	ND	660	ND	660	ND
Hexachlorobutadiene	330	330	ND	330	ND	330	ND
4-Chloro-3-methylphenol	660	660	ND	660	ND	660	ND
2-Methylnaphthalene	330	330	ND	330	ND	330	ND
Hexachlorocyclopentadiene	660	660	ND	660	ND	660	ND
2,4,6-Trichlorophenol	330	330	ND	330	ND	330	ND
2,4,5-Trichlorophenol	330	330	ND	330	ND	330	ND
2-Chloronaphthalene	330	330	ND	330	ND	330	ND
2-Nitroaniline	1700	1700	ND	1700	ND	1700	ND
Dimethylphthalate	330	330	ND	330	ND	330	ND
Acenaphthylene	330	330	ND	330	ND	330	ND
2,6-Dinitrotoluene	330	330	ND	330	ND	330	ND
3-Nitroaniline	1700	1700	ND	1700	ND	1700	ND

MDL = Method Detection Limit
 ND = Not Detected (Below DLR)
 DLR = MDL x Dilution Factor
 NA = Not Analyzed

The cover letter is an integral part of the analytical report.



Client:
Altin:American Scientific Laboratories
Molky BrarClient's Project:
Date Received:
Matrix:
Units:
Extraction Method:9040
09/18/00
Soil
µg/kg
3550B

EPA Method 8270C

Lab No.:		Method Blank		46733-001		46733-002	
Client Sample I.D.:		--		57091		57092	
ANALYTE	MDL	DLR	Results	DLR	Results	DLR	Results
Acenaphthone	330	330	ND	330	ND	330	ND
2,4-Dinitrophenol	1700	1700	ND	1700	ND	1700	ND
Dibenzofuran	330	330	ND	330	ND	330	ND
4-Nitrophenol	1700	1700	ND	1700	ND	1700	ND
2,4-Dinitrotoluene	330	330	ND	330	ND	330	ND
Fluorene	330	330	ND	330	ND	330	ND
Diethylphthalate	330	330	ND	330	ND	330	ND
4-Chlorophenyl-phenyl ether	330	330	ND	330	ND	330	ND
4-Nitroaniline	1700	1700	ND	1700	ND	1700	ND
4,6-Dinitro-2-methylphenol	1700	1700	ND	1700	ND	1700	ND
n-Nitrosodiphenylamine	330	330	ND	330	ND	330	ND
4-Bromophenyl-phenyl ether	330	330	ND	330	ND	330	ND
Hexachlorobenzene	330	330	ND	330	ND	330	ND
Pentachlorobenzene	1700	1700	ND	1700	ND	1700	ND
Phenanthrene	330	330	ND	330	ND	330	ND
Anthracene	330	330	ND	330	ND	330	ND
Di-n-butylphthalate	330	330	ND	330	ND	330	ND
Fluoranthene	330	330	ND	330	ND	330	ND
Pyrene	330	330	ND	330	ND	330	ND
Butylbenzylphthalate	330	330	ND	330	ND	330	ND
Benzofluoranthene	330	330	ND	330	ND	330	ND
3,3'-Dichlorobenzidine	660	660	ND	660	ND	660	ND
Chrysene	330	330	ND	330	ND	330	ND
bis(2-Ethylhexyl)phthalate	330	330	ND	330	ND	330	ND
Di-n-octylphthalate	330	330	ND	330	ND	330	ND
Benzo[b]fluoranthene	330	330	ND	330	ND	330	ND
Benzo[k]fluoranthene	330	330	ND	330	ND	330	ND
Benzo[a]pyrene	330	330	ND	330	ND	330	ND
Indeno[1,2,3-cd]pyrene	330	330	ND	330	ND	330	ND
Dibenz[a,h]anthracene	330	330	ND	330	ND	330	ND
Benzo[g,h,i]perylene	330	330	ND	330	ND	330	ND

Surrogate Recovery

Surrogate Recovery	%Rec.	Limits	%Rec.	Limits	%Rec.	Limits
2-Fluorophenol	57	25-121	60	25-121	45	25-121
Phenol-d6	60	24-113	64	24-113	49	24-113
2-Chlorophenol-d5	57	20-130	60	20-130	46	20-130
1,2-Dichlorobenzene-d4	73	20-130	76	20-130	53	20-130
Nitrobenzene-d5	71	23-120	75	23-120	53	23-120
2-Fluorodiphenyl	67	30-115	73	30-115	59	30-115
2,3,6-Tribromonaphthalene	65	19-122	70	19-122	67	19-122
Terphenyl-d14	71	18-137	66	18-137	68	18-137

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL x Dilution Factor
NA = Not Analyzed

Approved/Reviewed By:

Edgar Morrison

Organics Supervisor

Date:

9/19/00



The cover letter is an integral part of this analytical report.

Advanced Technology

1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Spike Recovery and RPD Summary Report - SOIL ($\mu\text{g/kg}$)

Method : D:\HPCHEM\1\METHODS\S000914.M (RTE Integrator)
 Title : EPA 8270C Advanced Technology Laboratory
 Last Update : Fri Sep 15 13:10:45 2000
 Response via : Initial Calibration

Non-Spiked Sample: S0919003.D

Spike Sample	Spike Duplicate Sample
File ID : S0919005.D	S0919006.D
Sample : ,MBLK-1441,MS,S008270S255,SOIL,	,MBLK-1441,MSD,S008270S255,SOIL,
Acq Time: 19 Sep 2000 10:54 am	19 Sep 2000 11:32 am

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits	
								RPD	% Rec
Phenol	0.0	100	63	66	63	66	5	35	26- 90
2-Chlorophenol	0.0	100	65	69	65	69	6	50	25-102
1,4-Dichlorobenzene	0.0	50	36	36	71	73	2	27	28-104
N-Nitroso-di-n-propy	0.0	50	45	45	89	91	2	38	41-126
1,2,4-Trichlorobenze	0.0	50	40	40	81	81	0	23	38-107
4-Chloro-3-methylphe	0.0	100	78	80	78	80	2	33	26-103
Acenaphthene	0.0	50	43	44	85	88	4	19	31-137
4-Nitrophenol	0.0	100	74	70	74	70	5	50	11-114
2,4-Dinitrotoluene	0.0	50	47	50	95#	99#	4	47	28- 89
Pentachlorophenol	0.0	100	86	88	86	88	2	47	17-109
Pyrene	0.0	50	47	48	94	97	3	36	35-142

- Fails Limit Check. Does not meet QC requirements. Batch is validated by the LCS. The LCS meets all QC requirements.

QCBATCH#S008270S255

Reviewed / Approved by:


 Edgar Morrison
 Organic Supervisor

Date: 9/19/00

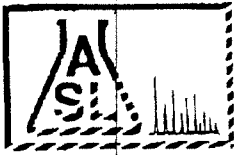


CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY:

Advanced Technology Laboratories 1510 E. 33rd Street Signal Hill, CA 90807 (562) 989-4045 • FAX (562) 989-4040		Sample Condition Upon Receipt 1. CHILLED ☐ Y ☐ N ☐ 4. SEALED ☐ Y ☐ N ☐ 2. HEADSPACE (NOM) ☐ Y ☐ N ☐ 5. OF SP/SMATCH COC ☐ Y ☐ N ☐ 3. CONTAINER/INTACT ☐ Y ☐ N ☐ 6. PRESERVED ☐ Y ☐ N ☐	
Method of Transport Walk-in ☐ Courier ☐ UPS ☐ FED. EXP. ☐ ATL ☐		P.O.#: Date: _____ Time: _____ Logged By: _____	
Client: <i>American Scientific Lab</i> Address: <i>3225 San Fernando Rd</i> City: <i>L.A.</i> State: <i>CA</i> Zip: <i>90055</i> TEL: <i>(323) 254-7700</i> FAX: <i>(323) 254-7799</i>		Project #: <i>9040</i> Date: <i>9/18/00</i> Time: <i>3:20</i> Received By: <i>[Signature]</i> Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____	
Bill To: Attn: _____ Co: _____ Address: _____ City: _____ State: _____ Zip: _____		Special Instructions/Comments: <i>ASAP. Please Fax results</i>	
Sample Report To: Attn: _____ Co: _____ Address: _____ City: _____ State: _____ Zip: _____		Circle Appropriate Matrix AIR ☒ ☐ ☐ ☐ ☐ WATER ☐ ☐ ☐ ☐ ☐ SOLID ☐ ☐ ☐ ☐ ☐ OTHER ☐ ☐ ☐ ☐ ☐	
Unless otherwise requested, all samples will be disposed 45 days after receipt. Sample Analysis/Disposal: ☐ Laboratory Standard ☐ Other ☐ Return To: _____ * \$10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL		Remarks: RTIME ☒ ☐ ☐ ☐ ☐ WIP ☐ ☐ ☐ ☐ ☐ NAVY ☐ ☐ ☐ ☐ ☐ CT ☐ ☐ ☐ ☐ ☐ OTHER ☐ ☐ ☐ ☐ ☐	
LAB USE ONLY: Batch #: _____ Lab No. _____		Sample Description Sample I.D. _____ Date _____ Time _____	
40733-001 57091 2 57092 3 57094 4 57095		TAT: A= _____ B= _____ C= _____ D= _____ E= _____ Container Types: T=Tube V=VOA L=Liter P=Plastic M=Metal Preservatives: H=HCl N=HNO ₃ S=H ₂ SO ₄ C=4°C Z=Zn(Ac) O=NaOH T=Na ₂ SiO ₃	

DISTRIBUTION: White with report, Yellow to folder, Pink to submitter.



AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

Fax

To: Chris Bonds

From: Molky

Fax: 818-551-2901

Pages: 2

Company: DTSC

Date: 9/29/00 Time: 12:00 PM

Re: _____

CC: _____

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

• Comments: Please check the report and call us with any additional request as soon as possible.

FSDP
PLS-29 + -31 results

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

Submitted to:

ASL

Attention: Molky Brar

3225 San Fernando Road

Los Angeles CA 90065

Tel: (323)254-7700 Fax: (323)254-7799

APCL Analytical Report

Service ID #: 801-004783

Received: 09/19/00

Collected by:

Extracted: N/A

Collected on: 09/15/00

Tested: 09/28/00

Reported: 09/29/00

Sample Description: Soil

Project Description: 9040

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	Analysis Result	
				57091	57092
				00-04783-1	00-04783-2
Perchlorate (a)	M300.0	µg/kg	20	ND	ND

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

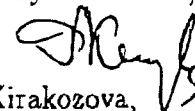
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

(a) Analyzed on a 1:5 water extract.

Respectfully submitted,



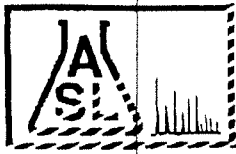
Regina Kirakozova,
Assistant Lab Manager
Applied P & Ch Laboratory

ug/kg = ppb

✓ < 20 ppb

00.020.

< 0.020 ppm



AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

Fax

To: CHAS BONDS

From: Molky

Fax: 818-551-2901

Pages: 3

Company: DTSC

Date: 9/28/00 Time:

Re: 8270 Sims

CC:

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

• **Comments:** Please check the report and call us with any additional request as soon as possible.

FSOP
CWD-A

Spike Recovery and RPD Summary Report - Soil ($\mu\text{g}/\text{kg}$)

Method : D:\HPCHEM\1\METHODS\SSIM0831.M (RTE Integrator)
Title : EPA 8270C Advanced Technology Laboratory
Last Update : Fri Sep 01 10:44:46 2000
Response via : Initial Calibration

Non-Spiked Sample: S0928003.D

Spike Sample	Spike Duplicate Sample
File ID : S0928005.D	S0928006.D
Sample : ,MB-1497,MS,S008270S264,	,MB-1497,MSD,S008270S264,
Acq Time: 28 Sep 2000 11:12 am	28 Sep 2000 11:58 am

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	% Rec
Acenaphthene	0.0	17	13	11	78	66	17	19	31-137
Pyrene	0.0	17	16	16	96	96	0	36	35-142

QCBATCH#S008270S264

Reviewed / Approved by:


Edgar Morrison
Organic Supervisor

Date:

9/29/00



Client:
Attn:American Scientific Laboratories
Molky Brar

Client's Project:

9040

Date Received:

09/23/00

Matrix:

Soil

Units:

µg/kg

Extraction Method:

3550

Method 8270SIM

Extraction Method:		Method 8270SIM									
Lab No.:		Method Blank		46907-001		46907-002		46907-003		46907-004	
Client Sample I.D.:		-		57091		57092		57094		57095	
Date Sampled:		-		09/15/00		09/15/00		09/15/00		09/15/00	
QC Batch #:		S008270S264		S008270S264		S008270S264		S008270S264		S008270S264	
Date Extracted:		09/27/00		09/27/00		09/27/00		09/27/00		09/27/00	
Date Analyzed:		09/28/00		09/28/00		09/28/00		09/28/00		09/28/00	
Analyst Initials:		MH		MH		MH		MH		MH	
Dilution Factor:		1		1		1		10*		1	
ANALYTE	MDL	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results
Naphthalene	10	10	ND	10	ND	10	ND	100	ND	10	ND
2-Methylnaphthalene	10	10	ND	10	ND	10	ND	100	ND	10	ND
Acenaphthylene	10	10	ND	10	ND	10	ND	100	ND	10	ND
Acenaphthene	10	10	ND	10	ND	10	ND	100	ND	10	ND
Fluorene	10	10	ND	10	ND	10	ND	100	ND	10	ND
Phenanthrene	10	10	ND	10	ND	10	13	100	ND	10	ND
Anthracene	10	10	ND	10	ND	10	ND	100	ND	10	ND
Fluoranthene	10	10	ND	10	ND	10	27	100	ND	10	16
Pyrene	10	10	ND	10	ND	10	30	100	ND	10	36
Benzo[a]anthracene	10	10	ND	10	ND	10	12	100	ND	10	ND
Chrysene	10	10	ND	10	ND	10	11	100	ND	10	ND
Benzo[b]fluoranthene	10	10	ND	10	ND	10	13	100	ND	10	21
Benzo[k]fluoranthene	10	10	ND	10	ND	10	ND	100	ND	10	ND
Benzo[a]pyrene	10	10	ND	10	ND	10	ND	100	ND	10	ND
Indeno[1,2,3-cd]pyrene	10	10	ND	10	ND	10	ND	100	ND	10	ND
Dibenz[a,h]anthracene	10	10	ND	10	ND	10	ND	100	ND	10	19
Benzo[g,h,i]perylene	10	10	ND	10	ND	10	ND	100	ND	10	19

Surrogate Recovery

Surrogate Recovery	%Rec.	Limits	%Rec.	Limits	%Rec.	Limits	%Rec.	Limits	%Rec.	Limits
1,2-Dichlorobenzene-d4	69	20-130	57	20-130	60	20-130	39	20-130	53	20-130
Nitrobenzene-d5	88	21-120	53	23-120	98	23-120	89	23-120	55	23-120
2-Fluorobiphenyl	74	30-115	71	30-115	65	30-115	44	30-115	57	30-115
Terphenyl-d14	99	18-137	87	18-137	88	18-137	76	18-137	75	18-137

MDL = Method Detection Limit

ND = Not Detected (Below DLR)

DLR = MDL x Dilution Factor

NA = Not Analyzed

* = Dilution due to matrix interference.

Approved/Reviewed By:

Edgar Morrison

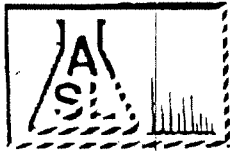
Organics Supervisor

Date:

9/29/00

The cover letter is an integral part of this analytical report.





AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

Fax

To: Chris Bonds

From: Molky

Fax: (818) 551-2901

Pages: 8

Company: DTSC

Date: 10/6/00 Time: 2:35pm

Re: ASL # 9166

CC: _____

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

• Comments: Please check the report and call us with any additional request as soon as possible.

FSDP



***Advanced Technology
Laboratories***

1510 E 33rd St.,
Signal Hill CA 90807
(562) 989-4045 Phone
(562) 989-4040 Fax

Fax Transmittal Sheet

To: ASL

From: Rachelle

RE: Results for 047012

Message:

Enclosed are the results for your Project 9166 – Work Order 047012. Thank you very much for your business and we are looking forward to be of service to ASL.

This message is intended for the use of the individual or entity to which it is addressed. This may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the above address. Thank you.

Advanced Technology Laboratories

Print Date: 10/5/00

CLIENT: American Scientific Laboratories
 Lab Order: 047012
 Project: 9166
 Lab ID: 047012-001A

Client Sample ID: 57741

DTSC A

Collection Date: 9/27/00

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PCB BY GC/ECD						
EPA 8082						
BatchID: 1538						
PrepDate: 10/3/00						
Analyst: IG						
Aroclor 1016	ND	33		µg/Kg	1	10/3/00
Aroclor 1221	ND	67		µg/Kg	1	10/3/00
Aroclor 1232	ND	33		µg/Kg	1	10/3/00
Aroclor 1242	ND	33		µg/Kg	1	10/3/00
Aroclor 1248	ND	33		µg/Kg	1	10/3/00
Aroclor 1254	ND	33		µg/Kg	1	10/3/00
Aroclor 1260	41	33		µg/Kg	1	10/3/00
Aroclor 1282	ND	33		µg/Kg	1	10/3/00
Aroclor 1288	ND	33		µg/Kg	1	10/3/00
Surr: Decachlorobiphenyl	103	30-150		%REC	1	10/3/00
Surr: Tetrachloro-m-xylene	97.9	30-150	J	%REC	1	10/3/00

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 R - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 M - Not Monitored. Highly Reactive

Initials: 



Advanced Technology
 Laboratories

1510 F. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: 10/5/00

CLIENT: American Scientific Laboratories

Client Sample ID: 57742

D7SC B

Lab Order: 047012

Project: 9166

Collection Date: 9/27/00

Lab ID: 047012-002A

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
----------	--------	-------	------	-------	----	---------------

PCB BY GC/ECD

EPA 8082

BatchID: 1538

PrepDate: 10/3/00

Analyst: IG

Aroclor 1016	ND	33		µg/Kg	1	10/3/00
Aroclor 1221	ND	67		µg/Kg	1	10/3/00
Aroclor 1232	ND	33		µg/Kg	1	10/3/00
Aroclor 1242	ND	33		µg/Kg	1	10/3/00
Aroclor 1248	ND	33		µg/Kg	1	10/3/00
Aroclor 1254	ND	33		µg/Kg	1	10/3/00
Aroclor 1260	ND	33		µg/Kg	1	10/3/00
Aroclor 1262	ND	33		µg/Kg	1	10/3/00
Aroclor 1268	ND	33		µg/Kg	1	10/3/00
Sum: Decachlorobiphenyl	102	30-150		%REC	1	10/3/00
Sum: Tetrachloro-m-xylene	94.9	30-150	J	%REC	1	10/3/00

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analysis detected below quantitation limits
R - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: 

2

Advanced Technology
Laboratories

1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: 10/5/00

CLIENT: American Scientific Laboratories
Lab Order: 047012
Project: 9166
Lab ID: 047012-003A

Client Sample ID: 57743

DTSC C

Collection Date: 9/27/00

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
----------	--------	-------	------	-------	----	---------------

PCB BY GC/ECD

EPA 8082

BatchID: 1538

PrepDate: 10/3/00

Analyst: IG

Aroclor 1016	ND	33		µg/Kg	1	10/3/00
Aroclor 1221	ND	67		µg/Kg	1	10/3/00
Aroclor 1232	ND	33		µg/Kg	1	10/3/00
Aroclor 1242	ND	33		µg/Kg	1	10/3/00
Aroclor 1248	ND	33		µg/Kg	1	10/3/00
Aroclor 1254	ND	33		µg/Kg	1	10/3/00
Aroclor 1260	48	33		µg/Kg	1	10/3/00
Aroclor 1262	ND	33		µg/Kg	1	10/3/00
Aroclor 1268	ND	33		µg/Kg	1	10/3/00
Surr: Decachlorobiphenyl	99.8	30-150		%REC	1	10/3/00
Surr: Tetrachloro-m-xylene	95.9	30-150	J	%REC	1	10/3/00

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: 

3



Advanced Technology
Laboratories

1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040



Advanced Technology Laboratories

Date: 05-Oct-00

CLIENT: American Scientific Laboratories

Work Order: 047012

Project: 9166

QC SUMMARY REPORT

Method Blank

Sample ID	MB-1538	Batch ID: 1538	Test Name PCBs BY GC/ECD				Units µg/Kg		Analysis Date: 10/3/00		Prep Date: 10/3/00	
MBLK												
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aroclor 1016	ND	33										
Aroclor 1221	ND	67										
Aroclor 1232	ND	33										
Aroclor 1242	ND	33										
Aroclor 1248	ND	33										
Aroclor 1254	ND	33										
Aroclor 1260	ND	33										
Aroclor 1262	ND	33										
Aroclor 1268	ND	33										
Surf: Decachlorobiphenyl	30.73	33	33.3	0	92	30	150	0			J	
Surf: Tetrachloro-m-xylene	27.88	33	33.3	0	84	30	150	0			J	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
M - Not Monitored, Highly Reactive

Initials:

1



Advanced Technology Laboratories

Date: 05-Oct-00

CLIENT: American Scientific Laboratories

Work Order: 047012

Project: 9166

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID MB-1538 Batch ID: 1538 Test Name PCBs BY GC/ECD Units µg/Kg Analysis Date: 10/3/00 Prep Date: 10/3/00
MS SeqNo: 54175

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1018	307.4	33	333.3	0	92	50	150	0			
Aroclor 1260	377.6	33	333.3	0	113	50	150	0			
Surr: Decachlorobiphenyl	32.67	33	33.3	0	98	30	150	0			J
Surr: Tetrachloro-m-xylene	31.1	33	33.3	0	93	30	150	0			J

Sample ID MB-1538 Batch ID: 1538 Test Name PCBs BY GC/ECD Units µg/Kg Analysis Date: 10/3/00 Prep Date: 10/3/00
MSD SeqNo: 54175

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	308.7	33	333.3	0	92	50	150	307.4	0	50	
Aroclor 1260	380	33	333.3	0	114	50	150	377.6	1	50	
Surr: Decachlorobiphenyl	32.46	33	33.3	0	97	30	150	0	0	0	J
Surr: Tetrachloro-m-xylene	30.24	33	33.3	0	91	30	150	0	0	0	J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method BlankS - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
M - Not Monitored, Highly ReactiveInitials:

1

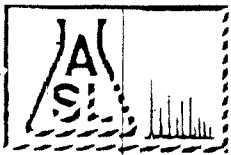
CHAIN OF CUSTODY RECORD

Pg 1 of 1

FOR LABORATORY USE ONLY:		Sample Condition Upon Receipt	
Method of Transport		Y ☐ NO ☐ 4. SEALED	
Walk-In ☐		Y ☐ NO ☐	
Courier ☐		Y ☐ NO ☐	
UPS ☐		Y ☐ NO ☐	
FED. EXP. ☐		Y ☐ NO ☐	
ATL ☐		Y ☐ NO ☐	
P.O. #:		1. CHILLED	
Logged By: _____ Date: _____ Time: _____		2. HEADSPACE (VDA) Y ☐ NO ☐ 5. # OF SKLS MATCH COC Y ☐ NO ☐	
Address: 3225 San Fernando Rd		3. CONTAINER INTACT Y ☐ NO ☐ 6. PRESERVED Y ☐ NO ☐	
City: _____ State: _____ Zip: _____		TEL: (323) 254-7700	
FAX: (323) 254-7729			
Project Name: Project #: 9166			
Sampler: _____			
Received by: (Signature and Printed Name) _____ Date: 9/29/00 Time: _____			
Received by: (Signature and Printed Name) _____ Date: _____ Time: _____			
Received by: (Signature and Printed Name) _____ Date: _____ Time: _____			
Special Instructions/Comments: Please Fax results by 10/5/00.			
Send Report To:		Specs: Instructions/Comments:	
Alt: _____			
Cor: _____			
Address: _____			
City: _____ State: _____ Zip: _____			
Client or Add Analyst(s) Requested:		CIRCLE APPROPRIATE MATRIX	
801/802 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)		WATER - SOLVENT - LIQUID	
803/804 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)		AIR - FILTER	
805/806 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)		WASTE - FILTER	
807/808 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)		DRINKING WATER	
809/810 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)		CONTAINER (s)	
811/812 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)		TAT #	
813/814 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)		Type	
815/816 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)		E i	
817/818 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
819/820 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
821/822 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
823/824 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
825/826 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
827/828 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
829/830 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
831/832 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
833/834 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
835/836 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
837/838 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
839/840 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
841/842 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
843/844 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
845/846 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
847/848 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
849/850 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
851/852 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
853/854 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
855/856 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
857/858 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
859/860 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
861/862 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
863/864 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
865/866 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
867/868 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
869/870 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
871/872 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
873/874 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
875/876 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
877/878 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
879/880 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
881/882 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
883/884 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
885/886 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
887/888 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
889/890 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
891/892 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
893/894 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
895/896 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
897/898 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
899/900 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
901/902 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
903/904 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
905/906 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
907/908 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
909/910 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
911/912 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
913/914 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
915/916 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
917/918 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
919/920 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
921/922 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
923/924 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
925/926 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
927/928 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
929/930 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
931/932 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
933/934 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
935/936 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
937/938 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
939/940 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
941/942 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
943/944 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
945/946 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
947/948 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
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971/972 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
973/974 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
975/976 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
977/978 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
979/980 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
981/982 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
983/984 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
985/986 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
987/988 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
989/990 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
991/992 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
993/994 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
995/996 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
997/998 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			
999/1000 (Pb/Cd/Cr/Cu/Fe/Mn/Mo/Ni/Pb/Sr/Zn)			

- TAT starts 8 a.m. following day if samples received after 5 p.m.
 - TAT: A= Overnight 5-24 hr B= Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays
 Container Types: T=Tube V=VOA L=Liter P=Pin J=Jar B=Tedlar G=Glass P=Plastic M=Metal
 Preservatives: H=Hd N=HNO₃ S=H₂SO₄ C=4°C Z=Zn(Ac) O=NaOH T=Na₂S₂O₃

DISTRIBUTION: White with report, Yellow to folder, Pink to submitter.



AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

Fax

To: Chris Bonds

From: Molky

Fax: 818 551-2901

Pages: 2

Company: DTSC

Date: 10/6/00 Time: 3:50pm

Re: ASL #9166
APCL Report

CC: _____

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

• Comments: Please check the report and call us with any additional request as soon as possible.

FSDF

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

Submitted to:

ASL

Attention: Molky Brar

3225 San Fernando Road

Los Angeles CA 90065

Tel: (323) 254-7700 Fax: (323) 254-7799

APCL Analytical Report

Service ID #: 801-004975

Received: 09/29/00

Collected by:

Extracted: N/A

Collected on: 09/27/00

Tested: 10/05/00

Reported: 10/06/00

Sample Description: Soil

Project Description: Job # 9065

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	Analysis Result		
				57741	57742	57743
				00-04975-1	00-04975-2	00-04975-3
Perchlorate (u)	M300.0	mg/kg	20	ND	ND	ND

PQL: Practical Quantitation Limit.

MDL: Method Detection Limit.

CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit.

"-": Analysis is not required.

J: Reported between PQL and MDL.

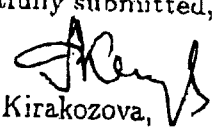
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

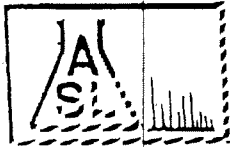
(u) Analyzed on a 1:5 water extract.

mg/kg = ppm

20 ppm

Respectfully submitted,


 Regina Kirakozova,
 Assistant Lab Manager
 Applied P & Ch Laboratory



AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

Fax

To: Chris Bonds

From: Molky

Fax: 818 551-2901

Pages: 4

Company: DTSC

Date: 10/9/00 Time: 1:07 pm

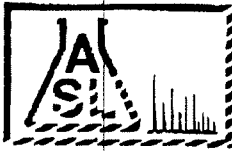
Re: ASL # 9166
APCL to ASL Reports

CC: _____

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• Comments: Please check the report and call us with any additional request as soon as possible.

F SDF



AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

Ordered By

Department of Toxic Substance Control
10151 Croydon Way Suite 3
Sacramento, CA 95827-2106

Number of Pages 2

Date Received 09/28/2000

Date Reported 10/09/2000

Telephone (818) 551-2199
Attn Richard McJunkin

Job Number	Ordered	Client
9166	09/28/2000	DTSC

Project ID: SSFL
Project Name:
Site: Chatsworth, CA

Enclosed are the results of analyses on 3 soil samples analyzed as specified on attached chain of custody.

Amolk MOLKY Brar
Laboratory Manager

Rojert G. Araghi
Laboratory Director

American Scientific Laboratories, LLC (ASL) accepts sample materials from clients for analysis with the assumption that all of the information provided to ASL verbally or in writing by our clients (and/or their agents), regarding samples being submitted to ASL, is complete and accurate. ASL accepts all samples subject to the following conditions:

- 1) ASL is not responsible for verifying any client-provided information regarding any samples submitted to the laboratory.
- 2) ASL is not responsible for any consequences resulting from any inaccuracies, omissions, or misrepresentations contained in client-provided information regarding samples submitted to the laboratory.



AMERICAN SCIENTIFIC LABORATORIES, LLC

Environmental Testing Services

ANALYTICAL RESULTS

Ordered By
Site

Department of Toxic Substance Control
10151 Croydon Way
Suite 3
Sacramento, CA 95827-2106

Chatsworth, CA

Telephone: (818)551-2199

Attn: Richard McJunkin

Page: 2

Project ID: SSFL

Project Name:

Job Number	Order Date	Client
9166	09/28/2000	DTSC

Method: 7471A, Mercury (CVAA)

Our Lab I.D.	57741	57742	57743		
Sample ID	DTSC-A	DTSC-B	DTSC-C		
Date Sampled	09/27/2000	09/27/2000	09/27/2000		
Date Extracted	10/03/2000	10/03/2000	10/03/2000		
Preparation Method					
Date Analyzed	10/03/2000	10/03/2000	10/03/2000		
Matrix	Soil	Soil	Soil		
Units	mg/kg	mg/kg	mg/kg		
Detection Limit Multiplier	1	1	1		
Analytes	PQL	Results	Results	Results	
AA Metals					
Mercury	0.20	ND	ND	ND	

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit							
AA Metals									
Mercury	100	70-130							

ND - Not Detected at The Detection Limit. MS - Matrix Spike. MSD - Matrix Spike Duplicate. SM - Sample. SMD - Sample Duplicate.

3225 San Fernando Road, Los Angeles, California 90065 • (323) 254-7700, Fax: (323) 254-7799

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1528 Fax: (909) 590-1498

Submitted to:

ASL

Attention: Molky Brar

3225 San Fernando Road

Los Angeles CA 90065

Tel: (323)254-7700 Fax: (323)254-7799

APCL Analytical Report

Service ID #: 801-004975

Received: 09/29/00

Collected by:

Extracted: N/A

Collected on: 09/27/00

Tested: 10/05/00

Reported: 10/06/00

Sample Description: Soil

Project Description: Job # 9065

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	Analysis Result		
				57741	57742	57743
				00-04975-1	00-04975-2	00-04975-3
Perchlorate (a)	M300.0	mg/kg	20	ND	ND	ND

PQL: Practical Quantitation Limit.

MDL: Method Detection Limit.

CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit.

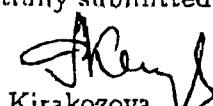
"-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlabeled DFs are 1.0

(a) Analyzed on a 1:5 water extract.

Respectfully submitted,


Regina Kirakozova,
Assistant Lab Manager
Applied P & Ch Laboratory



AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

Fax

To: Chris Bonds

From: Molky

Fax: 818 551-2901

Pages: 11

Company: DTSC

Date: 10/17/00 Time: 6:02 p.m.

Re: ASL #9166

CC: _____

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

• Comments: Please check the report and call us with any additional request as soon as possible.

FSDF

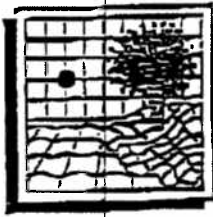
DTSC-A → C samples

Page 4

10/17/2000 09:27 FAX 918 251 2599

SOUTHWEST LAB

001



**Southwest
Laboratory
of
Oklahoma,
Inc.**

1700 W. Albany

Broken Arrow,

OK 74012-1421

Office: 918-251-2858

FAX: 918-251-2599

DATE: 10-17-00 # PAGES: 10
(Including Cover)

TO: Mulkey

FROM: Jayant

COMMENTS: Diopir Results for
episode 44524

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(A0006-1293-02)

10/17/2000 09:27 FAX 918 251 2599

SOUTHWEST LAB

0002

Page 4 of 13

Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

57741

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44524

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 44524.01

Client Name: ASL-CA Sample Wt/Vol: 10.17 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 05-06-00

Sample Receipt Date: 09-30-00 Instrument ID: Autospec-Ulf

Ext. Date: 10-02-00 GC Column: DB-5

Ext. Vol(ul): 20 Inj. Vol(ul): 1 Sample Data Filename: U101430#5

Analysis Date: 7-OCT-00 Time: 13:42 Blank Data Filename: U101430#3

Dilution Factor: 1 Cal. Ver. Data Filename: U101430#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 5.63

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.815	U	*	*	1.25
1,2,3,7,8-PeCDD	*	1.691	U	*	*	1.08
1,2,3,4,7,8-HxCDD	*	1.224	U	*	*	0.99
1,2,3,6,7,8-HxCDD	*	1.171	U	*	*	1.03
1,2,3,7,8,9-HxCDD	*	1.151	U	*	*	1.05
1,2,3,4,6,7,8-HpCDD	5.987	0.830		1.02	1.001	1.03
OCDD	60.452	1.017	B	0.78	1.000	1.17
2,3,7,8-TCDF	*	0.637	U	*	*	0.99
1,2,3,7,8-PeCDF	*	1.267	U	*	*	0.87
2,3,4,7,8-PeCDF	*	1.242	U	*	*	0.89
1,2,3,4,7,8-HxCDF	*	0.557	U	*	*	1.28
1,2,3,6,7,8-HxCDF	*	0.559	U	*	*	1.28
1,2,3,7,8,9-HxCDF	*	0.715	U	*	*	1.00
2,3,4,6,7,8-HxCDF	*	0.560	U	*	*	1.28
1,2,3,4,6,7,8-HpCDF	*	0.570	U	*	*	1.89
1,2,3,4,7,8,9-HpCDF	*	0.788	U	*	*	1.37
OCDF	*	0.562	U	*	*	1.31
Total Tetra-Dioxins	*	0.815	U			
Total Penta-Dioxins	*	1.691	U			
Total Hexa-Dioxins	*	1.171	U			
Total Hepta-Dioxins	12.899	0.830				
Total Tetra-Furans	*	0.637	U			
Total Penta-Furans	*	1.242	U			
Total Hexa-Furans	1.936	0.559				
Total Hepta-Furans	*	0.570	U			

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290P1

10/17/2000 09:27 FAX 918 251 2599

SOUTHWEST LAB

0003

USEPA, ITD
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Page 4 of 13

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

EPA SAMPLE NO.

57741

Lab Name: SOUTHWEST LAB. OF OKLAHOMA Episode No.: 44524
 Client Name: ASL-CA Lab Sample ID: 44524.01
 Matrix (aqueous/solid/leachate): solid Sample Wt/Vol: 10.17 g or mL: g
 sample Receipt Date: 09-30-00 Initial Calibration Date: 05-06-00
 Ext. Date: 10-02-00 Shift: Instrument ID: Autospec-UI6
 Analysis Date: 7-OCT-00 Time: 13:42 GC Column ID: DB-5
 Extract Volume (ul): 20.0 Sample Data Filename: U101430#5
 Injection Volume (ul): 2.00 Blank Data Filename: U101430#3
 Dilution Factor: 1 Cal. Ver. Data Filename: U101430#2
 Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 5.83

	CONCENTRATION	TEF (1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	5.99	X 0.01	5.99e-02
OCDD	60.45	X 0.001	6.05e-02
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.001	*

Total: 1.203e-01

- (1) Taken from 'Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update (EPA/625/3-89/016, March 1989.'

Page 4 of 13

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

57741

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44524
 Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 44524.01
 Client Name: ASL-CA Sample Wt/Vol: 10.17 g or mL: g
 Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 05-06-00
 Sample Receipt Date: 09-30-00 Instrument ID: Autospec-Ulf
 Ext. Date: 10-02-00 GC Column: DB-5
 Ext. Vol (ul): 20 Inj. Vol (ul): 1 Sample Data Filename: U101430#5
 Analysis Date: 7-OCT-00 Time: 13:42 Blank Data Filename: U101430#3
 Dilution Factor: 1 Cal. Ver. Data Filename: U101430#2
 Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 5.83

	SPIKE CONC. (pg)	CONCENT. FOUND (pg)	RECOV. %	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	1000	817.35	81.74	0.69	1.012	1.08
13C-1,2,3,7,8-PeCDD	1000	818.63	81.86	1.94	1.273	0.86
13C-1,2,3,6,7,8-HxCDD	2500	1875.84	75.03	1.19	0.991	1.02
13C-1,2,3,4,6,7,8-HpCDD	2500	1715.50	68.62	1.20	1.077	0.98
13C-OCDD	5000	4438.03	88.76	0.87	1.159	0.68
13C-2,3,7,8-TCDF	1000	985.02	98.50	0.77	0.970	1.49
13C-1,2,3,7,8-PeCDF	1000	916.37	91.64	1.62	1.214	1.33
13C-1,2,3,4,7,8-HxCDF	2500	1995.51	79.82	0.52	0.965	1.27
13C-1,2,3,4,6,7,8-HpCDF	2500	1685.58	67.42	0.52	1.051	0.95
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	800	766.87	95.86		1.013	0.99

(1) Contract-required limits for percent recovery are 40%-135%
(section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are
specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

CLIENT ID.

57742

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg ‡ Moisture: 3.46

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.

(2) ERTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

10/17/2000 09:28 FAX 918 251 2599

SOUTHWEST LAB

0006

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Page 5 of 13

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

EPA SAMPLE NO.

57742

Lab Name: SOUTHWEST LAB. OF OKLAHOMA

Episode No.: 44524

Client Name: ASL-CA

Lab Sample ID: 44524.02

Matrix (aqueous/solid/leachate): solid

Sample Wt/Vol: 10.14 g or mL: g

Sample Receipt Date: 09-30-00

Initial Calibration Date: 05-06-00

Ext. Date: 10-02-00 Shift:

Instrument ID: Autospec-Ulf

Analysis Date: 7-OCT-00 Time: 14:31

GC Column ID: DB-5

Extract Volume(ul): 20.0

Sample Data Filename: U101430#6

Injection Volume(ul): 2.00

Blank Data Filename: U101430#3

Dilution Factor: 1

Cal. Ver. Data Filename: U101430#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg * Moisture: 3.46

	CONCENTRATION	TEF (1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	1.29	X 0.01	1.29e-02
OCDD	18.22	X 0.001	1.82e-02
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.001	*

Total: 3.108e-02

- (1) Taken from 'Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update (EPA/625/3-89/016, March 1989.'

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SOUTHWEST LAB

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FORM 2

CLIENT ID.

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

57742

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44524

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 44524.02

Client Name: ASL-CA

Sample Wt/Vol: 10.14 g or mL: g

Matrix (aqueous/solid/leachate): solid

Initial Calibration Date: 05-06-00

Sample Receipt Date: 09-30-00

Instrument ID: Autospec-UIE

Ext. Date: 10-02-00

GC Column: DB-5

Ext. Vol(ul): 20 Inj. Vol(ul): 1

Sample Data Filename: U101430#6

Analysis Date: 7-OCT-00 Time: 14:31

Blank Data Filename: U101430#3

Dilution Factor: 1

Cal. Ver. Data Filename: U101430#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 3.46

	SPIKE	CONCENT.	RECOV.	ION	RRT	MEAN
	CONC. (pg)	FOUND (pg)	%	ABUND. RATIO (2)	(2)	RRF
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	1000	830.01	83.00	0.76	1.012	1.08
13C-1,2,3,7,8-PeCDD	1000	803.18	80.32	1.88	1.273	0.86
13C-1,2,3,6,7,8-HxCDD	2500	1874.23	74.97	1.18	0.991	1.02
13C-1,2,3,4,6,7,8-HpCDD	2500	1899.54	75.98	1.16	1.077	0.98
13C-OCDD	5000	4732.74	94.65	0.88	1.159	0.68
13C-2,3,7,8-TCDF	1000	998.70	99.87	0.80	0.969	1.49
13C-1,2,3,7,8-PeCDF	1000	922.44	92.24	1.59	1.214	1.33
13C-1,2,3,4,7,8-HxCDF	2500	2007.05	80.28	0.50	0.965	1.27
13C-1,2,3,4,6,7,8-HpCDF	2500	1657.36	66.29	0.51	1.052	0.95
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	800	811.70	101.46		1.013	0.99

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

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SOUTHWEST LAB

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Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

57743

Disc-0

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44524

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 44524.03

Client Name: ASL-CA

Sample Wt/Vol: 10.15 g or mL: g

Matrix (aqueous/solid/leachate): solid

Initial Calibration Date: 05-06-00

Sample Receipt Date: 09-30-00

Instrument ID: Autospec-Ulf

Ext. Date: 10-02-00

GC Column: DB-5

Ext. Vol(uL): 20

Inj. Vol(uL): 1

Sample Data Filename: U101430#7

Analysis Date: 7-OCT-00 Time: 15:21

Blank Data Filename: U101430#3

Dilution Factor: 1

Cal. Ver. Data Filename: U101430#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 4.57

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	1.054	U	*	*	1.25
1,2,3,7,8-PeCDD	*	1.453	U	*	*	1.08
1,2,3,4,7,8-HxCDD	*	1.147	U	*	*	0.99
1,2,3,6,7,8-HxCDD	*	1.097	U	*	*	1.03
1,2,3,7,8,9-HxCDD	*	1.078	U	*	*	1.05
1,2,3,4,6,7,8-HpCDD	6.837	0.685		1.11	1.000	1.03
OCDD	69.526	0.837	B	0.79	1.000	1.17
2,3,7,8-TCDF	*	0.672	U	*	*	0.99
1,2,3,7,8-PeCDF	*	1.022	U	*	*	0.87
2,3,4,7,8-PeCDF	*	1.002	U	*	*	0.89
1,2,3,4,7,8-HxCDF	*	0.647	U	*	*	1.28
1,2,3,6,7,8-HxCDF	*	0.650	U	*	*	1.28
1,2,3,7,8,9-HxCDF	*	0.832	U	*	*	1.00
2,3,4,6,7,8-HxCDF	*	0.651	U	*	*	1.28
1,2,3,4,6,7,8-HpCDF	*	0.631	U	*	*	1.89
1,2,3,4,7,8,9-HpCDF	*	0.873	U	*	*	1.37
OCDF	1.163	0.751	X	0.65	1.004	1.31
Total Tetra-Dioxins	*	1.054	U			
Total Penta-Dioxins	*	1.453	U			
Total Hexa-Dioxins	*	1.097	U			
Total Hepta-Dioxins	14.494	0.685				
Total Tetra-Furans	0.793	0.672				
Total Penta-Furans	1.205	1.002				
Total Hexa-Furans	2.104	0.650				
Total Hepta-Furans	0.560	0.631				

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

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PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

EPA SAMPLE NO.

57743

Lab Name: SOUTHWEST LAB. OF OKLAHOMA Episode No.: 44524
 Client Name: ASL-CA Lab Sample ID: 44524.03
 Matrix (aqueous/solid/leachate): solid Sample Wt/Vol: 10.15 g or mL: g
 Sample Receipt Date: 09-30-00 Initial Calibration Date: 05-06-00
 Ext. Date: 10-02-00 Shift: Instrument ID: Autospec-Ulf
 Analysis Date: 7-OCT-00 Time: 15:21 GC Column ID: DB-5
 Extract Volume (ul): 20.0 Sample Data Filename: U101430#7
 Injection Volume (ul): 2.00 Blank Data Filename: U101430#3
 Dilution Factor: 1 Cal. Ver. Data Filename: U101430#2
 Concentration Units (pg/L or ng/Kg dry weight): ng/Kg & Moisture: 4.57

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	6.84	X 0.01	6.84e-02
OCDD	69.53	X 0.001	6.95e-02
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	1.16	X 0.001	1.16e-03

Total: 1.391e-01

(1) Taken from 'Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update (EPA/625/3-89/016, March 1989.'

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SOUTHWEST LAB

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FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

57743

Lab Name: Southwest Lab. of Oklahoma Episode No.: 44524

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 44524.03

Client Name: ASL-CA Sample Wt/Vol: 10.15 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 05-06-00

Sample Receipt Date: 09-30-00 Instrument ID: Autospec-Ulf

Ext. Date: 10-02-00 GC Column: DB-5

Ext. Vol(ul): 20 Inj. Vol(ul): 1 Sample Data Filename: U101430#7

Analysis Date: 7-OCT-00 Time: 15:21 Blank Data Filename: U101430#3

Dilution Factor: 1 Cal. Ver. Data Filename: U101430#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 4.57

	SPIKE	CONCENT.	RECOV.	ION		
	CONC. (pg)	FOUND (pg)	%	ABUND.	RRT	MEAN
				RATIO (2)	(2)	RRF
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	1000	841.32	84.13	0.71	1.013	1.08
13C-1,2,3,7,8-PeCDD	1000	788.98	78.90	1.91	1.273	0.86
13C-1,2,3,6,7,8-HxCDD	2500	1890.24	75.61	1.19	0.991	1.02
13C-1,2,3,4,6,7,8-HpCDD	2500	1874.83	74.99	1.16	1.077	0.98
13C-OCDD	5000	4626.07	92.52	0.88	1.160	0.68
13C-2,3,7,8-TCDF	1000	1003.33	100.33	0.82	0.970	1.49
13C-1,2,3,7,8-PeCDF	1000	909.58	90.96	1.56	1.214	1.33
13C-1,2,3,4,7,8-HxCDF	2500	2019.28	80.77	0.50	0.964	1.27
13C-1,2,3,4,6,7,8-HpCDF	2500	1629.95	65.20	0.53	1.051	0.95
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	800	871.37	108.92		1.013	0.99

(1) Contract-required limits for percent recovery are 40%-135%
(section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are
specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl-2,3,7,8-TCDD (cleanup standard).

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